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Vol. XCVII—No. 1 THE PACIFIC RURAL PRESS Forty-ninth Year

SAN FRANCISCO JANUARY 4, 1919 LOS ANGELES

Tree Planting Time Is Right Now

Written for Pacific Rural Press by John J. Fox

WE HAVE visited many of the largest nurseries in the State during the fall and the impression gathered is that nursery stock as a rule is rather less than normal. Also, generally speaking, the trees are not so tall, though they are stocky and thrifty. The new system of grading by caliper instead of by length will doubtless be welcomed by all. The trees that have been dug so far have had a good time of it, for the early rains put the ground in excellent condition for this operation, in unirrigated sections as well as those which are independent of rainfall.

> Last year many people couldn't plant in February. It was too wet. They could not plant in March because it got too dry by the middle of the month. Everybody expected "more rain"—waited for it and it did not come. As a consequence many hundreds of thousands of trees were burnt up that ought to have been planted. Now is the time. Go to it!

This will be one busy month for the nurseryman as well as the grower, for the ground is moistened deep enough to make the planting of young trees safe. If, however, rains come sufficiently to make the ground cold, soggy and water-logged, or if there be water in the holes, it is not wise to plant until the ground is in warmer, more friable condition. Such a thing may come to pass before this article goes to press. In this case it is well to keep the trees heeled in until such time as the ground is in shape.

Receiving and Care of Nursery Stock.

When the young trees come to hand, see that they are not opened in a drying north wind and heel them in the same day that they are opened. This information is for those who are new to the business. The trench should be on ground that does not get saturated or hold water in the trench. If the trees are at all dry when they come, the roots can be freshened up in the water trough before heeling in, but not left there all night these cold nights. When heeling in, the earth must be well sifted down through the roots, so that if the north wind blows at any time it will not dry them out. But it is better not to water them in the trench. We have known trees taken home and stacked in the barn for several weeks, unprotected, so as to save the labor of digging that trench. This is very often followed by a disappointing stand and is one of the reasons for the young tree starting only at its base or perhaps below the bud.



This shows a thrifty and even stand of young olives in the nursery after their last cultivation. The exuberant growth proclaims a vigorous root system.

When to Plant and What Depth.

Generally the time to plant is as soon as the ground is in good, mellow condition, so that the soil will break up and sift down among the roots. Where there is too much cold rain and frost in the ground, the time of planting must be later. No more trees should be taken from the heeling trench than can be immediately planted. And even then they must be well protected until planted. No matter what kind of tree, it should be planted at about the same depth as it stood in the nursery. Unless trees have been especially budded high, this means that the union should be just above ground when the tree is firmed down by tramping after setting. Among grape growers it is one of the commonest mistakes they make, when new to the tree business, to dig a deep hole "so as to set the roots down where the moisture is," as they say. The writer has often found, on investigation, such trees set a foot and more below the union. These generally die or sometimes make two or three inches of growth when they ought to make two or three feet. Put the bud right in the crotch of the tree-setter and keep it there till you firm it and (unless it is a purposely high-budded tree) the right depth is insured. This, however, does not apply to the sandy soils of the interior, where the union may be several inches below the surface.

What About Plowing and Manuring?

The question is frequently asked, "Can I plant my trees before plowing?" Provided the ground is otherwise in condition for irrigation and cultivation, the answer is "Yes, if good, big, deep holes are made first." It is better than putting off the planting if you have been cut short in the plowing and cannot get through till late, although it is preferable to have the plowing done first if possible. But if either has to wait, and the ground is in first-class condition, it is often better to make the plowing wait than the planting.

No manure should go in the hole with the young tree. It is likely to injure the tree by heating and interferes with the drawing of moisture from below. A mulch of manure around the young tree on the surface is all right, though it ought to be kept from contact with the bark.

Protection.

As more young trees are probably lost from sunburn and subsequent entry of flat-headed borer than from all other causes, it pays to protect the young trees which have hitherto had such tender care. Whitewash first. Then a good tree protector (not black), as well, will make you pretty secure against these evils. Also, in California, all trees must be headed low, so that they are early protected by their own foliage. A young fruit tree must always be headed back well.

Varieties Being Planted.

There is a very heavy planting of prunes again this year on both peach and Myrobalan and some almond root. On good peach land the peach root is pretty hard to beat and the demand for it is increasing, though the Myrobalan holds its own on heavy land. Prunes are being planted in every prune-growing section of the State.

The demand for plums seems to be average, though the past season has shown very attractive prices. In the Forestville and Sebastopol sections we hear of a demand for Santa Rosa, Wickson, Climax and Burbank, also Jefferson. In the south the Burbank, Tragedy, Standard and Santa Rosa. In the Sacramento Valley the Santa Rosa seems to be also a favorite, with Grand Dukes, California Blue, Clyman and others.

Much new land is being brought into shape in the hills in Santa Cruz county for apricots. The attractive prices for shipping and dried fruits, together with the jam and preserve factories starting up, give this important industry a pretty safe outlook in the future. The Blenheim variety and the Royal are still the two leaders, followed by Tilton, Hemskirke and some Moorparks in places suited to them. Apricot root is the most in demand and this stock is of good quality in all the nurseries we have visited.

The planting of apples seems to be below the average. This has been a banner year for prices on apples and strong demand has been in evidence throughout the season for the fruit. Some day Humboldt county and Mendocino county, along the coast, ought to be big producers of winter apples. They can produce the color and the texture and have a good apple climate. Only care is needed in the selection of suitable

(Continued on page 11.)

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EDITORIALS

A GOOD WINTER JOB.

NOW THAT the rains are above the normal in most places and likely to remain so throughout the season: now that crop production has returned to individual judgment and initiative and is no longer a matter of restricted revelation by self-constituted authorities: now that we have given crop reviews and outlooks with facts and figures fit to fire the figurative imaginations of all our readers—what shall we head for now? This is not a conundrum submitted to a reader's referendum, for we have already decided where we are going and the only way a subscriber can escape from making the trip with us is to jump overboard and trust to being picked up by the small journalistic craft which are sculling along in our wake!

We are going to study law! We find encouragement in taking up law at this late day in the fact that some wise one has said that the best advocates are those who do not know too much law. It is an advocate that we propose to be—not a professor of law, who is apt to see so much in the case for the prosecution that he cannot defend his client effectively. The profound principle upon which we base our legal career is this: "every man for himself and all to help the hindmost." We are forced to this outspoken declaration of principle by the fact that all special industries and interests other than agriculture are masquerading in the public eye under a camouflage of devotion to fraternalism and humanitarianism and claiming to have forgotten all the privileges and advantages for which they previously contended, in their devotion to altruism. While we honestly believe that there is hardly a man in the world so greedy and grasping that he has not been mellowed somewhat by the broader and warmer emotions in the interest of all mankind which the great war engendered and the great victory enforced, we are very sure that if agriculture does not watch out it will perceive too late that it has been caught worse than ever by interests both high and low as soon as the wool wears off the lamb skins which these interests are now wearing. For this reason we distrust most of the assisted propaganda for individual and community organization with which the country is now being flooded. Most of it seems to us to be actuated by political, commercial or financial objectives or by socialistic vagaries—all of which are at least unconsciously antagonistic to fair recompense for agricultural effort and investment. The way which seems to us most proper and promising for agriculture, under such insidious menaces, is to come out in open organization to fight for what it desires and to force opposing interests to do the same.

* * *

SOCIALISM AND INDIVIDUALISM.

WE HAVE possibly made a reflection on socialism which some readers may resent. It seemed to be necessary to do this, for we believe that many of the propagandists to whom we refer are stealing the livery of socialism with which to camouflage their remote purposes. These purposes are most varied. In some cases they are simply the gathering in of fees for organizers or officers, in others the collection of funds for political propaganda and votes for party candidates: in others still the objectives are increased demands for particular manufactured products. In nearly all cases the principles declared by the socialists are prostituted to propagandists' purposes, whatever they may be. In all such cases this seems unfair, for it is a proclamation of devotion to principles of sociology for the purpose of creating new institutions of particular advantage and privilege to which such principles are opposed. It is the duty of agriculture to apply these same principles, not in this false way, but frankly and openly to secure a square deal for itself among other interests and industries. Sociology has formulated principles which have been freely adopted during the last few years in the improvement of human government in nearly all countries and "socialists" are entitled to much credit for enforcing them upon public opinion, though they cannot justly claim to have discovered or invented them. "Socialists" have many plans for applying these principles, and other alleged principles which they have perhaps invented, and their claim is to constitute a new social order on such a basis. That seems to us neither wise nor safe. We need the progressive development of our laws and governmental functions to embody demonstrated sociological principles as fast as they can be assimilated or incorporated into the existing social order and to this end much of the current socialistic agitation is a benign agency, but to adopt the socialistic way of applying sociology to the creation of a new order would be in fact to install disorder. What we need in America, at least, is a more enlightened and controlled individualism. Certainly that is the need of our agriculture and the need of the general public from agriculture. To exchange the sure foundation of individualism upon which our agriculture has been so successfully built up, for a socialistic vision of communistic production and exchange might starve half the population and ruin a generation of farmers before it could be really learned whether it could be done or not. What agriculture needs is encouragement of individual enterprise, and a square deal for it among other industrial activities, capitalistic and operative, which now too far dictate its producing conditions. It is perfectly natural that most farmers should distrust the multitude of efforts at organization which are camouflaging themselves with socialistic stripes and splashes. It is up to them to protect themselves from masqueraders and visionaries.

* * *

HOW WE SHALL STUDY LAW.

WE HAVE perhaps an original way of studying law. We are not going to explore Blackstone nor Kent, nor have we any shelves full of California codes and statutes. Any reader who wishes that sort of thing can find cartloads of it in the second-hand book stores. We propose to study laws in the making in the place where they are being made. To put the matter concretely, we have persuaded our Mr. Hodges to take up his abode in Sacramento during the session of the California Legislature, which opens next week, and put us wise upon all proposed and enacted legislation which has a direct bearing upon the interests and operations of California agriculture. Mr. Hodges will give our readers first-hand sketches of propositions which it will be attempted to enact into laws and indicate as far as possible who is responsible for such propositions and what phases of public or private interest and judgment they embody. We believe this effort will not only keep our readers well informed upon matters likely to have important bearing upon their producing and product-selling business, but will be suggestive of promotive or repressive influence which farmers should exert for their own advantage or protection. We do not remember that such an effort has ever been made hitherto with particular reference to California agriculture and we shall be disappointed if it fails to give readers better opportunity than they have hitherto had for knowledge and action upon all measures brought forward in the name of farming or otherwise bearing upon farming interests, for better or for worse. We bespeak for Mr. Hodges the good will alone of those who make the legislative wheels go around, but of all California farmers who may be called to Sacramento during the session to help them go around aright. It will be a good winter's job not only for Mr. Hodges but for all readers who wish to know what is going on and to help good things go through.

* * *

LESS TAXATION: MORE EFFICIENCY.

THERE is a widespread conviction that our State Government is costing too much. This is not a matter of fence-corner gossip nor of cross-party campaign oratory: it apprehended by state officials who are good at comparing figures and by publicists who are looking through all kinds of economic spectacles. This being the case it was a good move by Governor Stephens to appoint a committee of representative men to carefully investigate and report their findings for the information of the coming Legislature. It has been freely charged that the State is undertaking to do some things which should be left to private enterprise: that it is doing too extravagantly other things which it ought to do economically: that it is incurring much expense by over-lapping of executive scopes and functions. These are charges which cannot be wisely met by individual declaration because of the danger of misconception through error or prejudice. Governor Stephens has attacked them in the right way and through the committee which he has appointed and the Legislature which will soon join him in regular session, the outlook is good for readjustment of executive machinery which will reduce taxation and increase efficiency. We have surely come, through the extension of the commission method, into the possession of a most complex method of creating special laws and regulations and of extra-judicial administration of them which should be considered from the point of view of unnecessary public cost at least and if the State is over-functioning or cross-functioning, the operation should be reduced or simplified. In promotion and regulation of agriculture it is quite possible that such things will be found. The old trouble of duplication of effort in educational and executive lines for the promotion of agricultural education and practice certainly still exists. We have always claimed that agricultural executive and educational functions should be clearly segregated: that agricultural education is the function of the school system, from the University downward, and that executive control pertains to the operation of the laws for protection from diseases and pests onward to the standardization of the product for sale. Explanation of the laws and such exhortation and enforcement as are required for the observation of them, seem to us to comprise the proper field for executive action. Presumably this would reduce cost by excluding duplication and would also increase efficiency by releasing functionaries from the demands which duplication sets up. Propositions for reorganization of State work for agriculture will undoubtedly appear before the coming Legislature and they deserve close attention. Presumably there will be similar efforts to reduce and simplify State work in other industrial and social lines also. Rigid examination of all of them to ascertain if the public can get what it really needs for less money.

* * *

AGRICULTURE ON THE EAST FRONT.

SO FAR as we can clearly see at a distance of three thousand miles from the front, there is impending a clean break in the ranks of those who are striving to install a line of agricultural defence at the national capital. We alluded to this outcropping of agricultural desintegration in our issue of October 19, when we first mentioned the plan of one bunch of farming associations to build a "temple" in Washington—of which enterprise another bunch of them declared that "to talk of a 'temple of agriculture' at Washington is worse than folly." That is about the way farmers usually get together and that is the reason why every kind of organization from a national political convention to a local "farm labor conference," always gets away with them. We do not intend to go into the details of this scrap over the "temple or no temple" at this time, and yet that our readers may see the issue which is joined, we remark that the "National Board of Farm Organizations" is the name of the bunch which swears by the temple and the "Farmers' National Headquarters" is the name of the bunch which swears at the temple. It seems to be

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a sort of a swearing bee all around—by heck! Both organizations have their headquarters in Washington, the capital, and both have their tailquarters in Washington, the State. So far as we can judge by their declarations and by the personnel of their governing boards, the bunch named first above is conservative and individualistic, and represents the greater numbers of farmers: the second bunch is radical and communistic and represents those who believe in the Non-Partisan League of the northwest in philosophy and politics. As for the relative value and usefulness of the two aggregations in the promotion of agriculture we are not undertaking to judge at this time. The present fact is that they are coming apparently to a grand set-to in Washington on January 7, on which date the Farmers' National Headquarters has called a "Farmers' National Conference on Reconstruction"—the programmed platform for which includes about all the forms of paternalism which we have recently heard mentioned. Any California farmer who happens to be in Washington on that day can get his ears full by attending. But what impresses us most in the facts we have cited is that both national organizations are so busy fighting each other over what should be done for agriculture that they have no breath left to do anything. Both organizations declare that they desire to do for farming what Federated Labor does for labor and yet both are getting as far away as they can from the way Federated Labor does things. If Mr. Gompers is not too busy tipping off the government on what labor insists upon in "reconstruction" he must be having a good laugh at the farmers' way of reconstructing!

QUERIES AND REPLIES

By the Editor.

Inquirer Must Give Full Name and Address.

Pruning Wished-On Orchard.

To the Editor: Please tell how to prune apricot and peach trees two and four years old, also Muscat grape vines two years old, and Himalaya berries three or four years old. This property was wished on me and I do not know about pruning and am sure you can supply the desired information at once, as I must get busy. Have just picked the last of the grapes.—D. J. C., Chowchilla.

There are few farming operations which go less by rule and more by judgment and experience than the pruning of fruit trees. We would rather try to teach you to milk cows by rule than to prune trees, because cows' teats and men's hands are more uniform and simple in operation than tree growth and pruning purposes. Besides, the cow will help you to apply a milking rule by slamming you against the corral fence a few times, while a tree will quietly take what you give it and get even later by making you climb into the sky for the fruit or by breaking to pieces and letting you pick the fruit from the ground. Therefore, pruning always has to be done with reference to the future and requires prophetic judgment, which is hardest to get and most valuable to have. A cow will kick over a few pails of milk while you are catching on; an ill-pruned tree will lose money for you as long as it lives. You must not expect to get wise with a tree by a few rules. You must learn by close study of the tree how it grows and how you can make it grow so that it will give you good crops of good-sized fruits regularly and hold it so that you can pick it in best condition at the least cost.

No one can tell you much about pruning two and four-year-old trees without seeing the trees and being able to judge whether they have been properly pruned thus far. We must suppose that they have been and that they are low-branching and short-jointed on the main branches. The trees which have made two summers' growth in your valley should have six or eight branches properly placed. Select about this number and cut them off at the level of your chin and remove all others at the points where they start from stem or larger branch. Apricots and peaches having made four summers' growth ought to bear a good crop next summer. They ought to have about sixteen branches at about eight feet from the ground. Cut them off at that height and remove most of the others which reach above that height at their starting points, to keep your tree from getting too thick or brushy. Do not cut the short laterals below. They should bring fruit where the tree can best carry the weight of it. If your trees have been neglected and have not made such proper growth, cut back about in the same way but at a lower level. Train your best canes of Himalayas to high stake or trellis and cut back a little beyond the support you can give and remove what you cannot train up. Cut back about four of your best Muscat canes to two buds and remove others at the stump. On weaker vines save fewer canes.

Grafting-Over Southern Black Walnuts.

To the Editor: On our hillsides there are many wild walnut trees. Can these be made valuable by trimming and grafting or budding to the best English walnuts? At present they produce heavily, but the nuts are of no value. Since we would like to leave the side hills covered with these trees, could a profitable transformation be made by grafting or budding as above? Which variety would you recommend?—C. W. P., Los Angeles.

If the hillside soil and moisture are such that you have good-sized trees and not shrubs, they can be satisfactorily transformed as you propose. If they are only shrubs, there is no reason to expect to get trees or good-sized nuts by grafting, and they will be more ornamental as they now are than afterwards. Nor is it reasonable to expect even from large trees under wild conditions nuts which will be comparable with the product of cultivated trees brought along by irrigation and fertilization as the best production may require. If, however, you have really good wild trees, select those of medium size and age. Very large and old trees are more expensive to graft-over and less satisfactory for future performance. Such work as you propose will require considerable investment and should only be entrusted to an experienced walnut grafter and not to an ordinary tree-butcher. Get a well-recommended man from the walnut region of your own or Orange county and have him graft in several varieties which are approved in your part of the State. No one knows yet which is the best walnut. You will have to help along toward that knowledge by determining which is best for the special conditions you offer.

Applying Manure and Lime.

To the Editor: Will stable manure lose its value if it stands in a pile during the winter? Would it be better to spread it on the land and plow it under in the spring? In applying hydrated lime, should it be spread before plowing, or harrowed in after the land is plowed?—Subscriber, Novato.

Unless you wish to undertake composting, which consists in shoveling over and keeping moist enough to promote decay and prevent "firing" or too rapid fermentation, which causes loss of organic compounds, it is better to spread at once and plow under when ready to plow. Surface spreading of fresh manure prevents loss, for simple drying does not occasion loss and it prevents also loss by firing and leaching—because solubles go into the soil where they are wanted, when they are washed out by rain. Manure piles are often largely leached by heavy rains and their contents lost because the water runs to waste places. If you wish to distribute lime through the whole soil mass, plow it in. If you wish surface mellowing particularly, apply after the land is plowed.

Insect Eggs on Peach Twigs.

To the Editor: I send a peach twig encircled with some kind of eggs. We do not know what they are, so we are sending them to you. We have found several, but not as large, on the Lovell peach and have not seen any on the others.—C. M., Winters.

You send a cluster of the eggs of moth from which looping caterpillars will hatch out toward spring and eat the leaves of your trees unless all such clusters, as you see them when pruning, are destroyed. The eggs resemble those of the moths of the tent caterpillar and of the fall canker-worm, but are not surely the product of either; but you will be sure to avoid trouble later by destroying them.

Planting for Almond Pollenation.

To the Editor: I am ordering 500 almond trees, the variety being Nonpareil, Ne Plus and Drake. How many should I plant of each and how should they be planted? I intend to plant 28 feet apart. The orchard will be about 1150 feet long by 320 feet wide and its length runs north and south. In this lot there will be 43 trees to a row and 12 trees across.—W. B., Orland.

There are many ways in which you can relate the Drakes to the two others you wish to pollenate, and we are not confident that our way is better than others. Supposing that you do not wish to grow more Drakes than necessary for its anticipated effects, we should plant two rows of Nonpareil, then a Drake, then six rows of Nonpareil, then a Drake, then two rows of Nonpareil. This is lengthwise of the piece. When you have set in all the Nonpareils you wish to plant, take up the Ne Plus and proceed as before—allowing the Drake rows to go the full length of the piece. This is for the purpose of getting the varieties bunched as closely as possible for convenience in gathering each kind by itself and still providing for pollenation.

Get a Bigger Job for 1919

This is your big opportunity. You know the conditions that confront farmers today. During the period of reconstruction there will be many readjustments. Farmers will be up against new problems which they cannot solve alone, and the Rural Press will prove indispensable to them.

We need a few more men to present the paper to those who are not already subscribers; also to take care of our renewals. Experience not necessary, but must have an automobile.

Straight salary; permanent work, with advancement. Tell us a little about yourself and ask for our proposition. It will interest you if you are a live wire.

Moving Large Grape Vine.

To the Editor: I have a large grape vine about 100 feet long on a trellis in front of my house and wish to push it out about ten or twelve feet so as to enlarge my porch. The leaves are all off now and I have just gathered the last of the grapes, about twenty five-gallon buckets full. Is this a good time to move the vine, or should I wait till it gets more dormant or wait till the sap starts in the spring? It will have to be racked and twisted considerably to move it and I don't want to injure it.—M. W., El Dorado.

It is better to move your big vine now than later because the cut roots callus and begin making rootlets before it is warm enough to start the buds and thus get ready to stand the strain of the new top growth. If you transplant, shorten the long branches very much and cut back all new lateral canes to one bud. There will even then be considerable risk in transplanting such a big vine. Can you not build around the old trunk without moving it and then twist the branches as much as you like in getting them into new places so long as you do not break or splinter them? If you leave openings for plenty of air under the porch and arrange to get enough water to the roots, the vine will grow as well as ever and you will lose neither shade nor fruit. If you transplant you are apt to lose both for some time even if you do not lose the vine itself. And yet very large vines have been successfully transplanted.

To Restore Wild Pasturage.

To the Editor: I have 59 acres that have been pastured by cattle for a number of years. I wish you could tell me what seed to plant to replenish the ground. The ground is to be used for cow pasture and is not too rocky for cultivation.—Subscriber, Orosi.

If it is dry land and you cannot do anything to increase its summer moisture, you can only reseed it with plants which make growth during the rainy season, such as wild oats, bur clover and filaree. You can scratch these in now. Keep off the stock and give the plants a chance to make as much seed as possible next spring. They will be aided to restore the pasturage by other wild plants which will reappear. The land would have given winter pasturage indefinitely if it had not been overstocked or fed down too late so the plants had no chance to make seed. Use the land less for green pasturage and more for dry feed and it will come back all right.

California Weather Record

The following rainfall and temperature record is furnished the Pacific Rural Press by the United States Department of Agriculture Weather Bureau at San Francisco for the week ending at 5 p. m., December 31, 1918:

Stations—	Rainfall Data: Past Week	Seasonal To Date	Normal To Date	Temperature Data: Max'm	Min'm
Eureka	.12	11.72	16.89	56	30
Red Bluff		14.45	10.08	60	26
Sacramento		7.39	7.12	52	32
San Francisco		10.92	8.30	57	38
San Jose		9.91	6.22	56	36
Fresno		3.84	3.55	64	26
San Luis Obispo		7.37	5.86	68	36
Los Angeles		3.98	5.21	76	38
San Diego	.10	4.24	3.17	74	56

Indian Corn Is Paying California Growers

Written for Pacific Rural Press by R. E. Hodges

CALIFORNIA Indian corn crops do not yet supply the demand for California human consumption, much less do they provide enough for stock feed. The average yields of only 32 bushels per acre in both 1916 and 1917 and 35 bushels in 1918 are so far below what they ought to be that it is not attracting enough acreage to supply ourselves. One outstanding reason for our low yield per acre is lack of any particular care in selecting seed. No farmer tests seed corn for germination, few farmers even take more than a cursory glance at the ears chosen for seed, practically none select seed corn in the field before picking the crop. When one bushel will plant seven acres, the entire cost of pre-selecting seed for a large crop would be negligible. Because corn is so easily improved or degenerated, it would increase our yield to practice selection of large ears, matured early, with small cobs, deep kernels, with no grooves between the rows, having tight husks to discourage worms and avoid rain damage, having grown at convenient height on strong stalks, and having hung downward to shed rain. Early maturity would seem to be a principal need for California, in order to reduce the moisture content. The price of our corn in sacks is normally not a great deal different from the price of Eastern corn in bulk after paying the freight to California. Just at this writing a leading mill company quotes $3.25 per cwt. for Eastern bulk and $2.75 to $3 for California sacked. California corn is always high in moisture and all except the earliest must be kiln-dried before milling. Where our corn runs 17 to 22 per cent moisture, Eastern corn is 13 to 15 per cent. After our corn is dried to 15 per cent, California millers prefer it. Over half of our California corn is milled normally; and in a season like the present still less than normal is used for cattle and sheep on account of good green feed. We have cheaper, more easily grown stock grain feeds in California anyway, and it may be a question whether we should try to raise much Indian corn for stock, though for chickens and turkeys some corn is highly desirable. But great quantities of Eastern corn are annually shipped to California to be milled for us to eat. This economic waste might well be avoided with increased prosperity for growers and for the State. While nearly every county grows some Indian corn with great profit and fifteen or twenty of them have been raising over 1000 acres each, all of them together fall far short of supplying our home demand.

One County Grows Third of All.

A peculiar situation is indicated by figures for the 1918 crop. While the acreage for the State as a whole increased less than 2 per cent over the previous year, the acreage in San Joaquin county multiplied six or eight times. Other counties must have dropped in production, while the high yields per acre and low labor requirements of this crop led to a great increase in San Joaquin. Visitors to the delta region this fall and winter were struck by the long lines of narrow slatted corn cribs that adorn the levees on all sides—their peculiar feature being their almost universal newness.

The pioneer corn grower of the peat lands, J. M. Bigger, can count on his fingers the years of commercial corn industry here. But while he has been drawing a salary of $1 per year from Uncle Sam his neighbors and their neighbors have spread the corn acreage like an epidemic. San Joaquin county in 1918 grew 25,000 of the 76,000 acres of Indian corn planted in California!

And what corn grows on this acreage! Most everybody drills it thickly to reduce its exuberance. Even at that an Iowa corn man would discount the crop, for "we can't afford to carry stepladders to pick corn." But Californians could almost afford to carry stepladders if necessary, for these thickly standing stalks average more than one big ear apiece.

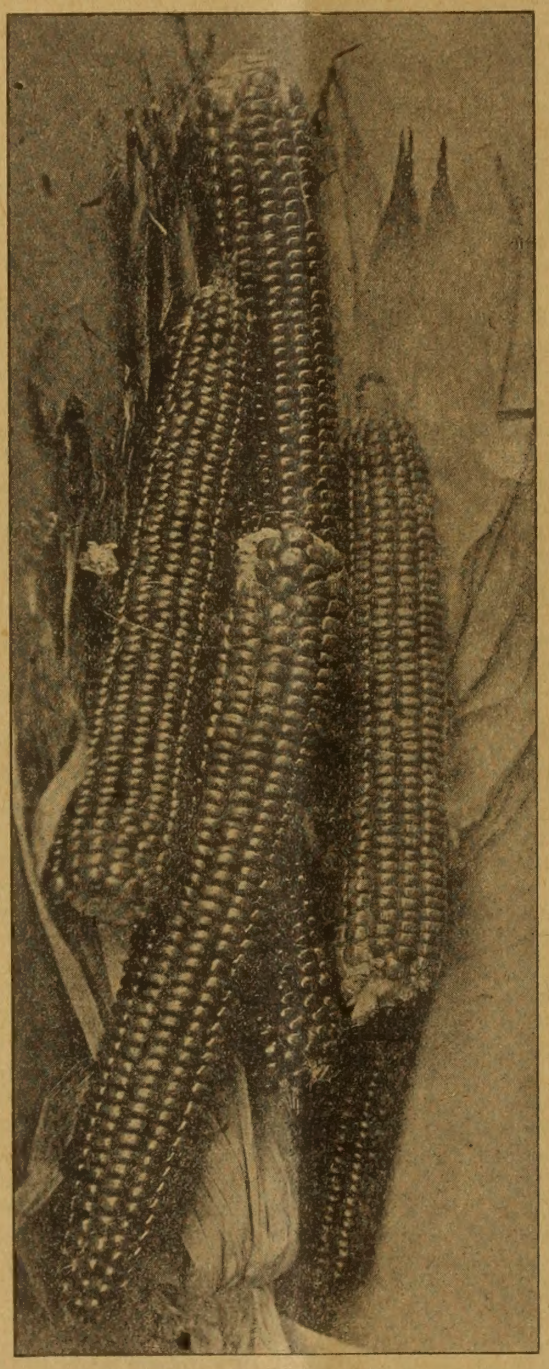
What One Farmer Is Doing.

Frank F. Lyons, who is showing the world that a successful farm advisor can also be a successful farmer, is one who says he will grow nothing but corn for awhile. He grew a big crop of it last year. He was just harvesting 400 acres last fall when the writer visited his ranch, and he estimated the yield between 70 and 80 bushels per acre.

Corn costs between $9 and $10 per acre to bring to harvest. Hand picking and storing in cribs costs $15 per acre ($10 last year). Cutting the corn with a tractor pulling two binders, and running it through a combined husker and shredder, putting the corn into cribs and the shredded fodder into stacks also costs about $15 per acre total. The fodder is then both eatable and available for cattle all winter, being considered worth the $15 an acre, at the rate of about $7.50 per ton, for feeding on the ranch. Last year some of Mr. Lyons' neighbors baled and shipped shredded fodder at $8 per ton f. o. b. Stockton, but figured they lost money on that. Mr. Lyons last winter had 500 cattle two months through the February rains on two acres of salt grass on which shredded corn fodder had been stacked, and this year he hopes to do something like it with the fodder from 200 acres of corn. The rest is to be hand picked, partly because shredded fodder is not yet enough appreciated by stockmen.

Peat Soil for Corn.

How is Mr. Lyons raising $125 worth of corn per acre at a cost of $25? His soil is on the rim of a tract over which he used to hunt for ducks. To look at it where ditching machines have thrown it, you think of dried fire-fanged manure. To walk over it in a cultivated field, you think of a barnyard in summer where the year's accumulation of manure has been dried and trampled to fluffy stuff. To jump high and land on it with your heels, you think it is floating on an underground lake, for you can see it shake 50 feet away. It is rich in nitrogen, for it is the aggregation of centuries of lush grass and its roots—real peat twenty feet deep. Near the levees and to a proprotionately less degree at greater distances sediment from river overflow has mixed into this peat, not enough to remove its fluffiness, but enough to give it greater body and less shrinkage. In the few years since this tract was reclaimed, the purer peat half way between the sloughs which border it has shrunk so much more than the soil around the edges that the area is saucer-shaped, as are all of the delta islands, the center being about ten feet below sea level and the edges only three or four. Yet when Mr. Lyons was hunting on it before the reclamation he waded over it indiscriminately, no deeper in the center than around the edges. So much for the soil, which has never been fertilized, though certain kinds of fertilizer would no doubt help it, as shown on some of the islands not far away.



Characteristic flint corn grown in San Joaquin Delta.
Photo by courtesy Stockton Chamber of Commerce.

Preparation of the seedbed was simple. He plowed it in January, using Caterpillar tractors and turning wide, deep swaths with gang plows because the soil turns easy. Part of it he replowed before planting in April, as many of the neighbors think necessary. He will not do this again. That part of the fields became particularly weedy. He got in a rush with the rest and simply disked it with a Samson tractor before planting. Two double diskings can be done in less time than a plowing and they leave a beautiful mulch five inches deep and so dry that weeds won't sprout in it to any great extent. Corn could be planted sooner after disking than after replowing and it got ahead of the weeds anyway.

Notice the Corn Planting.

The corn was put into moist ground under the mulch by using furrow openers in front of the planters. They opened trenches four inches deep and the corn was dropped two inches below that. The furrow opener also takes care of any weeds that may have sprouted after the disking. The trench warmed up better in the sunshine and avoided the wind, so the corn came up sooner. It was checked to cultivate both ways. This took seven pounds of seed per acre, where drilling, as commonly practiced, would take ten and be too thick, as Mr. Lyons thinks.

It was a cold April and a hot June. The cultivator got over the fields only once before the corn was so tall it could not be cultivated again. It covered weeds in the trenches left by the planters and filled them up so the corn was surely rooted way underground. The field is clean enough this fall to be the envy of any Corn Belt farmer.

Irrigating Delta Soil.

The soil of the delta is peculiar in its irrigation and drainage needs and in the simplicity and cheapness of its irrigation. Drainage is everywhere essential. On the Lyons ranch permanent ditches 4½ feet deep and 850 feet apart drain into the main canal of the tract from which the water is pumped over the levee into the river by enormous pumps, as in other districts. In summer, when irrigation is needed, these ditches are left as full of water as desirable to subirrigate the tract. To aid in the subirrigation, temporary trenches six inches wide, two feet deep, and 75 feet apart are dug every spring by regular machines. Whenever irrigation is needed, these trenches are filled either from the drainage ditches or by siphoning water over the levee at no cost for power. The water seeps sidewise rapidly, but does not rise much because the soil is too fluffy for capillarity. There is every advantage in keeping the surface mulch dry anyway.

Corn Growers' Problems.

As in any reclamation, there is some alkali in the islands and where irrigation has not been handled properly it shows considerably on the surface. There is not much of the black alkali, and the white salts may be removed in two or three years. Mr. Lyons had 20 acres so alkaline that nothing would grow on it in 1917. He got the drainage ditches through that year and after soaking the ground thoroughly to dissolve the alkali he drained it off and this year had a fair growth of corn. Similar treatment this winter is expected to result in a normal crop on this piece in 1919.

The Worm Problem.

Practically every ear of corn has one or more worms in it. Frequently, as this fall, the worms open the way for rain to work down the ear and mold it all. At any rate, they always destroy the tip. The man who can solve the problem commercially will be worth a fortune to California growers. Trap crops around the fields, early planted rows, moth traps, arsenate of lead and other schemes have seemed either impracticable or only partially successful. Mr. Lyons has one row of a tight-husked Mexican corn which did not get any worms. It bore several ears per stalk and seems like a promising variety. Seed was obtained from Prof. W. W. Mackie of the University of California, who has been searching and breeding for the purpose.

Seed Is Mixed.

As a general rule, the mildness of the California climate has resulted in seed selection from the cribs and but little attention has been made to the growing of pure strains. The yield, however good, is not as high with this kind of seed as it would be with properly selected seed, and the quality for milling is certainly much degenerated. This situation can be easily remedied and we will say more about it later.

"Johnny, parse this sentence for me, 'Mary milked the cow.'"

"'Cow' is feminine and singular," said Johnny, "and stands for Mary."

"How does 'cow' stand for 'Mary'?" asked his astonished educator.

"How could Mary milk her if she didn't?"

Putting a Beef Herd on the Map

Written for Pacific Rural Press by R. H. Whitten

JUST BEFORE the recent American Royal Stock Show at Kansas City two carloads of fat cattle were sold on that market. They came from two neighbors who had fed and cared for their stock about alike. One lot sold for $18.10 a hundred; the other brought only $15.40. The steers of the first lot averaged $237.11 each; those of the second lot $158.40. Probably there was very little difference in the cost of the two lots, but we'll be liberal and allow $40. This leaves a net advantage of $40 per head, due to something besides feeding and care.

There is an important lesson to every stockman in the sale of these two lots of steers. The man who took the cheaper lot to market went right home again, stating that he could not learn anything at the American Royal, as he was raising only grades and was not interested in purebreds. But the owner of the higher priced lot remained to attend the show, that he might study type and blood lines. And right here we have explained the net difference in the prices paid for the two lots—it was due to their difference in breeding. The real purpose of a livestock show is to encourage the rank and file of farmers to produce better stock, and by attending the Royal regularly this breeder of the better steers had had his desire for better animals quickened. He had been breeding up his herd for several years, and it paid him big.

If all livestock men could realize that it is breeding more than feeding that regulates the degree of profit, there would be none who would take the position that they had no interest in purebred stock because they were raising grades. Purebreds have only one use, and that is to improve the quality of the grade stock on the ranches. And with higher-priced land, higher-priced labor and higher-priced feed it is absolutely necessary to raise a better grade of stock.

L. J. Smith of Pleasant Hill, Mo., an exhibitor at the Royal, said: "When I bought my first beef cattle eleven years ago my farm was worth $92.50 an acre. Today it is worth $200 an acre. I must have greater returns now to make money on my investment. Scrub cattle never were profitable, but now it is out of the question to raise them. It takes just as much feed to put a scrub on the market as a purebred. The latter will lay on five pounds of flesh a day while the scrub does well to put on half that amount."

A leading authority who has watched the Middle West markets for several years says that the vast majority of cattle coming to market show evidences of better feeding than breeding. But the prices obtained prove that it is not profitable to feed high-priced feeds to low-bred animals. It is impossible to feed something out of a bunch of steers that has not been bred into them, and for satisfactory profits good feeding must be preceded by good breeding.

Unfortunately the offices of the U. S. Bureau of Markets have not been established in California long enough to furnish any helpful statistics in this connection, but we happen to know of some Wyoming figures which will prove interesting. The average weight of all range three-year-olds from Wyoming runs from 1040 to 1075 pounds. Last year B. J. Erwin of Douglas, who uses purebred bulls exclusively, marketed his two-year-olds at 1040 pounds—approximately the same weight as the average of three-year-olds from the same locality. Thus the use of registered bulls reduced one year's maintenance in reaching the same weight. Some item.

California a Beef Cattle Paradise.

The difference should be even greater in California, on account of our longer grazing period and the abundant roughages that can be raised. Did you read the statement of O. V. Battles of the well-known firm of Congdon & Battles in last week's issue? You remember he said that California would become a beef cattle paradise during the next decade because of its luxuriant forage and long season of open grazing. A pretty strong statement for a breeder who is located in Washington, isn't it? But we believe it. We believe that California has every other section of the country skinned in natural advantages, and that while our progress has been remarkable it is only a small beginning as compared with what will be done. We believe that there never was a better time to take up beef cattle raising or to increase the size of herds already established, and we hope that ranchers who have lands suitable for cattle raising will take advantage of the opportunity now.



California is destined to become a beef cattle paradise because of its luxuriant pastures.

The Selection of a Breed.

When it comes to the selection of a breed the choice should be made with due consideration to the general breed characteristics and the local conditions to be met. Each of the three leading breeds—Hereford, Shorthorn and Angus—has certain qualities, and you should make your selection according to the way these qualities fit your conditions. The Hereford is considered the best rustler and grazer and is very free from disease. The Shorthorn is especially adapted to farms on which there is an abundance of grass and the stock can be given a reasonable amount of care; also where a dual-purpose animal is desired. It is claimed that the Angus will produce the highest quality of beef and will do exceptionally well in the feed lot. It would be foolish to say that any one of these breeds will fit every condition, and you should select the one which seems to most nearly have the qualifications you desire.

Individuality Most Important.

But regardless of the breed selected, don't forget that there is more difference between individuals within a breed than between the averages of breeds, and that it is essential to mak selections of good individuals carrying popular blood lines in their pedigrees.

Look to individuality first and pedigree afterwards. Don't go too strongly on reputations. Don't buy an animal just because it is a son or daughter of some noted bull, or just because it was raised by some prominent breeder. First of all decide upon the type you wish to raise, looking well into the market value of your ideas. Then get individuals of that type. If a prominent cattleman bred them, so much the better. If they carry the best blood of the breed in their veins, better yet. But instead of buying breeding stock with your eye on the tabulated pedigree, pick good individuals first and then try to get as much fashionable pedigree and breeding as you can to go with the individuality.

Sire the Determining Factor.

Unusual attention should be given to the selection of the head of the herd. As Dean C. F. Curtiss says: "Nothing contributes more to the success of a breeder and the prestige of a herd than a good sire. Nothing can so handicap a breeder and doom a herd to failure as an inferior sire. Even an ordinary or fairly good sire usually proves to be the limiting factor in livestock improvement. It is safe to say that no substantial progress will be made except through sires of unusual excellence."

The sire should be an animal of high individual excellence, free from serious defects and backed by a strong line of good ancestry. By all means get a bull from a good cow. A good sire very rarely, if ever, comes from a common cow with a short line of good ancestry back of her. See the mother, if possible, and also study carefully the three or four top crosses in her pedigree.

Remembering that "like begets like," you should have your herd bull of the same type as you would have your steers in the feed lot. Have a type, but be sure to have the right type—compact, wide, deep and on short legs. He should be growthy, of mellow and natural fleshing quality, masculine and vigorous.

In conformation he must have a short neck joined onto his body in perfect line with his shoulders, and both the shoulder blades and the point of the shoulder should be well covered. He should be large of heart-girth, with the foreflanks well down, but he should not be so well arched in the ribs as a cow. She needs the room on account of carrying her calf, but if the bull is strongly arched in the ribs he will be slack-loined. You should be able to see all the way along his back from behind.

He must be ribbed right back to his hip bones, and the hips should not be too prominent, but well covered. The rump should run straight back to the thurl region, and the rear flank should be in line with the foreflank. The bull should carry straight hindquarters, well-fleshed to the hocks, giving a twist that is full but not so bulging that the tail will not hang plumb.

A mean-headed bull generally has mean-headed sons and daughters, so, besides seeing that the head has a masculine appearance, you should be sure that there is plenty of width between the eyes, a short muzzle, and a good, wide, capacious mouth. Never buy a pinch-nosed, small-mouthed bull—he won't have good grazing qualities.

If his crest humps up a little more than looks normal, it won't make any difference; nor will it if he has just a little leather under his throat. You want him to look like a bull, not a steer.

His head should not be carried much higher than his back. If it is, then he is not strong in his back. He ought to be level all along the top line, and it should be well covered.

Looked at from the front, he should be broad, but his brisket should not sag. In time a big, flabby brisket will draw meat away from the shoulder blades and leave them unsightly and bare, which means that the chuck roasts will be without that basting piece of fat desired by the cook.

The bull's legs ought to be like those of a table—straight and coming out of the four corners. The hind legs particularly should be straight and stand well apart. Don't get a bull with sickled or crooked hind legs. The bone should be of good size, flat and clean. A greasy-legged bull is as bad as a gummy-legged stallion. But the legs must not be too long; the bull should be close to the ground.

Plenty of scale and substance; a good lower line; a full, deep flank; a meaty loin; a thick, mellow hide; a good coat of hair; extreme ruggedness of constitution—that will be about enough for the bull.

Registered Cows Will Pay.

Perhaps you were expecting to have only a registered bull, but why not get just a few registered females if you can't afford a large number? If you will start with four or five good ones and keep the female increase, you will have a valuable herd in a few years that will represent very little cost aside from the feed and care. As it would cost you just as much to carry a similar number of grades, you can see clearly the advantage of the purebreds. In this way you can grow into the business gradually, and in selling the surplus stock you can sell from the grade herd. Also, you will find that the use of a bull suitable for mating with purebred cows will greatly improve your grade herd and enable you to make more money from them.

In general, the cow must possess the same qualities as the bull, except that it is just as important for her to have a feminine appearance as for the bull to appear masculine. As one authority puts it, "The cow's countenance must have that almost indescribable sweetness of character, without which she is nothing."

Don't forget what you are raising cattle for, and be sure to have plenty of size and bone; a broad, strong back that finishes smooth at the tailhead; a low flank, and deep, heavy quarters. Get length, width and depth, and be particular about early maturity, and naturally easy-fleshing characteristics, as indicated by a fairly loose hide; also look for smoothness and quality. Insist upon great vigor and a strong constitution. Turn down cows with long legs, high-cut flanks and flat chests. They won't prove profitable.

If your capital is limited, don't make the mistake of false economy in buying foundation stock. It will be better to buy just a few, and have them of the right sort in individuality and breeding, than to strive for larger numbers. You can make more profit from a few really high-class animals than from twice as many of the ordinary sort. True, progress can be made by the use of good sires on plain dams but soon the limit is reached beyond which improvement is slow. But by building up both lines there is scarcely any limit to progress. So make quality, not quantity, your goal.

How Much to Pay for Stock.

You may say that as you are a beginner and not well known it will be unnecessary for you to buy high priced stock. But the size of the matter is that if you don't buy good stock you never will be known, while if you buy some real high-class animals people will soon know all about you.

Whatever you do, don't buy cheap cattle. If

(Continued on page 10.)

Pear Blight on Hangers

[Written for Pacific Rural Press.]

In sections where pear blight is common, the practice is to prune so as to carry the main of the fruit on hangers. In other sections where blight is practically unknown the fruit is all or nearly all carried on spurs throughout the tree.

The chief reason for pruning off spurs and leaving hangers is that in case the blight strikes, the hanger can be cut off before the blight reaches the branch or limb, which can thus be saved.

But, though the blight travels with alarming rapidity in the succulent hanger, its progress through a gnarly spur is comparatively slow and the harder and older the spur the longer the blight takes to run. Pears grown wholly on the spur are easier to pick and seem to cost about the same to prune or very little more. Some men practise a kind of mixture of both systems and others again never stop at all—only thin out wood. The latter system is probably the hardest to handle in case of blight, because of its droopy head. How many men are going to try the system of banding their pear trees for blight to keep the ants from running and carrying infection into the buds in case of a blight year?

WINTER NELIS AND BEURRE D'ANJOU.

More and more winter varieties of pears are being planted as the demand for them increases. Also it is better recognized that the Bartlett (and other varieties) produce better by cross-pollination. The Beurre d'Anjou and Bartlett bloom at the same time and the Winter Nelis only a few days earlier. California produces pears for practically the whole United States. George P. Weldon, Chief Deputy of the State Commission of Horticulture, says in his book on pear growing: "In California there is no better pear on the market during the holiday season than the Winter Nelis. On December 27, 1916, I made an investigation of the San Francisco markets to determine what varieties of winter pears were being sold during the holiday season. The following notation was made on this date: Winter Nelis was selling at $2 to $3 a box, Clairgeau, Easter Beurre, Kieffer and Pound at 75 cents to $1.25 a box. Three pears of the Pound variety were bought from a street vendor for 10 cents. They were hard and unedible. Three Anjou pears were bought at a fruit stand for 10 cents; these were excellent for eating. Of all the varieties seen during this investigation, only Winter Nelis and Anjou were worthy of the name 'pear.' On March 30, 1918, well-ripened Winter Nelis in prime condition were bought from a fruit dealer in Los Angeles."

Nothing is likely to ever replace the Bartlett, nor will the winter varieties be likely to have an unlimited market, but as cross-pollinizers an occasional row of these varieties might help.

Winter Spraying of Apples

[Written for Pacific Rural Press.]

The reason given by A. W. Tate, Jr., why Bellflowers do not bear so well as formerly is because of the powdery mildew—it is the worst thing they have to contend with in the Watsonville district. Dr. Tate says the most satisfactory way of dealing with powdery mildew is to cut off the infected wood faithfully every year and follow this with the usual sulphur sprays when sap starts to flow and later in foliage. He also advocates the use of crude oil emulsion for a winter clean-up spray, but says if it is used too early it has a tendency to seal the buds, while if it is used too late (after the buds begin to swell) it will burn. The lateness of the time when it can be applied depends upon the season and the condition of the buds.

LEAF ROLLER.

Dr. Tate said that spraying for the leaf roller in June was no good. Miscible oil 1-20 had been tried and so had neutral arsenate of lead and blackleaf 40, but that no results were apparent. It must be controlled in winter with the oil spray, which penetrates and destroys the egg masses.

A LOW-PRICED EVAPORATOR.

F. W. Haas (seven miles north of Napa) promptly set to work to install an evaporator when his prunes got sprinkled in September. The one used was built on the principles of the one recently reprinted in the Pacific Rural Press, except that four return pipes were used opening out from a large drum two feet in diameter that extended right across the end of the heating chamber farthest from the furnace. It is only a small affair and was built at an actual outlay of $400, but Mr. Haas saved his 15 tons of prunes from nine acres and has since finished drying 75 tons for his neighbors—making good money, it is said. This three-compartment dryer has a capacity of 45 eight-foot trays and the prunes take from 30 to 36 hours to dry. He says the bottom tray dries first and has to be removed early, but all the rest dehydrated pretty evenly. The lower part of his evaporator house is of concrete to about four feet and of wood above. He says that if he were going to build another it would be of solid concrete and would be just as cheap (doing the work himself). Also he would have cars to run the fruit in on, instead of sliding them in on cleats. The degrees of heat used are from 140 to 180 degrees. Greater heat than 180 degrees at any time spoils the quality of the fruit. H. J. Baade, the Farm Advisor of Napa county, who accompanied the writer, said he could recommend the improvements mentioned at not to exceed $50 above the cost price of this dryer.

NURSERY CATALOGUES RECEIVED.

We are in receipt of two of the new catalogues from nurserymen—one of 96 pages from George C. Roeding of the Fancher Creek Nurseries at Fresno, and one of 104 pages from M. R. Jackson, manager of the Fresno Nursery Company at Fresno. Both of them contain a full line of deciduous and citrus fruit stock, vines, berries, ornamental deciduous and evergreen shrubs, palms, roses, etc. In each is set forth a section of figures and instructions valuable to all planters, such as "Methods of Planting," number of trees to the acre under different systems of arrangement, basis of sizes and caliper measurements, proper planting distances and instructions as to cutting back the young trees. Both catalogues are profusely illustrated with good cuts of fruit, flowers and ornamental trees. The Fancher Creek catalogue contains a graphic exposition of landscaping service, together with design and plans for laying out everything from a rose garden to a princely domain, designed by their own landscape department, together with lists of trees, plants, ferns and shrubbery to suit any plan or design. Write for their sketch plan, cross-section blank and information sheet.

STATE HORTICULTURAL LAWS DISCUSSED.

[Written for Pacific Rural Press.]

At the Horticultural Commissioners' conference, held at Sacramento in December, in discussion it was decided that the Fresh Fruit Standardization Law as it applies to grapes is very satisfactory. The enforcement of the requirement that grapes must contain 17 per cent of sugar, except in the cases of Emperor, Cornichon and Gros Coleman, which must contain 16 per cent, has been enforced uniformly by the County Commissioners in the grape-growing districts of the State. The industry has been practically put on its feet by this provision of the law.

THE PLUM AND APRICOT PACK.

The grading of certain fruits, especially apricots and plums, was said to be faulty. The sloping side basket which is used in the packing of these fruits is packed with smaller fruit at the bottom than at the top. The difference is so great that the packing is often very deceptive and is not conducive to the best interests of the fruit industry. A straight-sided basket which would require uniform grading is recommended.

APPLE BOXES.

In the discussion of standard packages the fact was pointed out that the box which is generally used in the packing of apples at the present time is not scientifically correct for the various sizes of apples. A standard box of the following dimensions, which is used in the Northwest and commonly known as the Northwestern box, should be provided for by law. Depth of end, 10½ inches; width of end, 11½ inches; length, 18 inches.

BY-PRODUCT FACTORIES.

In the enforcement of the standardization law the officials have experienced much difficulty in determining the disposition of condemned fruit. There is a notable scarcity of by-product factories in some of the more important fruit growing sections. For example, the big deciduous fruit district surrounding Auburn, Newcastle, Penryn and Loomis in Placer county has no by-product factory for handling overripe or otherwise unfit fruit for a standardized pack. An up-to-date by-product factory, it is believed, is an economic necessity.

The possibility of the adoption of an amendment providing for a straight side package for such fruits as apricots and plums instead of the present sloping side container, which is not satisfactory, was suggested; also a straight side berry basket was thought to be far superior to some of the sloping side baskets that are now in use and possibly an amendment will later be drafted to provide for such a container.

A GOOD PLAN.

Harry H. Ladd, Horticultural Commissioner of San Joaquin county, whom we saw recently giving a pruning demonstration at Acampo, has taken pruners to the Sims orchard at Farmington in Tulare county on several occasions. It is a long drive down there, but we think Harry is on the right track in taking his professional pruners around to the best commercial orchards he knows of. There is no better way of learning up-to-date methods. And the "hanger" system seems to be coming more into vogue, certainly giving good results. Every good pruner who is a good learner is of benefit to his county, for in this way good knowledge is spread abroad.

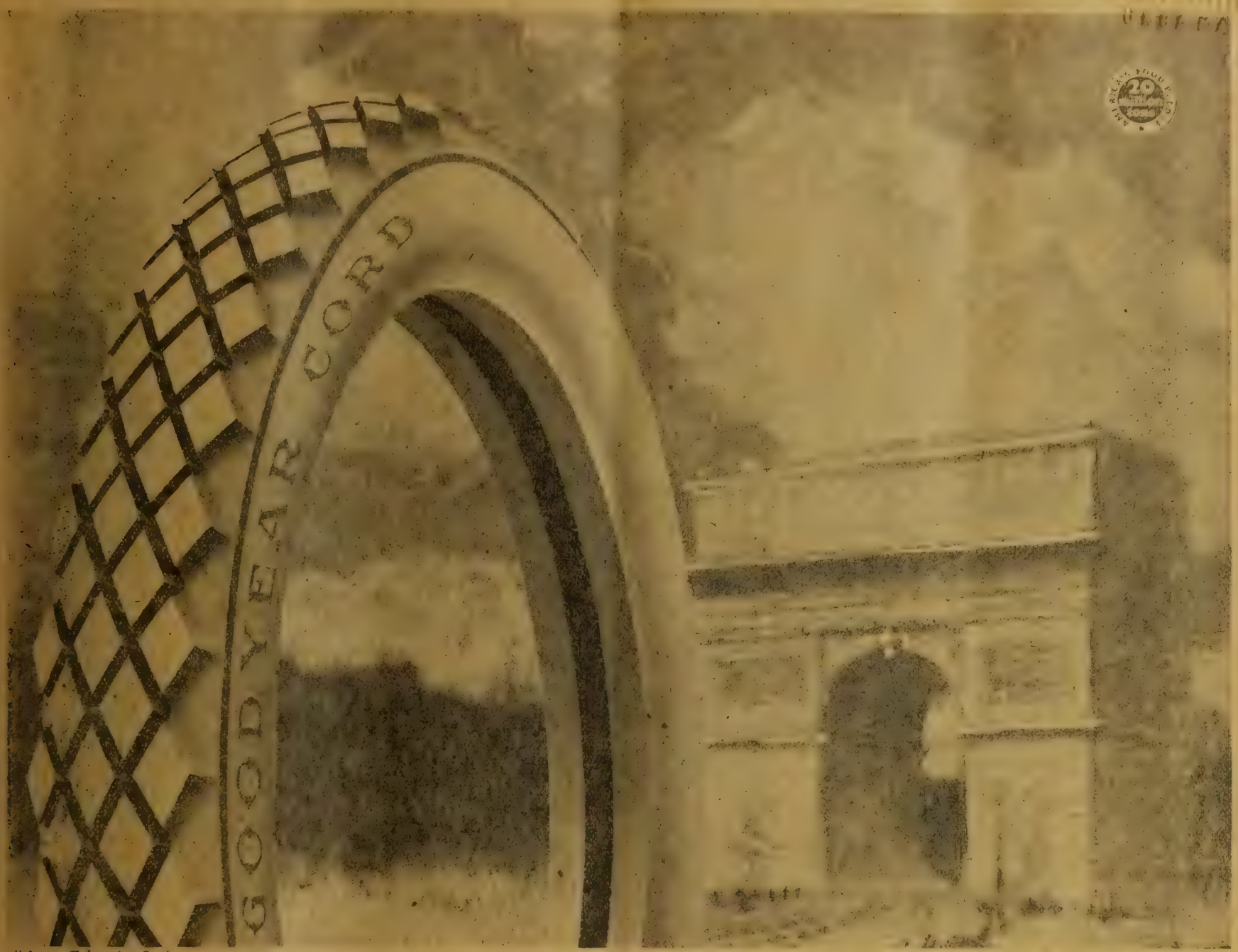
The Lincoln Cannery, a co-operative concern owned by the fruit growers, is to be doubled in capacity this winter for next season's pack so as to be able to handle more than one line of products at once. This year it could not handle tomatoes because it was running on peaches and when the peaches were cleaned up the rain had spoiled the tomatoes. It will be possible after this to prevent such a condition.

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ANNOUNCEMENT

WE are resuming quantity production on Goodyear Passenger Car Tires for private use.

The shortage of these tires that existed during the period of war was inevitable.

Promptly upon America's entry into the war, Goodyear devoted great effort to the production of gas masks, airplane, automobile and truck tires, balloons and dirigibles, urgently needed by our army and navy.

This, of course, necessitated a cut in our passenger car tire output, for general distribution.

Later, there came the Government order limiting all tire makers to 50 per cent of their normal output.

This restriction has since been lifted.

So, as normal conditions are being restored, we are increasing our production steadily in an effort to meet the greatly increased demand for Goodyear Tires.

However, to insure prompt delivery, we suggest that you estimate your near-future requirements, placing your order now with your Goodyear Service Station Dealer.

THE GOODYEAR TIRE & RUBBER COMPANY, AKRON, OHIO

GOODYEAR

AKRON

Here and There in the Fruit Business

[Written for Pacific Rural Press.]

Why the Difference?

We asked Harry H. Ladd, Horticultural Commissioner of San Joaquin county, why he used so much carbon-bisulphide (11,680 gallons and 335,000 waste balls) for squirrel destruction last year, besides about three carloads bought by farmers from the merchants—and only about three tons of poisoned grain. His explanation was that there was so much grain and other feed always available in the San Joaquin county fields that they were compelled to use the gas instead in order to get results. He has eight squirrel inspectors and will resume his campaign January 20. Only 21 farmers were compelled by process to do their work. Generally speaking, they co-operated in this important work in a very energetic way. Last year the campaign opened December 10 and stopped the middle of June. We went over Roberts Island with Mr. Ladd and saw the result of some of his work here.

Campaign Against English Sparrow.

At last there seems to be an organized campaign afoot directed against the English sparrow by the League of American Sportsmen. They are the most destructive small feathered pests we have where conditions are right for their reproduction. This means any place where there is grain or stock kept. The English sparrow eats all kinds of grain, meat, green stuff, truck, fruit and buds. In the old country, sparrow clubs are formed all over the grain districts for keeping some sort of control over this very predacious bird, which, instead of having the meek and gentle nature of the average Englishman, is possessed of a character at once pugnacious and persevering and drives away the soft-billed, bug-eating birds which are the farmers' friend. We wish the League of American Sportsmen and all other friends of song birds success in their campaign against the English sparrow.

Berries Shipped in Barrels.

H. A. Baker of Santa Rosa packed and shipped over 500 tons of blackberries and loganberries at Sebastopol this year. The berries are put up in 50-gallon spruce barrels, packed in cracked ice. About 395 pounds net weight of blacks or logans go into a barrel, though strawberries will pack as much as 450 pounds in the barrel. This is Mr. Baker's second year in Sebastopol and his packed fruit is all shipped to Eastern points and to Europe. He paid the growers here an average of $100 a ton for the fruit in bulk and the cost of picking such stock averaged $28 a ton.

Pruning Demonstration.

A demonstration of pruning was held by the Cinnabar Farm Center at Sonoma county under the direction of George C. Merrill, County Agent, assisted by Horticultural Commissioner O. E. Bremner. The varieties in hand included apricots, pears and apples. This is the third demonstration of this kind we have attended this month and it is gratifying to note the keen interest taken generally in the work exemplified in this important phase of horticulture. Where many expert tree men show up there is always plenty of constructive criticism, and that is how we learn things.

Please Pass the Malagas.

Dr. J. H. Moore of Dinuba took 17,000 crates of Malagas from 24 acres, as reported by J. W. Jeffrey, who was formerly State Commissioner of Horticulture. The grapes sold at $1.10 per crate net (excepting the usual ranch expenses). The explanation of this is in the deep plowing and superior general vineyard management, says Mr. Jeffrey, as the previous year's income was only $5,000 from the same area. "Only" is good. Ante and pass the buck!

Fruit Growers' Association.

The Placerville Fruit Growers' Association met December 21 to elect officers for the ensuing year. This is one of the associations affiliated with the California Fruit Exchange. It was decided to keep the local fruit house open throughout the year to supply patrons with information and orchard equipment. A 3 per cent dividend was declared over a 2 per cent of last year, and all equipment and property are free from incumbrance. It was reported that there had been an increase of thirty to forty carloads handled by the exchange. Co-operation pays.

California Again Used as a Model.

A new fruit standardization law has been drafted by the Horticultural Director at Wellington, New Zealand. The proposed law is essentially the same as our "Fresh Fruit Standardization Law," enacted in 1917. The Antipodes finds it has to follow our bold lead in order to keep up with the band wagon. For we also hear of a Tasmanian fruit standardization bill which is meeting with the general support of fruit growers. Again the California model has been used.

Lake County Notes.

Much early pruning of pears has been already done in Lake county, according to Horticultural Commissioner Fred G. Stokes. The majority of the orchards are in excellent condition as regards blight. For, as Mr. Stokes points out, Lake county men generally put up a good fight and blight has been kept under control sufficiently to warrant planting out pears.

Persimmons in Demand.

An increased demand is reported for persimmons by G. W. Bisbee of the Pioneer Fruit Co. at Newcastle. Its demand is not only for decorative purposes, but its attractiveness as a table fruit is increasing. One lot from the J. B. Hamaker ranch brought $5.25 a box packed in an ordinary peach container, with from forty to forty-five fruits to a box.

Big Hydrating Plant Planned.

The big steam drying plant owned by E. Heilmann and W. S. O'Brien at Sanders Station, near Yuba City, is to be remodeled and converted into a dehydrating plant. The firm will be incorporated under the name of the Sutter Dehydrating Company with a capital stock of $50,000. Articles of incorporation have been applied for.

Peach Tree on Hard Ground.

Mr. Miller of the firm of Miller & Gobbi at Healdsburg has a Santa Rosa plum on peach root standing between four cherry trees in his yard that thrives and is a good average sized tree, though the ground is all packed solid for driving over. He also thinks more Satsumas will be planted in his district. The canners want them for color. He reported sales this year of $2.40 per 24-pound crate.

Some Grape Returns.

Tokay grapes averaged ten tons to the acre, Alicantes and Zinfandel on Rupestris eight tons to the acre, this year, for the Schuler Vineyard Company at Lodi, according to George F. Schuler. The average selling price was $38 a ton f. o. b.

Grow More Logans.

F. B. Bill, president of the Berry Growers' Union at Sebastopol, urges further plantings of loganberries in the proper sections. He says that the acreage is about stationary at present.

The plant disease survey of the United States Bureau of Plant Industry is doing good work, according to reports from Washington. Its principal objects are to collect and report information regarding plant diseases in the United States, covering geographical distribution, prevalence and severity of same.



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While food will be needed next year more than ever, there are thousands of acres of valuable land idle as a result of the war. Therefore every acre under cultivation must be made to produce its utmost.

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FOR CALIFORNIA SOILS

Horticultural Jottings

"No damage" to date is reported from the citrus centers in spite of the nippy mornings.

The white fly is reported to have again appeared on orange trees at Sacramento.

Apples continue to be in good demand on local markets, averaging from 5 to 7 cents a pound for fours, according to variety and quality.

The California Fig Institute, which was scheduled for January 3 and 4, to be held at Fresno, has been postponed indefinitely because of the prevalence of influenza.

Probably 13,000 acres will be planted to cantaloupes this year in Imperial county, according to R. G. Risser, U. S. Bureau of Crop Estimates. Some planting has already been done.

The Whitney orange groves near Loomis are now packing and shipping one or two carloads of fruit a day. The shipping will continue for several weeks. No damage from frost has been suffered.

Solano county has 6145 acres planted to prunes and Butte county 5942 acres. Colusa comes next of the valley counties with 4100. The upper Sacramento is creeping up with the juicy "Sunsweet."

F. Ecklemire, near Sebastopol, says he always prunes his grapes late and never fails to have a good crop, while some of his neighbors usually have light crops, other conditions being the same.

I. N. Pettes, working for Baker & Co., Healdsburg, said that all their stacked prunes were sprayed on the trays with hot lye directly after the rain and were saved in good condition. Those that had been exposed perished.

It is reported by nurserymen that the demand for fig trees will exhaust their stock owing to the extensive plantings projected for this season. The fig stock is excellent. We saw it ourselves.

George Miller of Healdsburg says that the gravelly clay loam at Forestville and that section is well adapted to plums, where they average 10 tons to the acre at maturity. They have, he says, been averaging $30 a ton. How about plums in the Fly district at Napa?

Demonstrations in the pruning of young trees continue to be a subject of State-wide interest with fruit men, who are following the demonstrations taking place in various parts of the State with the keenest interest. There is always something to be learned at these demonstrations and often something to be unlearned.

An 8 per cent dividend has been distributed to the stockholders of the California Associated Raisin Company. The dividend aggregates $80,000 on the original million dollars of stock and goes to 3000 stockholders throughout the raisin belt. This 8 per cent dividend is paid annually, most of it to growers and the rest to business men who subscribed at the organization of the company.

We have come across another Wickson plum tree at Healdsburg surrounded with peaches only which bears regularly every year. We mentioned a similar instance recently and would be glad to hear from anyone making similar claims for the Wickson and the peach. The Climax is said to split at the point in the upper Sonoma Valley, while the Santa Rosa is a heavy producer there, is early and of good color and flavor.

Walla Walla, Klickitat, Whitman and Columbia counties of Washington are saving up lady bugs for the spring campaign against aphids. The lady bugs, gathered by gallons in the woods during the winter, are kept confined in excelsior and green debris and after the winter is over they will be liberated. The test was tried out last year and was successful. Each lady bug, say the experts, can devour 150 aphids and produce 200 young lady bugs of its own in a season. What ferocious fecundity!

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Tells you all about frost prevention. Filled with valuable information for the grower.

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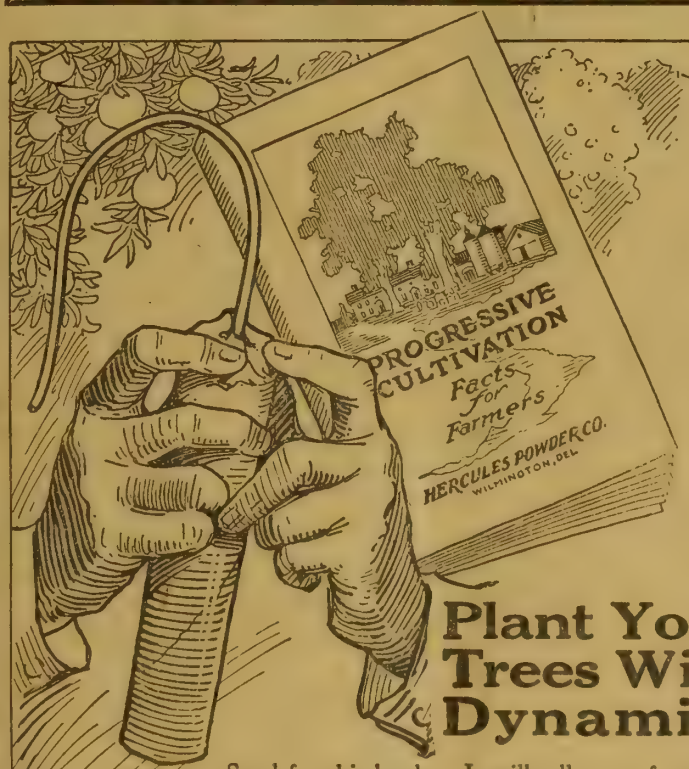
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Wire Your Prune Trees

[Written for Pacific Rural Press.]

The use of props in prune and plum orchards is annoying, expensive and unsatisfactory. It interferes with cultivation, gets in the way of the truck, and costs a lot of money for time and material each year. Also, if there is a little wind, it is always the prop under a large load that slips out—the sudden release generally resulting in a broken limb, followed by the usual profanity on the part of the owner, which may afford relief to the feelings, but it doesn't mend the limb.

The writer has spent many a weary day in the past tying up the trees along in July with baling rope, when everybody had oodles of that useful article always hanging up in the barn. We found that it was good for two years and no more. Then somebody suggested wire and we found it highly satisfactory. It lasts a long time, is easy to use and is far cheaper and more effective than any other method of support on prunes.

We found out by experience that 14- and 15-gauge wire was too light for heavy trees, though the 14 is good enough for young ones from six to ten years old. Twelve-gauge is rather too heavy for top work, though it is all right for lower down on the limb. The method of wiring generally is to drive a long fence staple into the limb at about 10 feet from the ground and wire from that to the limb opposite. And so on from the opposite leaders across the tree. Take the end of the wire with you and each wire after stringing can be cut off without waste. We noticed in one orchard a central ring was used to wire to, so that if one wire broke only that limb would be affected.

The staple is better than a rubber tube or any other support at the back of the limb, because anything which rests against the bark will either chafe or otherwise shut off the flow of sap. If the limb is too small to support a staple without splitting the wood, a screw-eye is used, the bark healing all around the points of entrance.

Now is the time to do this wiring, while the trees are bare and pruning has been done. Use 13-gauge wire and put it up high, where the leverage of the load is not so great. And next harvest you will be able to drive through and roll the ground down for the pickers and feel that you are safe from large breakages. A good winter's job!

Sacked Grain to Bulk Elevators

[Written for Pacific Rural Press.]

Hybrid bulk and sack handling of grain has proved not very popular with grain farmers nor with W. C. Colley, owner of the elevator at Chowchilla, according to Earl S. Cardwell, the superintendent of both the elevator and the local grain warehouse. While he figures that the elevator could hardly pay interest on investment, yet he admits that grain is handled at less expense and with less labor that way. The elevator is of 2x6-inch cribbing built in the form of a square-cornered building, containing ten bins 14 feet square and 60 feet tall, with a total capacity of 100,000 bushels. This year it was only one-quarter filled.

The system for the three crops handled in the elevator has been for Mr. Colley to rent big white sacks to the farmers at 5 cents each. The sacks hold 100 pounds and are tied rather than sewed shut. This is easier and it facilitates dumping after the sacked grain is hauled to the elevator. A sack is good for about four trips per season for four seasons, according to Mr. Cardwell. At the elevator the grain is dumped from the sacks and run through a cleaner operated by a five-horsepower motor, elevated by another five-horsepower motor to scales at the top, whence it is distributed by auger conveyors. Elevation is wastefully high for any place where a little more land for a lower elevator would cost excessively; and there is no gravity system for emptying the bins into sacks. The grain is graded and each man's crop is put through separately.

The elevator cost $12,000. Storage charges are regulated by the State Railroad Commission. Revenues are not likely to exceed $2500 in one season. It takes about $1,200 a year for labor, two men being required in the busy season. Power costs $11 per month or $132 per year. This leaves about $1,168 to keep it in repair and pay interest on investment. If no repairs are figured and no charge made for Mr. Cardwell's supervision, the maximum interest on investment would still be less than 10 per cent. In the warehouse, where grain is stored in sacks at the same charges, four men are kept busy all the time.

Growers May Hold Grain

To the Editor: Will the Government allow an individual to hold or buy grain to hold as long as he wants to.—B. B. F., Puente.

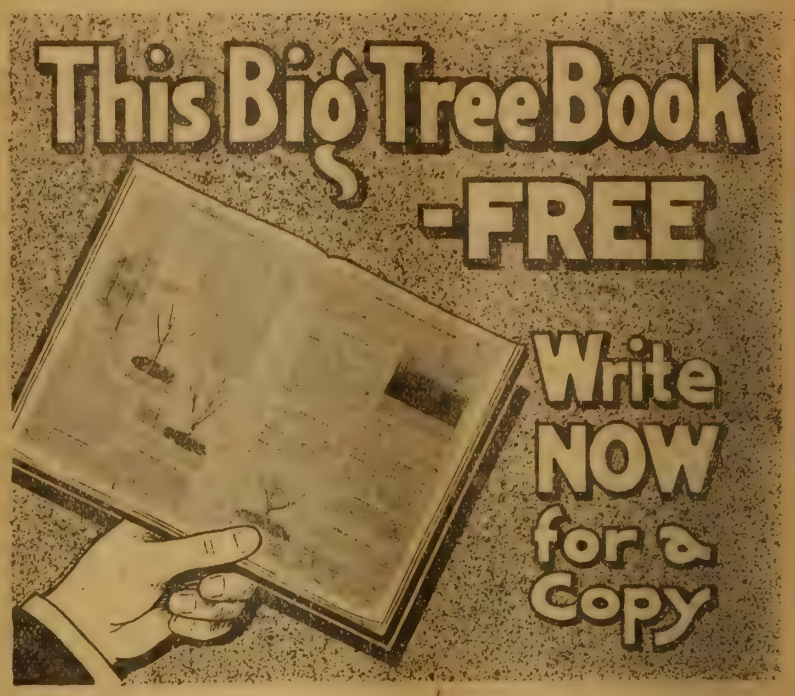
All rules regarding the holding of grain have been rescinded, according to W. A. Starr of the U. S. Grain Corporation, except the general rules designed to prevent profiteering. Growers have always been allowed to hold grain (except wheat under certain conditions) as long as they wanted to on their own ranches. Grain in warehouses has in certain cases been commandeered, and long storage in seaboard warehouses has been frowned upon because the space was needed. Generally, however, permits to extend time of storage even there have been granted when possible. In California, where the Grain Corporation sells to the mills because we are an importing State, there is but little chance of advantage in storing wheat. Our mills are grinding much wheat from Australia now and this is of good quality, with but little or none of the weevily stuff yet to come. Higher prices than the Government offers have been recently paid in the East by millers whose supplies have been low. There the Grain Corporation does not sell to the millers because of the policy of shipping whole wheat to Europe to increase the mill feeds over there.

A New Contact Insecticide

Through the combining of nicotine and oleic acid, a new contact insecticide termed "nicotine oleate" has been produced. It is soluble in soft water and forms a soapy solution that may be used to emulsify an animal, vegetable or mineral oil.

In certain tests 2½ quarts of a 40 per cent solution were combined with 1¾ quarts of commercial oleic acid to make 1¼ gallons of "nicotine oleate."

This is said to be more effective against aphids than a spray of free nicotine and costs only about one-half to prepare. It should not be used on plants that are to be eaten, such as lettuce, kale or spinach, as the "oleate" feature prevents the spray from volatilizing. On dormant fruit trees its use with a non-volatile oil, such as linseed, cottonseed, or fish oil should make it valuable for the destruction of eggs of insects and some scale insects.



THIS practical planters' guide lists and describes the best proven varieties of all fruit-bearing trees, vines, ornamentals and roses.

It gives a lot of other information which, if followed, will keep you from making unnecessary and costly mistakes.

When you buy trees you want them to grow; you want them to bear; you want them true to name.

Fancher Creek trees are grown from selected buds and properly cared for. Trees are very vigorous and well rooted.

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PEAK'S CLING PEACH, in great demand by canners; ripens between Tuscan and Phillips and is fully equal to those old stand-bys in quality and productiveness.

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Tree Planting Time Is Right Now

(Continued from first page.)

soil—and there is plenty of it. As the roads are improved, so will more good land here become available for high-class production and transportation troubles overcome.

The average planting of pears is in view for the season. In Nevada and Placer counties more winter pears are being planted than formerly, both for cross-pollination and with a view to an extension of the winter pear markets. But the great demand is, of course, for the Bartlett. A good clean crop of pears is always as good as wheat.

Almonds are going ahead. The fine prices paid the last year or two and the clean markets have been very encouraging. Probably the planting will be lighter this year than last, as certain sections that are frosty are getting discouraged and have switched, which is a good thing, for there are plenty of places in California where almonds do well and are safe. The Hatch varieties are favorites with growers and with the trade, though in the Acampo district I found they were favoring the Texas Prolific and Drake's Seedling. C. B. Clancy at Lodi reports this preference.

The demand for peaches, both cling and free, seems to be about up with the demand of stock offered. This is again explained by good prices on fair crops and a greater feeling of security in the markets than ever existed before.

GRAPES.

The planting of Thompson Seedless grapes threatens to make the raisin-grape industry rather lopsided. Everybody's doin' it. The young vines started the season at $25. A poor rooting (after the dry year) and the large demand raised the price to $30, and we have heard of $35 a thousand. Last year, when Muscats were selling at 5 cents a pound and seedless at 7 cents, we noticed some good ten-year (and older) Muscat vineyards on fine, strong, loamy Muscat land being interset with Thompson Seedless, with a view to eliminating the Muscats later! It is only a question of time when the above-mentioned prices may be reversed if these heavy plantings continue. (1) There is no raisin grown that equals the Muscat in flavor and quality; (2) the Muscat vineyards in Spain are said to be devastated and deteriorating from the attacks of Phylloxera; (3) the central empire of the San Joaquin holds the monopoly of Muscat climate and country—excepting the El Cajon Valley in San Diego county. And last but not least, a Muscat vineyard cannot be brought to maturity in three years as a Sultanina can. A good Muscat vineyard today is a gold mine. So is a Thompson Seedless if the industry is not overdone. This is a plea for the life of the bearing Muscat. And that Muscat land be not wasted while there is so much light, sandy and white-ash soil good enough for seedless to be had

ORNAMENTAL.

Those in charge of highways, townships and dooryards that are to be planted to ornamental and shade trees should be looking into the matter now, especially if varieties are chosen that start their buds in February. All evergreen trees should be bought balled or in pots, for the roots of pines, firs, cedars and citrus trees cannot be exposed with impunity as a deciduous tree can. It is done, but it is not a good practice and always leads to disappointment. A balled tree will always grow if properly planted and tended. Public parks always get their orders in early if the trustees are not too slow, because the men in charge know their business and do not want to be tailenders. Prospective growers should order their trees at once and plant them just as soon as the ground is ready, for, generally speaking, the ground is now in the best condition and the late winter rains will help to settle the earth around the small roots. The writer is so often asked where is the best place to obtain trees. He can only repeat that nurserymen have to be men of standing and responsibility to get their advertisement in the pages of the Pacific Rural Press or to keep them there—as every old reader knows. "You pays your money and you takes your choice."

Many citrus trees have already been balled and cut for shipment and the steady run on olives is again taking place. The past month's very seasonable weather has enabled everybody to get well ahead with their winter work. It is small things that count—how much more cheerfully we go to it now that white bread and the sugar bowl appear on the table!

NURSERY NOTES.

Miller & Gobbi of Healdsburg report that they have a large and increasing demand for prune trees budded 12 inches above ground. This year they have 10,000 trees so budded. The reason for this is said to be a belief that the trees are less liable to sour sap. They also have a large number of two-year seedlings headed and top-worked on Myro for the same reason.

Several nurseries report a good demand for pear stock and about 75 per cent of it is on Japanese root.

The demand for prunes, plums, almonds and peaches on peach root is reported by practically all nurseries to be gradually gaining ground. The Imperial prune on peach is in good demand. One grower is of the opinion that there is less loss at the critical four-year period from gumming and souring at the top when the Imperial is on peach than on the Myrobalan. This seems reasonable, but the writer cannot yet verify it by observation.

Heal those trees on the same day they arrive and treat them with as great care as you would if they were children with the "flu."

Head lettuce requires cool, moist conditions for growth.



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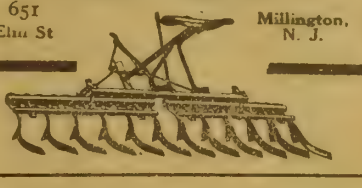
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Those who wait will be disappointed. Write now—right now!

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California Vegetable Seed Producers Lead America

California leads the rest of the United States in production of several kinds of vegetable seeds including 90 per cent of the total onion, beet, and carrot seed. Twenty-four million pounds of vegetable seeds were produced in this State in 1918, in spite of the dry winter previous, which reduced the crops two and a quarter million pounds below what it would have been on the 34,408 acres planted for vegetable seed production. Growers received for the 1918 crop, on the basis of contract prices per pound, over $3,664,298. These figures are worked out from estimates given by an accurately informed party as to the percentage of normal yield per acre which was obtained in 1918, and contract prices to growers, along with the acreage and normal yield per acre as published by the United States Seed Reporting Service. Short crops, as noted, are due to following causes: Onions, hot blast in July; cucumbers, poor stand due to dryness at planting; squash, dryness at planting; parsnips, dry weather; radishes, frost two or three times and dryness at last planting.

CALIFORNIA VEGETABLE SEED ACREAGE, PRODUCTION, AND VALUE, 1918.

Seed Crop.	Acreage 1918.	Normal Lbs. per Acre.	Per cent of Normal Acre Crop 1918.	Returns to Growers, 1918	Lbs. Raised 1918.
Onions	6,882	400	40	$365 392	1,101,120
Pole beans	4,989	1050	100	628,608	5,238,400
Carrots	4,609	780	100	647,103	3,595,020
Radish	3,345	850	50	213,244	1,421,625
Dwarf snap beans	2,696	1075	100	304,311	2,898,200
Beets (garden)	2,459	1100	135	550,275	3,668,500
Lettuce	2,276	565	75	192,891	964,455
Peas (garden)	1,889	1180	80	124,825	1,783,216
Spinach	1,069	700	100	187,075	748,300
Beets (sugar)	739	1000	133	138,562	1,108,500
Tomato	735	200	100	117,600	147,000
Squash (winter)	667	400	70	46,690	186,760
Sweet corn	304	1000	100	24,320	304,000
Mangels	272	1375	92	43,010	344,080
Parsnips	255	880	50	15,147	112,200
Pumpkin	189	300	100	11,340	56,700
Squash (summer)	179	200	100	8,950	35,800
Celery	175	510	100	17,850	89,250
Parsley	155	800	35	5,425	43,400
Salsify	123	550	15	5,074	10,147
Turnip	107	1000	100	.....	.....
Pepper	92	250	100	.....	23,000
Watermelon	74	400	100	8,880	29,600
Cucumber	59	500	25	2,581	7,375
Muskmelon	49	350	100	5,145	17,150
Cabbage	20	500	....	.....	.....
Total	34,408	....	....	$3,664,298	23,933,798

At least half of the seed grown in California will be exported to foreign countries, according to T. A. Cox, one of the pioneer seed growers of this State. Less than one-half of one per cent of California-grown seed is used here.

Light Planting of Onions for Seed

[Written for Pacific Rural Press.]

Of the 7233 acres of onions grown for seed the past season in the United States, California grew 6882, practically a monopoly as shown by November figures of the U. S. Seed Reporting Service. The acreage was more than double the average of the two years preceding, and if disaster had not overtaken the growers in the form of a hot wave when seed was in the milk there would be a great oversupply on the market now, according to T. A. Cox of the Pacific Seed Growers' Co. One man planted 600 acres and until the hot blast of last July he had prospects estimated by various people at 500 to 1000 pounds of seed per acre. Four hundred pounds is a good normal yield. This man lost practically everything he put into the crop—at least $75,000. Another outfit with over 300 acres harvested only 120 to 130 pounds per acre. Mr. Cox estimates the destruction of seed at 50 to 70 per cent in various fields. Planting for the next crop is proceeding, but there is every indication that acreage will be far less than last year. A great deal of stock resorted and intended for seed had to lie out on the levees in our fall rains for lack of help to handle it during the influenza epidemic. Much of it heated and molded in the sacks.

The Canary Islands supply much of the onion seed used in the United States, aside from that grown in California. Value of shipments from the islands to the United States fell off greatly in 1918 from 1917, but are still much greater than in previous years. As given in recent Consular Reports, values of such shipments are: In 1914, $43,293; 1915, $40,828; 1916, $84,387; 1917, $137,289; 1918, $98,458. The yield of Canary Island seed equaled that of 1917 and was 15 per cent above the average; but American buyers reduced their orders by 40 per cent, so Canary Island growers have offered ungraded seed as low as 20 cents per pound with no buyers. This sort of a market has discouraged them and there will probably result a greatly reduced planting for 1919 seed. Probably half of the onion seed imported normally into the United States comes from the Bermuda Islands, but figures on this are unavailable at present.

Fertilizers in Rice Hull Ashes

To the Editor: The two rice mills here produce a large amount of rice hulls. Lately a pile, the accumulation of about four years, has been reduced to ashes. Now, will they make good fertilizer—top dressing for alfalfa, for instance? The haul is short—half a mile.—A. J., Biggs.

[Answer by Prof. P. L. Hibbard.]

We have no analyses of our own, but, calculating from figures given in Roberts' "Fertility of the Land," I find that rice hulls may contain about 12 per cent ash, .17 per cent phosphoric acid, .14 per cent potash, besides some nitrogen. When the hulls are reduced to ashes, the ashes would contain 32 pounds phosphoric acid and 24 pounds of potash per ton, besides some lime. Both phosphoric acid and potash are liable to be considerably unavailable, so it is easily seen that rice hull ashes have no great value as a fertilizer. A ton of ordinary manure should contain 8 pounds phosphoric acid and 15 pounds potash, all available.

All the fertilizing value of rice hulls, as well as the humus value, would be obtained by applying to the soil without burning. In this way much more value would be obtained than by burning, then applying the ashes. Either hulls or ashes might be applied to almost any crop.

FIVE BUSHELS MORE PER ACRE.

Five hundred ears of Indian corn were taken from an Iowa field without any selection. They were numbered and scored by 25 judges. Later part of the kernels from each ear were planted separately in plats. Ears receiving the highest scores produced the highest yield. The best ears as selected by a majority of the judges averaged five bushels per acre better than the bulk of the ears.



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U. S. Crop Statisticians

An outline of the organization developed in the Department of Agriculture through more than half a century of experience in crop estimating, indicating the care and thoroughness with which Government crop reports are prepared, is given in the annual report of the Secretary of Agriculture.

For collecting original data the Bureau of Crop Estimates has two main sources of information—voluntary reporters and salaried field agents. The voluntary force comprises 33,743 township reporters, one for each agricultural township; 2752 county reporters, who report monthly or oftener on county-wide conditions, basing their estimates on personal observation, inquiry and written reports of aids, of whom there are about 5500; 19 special lists of co-operators, aggregating 137,000 names, who report on particular products, such as livestock, cotton, wool, rice, tobacco, potatoes, peanuts, beans and the like; and 20,160 field aids, including the best informed men in each State, who report directly to the salaried field agents of the bureau. The total voluntary staff, therefore, numbers approximately 200,000, an average of about 66 for each county and 4 for each township. The reporters, as a rule, are farmers. They serve without compensation, and are selected and retained on the lists because of their knowledge of local conditions, their public spirit, and their interest in the work. All except county and field aids report directly to the bureau, and each class of reports is tabulated and averaged separately for each group and State.

The bureau has 42 salaried field agents, one stationed permanently in each of the principal States or group of small States, and 11 crop specialists. These employees are in the classified civil service. All have had some practical experience in farming. Most of them are graduates of agricultural colleges and are trained in statistical methods and crop estimating. They travel approximately three weeks each month, the fourth week being required for tabulating and summarizing the data collected. They send their reports directly to the department in special envelopes or telegraph them in code. These are carefully safeguarded until the crop report is issued.

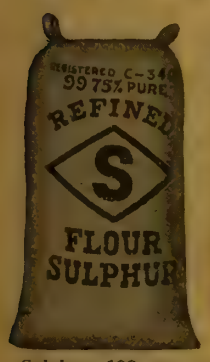
Additional information is secured from the Weather Bureau, the Bureau of the Census, State tax assessors, threshers, grain mills and elevators, grain transportation lines, the principal livestock markets, boards of trade and chambers of commerce, growers' and shippers' associations, and various private crop estimating agencies. Specific reports from the field service are assembled in Washington, tabulated, averaged and summarized separately for each source, each crop, and each State. The resulting figures are checked against one another and against similar data for the previous month, for the same month of the previous year, and for the average of the same month for the previous ten years; and a separate and independent estimate for each crop and State is made by each member of the crop reporting board, after which the board agrees upon and adopts a single figure for each crop and State.

OLIVES AND HARVESTING.

Olives in Sacramento and Butte counties are believed to have averaged about a ton to the acre this year, or about half an average crop. The mean price was probably $150 a ton and $150 for the State. W. W. Hinsey of Fairoaks says that he believes the demand at a certain price to be unlimited. His firm has more orders on hand than they have the fruit to fill. He said the price paid for picking this year averaged $40 a ton. Mr. Hinsey said that perhaps 10 per cent of the olive crop was ripe before the main crop was ready and it would pay to make this preliminary picking separately. It would save a lot of work in the pickling houses and improve the quality of the entire pack, which is apparent. When wages are a little less of an incubus it may pay to do this. When ten hours means four dollars it keeps the grower standing on his toes to watch where he is going to get off without a fall.

The U. S. Department of Labor Employment Service has just created a special "Farm Service Division" to get ready for the spring demand for farm labor. The Woman's Land Army is co-operating.

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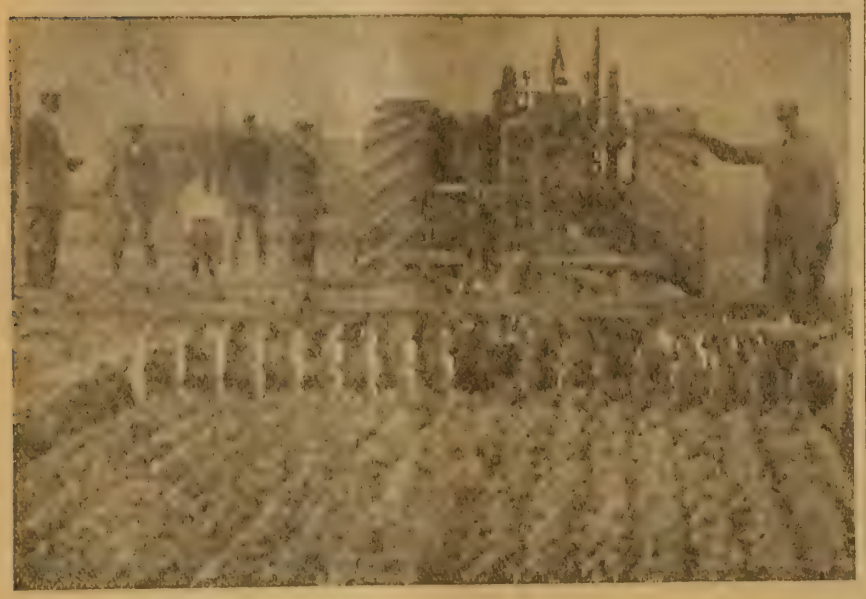
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Seed Plots Induce Better Yield

[Written for Pacific Rural Press.]



For larger yields prepare a good seed bed. Modern implements furnish every convenience for mellowing the ground.

There is a way of increasing yields per acre of the chief farm crops grown in California with very little increase in the cost or labor of raising them. It has been shown unnumbered times and indisputably that the plumpest seed, other things being equal, produce the biggest crops because they give seedlings a lead which their neighbors from seed of shriveled proportions cannot overtake. It is no question at all that acre yields may be increased by selection of seed from the best yielding plants year after year. It has been shown in a striking way that the oil content of Indian corn can be increased and decreased in a few seasons starting with seed from the same ear. A difference of several percentages in oil is found in corn so selected for oil and for the lack of it. In Wisconsin a few years ago Indian corn was a rarity even in the southern end. It is now a leading crop even in the north of that State, due to selection for earlier maturity and better growth at lower summer temperatures.

The more generations any seed are selected for any characteristic, the more certainly does it reproduce that characteristic in the next crop—provided cross breeding with pollen from plants of different characteristics is not allowed. If such cross breeding is permitted, the job of selection is hopeless, for nothing can be relied on in the offspring.

Now, there are growers of beans, grains, potatoes, etc., whose seed does not "run out." They do not have to buy from more intelligent seed producers nor from producers in other climates. It is a matter of selection year after year and giving the seed a chance each year to grow vigorous, plump, and strong.

These growers simply choose a specially suitable plot of ground for seed production and plant their best seed there, in order to do this part of their work with least extra labor.

An hour in a corn field just before the main crop is ripe will enable a man to select enough early-maturing, heavy-yielding ears from the proper kind of stalks to plant an acre for seed alone. That acre will produce superior seed for 150 or 200 acres, especially if it is located at a distance from other corn fields.

Nothing deteriorates much faster than potatoes for lack of seed selection. This deterioration is almost universally laid to the climate. A few hours marking superior hills of potatoes before maturity and digging them separately by hand, planting them in a separate, well-prepared patch, will not only avoid paying the extra price and the freight from other climates, but is likely to give better yields than seed not acclimated. This statement flies in the face of lots of people, but experience is showing that seed potatoes need not "run out."

Experiences of folks who grow better seed for their own use in separate plots will be printed in these columns from time to time until too late to follow such a practice.

Side Delivery Bean Rake

[Written for Pacific Rural Press.]

"I bought a side delivery rake for beans on Victoria Island in the Delta this season," said I. L. Borden. "I intend to get several of them next season, as they are great labor savers."

"A man and team can do as much with this side delivery bean rake as five men with forks," said O. E. Hales, who was winrowing lima beans for H. E. Ellery of Santa Barbara county last fall. "The rake needs some changes to make it fit our conditions better, but it's the right idea. They will sell lots of them here if they make the changes."

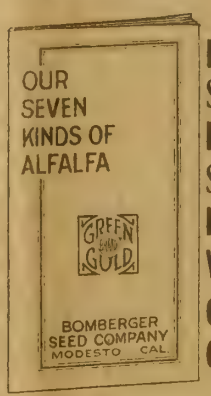
Mr. Borden's beans were mauled around so much last fall on account of the rain that he couldn't say what proportion shattered out due to the rake. Mr. Hales found that the rake did not shell out the regular limas at all to speak of, though bush limas shelled out too much to make the machine profitable on them. The beans were dry enough to rattle in their pods, but practically none were shelled out. A moist day is best for use of the rake, as he said.

The rake is a three-bar rotating reel wide enough to take an eight-foot swath. Each bar is studded with teeth eight inches long and four inches apart, each tooth having a coil spring at its base for elasticity in case of hitting anything too hard. The reel is geared to one of the two frame wheels and extends diagonally backward. The frame wheels are about four feet in diameter and 2½ inches wide. (Mr. Borden had to put wide shoes on them to avoid sinking in his peaty soil.). The reel teeth project downward through a half-cylinder which looks like a cradle made of hay-rake teeth set a few inches apart, with both ends upward. This insures the reel teeth cleaning at each revolution. They can be angled forward on their bars if desirable to give a better pickup action. Two swivel wheels near the rear end of the reel support its weight and the pressure of bean vines and permits a lever at the driver's seat to raise and lower the reel. The swivel wheels are about two inches wide and fifteen inches in diameter. They should be larger and wider. Mr. Borden had to put wider shoes on them and Mr. Ellery found them going deep into his lima bean ground.

For Mr. Ellery, the rake would pick out and deliver into one window two of the double rows left by the bean cutter and on a return trip would throw two more double rows into another winrow, after which one winrow would be thrown onto the other. Then piling was a rapid operation. The ordinary way is to fork three double rows into a winrow by hand.

Mr. Hales pointed out that whereas the frame wheels are adjustable to seven-foot of 6½-foot centers, they should be five-foot centers. As they are, one wheel has to run on beans in one double row when throwing the next double row into its winrow. A way of raising the front end of the reel and rake was found desirable; and a great convenience it would be if the left-hand delivery could be changed to a right-hand delivery when turning back. It is not now too soon to be investigating machinery for next season's crop.

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Field and Garden Suggestions

[Written for Pacific Rural Press.]

Whole vs. Cut Seed Potatoes.

Using small-sized whole potatoes for seed resulted in far better quality but not so large a crop in the experience of A. N. Judd of Santa Cruz county the past season. Mr. Judd planted four acres with small resorted whole Oregon Burbanks from storage. He also planted ten acres with pieces of larger potatoes, cut one and two eyes per piece. The whole potatoes gave a more even growth of tops and the potatoes were set deeper in the ground, avoiding knobs, greened tubers, and infestation by tuber moth. Only one sprout normally grew from a whole potato. It was "big as one's thumb" and did not branch so freely as weaker sprouts from cut pieces. Root stocks which bear the tubers come generally from the tap root among the upper system of real roots, according to Mr. Judd, while with cut seed they come out above the root systems too near the surface. The starch ring in potatoes from whole seed seemed thicker than in potatoes from cut seed pieces. The small whole seed potatoes were dark but sound when the crop was dug, whereas cut seed pieces were frequently rotten breeding places for disease. Whole seed required probably 50 per cent more weight for planting, but Mr. Judd believes the improved uniform quality of the crop is worth more than the difference in cost.

Gyp Corn Expectations.

To the Editor: I have sublet about 40 acres for gyp corn for one-third share in the crop. All of it can be irrigated. If next year is normal, what should I get out of it?—E. J. W., Escalon.

We know of yields of 8000 pounds per acre not so far from your ranch, but we would count on not more than half of that. The market for gyp corn should be good, but isn't. It may become so when the pig crop of the State has increased as it seems likely to do next season. Many growers are now holding their gyp. If they had hogs they could sell it through them, and sell it at a profit.

Rhizoctonia Is Fierce on Potatoes!

A serious disease of potatoes in California is the fungus called "rhizoctonia." Samples of affected tubers and vines were shown at the State Fair by the State Horticultural Commission. They were knobby and small—some had grown on the vines above ground, some of the vines showed tumorous enlargements. The vines and root stocks were girded by the disease and could not perform their functions. Treatment of seed potatoes to prevent infection of soil, and rotation to clean up infected soil, are the only remedial measures. Watch the Pacific Rural Press for details.

Japanese Production in California.

A chart in the Japanese exhibit at the State Fair showed their estimates of percentage of various crops in California grown by Japanese in the seasons 1915-17: Celery, 90 per cent; berries, 88 per cent; asparagus, 86 per cent; cantaloupes, 85 per cent; onions, 84 per cent; tomatoes, 80 per cent; florists' products, 73 per cent; seeds, 54 per cent; sugar beets, 46 per cent; mixed vegetables, 40 per cent; grapes, 35 per cent; rice, 26 per cent; potatoes, 20 per cent; beans, 11 per cent; cotton, 17 per cent; fruits, 15 per cent.

Sugar Beet Bulletin.

Almost any fertile soil except very sandy or gravelly land is good for sugar beets. More depends on the way it is prepared than on the kind of soil, says a bulletin of the U. S. Department of Agriculture, just published. Good drainage is important, and on alkali soils it is necessary to get the seedlings out of the ground during the time when winter rains have spread the alkali uniformly below the surface. A deep, fine seedbed is worth more than its cost in the better crop it will raise. The bulletin discusses other beet growers' problems such as labor, machinery, diseases, etc.

National Forests Some Important!

United States national forests are 152 in number—occupy 155,000,000 acres—contain 600,000,000,000 board feet of lumber—produce 10,000,000 seedlings yearly in 13 nurseries—furnish range for 14,000,000 cattle, horses, sheep, and goats—contain water power sites which can develop 12,000,000 horsepower—contain 1200 irrigation projects—protect 1200 watersheds—attract 1,500,000 pleasure seekers annually. Seventeen of the national forests are in California.

California Vegetable Shipments.

Of the total 7768 carloads of mixed vegetables shipped in the United States between January 1, 1918, and December 16, 1918, 2872 were shipped from California. Of the 1555 carloads of mixed fruit and vegetables, California shipped 673. This State shipped all of the five carloads of Brussels sprouts, 67 of the 513 carloads of carrots, 61 of the 680 carloads of cauliflower, all of the 32 carloads of dried peppers, 27 of the 203 carloads of dry peas, 39 of the 119 carloads of pumpkins, and 11 of the 117 carloads of spinach.

Woman's Land Army Successful.

Ten thousand women worked in Woman's Land Army camps on farms in the United States to help save last season's crops, as reported to the U. S. Department of Labor. It is estimated that half as many more worked on the farms independently of the organization. These were women who customarily do no farm work; but their enthusiasm and efficiency converted many skeptical farmers; and the same women are looking forward to similar work next season.

"Feed Your Hungry Crops."

A booklet of the above title has been issued for free distribution by the International Harvester Co. It tells of experiment station results in using manure, in finding wherein its value lies, and how best to preserve that value. The loss of bushels per acre in crop yields because manure is wastefully applied or not applied at all for lack of labor would soon pay for a manure spreader that would make this distasteful job a pleasure.

Bean Dealers' Restrictions Off.

All restrictions on dealing in beans have been removed except on exports, which are still controlled by the War Trade Board, according to H. Clay Miller of the Food Administration. Bean marketing, except for export, is now on a pre-war basis and folks who have been blaming the restrictions on dealers for the slow markets will now have a chance to see the other side.

The Earliest Onions.

Coachella Valley will have about 822 acres of Bermuda onions, according to the plantings just about completed, as reported by R. G. Risser. This acreage is about normal, but is being handled more by Japanese than in previous years. Much seedbed trouble has been experienced, with poor germination and thrips. Very few onions are grown in Imperial Valley.

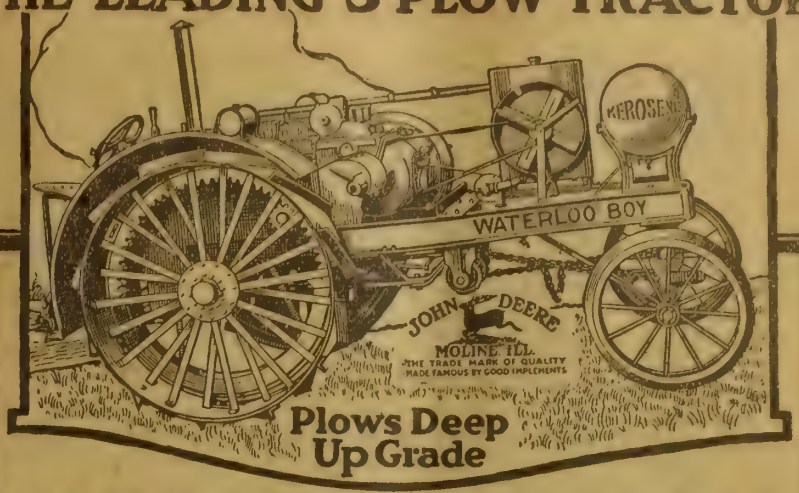
Mining Gold to Feed Squirrels.

"The value of food products destroyed in 1917 by ground squirrels in California exceeded our gold production by $8,000,000. Farmers have paid higher taxes to ground squirrels than to the assessors."—State Horticultural Commission.

Lettuce on 2630 Acres.

Imperial Valley lettuce acreage this year is estimated by R. G. Risser of the U. S. Bureau of Crop Estimates at 2630. Crops in varied condition, later than last year, but doing well and will soon be on the road in car lots.

THE LEADING 3 PLOW TRACTOR



Plows Deep Up Grade

WATERLOO BOY
ORIGINAL KEROSENE TRACTOR

"In old timothy sod I pulled three 14-inch bottoms at an average depth of six inches, some of the time up a pretty steep grade. In stubble I pulled the same plows at an average depth of eight inches."—Geo. W. Lee, Gladstone, N.J.

Waterloo Boy reserve power insures a smooth, even job of plowing in rolling land or varying soil conditions. Its two-speed motor, 2¼ and 3 miles per hour, enables you to turn the furrow at varying speed for best results in any kind of soil; quick change of speed and 12-foot turning radius permits close work in irregular fields and at corners.

The Tractor That Pays Its Way

because it is the right size for the widest range of profitable operation—supplies ample power for the heavy work, economical power for the lighter work—available for all work. Many Waterloo Boy owners are keeping their tractors busy most of the year—at draw bar or belt.

Simplified construction makes it easy to operate; equipped with Hyatt roller bearings, dependable ignition device, patented fuel saving kerosene burner, automatic lubricating system and other features which insure many years' service at minimum up-keep cost.

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We specialize in selected SEED POTATOES: Certified White Rose, American Wonders, British Queens, Burbanks, Garnet Chiles, and other varieties. Also fancy, reclaimed Alfalfa Seed. Write for prices.

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Mechanical Power on the Farm

Users of tractors, engines, pumping plants, motor trucks, automobiles, electric motors and other mechanical farm power are invited to make this department an exchange of their experiences and troubles.

IMPLEMENT PRICES.

Just prior to the great drive that ended the war, investigation showed that the consumption of iron and steel by the implement industry was approximately two million tons per year, as stated by Floyd R. Todd of Deere & Co. at the convention of the Mid-West Implement Dealers' Association at Omaha, November 15. The Government had been according the industry privileges and priorities at times equal to those accorded to shipping and munitions, but the great drive was of such immediate importance that the Government figured it was necessary to take 500,000 tons of iron and steel from the implement industry. So the supply was limited to 75 per cent of that used in the preceding year. This has been increased to 87½ per cent since the armistice was signed and soon no limit may be left on the amount of iron and steel that may be used for implements.

Are the prices likely to go down? Slight but no radical reductions have followed other wars. The War Industries Board, which has been making price agreements every three months with the implement industry, will continue until peace is signed, and may be continued after that. Its announced policy is to do all in its power to avoid radical changes which would demoralize the costs of production or the markets for implements. It will prevent sudden changes if possible.

On December 12 Mr. Todd addressed the Implement Dealers' Association at Milwaukee, in which additional facts were stated. Owing to increased cost of labor and transportation, with but little advance in cost of implements to farmers, the War Industries Board reduced the price of steel for implements by $5 per ton, effective July 15. From that date to January 1, 1919, the Government fixed price of steel has been $2.90 per 100 pounds, while the price of implement steel was $2.65. This reduced the cost of manufacture so that with some sacrifices by manufacturers the prices of implements were maintained with very little advance. A reduction of 20 cents per hundred has recently been made in the general price of steel, effective January 1, 1919; but this does not affect the price of implement steel, which is still $1 per ton less than the newly reduced price. Therefore, no reduction in the price of implements can be expected by virtue of the January 1 reduction in steel prices.

Mr. Hoover has said it will be necessary to export 20,000,000 tons of food to Europe this year as against 12,000,000 tons last year, and less than 6,000,000 tons under pre-war conditions. This is going to keep the general level of prices high with no more than moderate reductions. While the cost of living is high, wages cannot be much reduced and so all costs and prices will be approximately maintained. When prices of farm products go notably lower, the cost of living will be reduced, labor's wages may be reduced, costs of production will go down, and prices of implements to users will be lower. But that time seems not in the near future. Meanwhile the great tonnage of food must be produced and farmers have learned that efficient implements, even though somewhat high priced, repay much more than their cost in the form of greater crops raised at lower cost of production.

WASHING THE CRANK CASE.

In cleaning lubricating oil from the crank case, draining it does not get the oil out of the splash pans. This is best done by pouring four to six quarts of coal oil in after draining the case. The coal oil will displace old lubricating oil in the splash pans. Revolve the engine several times by hand to wash off the surfaces with the coal oil, and then drain and pour in lubricating oil until it has displaced all kerosene. This can be known when clean lubricating oil again comes from the drain cock. Do not revolve the engine under its own power with only coal oil in the crank case because the heat developed will evaporate the kerosene and leave surfaces, especially of the cylinders, dry. The engine would then have to run dry for some time after refilling with lubricating oil until it could splash up a fog that would again lubricate the cylinder walls. Damage might occur before such relubrication. In cleaning a force-feed lubricating system, the old oil and then the kerosene should be similarly forced out completely before refilling with lubricating oil. Then the pump may need repriming. If so, and if it is not attended to, the bearings will soon burn out.

WHY CONSIDER A TRACTOR?

Tractors are purchased for their profit-making ability, but not all tractors make profits. When they do not, it is usually due either to abuse of the tractor or unsuitability of the work to be done by it.

Tractors are worthy of consideration: (1) Because they enable one man to handle a larger unit of land. The history of American agriculture has been one of development from the hand hoe to the tractor, where one man controls multiplied power. (2) They use no fuel while idle. California farm work is largely to be done during limited seasons. The tractor needs no attention except good storage during the rest of the year. (3) During the grand rush of seasonal work a tractor keeps going 24 hours a day, with just time enough off to keep its lubrication and adjustment right. (4) Heat of summer doesn't require the tractor to rest at the ends of rows or furrows. (5) A quarter of all we used to grow has been required to feed horses. A tractor doesn't eat feed. It releases acres from production of horse feed to production of human food and clothing.

PUMPS IN A DITCHED DISTRICT.

Around Merced, where ditch irrigation service is generally reported very poor, one man irrigates 87 acres from two 12-inch wells 200 and 250 feet deep. The water is lifted not over 18 feet and there is plenty of it. Those pumping plants meant the difference between crops and no crops last year to him.

WITTE IRRIGATING ENGINES

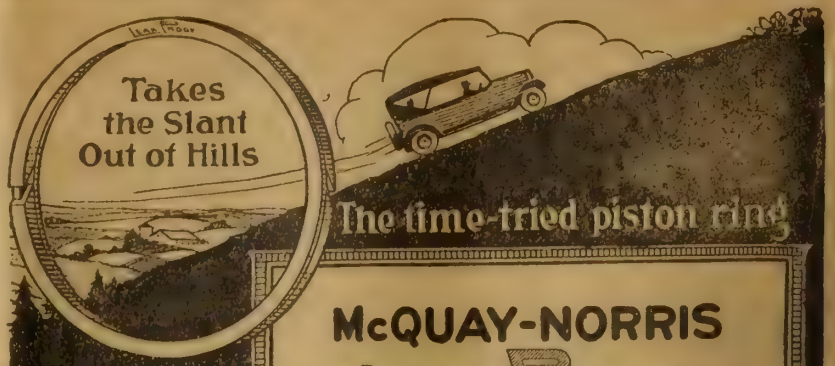


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Pump your water with a WITTE. All you need is a centrifugal and my Special Model Kerosene-Distillate Engine. I can lay your engine down at least cost. Save the middleman's profit—Get your engine NOW, while prices are favorable. Have reliable power for all your work. Made in standard sizes—2, 3, 4, 6, 8, 12, 16, 22, and 30 H.P. Battery or magneto equipment. I am in a position to offer you the best prices and make Quick Shipment. 90-Day Trial—5-Year Signed Guarantee. Largest exclusive engine factory in the world selling direct to user. Terms, cash or payments as arranged for. Suit yourself as to terms. Dont make a deal until you have investigated my offer.—Ed H. Witte, Pres.

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Increase Power—Decrease Carbon —Save Gas

For eight years these rings have stood the test—made good.

By creating uniform pressure on the cylinder walls, McQuay-Norris Leak-Proof Piston Rings stop piston ring leakage, increase power, decrease carbon and save fuel and oil.

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"To Have and to Hold Power"—a simple, clear explanation of piston rings, their construction and operation.

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McQUAY-NORRIS Supercyl RINGS

A special ring for engines that pump oil. Used in top groove only of pistons to control excess oil, with McQuay-Norris Leak-Proof Rings in lower grooves to insure maximum compression and fuel economy.

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Light-Weight Farm Motors

Cushman Engines weigh only one-fourth as much as ordinary farm engines, but they are balanced so carefully and governed so accurately that they run much more steadily and quietly. They are also the most durable farm engines in the world, on account of improved design and better material and construction.

4 H. P. weighs only 190 lbs., being only 48 lbs. per horsepower. Besides doing all ordinary jobs, it may be attached to any grain binder, saving a team, and in a wet harvest saving the crop. Also it may be used on corn binders and potato diggers. Very easy to move around from job to job.

8 H. P. weighs only 320 lbs., being only 40 lbs. per horsepower. For all medium jobs. Also may be attached to hay presses, corn pickers, saw rigs, etc. 8 H. P. and larger Cushman Engines are all double cylinder.

15 H. P. weighs only 780 lbs., being only 52 lbs. per horsepower. For heavier farm jobs, such as 6-hole corn shellers, ensilage cutters, large feed grinders, small threshers, etc.

20 H. P. weighs only 1200 lbs., being only 60 lbs. per horsepower. For heavy duty jobs, such as shredders, shellers, grain separators, heavy sawing, etc.

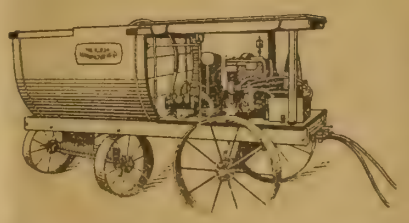
Cushman Engines stand up under wear and tear and do not wear unevenly and lose compression. Every running part enclosed, free from dust and dirt and properly lubricated. Equipped with Throttling Governor, Carburetor, Friction Clutch Pulley and Water Circulating Pump. Ask for book on Light-Weight Engines.



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The Famous Hardie Junior



The Famous Hardie Junior is a real power sprayer. It has sufficient capacity for two lines of hose. It has plenty of power for high pressure effective spraying. It is little in first cost, weight and upkeep. It is big in real value, engine power, pump capacity and ability to do successful spraying. We believe this is the greatest small power sprayer ever manufactured, and placed on the market with phenomenal success in every fruit section in United States and vouched by thousands who own the Famous Hardie Jr. Equipped with 1½ h. p. engine, battery ignition, 150-gallon tank with mechanical agitator, capacity of 4 gallons per minute with a steady working pressure of 200 pounds, and two 25-ft. of the best spray hose, fitted with spray rods and nozzles; 4-inch tire truck with pole or shaft.

ALL FOR $300. DELIVERED ANYWHERE IN THIS STATE.

If truck is not needed, deduct $55.00.

These prices are subject to change without notice. The wise buyer will place his order now.

This low price is made possible by big production.

If you are interested in other types and sizes of the HARDIE POWER SPRAYER, write us for the big spray catalog, and learn why we can offer more spray pump value than any other spray pump manufacturer.

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Hardie Agent, A. F. GEORGE CO., Los Angeles.
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SMALL BARLEY ROLLER.

Is a small barley crusher economical? Earl S. Cardwell of Madera county says it is not, because a boiler must maintain about 85 pounds pressure of steam to make the barley roll without crushing into flour. He was operating such an outfit when we called on him. A 5-horsepower electric motor and the crusher were mounted on a wagon, the steam being led into the hopper by an inch pipe. One man dumped barley into the hopper. One man tended the boiler and machine and filled sacks. Another sewed and piled the sacks. It was costing a little over $2.50 per ton to get the barley rolled. It was probably worth more than that beyond what whole barley would be worth for feed; but Mr. Cardwell points out that a large outfit is more economical except where the grain would have to be hauled a long distance to and from the roller.

TRUCKS HAUL BULK GRAIN.

Seven 3½-ton Republic trucks are used on Moreing Bros. ranch in Sacramento county to haul bulk grain two to eight miles from six of the largest combined harvesters to elevators. The trucks were fitted with grain-tight bodies holding four and a half to five tons. They are dumped by running the front wheels up an incline and opening swinging doors a foot wide across the rear end. Hired horses for this work in 1917 cost $10 per month each, plus their feed.

WHERE WE LOSE COMPRESSION.

Loss of compression results in loss of power. Compression may be lost through a pet cock, through or beside spark plugs, past dirty gaskets, past the plugs that in some motors connect the cylinder and water-jacket, past valves whose stems have too little clearance and will not permit them to seat properly, past dirty or worn valves, past broken piston rings, or along scored cylinder walls.

SPARK PLUG POINTS.

Carelessness in judging the distance between points of his spark plugs caused the writer great difficulty in climbing hills. The points were left too far apart. It is well to test occasionally with a smooth dime, which should fit easily between the points.

OVAL HAND-HOLE PLATES.

To the Editor: Why are hand-hole plates in the side of engine crank cases made oval instead of round?—Subscriber.

Round plates large enough to close the holes from the inside and fasten from the outside could not be put through the holes.

POWER NOTES.

The only time a tractor costs money is when it is idle. The rest of the time it is making money.

About 10 per cent of orders for Caterpillar gang plows have been for the interchangeable disk or moldboard types, while 90 per cent were for disks alone, according to J. H. Davis, who invented them. Both the disks and the moldboards bolt to the I beam frame.

Six combined harvesters are pulled on Moreing Bros.' ranch in Sacramento county by six steam tractors operated by crude oil fuel. With oil at $1.70 per barrel, the firing of the tractors cost $120.00 per day during harvest.

Fifteen or twenty days are spent by each operator of a combined harvester on Moreing Bros.' ranch overhauling the harvester just before the season's work begins.

A retarded spark will overheat the engine and waste power almost as badly as lack of lubrication. The late slow burning tends to slow down the piston. To test out the value of running an automobile on extreme advance, set the throttle at 15 miles per hour on retard. Then advance the spark and notice how the speed picks up.

A broken piston can usually be detected by removing the breather cap and listening while the engine is cranked.

Cylinder oil of too light a body will pass the piston to the explosion chamber, where it carbonizes with lots of trouble.

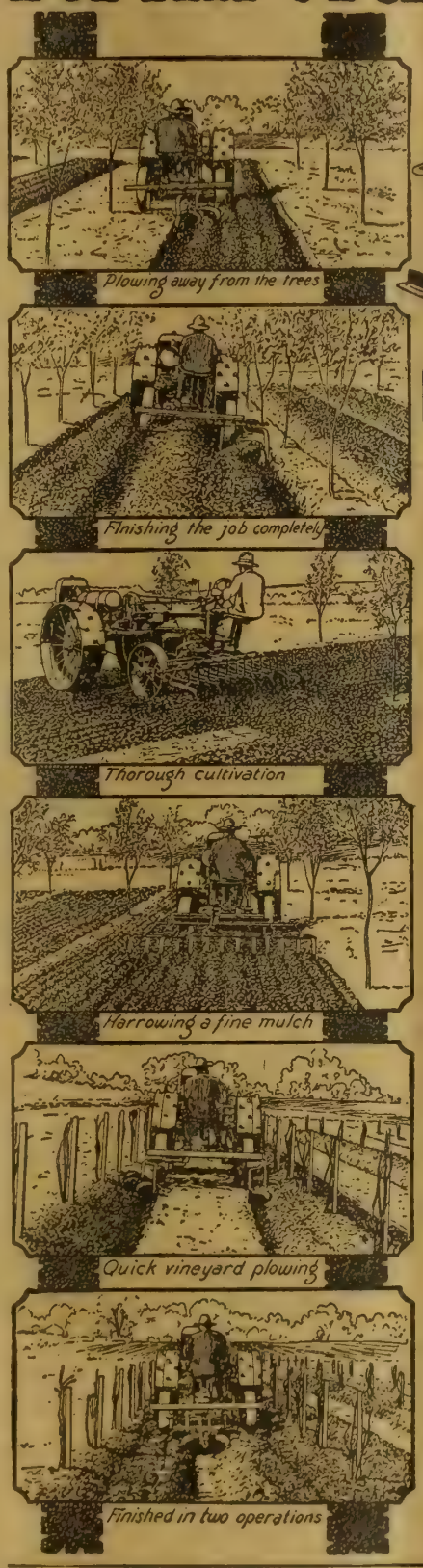
Premature firing in a warm engine is likely to be ignition of the incoming gas by hot carbon in the firing chamber.

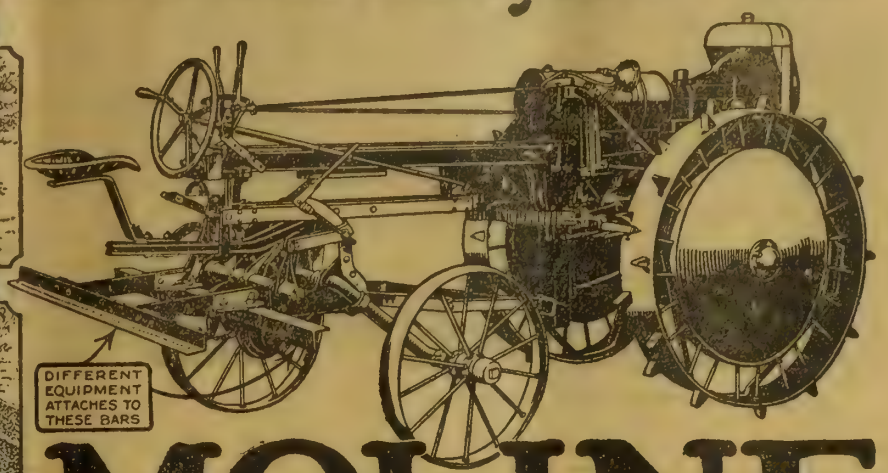
A weak spark is one cause of an engine overheating.

A tractor user says it is unnecessary to wash out the crank case with kerosene. He empties the old oil immediately after stopping the engine "while the oil is still well stirred up with the dirt." A question is whether the dirt is really well enough suspended in the oil to be carried off with it.

A large rancher of San Joaquin and Contra Costa counties employed a man at $8 per day to run his 75-horsepower tractor. The man did not tighten bolts and did not care properly for other adjustments or lubrication, and the several thousand dollars which the tractor cost was invested in a junk pile at the end of a month.

One Tractor and One Implement For All Orchard and Vineyard Work





MOLINE UNIVERSAL TRACTOR and ATTACHOR

With this one outfit the orchardist and vineyardist can do practically all their work and one man can do much more work at less expense than ever before possible.

The Moline-Universal Tractor Attachor is made to work in connection with the Moline-Universal Tractor so that one man has control of both tractor and implement. It consists of an attachor truck equipped with a power lift device and a pair of transverse bars to which can be attached the following equipment: Orchard Gang Plow, Offset Sulky, Straight Sulky, Orchard or Alfalfa Cultivators; Spring Tooth Harrow in two, three or four sections, Furrow Irrigator for orchard or vineyard work, Ridge Irrigator, Vineyard Gang Plow and Crust Breaker.

Thus this one implement does away with all special tools which are used for only a few days out of the year. The Moline-Universal Tractor Attachor combines the main parts of all these machines such as wheels, axle, frame, lifting device, seat and control mechanism. The saving in expense is apparent.

But the improved quality of the work which can be done with the Moline Universal outfit and the saving in time is of greater importance.

For orchard plowing the gang plow is used and the land is plowed as close as the branches of the trees will permit. Then the Offset Sulky or the Straight Sulky is attached in place of the gang plows and the last furrow or two are plowed out right up to the tree trunks. Plowing can be done away from or to the trees in this manner. After plowing the Orchard, the Cultivator or Spring Tooth Harrow can be readily attached for making a fine mulch. And if irrigation is practiced, furrows or ridges are quickly made by attaching this equipment.

For vineyard work, Moline-Universal Attachor enables a better quality of work to be done, and quicker and cheaper than ever before possible. The vineyard plow consists of a pair of right and left hand bottoms. These bottoms can be spaced wide apart or close together to suit any vineyard rows from 6 to 10 ft. apart. In two operations, with the bottoms spaced wide and close together, all the land can be completely plowed between the rows. Then by using Spring Tooth Harrow and Furrow Irrigators the entire vineyard work can be finished completely.

The Moline-Universal Tractor is especially well adapted to orchard and vineyard work, being light in weight, extremely powerful. All moving parts are fully protected from dust and many other features which other tractors do not have. Aside from this work it can be used for any farm work, including cultivation of row crops and for belt work.

This Moline outfit will make you more profit. If you are interested in orchard or vineyard work, send for folder R. F. No. 84 which explains in detail just how the Moline-Universal Tractor and Attachor are used.

Manufacturers of Quality Farm Implements Since 1865

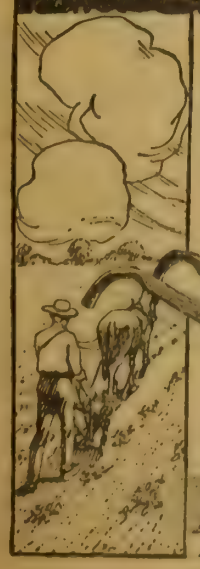
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You get bigger and better crops with less expenditure of time, labor, and money, for Planet Jr. tools enable you to cultivate easier, quicker, and more thoroughly. They are time-tested tools, so careful, accurate, and substantial in construction that they last a lifetime. Fully guaranteed.

No. 90 Planet Jr. Twelve-tooth Harrow, Cultivator and Pulverizer is a prime favorite with farmers, market gardeners, strawberry, sugar-beet and tobacco growers. Its twelve chisel-shaped teeth and pulverizer leave the ground in the finest condition. Adjustable to both width and depth, making close, fine work easy.

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No. 25 Planet Jr. Combined Hill and Drill Seeder, Double and Single Wheel-Hoe, Cultivator and Plow sows all garden seeds from smallest up to peas and beans, in hills or in drills, rolls down and marks next row at one passage, and enables you to cultivate up to two acres a day all through the season. Straddles crops till 20 in. high, then works between them.

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Illustrates Planet Jrs. in action and describes over 55 tools, including Seeders, Wheel-Hoes, Horse-Hoes, Harrows, Orchard-, Beet- and Pivot-Wheel Riding Cultivators. Write for it today!

Agencies in all principal Pacific Coast cities.

Rations Fed to Prize Winning Barrows

[Written for Pacific Rural Press by Prof. J. I. Thompson, Davis.]



First prize pen of Poland-China Barrows under 12 months. Shown by University of California at the 1918 Chicago International.

The University Farm showed three Poland-China barrows at the last International Livestock Show at Chicago. These pigs were farrowed October 1 and 4, 1917. They were second, third and sixth in class at Chicago and were the first prize pen of Polands under twelve months of age. The barrow that was first in this class was exhibited by the Iowa State College and was the champion Poland-China barrow of the show. It might be of interest to breeders of Poland-Chinas in the State to know that we own the sire of this champion Poland barrow. Our barrows were sired by Big Bob Orange 3rd, a son of the noted Big Bob, owned by Seivers in Iowa. The dams of these pigs were bred and raised on University Farm.

These pigs, together with pen and litter mates, were used in a feeding experiment last winter to determine the relative feeding value of milo maize in various forms. They were fat enough for average market conditions when the experiment ended last spring. To show, however, that they had unusual ability to go on is indicated by the fact that when they left here for Chicago the lightest one weighed 475 pounds, the second 485 and the third 525.

After being taken off of the experiment these pigs were, however, hand fed twice each day on a grain mixture of barley (3 pounds), sometimes ½ pound of shorts, 5 per cent tankage and 5 per cent coconut meal, and for the last thirty days about one gallon of skim milk per head per day. They had the run of a small pasture up until the time the skim milk feeding began, but the pasture was not especially good. In spite of their excellent weight and the fact that they had been on feed for an unusually long time, they were up on their toes like a goat and walked as readily as most 200-pound pigs.

They were eleven days on the road to Chicago, during which time they were not unloaded, and were there only two days before being shown. In spite of this handicap, the pen which defeated them for champion Poland pen was the grand champion of the show. It is, therefore, quite evident that California breeders, beginning with reasonably good breeding stock and using boars of the right kind, can produce tip-top show barrows, even though they may not be expert fitters.

SILAGE VS. ALFALFA.

To the Editor: What is the value of corn silage as compared with alfalfa?—J. J. G., San Luis Obispo.

[Answered by Livestock Editor.]

It is hardly possible to make a comparison between corn silage and alfalfa because neither one should be fed in the place of the other. One is heavy in protein and the other in carbohydrates, and they should be used together rather than separately. However, you can determine the price of silage according to the price of alfalfa, as corn silage contains about one-third of the nutrients contained in alfalfa hay. For instance, in 100 pounds of corn silage there are 17.5 pounds of digestible nutrients; in 100 pounds of alfalfa hay there are 52.2 pounds. Therefore, corn silage is worth about one-third as much as alfalfa hay.

Marketing of Wool

To the Editor: I have the wool from a small flock of sheep that I want to market. How should I go about it?—A. D. F., Merced.

[Answered by Prof. R. F. Miller, University Farm.]

The Government has stopped appraising wool since the close of the war, as they have a stock of about 300,000,000 lbs. on hand which is estimated to last them at least 14 months. There have been several meetings regarding the wool situation at Washington, but I believe nothing has been done regarding the future policy of marketing wool, although it probably will return to its original channel—marketing through commission men. The State of California is handicapped in marketing its wool in having only small buyers in the market. The California Wool Growers' Association had three meetings last spring in hopes of adopting a central wool warehouse through which all the wool would be marketed, and until such an assembling point has been established it will always be difficult for the small man to market his wool satisfactorily in this state. Any small farmer having wool on hand now should either try to sell it locally or ship it to some of the San Francisco buyers, such as: Hulme & Hart, Crimmins & Peirce, or Koshland & Co., who would allow him a fair price, although they do not cater to small lots.

[Editor's Note: Nineteen clubs, formed under county farm bureaus in New York state, marketed nearly a half million pounds of wool at full Government prices. Why not form similar clubs through our farm bureaus, so that our wool can be marketed in larger quantities and better prices can then be secured?]

Mrs. Henry Miller Hickle, daughter of Henry Miller and heir to about 140,000 acres of land in Kern county and 570,000 acres farther north in the San Joaquin Valley, has announced her intention of selling the land as quickly as possible.

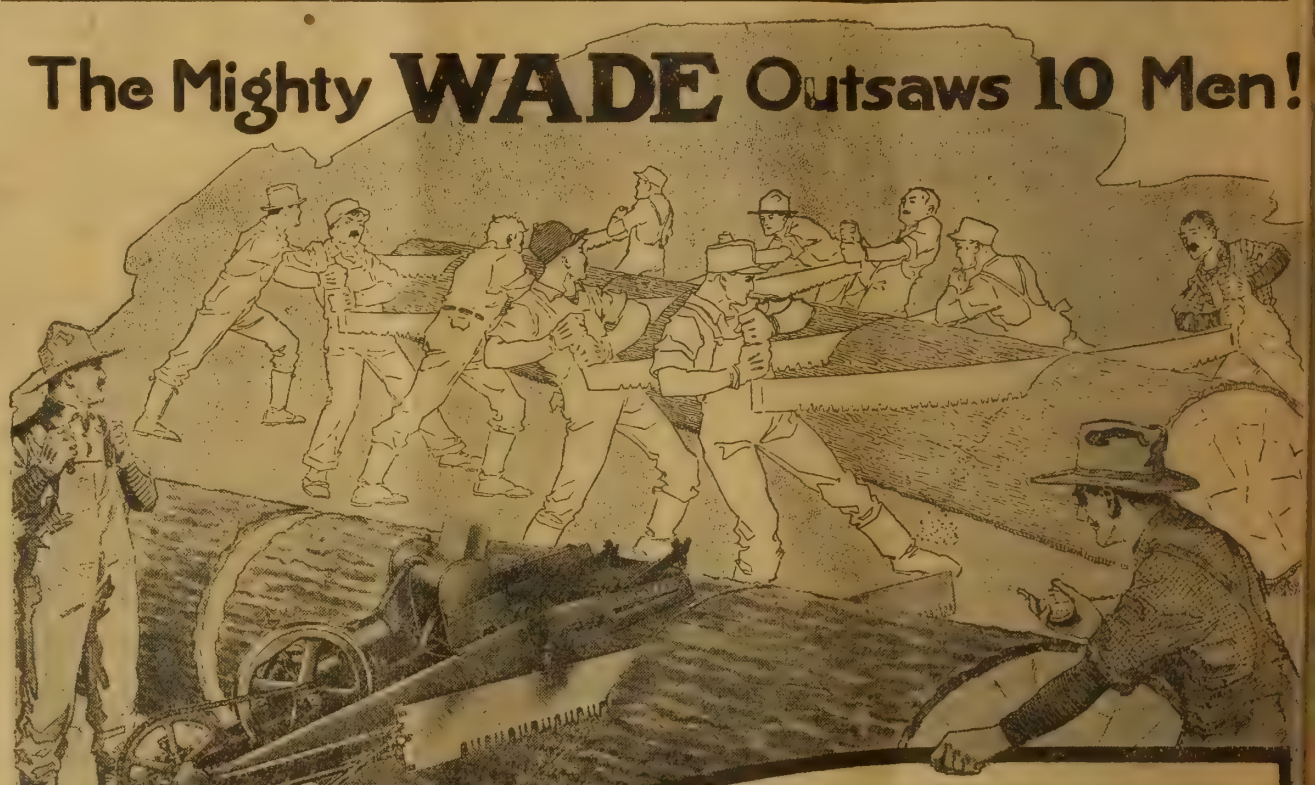
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58 SUTTER ST., SAN FRANCISCO

The Mighty WADE Outsaws 10 Men!



A money-maker and hard work saver for land clearers and wood-cutting contractors. One man can move it from cut to cut. Simple and reliable. Hundreds in use all over the United States—in the woods of the Pacific Northwest, California, Minnesota, Arkansas, New York. When not in use for wood cutting the 4-H.-P. motor will run feed mills, feed cutters, pumps, etc.

Read What These Owners of WADE DRAG SAWS Say:

"One afternoon my brother-in-law and I took my WADE into the woods and sawed three hard maple trees into 16-inch blocks, the trees averaging about two and one-half feet at the stump. He expected it would take me from eight to ten hours to do the job, but it was all done in three hours.—F. W. Hiller, Vernon, N. Y.

I cut thirteen and one-half ricks of cottonwood in six hours.—J. W. Stratton, Atkins, Ark.

One gallon of gasoline will cut six to ten cords of wood; it depends on the kind of timber you cut.—W. D. Thomas, Bull Run, Or.

My WADE saw paid for itself six times over.—F. W. Taylor, Swisshome, Or.

I am making $250 a month with my WADE.—F. A. Storts, Orville, Cal.

Thirty-six inches in diameter, yellow birch, is the largest I have cut and I cut down to six inches.—P. L. Cole, West Duluth, Minn.

I cut down to eight inches in diameter.—F. T. Swank, Park Falls, Wis.

America must burn more wood for fuel. One Wade will do 10 men's work at one-tenth the cost. Write for free book, "How Dan Ross Cuts 40 Cords a Day." Full details and special price.

R·M·WADE & CO·
SINCE 1865

349 Hawthorne Ave., - Portland, Oregon

Wade Booklets Free

R. M. Wade & Co.,
349 Hawthorne Ave., Portland, Ore.

Without obligation, send me Booklets, full details and special price on Wade Drag Saw.

NAME .....

ADDRESS .....

A 53 YEAR REPUTATION BACKS THE WADE

Shall We Have a Pure-Feed Law

[Written for Pacific Rural Press.]

What are you doing to help put through the pure-feed bill that will be introduced at the next session of the State Legislature?

Last July we emphasized the importance of such a law and, as one was defeated at the last Legislature because of lack of interest from farmers, we urged our readers to pledge their Senators and Assemblymen to support this new bill.

Here is what George W. Fry of the Redwoods Ayrshire Farm, La Honda, wrote his Senator and Assemblyman:

"At the next meeting of the Legislature a bill to regulate and control the selling and quality of commercial feeding stuffs will be presented for passage.

"I take this opportunity of asking your careful attention so the bill may have your affirmative vote. The purity of feeding stuffs is a vital question with stock and dairy owners.

"While the proposed bill will likely add to the State's pay roll, the outlay will be nothing compared to the amount it will save for the feeder. This saving will not be at the expense of the man with the honest goods, but will come from the man selling inferior or mislabeled articles.

"As it so happens, I have before me a report of the operation of a similar law in Texas and give you below a resume of the benefits they derive:

"1. It has placed the feeding stuff trade on an honest basis, so that mixtures of corn chops, wheat bran, sweepings, etc., are now sold for what they really are.

"2. It has equalized and promoted uniformity in the selling price of feeds.

"3. It has induced farmers and feeders to investigate the relative values of feed and thus increased the use of feeds of value.

"4. It has prevented the sale of a number of worthless feeds.

"5. It has encouraged manufacturers to maintain a high standard.

"6. It has prevented the shipment into the State of inferior feeds, barred from other States having such a law.

"7. It has prevented the sale of adulterated goods as being pure.

"I would appreciate your acknowledgment of this letter."

If you, Mr. Reader, want the composition of the mill feed you buy stamped on the outside of the sacks, so you will know what you are getting, it's up to you to do your part to get this bill through. Better get the letters off today. You might send us copies, too.

PUTTING A BEEF HERD ON THE MAP.

(Concluded from page 5.)

you can buy good cattle cheap, well and good, but don't buy animals just because they are cheap. You can get registered cows all the way from $200 to say $1,000. If you buy from a reliable breeder, a cow at either extreme will represent full value. The difference will be that with the lowest priced cow it will require probably five years of breeding up to get as good offspring as you will get right at the start with the highest priced cow. So the price to pay will depend upon the size of your pile and upon how quickly you want to get to the top.

But in buying a bull don't figure too strongly on the advertising you will get from paying a big price. The only real advertising you will get from a bull, aside from his show ring performances, will be the calves that he sires. There is no use in spending money for advertising if you haven't got the goods, and thousands of dollars spent on a bull that produces fifty-dollar calves won't get you anywhere.

However, there are bulls that are actually worth thousands of dollars, and if you can find a good individual, of good breeding, that gets a good calf about every time he serves a cow, pay the price and take him home before the owner changes his mind or someone else gets him.

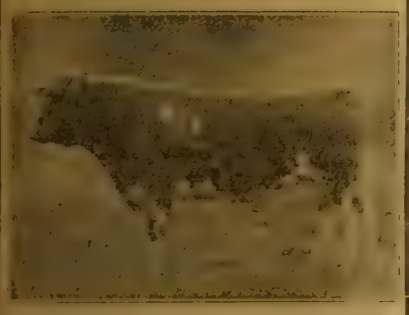
Parting Advice.

Don't raise more cattle than you can take care of properly. Nearly every beginner resolves that he will give his herd better care than other breeders do theirs, but as the herd increases his resolutions are broken. As a matter of fact, care should increase in greater ratio than the herd, because there is more at stake. To have calves born great is not enough. They require a lot of care in the making. Don't pamper them, but feed them well and give them good care.

The best advice that can be left with you is this: Choose the right type; resolve to take good care of your herd; then stick to both type and resolution.

C. H. Vodden, Los Gatos, made a general sweep of prizes at the Santa Clara Valley Poultry Show, held early in December. His Barred Plymouth Rocks won almost every first prize in very hot competition, and his cockerel, General Pershing, took the grand prize medal offered by the American Poultry Association for the best cockerel in the show. This record shows what scientific breeding will do.

Edgemoor Farm Guernseys



Imperial Itchen May King, 25174

PRETTY PRODUCTIVE PROFITABLE

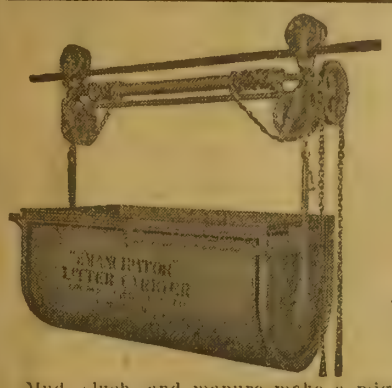
A Few Animals of Either Sex For Sale

See list of our winnings at Los Angeles in this issue of the Pacific Rural Press.

SANTEE, CALIF.

H. F. SCRIBNER
Supt.

W. H. DUPEE
Pres.



Barn Cleaning A "Snap" When You Use The Louden Litter-Carrier

Mud, slush, and manure make a mighty nasty combination when you have to clean the barn by the laborious, back-breaking wheel-barrowing method.

There's a quicker, better, easier way. Why not take advantage of it?

There's a Louden Litter Carrier for your barn at a price you can afford to pay. It will render years of service; it will save you a world of time and labor. It will make it possible to keep the barn clean and preserve manure values.

Can you conceive of a more profitable investment in farm machinery?

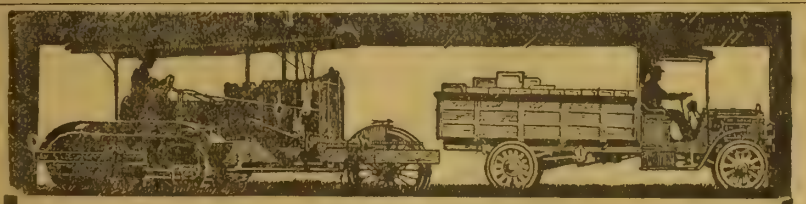
Louden Litter Carriers are made in five styles, at a wide range of prices. Rod track carriers are suitable for simple track arrangements. Solid track carriers are best where curves and switches are used.

You'll need a Louden Carrier this winter. May we work out an itemized quotation for you?

Write for Louden Catalog and Free Book of Barn Plans

California Hydraulic Engineering & Supply Co.

68 FREMONT ST., San Francisco, California
424 E. THIRD ST., Los Angeles, California



Learn Autos--Trucks--Farm Tractors--

These are the big paying lines of the future—skilled men are always in demand—in the after war adjustment only the trained man will be wanted—start now to learn a trade—cut out this ad—send for catalog today—What do you want to be?

—Auto Machinist—Auto Repairman—Farm Tractor Operator—Truck Driver—Gas Engineer—Ignition Expert—Vulcanizer—Chauffeur — Machinist — Lathe Hand—Oxy-Acetylene Welder and Cutter—Radio Operator—Mechanical Engineer—Draftsman—Civil Engineer—Electrical Engineer—Architect—Estimator—Plan Reader—Concrete Expert—Auto Course for Women.

Name .....

Address .....

Heald's Automobile and Engineering School
1220 POST ST., SAN FRANCISCO.

The Largest and Best Equipped Automobile Tractor and Engineering School on the Pacific Coast—32 Instructors—Over 2000 students annually.

Kings County Jack Ranch



The largest Jack and Mule farm on the Coast. **The best selection.** Can show you the heaviest, biggest boned animals you ever saw.

1100 to 1400 lbs. in weight.

Prices right.

Special Offer: 50 Young Mules

JOHN BURRELL, HANFORD, CAL.



PRINCE BUTTER BOY WALKER
Senior and Reserve Grand Champion at Sacramento, 1917.

Holstein Friesian Cattle

Herd Sires:
Prince Butter Boy Walker
King Mead of Riverside
Yolo Valdessa Hengerveld

Young bulls by these sires and out of cows with records

Write or Call

J. H. HARLAN CO., Woodland, Cal.

Eradication of Tuberculosis in Dairy Herds

[Written for Pacific Rural Press.]

Some interesting light is thrown upon the tuberculosis situation in the annual report of the State Dairy Bureau. It says: "It has been difficult to obtain purebred cattle that were not infected with tuberculosis. This difficulty is being eliminated, as the United States Department of Agriculture has started to issue lists of herds which are free from all taints of tuberculosis and these herds are officially accredited. No herd can be placed on this list unless all of the cattle have successfully passed two annual or three semi-annual tests. On July 1, 1918, there were 240 accredited herds on this list and there are undoubtedly many more at this time. No person should add a purebred animal to his herd unless it was obtained from an officially accredited herd. Any dairyman interested in this matter may obtain one of these accredited lists by writing to the Bureau of Animal Industry, Department of Agriculture, Washington, D. C.

"This department estimates that $40,000,000 is lost annually in the United States from tuberculosis among cattle. The Government has started on a plan to eradicate the disease from as many herds as possible, and has proposed to pay one-third of the difference between the appraised value and the salvaged value of cattle which are found to be tuberculous and slaughtered, if the State, county or municipality will pay a like amount. Judging from the amount of the appropriation made by Congress, it cannot be the intention of the Government that all cattle within such States as desire to co-operate with it should be tested, but that such owners of cattle who desire to clean up their herds could be assisted in doing so if the State had laws which would enable it to render a like assistance. The States of Vermont, Pennsylvania and Mississippi have such laws, and the State of Massachusetts had 9422 head of tuberculous cattle killed during seven years and paid for them in order to arrest the progress of the disease.

PER CENT OF INFECTED HERDS.

"Through the courtesy of the State Veterinarian, this office has received copies of the reports made by the deputies in the office of the State Veterinarian who have made tuberculin tests of cattle throughout the State. To determine the percentage of the herds in which one or more animals have reacted, we have gone over 5136 of these reports and find that 67.24 per cent of the herds have been found free from tuberculosis and 32.76 per cent have had one or more reactors. This is a very small per cent, as reports from many States and counties show that from 50 to 60 per cent or more of the herds tested have had one or more animals infected with tuberculosis.

WHY HERDS ARE LESS INFECTED IN CALIFORNIA.

"The conditions and climate in California are ideal for stock raising. No cattle have to be kept in crowded barns even over night, except in the high altitudes, and in most localities there is an abundance of sunshine nearly every day which kills the tubercle bacilli almost immediately after they are dropped on the pasture. There are, of course, many ways in which the disease is spread and the only way to keep cattle clean is to buy only such animals as are known to come from herds that are free from all taints of tuberculosis.

BENEFIT OF ACCREDITED HERDS.

"If the intermingling of infected herds with healthy cattle could be prevented, the spread of tuberculosis would soon be stopped, unless the owners of the cattle fed unpasteurized skim milk from other herds of cows to their calves.

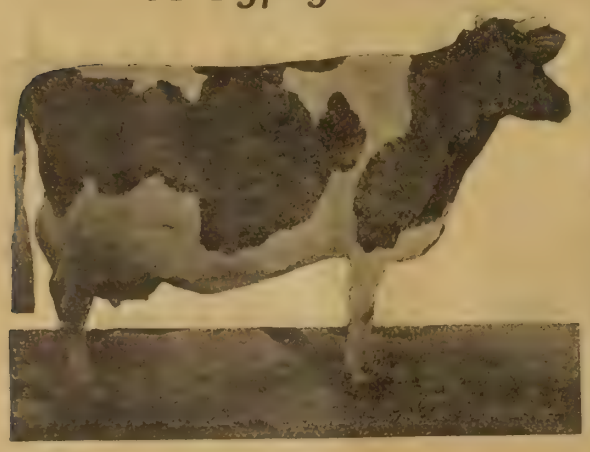
"As soon as the U. S. Department has a sufficiently large list of accredited herds in this State, it would be inexcusable negligence to buy stock from other herds, and those who desired to breed dairy cattle to sell to others would have to clean up their herds."

TIME TO GET BUSY.

The reasonings given in this report are sound, and the suggestions wise. Even if a breeder or dairyman has several cows condemned, it will pay him to stand one-third of the loss on each cow for the sake of getting the disease eliminated from his herd.

But it must be borne in mind that we cannot take advantage of this plan of reimbursement started by the Government until our State enacts a law which will make it possible to co-operate. It is almost time for the State Legislature to meet. Hadn't we better get busy and work up interest in this important subject? No matter how necessary a measure may be, there must be united action, publicity and pressure to put it through.

A Typey Producer on Test



Ninette Aine Pauline No. 175929, a young Holstein cow owned by Palo Alto Stock Farm, one of the many big producers in this herd, who has just completed a seven-day record, making 36.28 pounds butter, increasing her former record by over 4 pounds. She will be kept on test for the year and will no doubt make a big 365-day record, as she is possessed of great capacity and a rugged constitution. She is also a good specimen of the show type to be found in the Palo Alto herd. It is to be hoped this herd will be well represented at the San Francisco show in February.

GOVERNMENT PIG CLUB WORK.

During the past year 25 specialists working in 18 States supervised 35,980 members of the boys' and girls' pig clubs, an increase of 66 per cent over the year before. The present enrollment is more than 80,000 in 28 States. Records for more than 12,000 pigs show an average daily gain of 1.14 pounds and very satisfactory profits. Seventy-one per cent of the reporting members raised purebred pigs. Financial aid by bankers plays an important part in the success of the pig club work. The increase in production of pork due to club workers is evidenced by the fact that in several States the club members are shipping their hogs to market in carload lots. The pig clubs have been the forerunners of swine breeders' organizations, and in many States there are counties standardized to one breed of hogs as a result of the introduction of that breed for pig club work. The specialists have advocated economical production by the use of forage and pasture crops and the feeding of garbage and table scraps.

His Calves Are Now Coming



King Korndyke Pontiac 20th.

and they are certainly beauties. They not only inherit his type—extraordinary length, depth and splendid vigor—but also the wonderful production breeding that is behind him. Their dams also contribute great producing blood. Most of them are daughters of our senior herd sire, Prince Riverside Walker.

It is not too early to begin to figure with us on one of the young sons of King Korndyke Pontiac 20th for your herd.

Come and see them or write for description, pedigrees and prices.

OUR ENTIRE HERD IS TUBERCULIN TESTED.

Tulare Holstein Farm

W. J. Higdon, Owner TULARE, CAL. H. L. Reed, Herdsman



JERSEYS The PROFIT BREED

The pump has been blamed for much watered milk that really came from poor cows. Why waste feed on cows that skim their own milk when Jerseys will produce the highest percentage of butter fat at the lowest feed cost. Raise the standard of your herd to the highest degree with Jerseys. The man who begins with one Jersey is never satisfied until he has a herd. He can see the profit without close figuring. Start now. Write to Breeders for pedigrees and prices. Let us send you the Jersey facts that will open your eyes to the possibilities of this money-making breed.

THE AMERICAN JERSEY CATTLE CLUB, 388 West 23rd St., N. Y. City

Get one of my Jersey bulls to increase the production of your herd. They are rich in the blood of the great cow,

GERTIE OF GLYNLLYN.

Visitors welcome. Correspondence solicited

A. A. JENKINS, R. D. 1, Tulare, Cal.



N. H. LOCKE CO.

Lockeford, Cal.

Choice young bulls of King's Valet Blood, backed by Records.

Call at the ranch and make selection.

VENADERA HERD REG. JERSEYS

Herd headed by Altama Interest, Grand Champion 1918 State Fair. Awarded two other championships and 10 firsts, including Aged Herd, Breeders' Young Herd, and get of sire. Young bulls for sale from dams and granddams in Register of Merit.

GUY H. MILLER, MODESTO, CAL.

LEONARD FARM JERSEYS

Bulls for sale from Register of Merit cows. Write for information.

W. J. HACKETT, CERES, CAL.

T. B. PURVINE & SONS

PETALUMA, CALIFORNIA

Breeders of

Registered JERSEYS

Young bull calves for sale. Fine individuals with Register of Merit backing.

RANCHO SANTA MARGUERITA, D. F. Conant, Prop., Modesto, Cal

Register of MERIT JERSEYS A limited number of bulls for sale

REGISTERED JERSEY CATTLE

DUROC JERSEY HOGS

Look up my winnings at the fairs. Stock for sale at reasonable prices.

J. E. THORP Lockeford, Cal.



HOLSTEINS IN AMERICA

The Holstein-Friesian breed of dairy cattle has been established in this country nearly 50 years and has made good from the Atlantic to the Pacific. The breed has long been used to improve the dairy qualities of the cattle of Europe. It is in demand also in Canada, Mexico, Australia, New Zealand, South Africa, Japan, Argentine, Central America, and other countries, and holds all records for largest yield of milk and butter.

HOLSTEIN CATTLE

Send for our booklets—they contain much valuable information.

The Holstein-Friesian Assn. of America

Box 141 BRATTLEBORO, VT.

POLLED JERSEY CATTLE

Breeders' names, sale dates, Spillman's "Inheritance of the Polled Character in Cattle," and other information of

CHAS. S. HATFIELD, Secy.

Route 4, Box 51 Springfield, Ohio

Calf Enemies

WHITE SCOURS BLACKLEG

Your Veterinarian can stamp them out with Cutter's Anti-Calf Scour Serum and Cutter's Germ Free Blackleg Filtrate and Aggressin, or Cutter's Blackleg Pills.

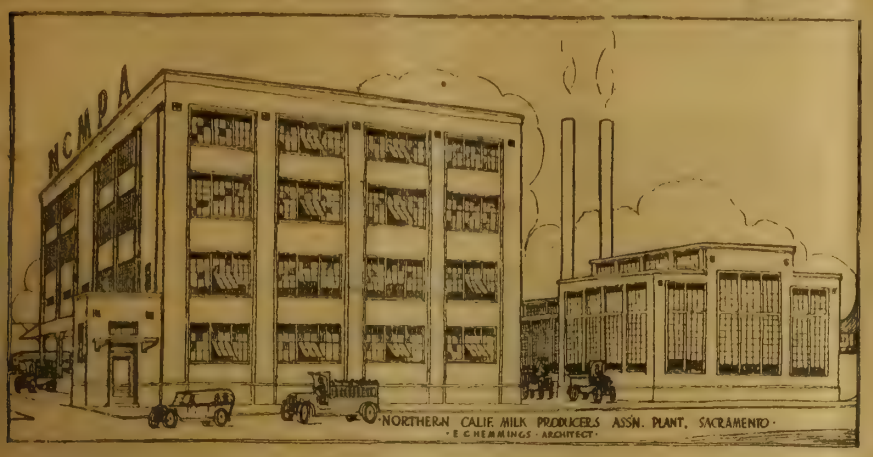
Ask him about them. If he hasn't our literature, write to us for information on these products.

The Cutter Laboratory

Berkeley, Cal., or Chicago, Ill.

"The Laboratory That Knows How"

Plant of No. Calif. Milk Producers' Assn.



The contract for this building, which will cost $125,000, has been let. It will be built in Sacramento and will be owned and operated by the association for the manufacture of butter, cheese, casein, albumen, sugar of milk, condensed milk, etc. It is one of many plants being built, bought, or leased by the units of the Associated Dairymen of California in all parts of the State in order to standardize milk products and prices without permitting too great a spread between producer and consumer.

New Drying Process for Meats

[Written for Pacific Rural Press.]

A new drying process by which meats and fish can be kept indefinitely, and then restored to their former state of freshness by the application of water, has been perfected in the chemical engineering laboratories at Columbia University. It is estimated that this method will increase the world's meat-shipping capacity more than twelve times by doing away with the need for refrigeration.

"During the period of comprehensive tests," a report on the process states, "meats that had been dried and kept a year were restored to their fresh state and served in the homes of professors attached to the laboratory. Three hundred pounds were sent to a camp in the South and served to the soldiers. Reports from the camp state that those who ate the restored meat failed to discover any difference between it and strictly fresh meats."

By this new process all bone, waste fat and connective tissue are removed from the meat or fish to be treated, leaving 100 per cent food. The meat is then cut into cubes, or, in the case of beef, into steaks, placed in a vacuum and subjected to a period of drying at a relatively low temperature. No other treatment is necessary—not even the addition of salt.

Such meat should certainly serve a useful purpose on shipboard, and in lumber and mining camps. It should also serve for armies in war time. But will it satisfy dainty livers, or even prosperous farmers? For instance, suppose me take a carload of fat stock to market, get a whopping big check and hot-foot it for the best restaurant in town. Will we be satisfied with a steak sliced from an animal in pre-historic times, or will we want one from beef that has hung in the cooler just long enough to give it that "tastiness" which makes our mouth water?

The laboratory work on the precess seems to be finished. Now let's see how it works out on a commercial basis. Let's see how the public takes to it.

At the annual dinner of the Chicago Livestock Exchange a committee was appointed to petition Congress for an increase in the appropriation from $500,000 to $1,000,000 to push the campaign against tuberculosis.

98%

Of the World's Creameries use exclusively DE LAVAL CREAM SEPARATORS

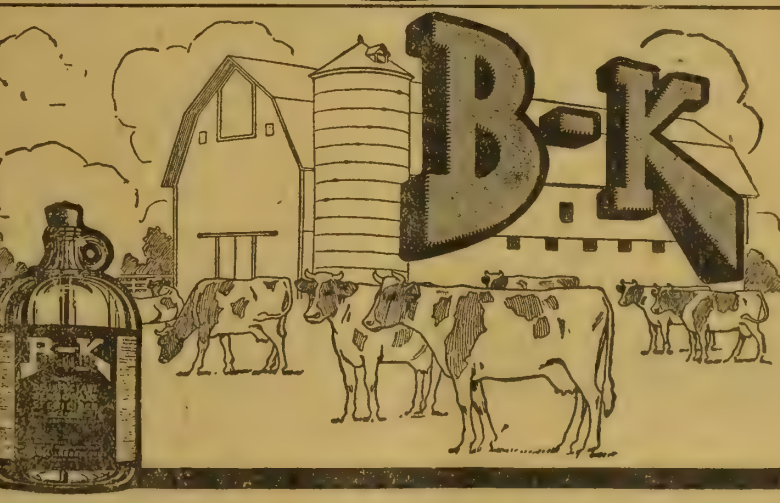
That one fact alone is sufficient reason for your choice of a De Laval.

The creameryman handles millions of pounds of milk and he has found out from experience that no other cream separator will skim so clean or wear so long as the De Laval.

"Claims" don't fool the creameryman. He goes on "performance." Why not you too?

For catalog or any desired information see the local De Laval agent, or write to our nearest office.

De Laval Dairy Supply Co.
61 Beale Street
San Francisco



for Contagious Abortion

Don't sell the aborters. Clean out the infection. Breeding animals are worth more than ever before. Control of Abortion is doubly necessary.

Every time a cow drops a calf—whether alive or dead—by premature birth or aborting, whether the afterbirth is retained or not, her reproductive organs should be flushed out once or twice with B-K. The Abortion infection develops in the uterus and vaginal tract. This infection causes Barrenness, Retention of Afterbirth and Calf Scours in addition to Abortion. Unless checked it is likely to run through your entire herd.

B-K is a powerful non-poisonous antiseptic—scientifically correct for this work. Used as a douche, it dissolves the slimy albuminous matter, kills the germs, stops discharges and controls the infection. B-K is much more effective than lysol, carbolic acid, Lugol's solution, bichloride of mercury and coal tar disinfectants, all of which tend to coagulate or thicken the albumins.

Contagious Abortion is being successfully controlled in many herds by following our simple plan with B-K. A well known breeder of registered stock says:

"I have been using B-K according to directions and the results have been very gratifying. My cows have every one passed the time for aborting and are calving all right in a natural way. I had lost $1,500.00 on my cows and feel that B-K has cleaned up the trouble entirely."

B-K is sold by Dairy and Farm Supply Dealers, General Stores, Druggists, etc. If your dealer does not have it, send us his name.

There are over "145 Farm Uses" for B-K

FREE BULLETINS: Send for our valuable bulletin No. 52. on "Contagious Abortion," also "145 Farm Uses" and our "Trial Offer."

General Laboratories

3443 So. Dickinson Street Madison, Wisconsin



A Healthy AYRSHIRE

This champion three-year-old is a notable example of perfect health. Her yearly record is 15,056 lbs. of milk and 589.2 lbs. of butterfat.

JOIN THE "HEALTHY COW" MOVEMENT

Present-day prices for dairy products are making dairymen everywhere think more about the milk production of their cows.

The "poor-milker" is usually non-productive because of some disorder of the digestive or genital organs that is sapping at her health and strength. Even apparently slight troubles of this nature usually lead to more serious ailments so common among dairy cows, such as Abortion, Retained Afterbirth, Barrenness, Scouring, Bunches, etc.

A sick cow should be treated like a sick person—with medicine that will correct the trouble. Kow-Kure is the most valuable and best known remedy for the prevention or treatment of cow ailments because its medicinal properties act on the organs where disease originates.

There will be no trouble about the milk flow of a healthy cow; keep yours healthy by having KOW-KURE on hand always. Druggists and feed dealers sell it, in 60c. and $1.20 packages.

Free book, "THE HOME COW DOCTOR," is yours for the asking.

DAIRY ASSOCIATION CO.
Lyndonville, Vt.



Livestock and Dairy Notes

Livestock breeders all over the State are invited to send on postal cards, notes regarding their sales, State and County Fair intentions, new stock, etc.

The Dairy.

Thomas Harrison of Santa Rosa is fitting a herd of 12 Milking Shorthorns to show at San Francisco next month.

Fred Hartsook of Lankershim is raising his registered Holstein calves on goats' milk to keep them free from tuberculosis.

Thomas Harrison of Santa Rosa has recently sold a yearling Milking Shorthorn bull, Golden Lad, to W. T. Roberts of Penn Grove.

The California Dairy Association will put up a big fight at Sacramento this winter to stop the use of oleomargarine in State institutions.

The annual Holstein guaranty sale will be held at Sacramento some time in March, under the management of the California Breeders' Sales and Pedigree Company.

President Aitken of the Holstein-Friesian Association of America announces that a French commission is in the United States to purchase 1000 head of purebred Holsteins.

At the dispersal sale of Elliott Bros., held in Waterloo, Ia., last month, 64 head of registered Holsteins sold for an average of $608, with a 13-months-old heifer topping the sale at $1,300. It certainly pays to raise good stock.

Word has been received from Modesto that Lowell Gum, general manager of the California Milk Producers' Association, died of pneumonia which followed an attack of influenza. Mr. Gum was one of the best known creamery men in the State.

Sophie's Agnes, of the Hood Farm herd, Lowell, Mass., has set a new world's record for the Jersey breed by producing 1000.70 pounds of butterfat, thereby breaking the record of 999.14 pounds, held by her granddam, Sophie 19th. She produced 16,212 pounds of milk testing 6.11 per cent. This cow sold in June for $10,099.

Beef Cattle.

Ormondale Company of Redwood City reports the sale of five Shorthorn bull calves to James Flood, Menlo Park.

O. Harris & Sons, the noted Hereford breeders of Harris, Mo., have decided to exhibit at the San Francisco show next month.

The International Shorthorn champion, California Marvel, will be shown by the University Farm at the San Francisco show in February.

During 1918 Warren T. McCray of Orchard Lake Stock Farm, Kentland, Ind., sold 14 Hereford bulls sired by Perfection Fairfax for $73,025, thus averaging $5,217 each.

Swine and Swinemen.

Ormondale Company of Redwood City has sold five Duroc-Jersey pigs to Edgar J. DePue of San Francisco.

During 1918 the Kings County Farm Bureau sold $200,000 worth of hogs at auction and saved the raisers about $21,000.

Twelve carloads of hogs were shipped from Kings county in one day last month. The shipment was valued at over $30,000.

At the recent Farm Bureau auction sale at Wasco the top carload of hogs was purchased by the Western Meat Company of San Francisco at $16.30 per hundred pounds.

F. T. Spoor has established a herd of Chester Whites at Compton. He has brought out some good stuff from the East, including the boar Oliver, from the Benjamin herd of Portland, Mich.

Anchorage Farm, Orland, has sold two Berkshire gilts, bred for spring litters, to George Upham, Martinez. Mr. Upham wanted gilts that would farrow last fall, but was too late, so booked an order for future delivery.

Fred Hartsook of Lankershim has lost his famous Poland-China sow, Big Knox Girl, first prize aged sow and reserve grand champion at Sacramento last fall. Death was due to an injury received while being unloaded at the Liberty Fair.

Five thousand one hundred and five California farmers pledged themselves to keep 21,099 more pigs in 1918, as the result of a campaign carried on by the Farm Bureaus to persuade every member to raise two more pigs than he otherwise would have done.

H. C. Witherow of Live Oak is selling Duroc-Jerseys like hot cakes. His sales for the past week have included two bred gilts to H. F. Bahmeier, Durham; ten bred gilts to R. C. Sexton and Manuel Foster of Live Oak. These gilts are bred to Johnson's Defender Jr. and Monarch Good E. Nuff.

L. C. Trewhitt of Hanford has been appointed business manager of the Kings county unit of the California Farm Bureau Marketing Association. Mr. Trewhitt began his new work on the first of the year, and is devoting his entire time to the business interests of the Kings county farmers in both buying and selling.

At the sale of the American Duroc-Jersey Breeders' Association, held last month at Chicago, the grand champion sow at the International, Brookwater Lass D, owned by Prof. H. W. Mumford of Brookwater Farm, Ann Arbor, Mich., topped the sale at $2,225, this being the record price for an open sow. An average of $428 was made on 55 head. That's going some.

Some time ago we reported that Elmer Lamb of Ceres had sold his entire herd of registered Durocs to Miller & Lux, but he made a later arrangement by which he shipped them 96 head of open gilts and young boars, thus keeping the brood sows, some bred gilts and two aged

MONTELENA HERD
of
Large Yorkshires
Headed by



LAKE PARK KING 25211
Grand Champion Boar—California State Fair, 1917.

Yorkshires have proven themselves, in every way, the breed best adapted to California conditions

Our herd won 21 prizes with 11 entries, including six championships, at Sacramento this year.

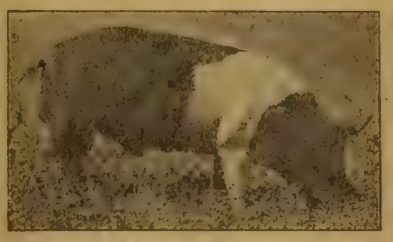
We offer for sale two Junior Yearling Boars, Spring Boars and Gilts, and Fall Pigs, sired by Lake Park King.

Calistoga A. L. TUBBS CO. California



UNEEDA QUEEN MODEL,
Grand Champion State Fair, 1918.

Uneeda Glenn County Herd of
Duroc-Jersey Hogs
KEY HERD OF PACIFIC COAST
Won at Sacramento:
Grand Champion Sow, Senior Champion Sow, Junior Champion Boar, seven Firsts, 23 other prizes.
PIGS BY NOTED SIRES
High Orion, the world's record-breaking sire, Great Wonder, Grand Champion Iowa; King Orion Cherry, First Prize Indiana and Ohio, and other best boars of the breed. Get some of their pigs. Few bred sows and gilts left.
H. P. SLOCUM & SON
WILLOWS, CAL.



DIRECTOR JUNIOR,
Grand Champion.

BOQUET CANYON HERD
HAMPSHIRES
Won Grand Champion on a six-months-old pig—something unusual. Also Reserve Senior Champion Sow, Junior Champion Boar and Reserve Junior Champion Sow.
7 FIRSTS, 6 SECONDS, 4 THIRDS.
We offer choice bred sows and open March gilts that we will breed to any boar in our herd. Also brothers and half-brothers to our Grand Champion boar, Director Junior.
EVERY HOG GUARANTEED TO PLEASE.
L. A. DENKER = Saugus, Cal.

OAK KNOLL FARM
LAKEPORT CALIFORNIA
We have sold all our young boars and are now booking orders for March delivery.
Highlander, the $1,000 Grand Champion Boar, heads our herd of
CHESTER WHITES
SAN FRANCISCO OFFICE, 601 BALBOA BLDG.

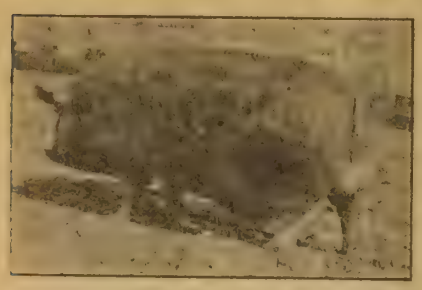


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Sells Stock or Implements, Gets Big Results
1008 Eighth St., Main 431 Sacramento, Cal.

DIGESTER TANKAGE
Send for Sensible folder on feeding hogs
WESTERN MEAT COMPANY
Animal Food Dept. 704 Townsend St., San Francisco

HAUSER'S DIGESTER TANKAGE
Gives Greatest VALUE for LEAST MONEY. IT MAKES THEM FAT.
HAUSER PACKING CO. LOS ANGELES

Grand Champion
BERKSHIRES



AMES RIVAL 70TH

We have in our herd the Grand Champion Boar, Grand Champion Sow and First Prize Senior Herd at State Fair.
Forty-three litters this year averaged ten to the litter. Let us supply you with foundation sows and boars to head your herd.
JAMES MILLS CO.
Hamilton City : : California

SWEETWATER DUROCS
California's Most Popular Big Type Sire.
GREAT MODEL
(By Great Wonder and Model Lady 4th)
M. C. Allen Winsor Ranch, Peters-Lamson
R. M. Allen Bonita San Diego. Co., and Walker

TAMWORTHS
(The Bacon Hog)
Largest Herd in the State
DUROC-JERSEYS
Mature Stock and Weanlings of both sexes. Sure to please.
SWINELAND FARM,
W. O. Pearson, Prop. Woodland, Cal.

boars. The brood sows, a few bred gilts and the herd boars, totaling 21 head, have recently been sold to the Liberty Hog Syndicate of San Francisco. Mr. Lamb has retained for the foundation of a new herd three of his choicest gilts and has purchased the State Fair junior champion sow from J. M. DeVilbiss. To mate with these sows Mr. Lamb has purchased from R. N. Allen, San Diego, a line-bred Golden Model boar, bred by Waltemeyer Bros. of Iowa.

Sheep.

A total of 975 head of bred ewes were brought into Contra Costa county this season through the efforts of the Farm Bureau.

T. S. Glide of Davis has sold 200 head of ewes to the Nissen Company of Esparto. This company owns a large ranch and plans to raise sheep on an extensive scale.

A sheep and wool growers' association has been formed in Imperial Valley to encourage sheep raising. O. N. Shaw is president and C. E. Mundy secretary. Headquarters are at El Centro.

The Lemoore Union High School has organized a sheep club, and the children joining have been furnished bred ewes. They will exhibit these ewes with their lambs at the school fair next fall.

The Government announces that it will take over only such wools of the 1918 clip as were loaded on cars and billed to an approved dealer prior to December 31. Consequently it is now too late for farmers to ship their wool for sale to the Government, and it will have to be sold direct to dealers, as was formerly done.

Livestock Miscellaneous.

Forty-five carloads of stock were shipped from Imperial Valley on the last "livestock shipping day."

The University of California has recently sold the Percheron stallion, Fernand, to the University of Illinois.

The war departments of the United States and France purchased 237,007 horses and 129,385 mules from the time we entered the war to July 15, 1918.

Ed Cebrian of San Francisco, who recently purchased the entire Paicines Ranch herd of Shorthorns for his coast ranch, bought at the Tagus Ranch sale a Percheron stallion and six mares and a Belgian stallion and four mares—all registered.

No class of livestock is found on every farm in the United States. When the last census was taken beef cattle were found on 83.1 per cent of the farms, milch cows on 80.8 per cent, horses on 73.8 per cent, hogs on 68.4 per cent, mules on 29.4 per cent, sheep on 9.6 per cent, goats on 1.3 per cent, chickens on 87.7 per cent, and turkeys on 13.7 per cent.

LIVESTOCK DIRECTORY.

Rate in this directory 3c. per word each issue

SWINE.

Poland-Chinas.

SOW BARGAINS—We are offering some exceptionally nice tried sows, bred and open gilts, at attractive prices. They are all sired by the undefeated and world's grand champion Superba and out of big type sows, which cost me $200 and over. Investigate before buying elsewhere. Rough's Greenfields, Arlington Station, Riverside, Cal.

NOW BOOKING ORDERS for spring pigs either sex, from my prize-winning, large type Poland China hogs. Also will book a few orders for bred gilts, February and March farrow, and a few good, serviceable, aged boars. Hale I. Marsh, Modesto, Cal.

McCARTY'S POLANDS—Cholera immune. Big, vigorous boars. The kind Kansas King sires. Price reasonable. "Money back if no like." Alex D McCarty, 324 Insurance Exchange Building, San Francisco.

THE BEST IN THE WEST—California Gerstdale and President's Equal are my herd sires. Fall and spring boars now ready to move—each one a corker. Dr J A Crawshaw, Hanford, Cal.

GATEWOOD BRED SOW SALE—On January 25 we will sell forty big type sows and gilts bred to King's Big Bone Leader and Giant Bob. Chas Gatewood & Son, Route 3 Fresno, Cal.

BIG TYPE POLAND-CHINAS—Young serviceable boars and spring weanlings from my best sows and Blucher, an exceptionally good boar. P. E. Mitchell, Atwater Cal.

WEANLING PIGS, both sexes, Gerstdale Jones and Caldwell's Big Bob blood lines. Booking orders for spring. Forest View Ranch, Paradise, Cal.

ELDERSLY FARM—Big type Poland Chinas with quality. Young stock from the breed's best big type sires for sale at reasonable prices. J. H. Ware, Live Oak, Cal.

OXBONE HERD offers March boars for sale from King's Big Bone Leader, grand champion at State Fair, 1918. Write F. E. Fay, Tipton, Cal.

10 SOWS and daughters of Big Bone Bob and I. B. A. Wonder sows for sale. Price right. N. K. Horan, Lockeford, Cal.

REGISTERED POLAND-CHINA SWINE—Prize winners. Finest stock in the State. $20 up. M. Bassett, Hanford, Cal.

BIG TYPE POLAND-CHINAS—Stock from the best herds of the Middle West. N. Hauck, Alton, Humboldt county, Cal.

20 HEAD of Big Bone Bob, Grand Model and I. B. A. Wonder Stock for sale. J. W. Wakefield, Acampo, Cal.

LAKE SIDE STOCK FARM—60 first-class gilts and a few boars from 6 to 8 months old. Geo. V. Beckman & Sons, Lodi, Cal.

POLAND-CHINA PIGS WITH RIBBONS. Prices right. Johnnie Glusing, Winton, Cal.

REAOAKS RANCH herd of registered Poland-Chinas. W. J. Hanna, Gilroy.

POLAND-CHINA PIGS — Bernstein, Trewhitt, and Ross blood. B. M. Hargis, Tulare.

Berkshires.

CASTLEVIEW GIANT TYPE BERKSHIRES are the thrifty, typey, quick-growing kind that will make larger profits for you. Prizes and Championship honors are awarded—by the greatest judges in America—only to animals possessing the essential qualities for economical meat production, viz.: heavy bone, good feet, broad strong backs, large hams and easy feeding qualities. Our grand champion herd includes Riverby Princess, grand champion sow of the world; Rookwood Lady 100th, 1917 grand champion of America; Mayfield Laurel 15th, 1917 grand champion of California. Bred sows, bred gilts and fine weaned pigs for sale. **Castleview Ranch** **Santa Rosa, Cal.**

MONEY-MAKING BERKSHIRES—The prolific, easy-feeding kind that make the highest priced pork from the lowest priced feed. They will increase your profits. Prices reasonable; satisfaction guaranteed. Write for free booklet, describing our world's reserve champion, Star Leader. Anchorage Farm, Orland, Cal.

BERKSHIRES—GUERNSEYS
GRAPE WILD FARMS
A few fall boars left, by Royal Superbus; also a limited number of fall gilts. We have early spring pigs of both sexes, and we are breeding some top gilts for fall farrow. Prices upon application. A. B. Humphrey, Escalon, San Joaquin county, Cal.

$25.00—$35.00—$50.00
BARON DUKE 201ST
Omaha Grand National Champion
BOAR PIGS: 3, 5, and 6 months old, from 650-pound prize-winning sows. We will sell nothing that we wouldn't use ourselves.
SANDERCOCK LAND CO.
906 K St., Sacramento.
In charge of Natomas Land sales.

BERKSHIRE BOARS—Some exceptionally good young prospects, from weanlings to serviceable age. Write or call and see us. Our prices and class of stock will interest you. R. J. Merrill & Son, Morgan Hill, Cal.

CROLEY'S BALANCED HOG FEED—The cheapest feed to fatten hogs. Write Geo. H. Croley Co., Inc., Livestock Supplies, 8th and Townsend streets, San Francisco.

MAPLEWOODE RANCH, Calistoga, Cal., offer some fine Berkshire fall and spring pigs of both sexes. Prices consistent with quality and breeding.

CASTLEVIEW BERKSHRIES are the typey, modern, quick-growing kind, choicest blood lines. Prices reasonable. Castleview Ranch, Berkshires exclusively, Santa Rosa.

BERKSHIRES IN PERRIS — They make money for me. Write for catalogue and prices. F. L. Hall, Perris, Cal.

BERKSHIRES—Sired by Star Leader, the $1,500 boar. Kounias Registered Stock Farm, Modesto.

FOR REAL GOOD BERKSHIRES write Frank B. Anderson, B. 724W, Sacramento, Cal.

HOPLAND STOCK FARM—Registered Berkshires. Prices on application. Hopland, Cal

CARRUTHERS FARMS BERKSHIRES—Cholera immune. Live Oak, Cal.

BERKSHIRES—Fair Oaks Ranch, Willits, California

Chester Whites.

"BILLIKEN" CHESTER WHITES — How about the spring farrows? Are you going to use a good board and produce some growthy smooth pigs? If so, you need one of my yearling boars and I have but 3 left. Yearling gilts bred for March farrow. Have but 6 of these left for December delivery. A few fall weaned pigs. C. B. Cunningham, Mills, Cal.

Duroc-Jerseys.

DUROC-JERSEYS AT IRELAND—Home of Cherry Volunteer II. Grand Champion Boar at Riverside. Ireland's Orion Defender and Orion's King of Ireland are excellent sires in service. Booking orders for spring delivery. Ranch at Owensmouth. City office, 1219 Brockman Bldg., Los Angeles.

THE JOHNSON HERD of Duroc-Jerseys. Spring gilts and boars, sons and daughters of Johnson's Defender, the 1917 junior champion for sale. Weaned boar pigs, $25. Frederick M. Johnson, Napa, Cal.

WE WON MORE MONEY on Durocs at the State Fair than any other exhibitor. Why not buy some of this winning stock? June Acres Stock Farm, Davis, Cal.

Splendid Dairy Opportunity

Have one of the best dairy propositions in California FOR LEASE OR SALE on long-term payment. Located within three-quarters of a mile of rail shipping point. One hundred acres of alfalfa; modern buildings, etc. For further information address

Frank A. Guernsey

STOCKTON, CALIFORNIA

DUROCS—Orion C. King blood. Very typey boars ready for service. Some gilts and boars 4 months, from 800-pound junior yearling sows, same blood. Something worth while. Prices reasonable. Also one junior yearling champion sow. Will be bred for second litter this week. Garden City Sanitarium, San Jose, Cal.

OPEN GILTS and two extra good service boars, one year old, grandsons of Taxpayer 13th. F. W. Gardiner, Rt. 4, Box 735, Sacramento.

DUROC-JERSEYS OF THE BIG TYPE—Cholera immune. Reasonable prices. Derryfield Farm, Odd Fellows Building, Sacramento.

HEAVY-BONED DUROCS—A few service boars for sale. Ormondale Co., Route 1, Redwood City, Cal.

A FEW CHOICE BRED GILTS, spring boars and gilts of the best blood lines. H. P. Slocum & Sons, Willows.

WE ARE CONSIGNING to Tulare sale an Advancer sow bred to Chief Defender. McDowell & Kendall, Lemoore.

WEANLING PIGS for sale, by a son of the grand champion of 1917. Jack Borge, Los Banos.

DUROC-JERSEYS—Weanlings of either sex ready for immediate delivery. H. E. Boudier, Napa.

REGISTERED DUROCS — All from prize-winning stock. W. P. Harkey, Gridley, Cal.

DUROCS—University Wonder and Advancer breeding. McDowell & Kendall, Lemoore.

Hampshires.

MY HAMPSHIRES are money makers. Stock for sale. Buy now. L. A. Denker, Saugus, Cal.

Yorkshires.

LARGE YORKSHIRES—The ideal hog for the progressive farmer. Young stock for sale. A. L. Tubbs Co., Calistoga, Cal.

DAIRY CATTLE.

Holsteins.

STRAIGHT, deep bodied sons of Finderne Soldene Valdessa (whose dam and sire's dam are both world's record holders) and of Segis Pontiac Acme, from 30-lb. dams. Toyon Farm Association, First National Bank Bldg., San Jose, Cal.

HIGH-CLASS HOLSTEINS—I have for sale some sons of Sir Veeman Korndyke Pontiac from A. R. O. dams. Write for particulars or come see them. R. F. Guerin, Visalia, Cal.

REGISTERED HOLSTEINS—Sires in service, Prince Butter Boy, King Mead of Riverside, and Yolo Valdessa Hengerveld. J. H. Harlan Co., Woodland, Cal.

FANCY GRADE HOLSTEIN COWS and heifers from herd testing 100 per cent. Animals qualified for certified dairies. The Lewis Company, San Jose.

THE McCLOUD RIVER LUMBER CO., McCloud, Cal.—High-class thoroughbred Holstein bulls for sale. Write for prices and pedigrees.

BREEDERS OF REGISTERED HOLSTEIN cattle and Berkshire pigs. Whittier State School, Whittier, Cal.

PALO ALTO STOCK FARM, Palo Alto, breeders of registered Holsteins. Heifers and service bulls. Reasonable prices.

GLORIETTA STOCK FARM, WOODLAND, CAL.—Registered Holsteins. Special offering of fine heifers and young bulls.

REGISTERED HOLSTEIN BULLS with world's record backing. Kounias' Registered Stock Farm, Modesto.

CREAMCUP HERD — Registered Holsteins, Pontiac bull calves. M. Holdridge, Rt. A, B. 437, San Jose, Calif.

F. H. STENZEL, SAN LORENZO, CAL.—Breeder of Registered Holsteins. High test producers.

REGISTERED HOLSTEINS—A. W. Morris & Sons Corp., Importers and Breeders, Woodland, Cal.

REGISTERED HOLSTEINS—Best blood lines of the breed. R. L. Holmes, Modesto, Cal.

SUNNYBROOK RANCH, Willits, Cal. — Registered Holstein-Friesian bulls for sale.

GOTSHALL & MAGRUDER — Breeders of registered Holstein-Friesians. Ripon, Cal.

BREEDERS OF REGISTERED HOLSTEIN cattle. McAllister & Sons, Chino, Cal.

CHOICE HOLSTEIN bulls for sale. No females. Millbrae Dairy, Millbrae, Cal

HOLSTEIN BULLS and bull calves from A. R. O. cows. C. A. Miller, Ripon.

REGISTERED HOLSTEIN CATTLE—E. E. Freeman, Route B, Modesto, Cal.

HENGERVELD DE KOL BLOOD. High producers. T. B. King, Visalia.

EL DORADO HERD OF HOLSTEINS—Alex Whaley, Tulare, Cal

Jerseys.

FOR SALE—Young registered Jersey bull. Sire, Valet's Peter of L. Dam Rebekah's Foxy Girl. O. J. Ames, Oakdale, Cal

SUNSHINE FARM JERSEYS—Tuberculin tested. Production counts. E. E. Greenough, Merced

REGISTERED JERSEYS—Young bulls and bull calves. T. B. Parsons, Petaluma, Cal

YOUNG BULLS from Register of Merit cows. W. G. Gurnett, Orland, Cal

Guernseys.

EDGEMOOR FARM GUERNSEYS — Proved in the show ring and in official records. Few animals of either sex for sale. Edgemoor Farm, Santee, Cal.

HIDDEN VALLEY FARM offers for sale 2 young Guernsey bulls, ready for service, out of high record advanced register dams. A. J. Welch, proprietor, Redwood City.

CLAREMONT GUERNSEYS—Young bulls of serviceable age from A. R. dams. L. D. Smith, 333 Vicente Road, Berkeley.

PALO ALTO STOCK FARM, Palo Alto—Breeders of registered Guernseys; both sexes; prices reasonable.

Ayrshires.

NORABEL FARM AYRSHIRES—Purebred young stock for sale at reasonable prices. Le Baron Estate Company, Valley Ford, Cal.

AYRSHIRES—Registered; all ages. E. B. McFarland, 412 Claus Spreckels Building, San Francisco.

MILKING SHORTHORNS.

BREEDERS OF REGISTERED SHORThorns—Milk strain; choice young stock for sale. John Lynch Ranch, Box 321, Petaluma.

INNISFAIL DAIRY SHORTHORNS—Registered young bulls for sale. Alexander & Kellogg, Suisun, Cal.

BEEF CATTLE.

AM A SPECIALIST in registered beef cattle and familiar with the best herds in the country. If you need Shorthorns or Herefords, make use of my experience, save money and be satisfied. R. M. Dunlap, Hotel Land, Sacramento.

ALAMO HERD REGISTERED HEREFORDS (founded by Governor Sparks). Herd and range bulls. Reasonable prices. W. D. Duke, Likely, Modoc county, Cal.

REGISTERED MILK AND BEEF SHORThorns, bulls and heifers for sale; catalogue free. Thomas Harrison, Santa Rosa Stock Farm, Santa Rosa, Cal.

REGISTERED YEARLING SHORTHORN Bulls—Heavy-boned, thick-meated Scotch and Scotch-topped breeding. Ormondale Co., Route 1, Redwood City, Cal.

RANCHO SAN JULIAN SHORTHORNS—Purebred range bulls, unregistered, for sale. Estate Thos. B. Dibblee, Santa Barbara or Lompoc, Cal. John Troup, Supt.

THE NEVADA HEREFORD RANCH, Jno. H. Cazier & Son Co., props., Wells, Nevada. Registered Hereford cattle. Breeding stock for sale.

REG. SHORTHORNS—Calves and yearlings for sale, both sexes; reds and roans. Choice Goods breeding. Fair Oaks Ranch, Willits, Cal.

JACK LONDON RANCH—Breeders of prize-winning beef Shorthorns. Glen Ellen, Cal. Eliza Shepard, Supt.

HOPLAND STOCK FARM—Registered Shorthorns. Prices on application. Hopland, Cal.

REGISTERED HEREFORDS—H. H. Gable, Diamond G Ranch, Esparto, Cal.

SIMON NEWMAN CO., breeders of Registered Herefords, Newman, Cal.

GEORGE CALLAHAN, Breeder of registered Herefords, Milton, Cal.

GEORGE WATTERSON—Breeder Registered Herefords, Bishop, Cal.

HEREFORDS—Mission Hereford Farm, Mission San Jose, Cal.

SHORTHORNS — Carruthers Farms, Live Oak, Cal.

SHEEP AND GOATS.

F. A. MECHAM ESTATE, Petaluma, Cal.—Breeders and importers of Shropshire, Rambouillets and American Merinos, both sexes. Also Red Polled cattle. Take electric car at Petaluma or Santa Rosa for Live Oak Ranch.

DORSETS AND ROMNEYS — Dorset ram lambs for sale. John E. Marble, South Pasadena, Cal.

BISHOP BROS., SAN RAMON, CAL.—Breeders and importers Shropshires.

KAUPKE BROS., WOODLAND, CAL.—Breeders, importers of Hampshire sheep

CHAS. KIMBLE—Breeder and importer of Rambouillets, Hanford, Cal

CALLA GROVE FARM, MANTECA, Cal.—Breeders and importers of Hampshire sheep

FOR SALE—Nine hundred high bred lambs J. A. Youngreen, Orland, Cal

HORSES AND MULES.

FOR SALE—Fine young Jack from imported stock. Raised right. C. E. Ruggles, Esparto, Cal.

MISCELLANEOUS.

BUTTE CITY RANCH—Shorthorns, Shropshires Berkshires and Shetland ponies. Write for prices and descriptions before buying. Butte City Ranch, Box P, Butte City, Glenn county, Cal. W. T. Dwyer and W. S. Gutheil owners

DAIRY HERD FOR SALE—70 head of choice cows and bred heifers; also some younger heifers and heifer calves. Nearly all high grade Holsteins. Also one fine registered Holstein bull. Address Box 1250, Pacific Rural Press.

MULE FOOT HOGS, large type, booking orders for spring litters. These are the economical easy feeding profit producing kind. H. P. Bexley, Box 37, Lodi, California. "The Pig Corner."

CROLEY'S BALANCED DAIRY FEED—The cheap milk producer and Croley's Calf Meal, the best California calf raiser. Geo. H. Croley Co. Inc. Eighth and Townsend streets, San Francisco, Cal.

POLLED JERSEY breeders names etc. see advertisement on Jersey page

State Cattlemen Develop Speed

[Written for Pacific Rural Press.]

Of momentous importance to the cattle industry of the State was the first meeting of the newly created board of directors of the California Cattlemen's Association, held at the Palace Hotel, San Francisco, December 21. The realization of the service rendered by L. A. Nares during the past year in the organization of the cattlemen inspired his unanimous re-election for the ensuing year, while David J. Stollery was continued in office as secretary.

Matters for legislative action were fully discussed, and endorsement was given to the following proposed measures: A pure-feed law, which provides for analysis labels on concentrated cattle feeds; a pure-seed law; a revision of the fence laws; a law for the use of purebred bulls on open ranges; and a modification of the vehicle act, which now prevents moving livestock on public highways at night.

It will be remembered that during 1918 the national parks in California were thrown open to the use of the cattlemen, this privilege having been granted as a war emergency only, as a result of conditions brought about by the drought. However, the demand for increased production to supplement the depleted herds of Europe makes it necessary for cattlemen to have access to all the grazing areas possible, and a committee of three was appointed at this meeting to fully investigate the situation before drafting a resolution thereon. The sentiment of the directors was very strongly against any enlargement of the national parks, as it was felt that the area of the present parks, which consist of upwards of a million acres, is ample and that the withdrawal of the suggested 90,000 acres from the Forest Reserve could certainly serve no useful purpose.

In order that the activities of the association may be given full scope, an executive committee was appointed comprising one director from each of the five zones, as follows: Zone 1, M. D. Lack, Redding; zone 2, Frank Gordon, Suisun; zone 3, Howard Jack, Parkfield; zone 4, J. W. Guiberson, Corcoran; zone 5, Harry Jones, Brawley.

The question of improved marketing facilities, and other problems of the cattle industry needing solution, are in the hands of a most representative group of cattlemen elected by popular vote to mold the affairs of the industry, consisting of the following named directors:

Zone 1—M. D. Lack, Redding; J. B. Parker, Callahan; N. V. Wemple, Milford; J. H. Boyce, Weaverville; P. E. Dorris, Alturas.

Zone 2—S. C. Doran, Oroville; Frank Gordon, Suisun; T. H. Ramsay, Red Bluff; J. D. Granlees, Slough House; Will Russ, Eureka.

Zone 3—Howard Jack, Parkfield; E. G. Rodolph, San Francisco; John Bryan, Hollister; J. McGlinchey, Livermore; C. E. Hebert, Salinas.

Zone 4—J. W. Guiberson, Corcoran; Stephen M. Pate, Le Grand; A. S. Goode, Bakersfield; Louis Frankenheimer, Stockton; L. A. Nares, Fresno.

Zone 5—O. B. Fuller, Los Angeles; Fred H. Bixby, Long Beach; James Sloan, Lompoc; Frank Butler, Bishop; Harry Jones, Brawley.

Speeding Up Pork Production

[Written for Pacific Rural Press by Frank B. Anderson, Sacramento.]

Pork production in California needs to be speeded up, according to the announcement of the Federal Food Administration, and in order to insure a greater pig crop for the new year an attempt will be made at a conference of food officials, hog growers and packers to be held at the office of the Administration, Lachman building, 417 Market street, San Francisco, on January 10 and 11, to reach an agreement for a minimum price on pigs of 1919 farrow, which will run throughout the year and until the fall pigs of this year are marketed in 1920.

President C. B. Cunningham of the California Swine Breeders' Association, and member of the Livestock Commission of the U. S. Food Administration, has sent out invitations to attend this conference to his association directors, packers, farm advisors in the counties that have been conducting car lot auction sales, and several big individual hog raisers, so that it will be a truly representative meeting of the various interests.

Notwithstanding the shortage in packer hogs that will confront California for the next six months and which will naturally assure the growers a good price, it is feared that many farmers will not become fully aware of the situation until it is too late. So this means will be taken to let producers know in advance that the price will not drop below a fixed minimum. With this security California should make an extra effort to grow out a big pig crop during the year just beginning.

In reaching a minimum price it will be for all pigs farrowed during the year 1919, just as the agreement made last January called for pigs of 1918 farrow, although many growers were of the opinion that it was a price on all porkers sold during the year. It was not until the 1918 spring pigs began to reach the markets that the full effect of this agreement was felt.

This ruling was made quite plain to the producers of market hogs during the close of the past year and the present month as well on account of the fixed price of not less than 16½ cents a pound for packer hogs at terminal points during these two months, this being 1 cent under the Chicago minimum.

Hog growers in close touch with the pork situation in this State look for a decided increase in price during the next six months, and Mr. Cunningham ventures as far as to predict that the California price will easily reach the Chicago figures and may go higher, due entirely to the natural regulation of supply and demand.

Having the advantage of the attendance of hog men, Mr. Cunningham has called a special session of dairy, beef cattle, hog, poultry and sheep growers to be held at the Palace Hotel on the evening of January 10 for the discussion of the pure-feed bill that will go before the State Legislature just convening. It is the purpose of this bill to compel manufacturers of commercial feedstuffs to state on the outside of the container just what the ingredients consist of and their digestible feed value.

Three million dollars an hour was paid to the farmers of the country for livestock used for meat purposes during November. Hogs brought more than $37,000,000 in the Chicago market alone. Although shipments are from 10 to 15 per cent above normal, livestock experts declare that the farmers are now receiving more than twice as much for their hogs as before the war and that the price of cattle and sheep also has increased enormously as compared with pre-war figures.

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Wm. Cox, Herdsman. Raymond S. Husted, Vice-Pres. Gen. Mgr.

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Three outstanding under-a-year bulls sired by Sir Type, a son of Cumberlands Type.
A few under-a-year heifers of same breeding.
Also registered Berkshires of both sexes of best breeding.

H. L. & E. H. MURPHY Perkins, Sacramento Co., Cal.



Champion Ram, P P I. E.

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WINNINGS P. P. I. E., 1915

Aged Ram, First and Second. Yearling Ram, First. Ram Lamb, First, Second, and Third. Champion Ram. Yearling Ewe, Second. Ewe Lamb, Second and Third. Get of sire, First. Pen of three Lambs, bred by Exhibitor, First and Fourth. Pen of Four Rams, bred by Exhibitor, First and Fourth. Flock, any age, Second. Flock, any age, bred by Exhibitor, Second. Flock, one year old, First. Flock, one year old, bred by Exhibitor, First. Flock under one year, First. Flock under one year, bred by Exhibitor, First. Produce of Ewe, First, Second and Third. Premier Championship for Breeder. Premier Championship for Exhibitor. A total, including American Shropshire Specials, of 15 Firsts, 9 Seconds, and 6 Championships.

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Livestock Queries

Sow Has Intestinal Catarrh.

To the Editor: I have a young sow that was given half a bucket of ripe tomatoes that had been in the hot sun. The following day she acted as though she had been poisoned. We gave her salts and castor oil and in a few days she seemed to be all right. But, although she acts as though she is very hungry, she refuses to eat anything more than a little green stuff. She seems somewhat bloated. What is the matter and what can I do for her?—Mrs. N. W. S., Fairfield.

[Answered by Dr. E. J. Creely, San Francisco.]

An emetic consisting of 15 grains of hellibore thoroughly dissolved in 2 ounces of warm water should have been given when she was first taken sick, followed in four hours by 10 grains of calomel. Eight hours later a full dose of castor oil or sulphate of magnesia should have been given. The treatment now is to give a full dose of castor oil and give her for several days large quantities of flaxseed tea, made by boiling whole flaxseed in water, and when cold give one cup of the tea three times daily. Give small quantities of food often rather than to give a large amount. I would suggest enemas of normal salt solution—a teaspoon of salt to 1 pint of luke-warm water. Inject 1 gallon per rectum once daily for several days. Watch the feces for slime and worms. Give a tablespoon of Phillips' Milk of Magnesia and 10 drops of turpentine once daily for several days and report progress in ten days. The food should be fine—not too rich, but nutritious.

Treating Bloat in Sheep.

To the Editor: Should the trocar be used for bloat in sheep? If not, what treatment should be used?—J. J. S., Jenny Lind.

[Answered by Livestock Editor.]

The trocar doesn't work as satisfactorily for sheep as for cows and should be used only as a last resort. If you keep cows, one of the best remedies for bloat in sheep is a half pint of milk right fresh from the cow. Have it just as warm as possible—natural animal heat—and give to the sheep by means of a drenching bottle. If this does not stop groaning and stretching in a short time, give another half pint. Be careful not to choke the sheep when dosing it. The value of this treatment is that the warm milk right from the cow's udder seems to absorb the gas. A leading authority recommends three tablespoons of raw linseed oil and one teaspoon of turpentine. He also recommends tying a stick in the sheep's mouth, holding up the head, standing astride the sheep and gently pressing the body with the knees so as to expel the gas.

Width for Cow Stalls.

To the Editor: I am building a new dairy barn and would like to know how much space should be allowed for each cow?—L. E. W., El Centro.

[Answered by Livestock Editor.]

The standard width of a cow stall is 3½ feet. When Jerseys or smaller animals are kept, the allowance is sometimes cut down to about 3 feet, but it is not advisable to do this, as you may change breeds or may want to sell your place and the new owner may want to keep larger cows. Even if you have a mixed herd and the cows are of different sizes, it is best to maintain the standard width for all.

Horse Probably Has Glanders.

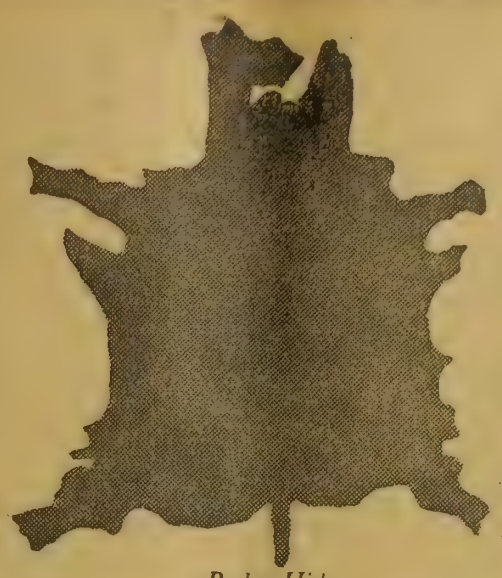
To the Editor: I have an old horse that has a running at the nose. If it is worked, the nose sometimes bleeds and at other times a sort of mucus comes. Can you prescribe a remedy?—Mrs. A. D., Anaheim.

[Answered by Dr. E. J. Creely, San Francisco.]

I believe that the horse has glanders and you should verify this at once by having an examination made by the county veterinarian, for which no charge will be made.



Country Hide


Packer Hide

Good hides make your cattle worth more money

Leather tanners are very careful about the hides they buy.

They want hides that are as nearly perfect as possible — hides that are without cuts and scores, and that are properly cured.

There are two classes of hides on the market—"country hides" and "packer hides."

Country hides are those taken off by small butchers and farmers. Packer hides are those taken off by the packers.

* * *

To take a hide off correctly is not easy. Unless great skill is used the hide will be marred by cuts and scores.

The packers have made a careful study of hides. They have trained experts who do nothing else but take them off. Hence, packer hides have few cuts and scores, and are uniformly and properly cured.

Swift & Company sorts its cured hides into grades or classes, according to quality and to the purposes for which they are best adapted.

Some country hides are good; others are very poor.

They usually have cuts and scores and are not cured so well. Some have also begun to deteriorate because of being held too long. Besides, they cannot be graded so uniformly. In the same batch there are both good and poor hides.

Because of this superiority of packer hides, tanners pay from two to five cents a pound more for them. If country hides were as good, tanners would gladly pay an equal price.

This increased value of packer hides means that you get for your cattle from $1 to $3 or more per head, additional.

Swift & Company does not deal in country hides at all, and has no interest in their purchase or sale. It is the hide dealers and tanners who notice the difference in quality, and pay accordingly.

Swift & Company uses skill in taking off hides, not because it wants to see country hides bring lower prices—but because it is part of its policy to produce articles of the highest quality.

* * *

This is only one way the packer has increased the value of your cattle. Many other by-products have been improved in a similar way.

Swift & Company is constantly on the lookout for new ways to improve the value of its products, and hence to make your cattle worth more money to you.

When Swift & Company says that its profit on beef averages ¼ of a cent a pound, this includes the profit from the sale of hides.

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My Fall shipment of stallions has arrived. These horses were personally selected by me in the best breeding districts of Iowa, Illinois, and Indiana. Two, three, and four-year-olds that will weigh a ton or over.

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Correspondence invited and visitors always welcome.

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Poultry for Profit

[Written for Pacific Rural Press by Susan Swaysgood, Pomona.]

SPRAYING VERSUS PAINTING FOR MITES.

Painting the woodwork with a good insecticide will always be effective in getting rid of mites, when the mites are confined to low buildings. When the buildings are high and the mites are lodged in every nook and cranny, also in the ground, painting with a brush would be an impossibility.

One of our readers writes his experience with a full cargo of mites in Philo coops, saying: "I painted inside and out with crude carbolic and distillate." This is a number one article to either spray or paint with, but to spray with this, on a large scale, would be a very costly affair, with the price of crude carbolic up as high as it is. Years ago I used the pure carbolic crystals and water, which is the cleanest, surest and nicest of all sprays, but I had only one poultry house to spray, and a pint bottle of crystals could be bought at that time for 60 cents. When it happened that I had fifteen or twenty houses to spray, it was an entirely different matter, even with crystals at 60 cents a pint.

HIGH RIVER WATER BRINGS MITES.

This is why I am writing on this subject. Our reader, whose letter has been mislaid, appears to think that his recipe would be a more practical one than the kerosene emulsion which I told an inquirer to use who stated that the mites had simply taken possession of the ranch. Economy must be practised in these matters or the cure will be as costly as the disease. I have seen mites take possession of a place after high water in the Russian river. I had set about a dozen Plymouth Rock hens in a house on a creek bank. The house had been whitewashed with fresh lime and a bottle of carbolic crystals added for effect. The hens were old sitters. So, with nice clean nests in a clean house, plenty of fresh water and feed to their hand and a partition between each hen, in order to avoid mistakes or squabbles, I did not worry when a high water came up one day and kept me from going to my hens. When the water went down I boated across the creek and to my surprise every hen was off the nest and the eggs cold. Unless my boy had suggested mites, I should have blamed the hens without once dreaming of the cause. At first I scoffed at the idea, but, sitting down on the steps outside the house, I saw the ground all alive as the sun came out. They had been washed down with the high water and lodged in and around that house.

HOW THEY WERE DISLODGED.

I could not very well paint all that side of the creek and I needed that isolated house for my sitting room, so I made a pot of good coal oil emulsion, put a pint bottle of crystals in it and went to work. In a week I had them all wiped up and my nests made again for the next batch of hens. But, as I say, carbolic in any form is almost out of reach, so we have to substitute. Concentrated lye is cheap and effective, but hard on the spray pump and the user, for if just a little gets in the eye it is very painful. Coal oil emulsion is a very old and reliable as well as cheap insecticide. Good live lime is hard to beat, but it leaves a scale for the mites that escape the first spray to hide under, and as the lime gets dryer and harder more mites hide behind it than stay on the perches or walls. For a clean white spray for woodwork in the interior of poultry houses or barns, I like Carbola best of all. It does not leave any scale, like lime, it works fine in a spray, does not clog and is very effective.

BREEDS OF POULTRY.

(Continued.)

THE ASIATICS.

This group consists of Brahmas, dark and light; Cochins of all colors, buff, partridge, black and white. The dark Brahma is a beautifully penciled bird and is not very much in evidence on this Coast, though the light Brahma is making many favorites in the south. The Langshans, both black and white, belong to this group. The peculiar or characteristic features of this group of fowls is that all, without exception, have feathered legs. The feathers should extend to the second toe and the more feathers the better. They, too, like the American breeds, all have red ear-lobes and all lay a large brown egg.

Weight of standard bred birds for light Brahma: Cock, 12 pounds; cockerel, 10 pounds; hen, 9½ pounds; pullet, 8 pounds.

Dark Brahma: Cock, 11 pounds; cockerel, 9 pounds; hen, 8½ pounds; pullet, 8 pounds.

Cochins: Cock, 11 pounds; cockerel, 9 pounds; hen, 9½ pounds; pullet, 7 pounds.

Langshans: Cock, 9½ pounds; cockerel, 8 pounds; hen, 7½ pounds; pullet, 7 pounds.

As these breeds are very heavily feathered and the feathers are loose and fluffy, the birds have the appearance of being much larger and heavier than they are. As a matter of fact, the light Brahma does not attain the natural weight on this Coast, no matter how well she is fed and cared for, until two years of age. This must be a climatic cause, for I have raised these birds first in England nearly fifty years ago, again in Dakota thirty years ago, and here in Southern California, but they do not reach the weight here that they do in Dakota, with her short seasons, so there is no other way of accounting for the lack of weight than climatic causes. The birds are healthy, eat well and lay well, but they don't make the weight.

LAMPS TO MAKE HENS PAY.

Gasoline mantle lamps are believed by C. E. Andressen of Yuba county to be responsible for a marked increase in daily egg yield pullets, after one of the lights was installed last November. Two others were installed two weeks later. He used kerosene lanterns the winter previous; but they did not give enough light. About Christmas Mr. Andressen was getting 170 eggs per day from 175 old hens and 300 pullets, while neighbors with flocks from the same stock were getting a much lower percentage.

Lamps were lighted and hung up at 4:30 a. m. in the scratching shed, which was open to the roosting section and is well littered with straw. Sprouted barley was thrown into the litter at once and the chickens would come off the roosts. In the evening, before roosting time, the lamps were lighted again and left there until 7:30 p. m., when most of the chickens had quit scratching. The evening lamp-light feed, given at 6 p. m., was about 10 quarts of shelled Indian corn, which is large enough for them to see. A quart of gasoline runs about 15 hours, making lights cost about $1 per month. Mr. Andressen thinks it pays well.

SPROUTED BARLEY EQUALS WHEAT.

The feed system is quite elaborate and carefully handled. It includes about 65 pounds of grain per day, besides a composite dry mash, which is kept before the pullets in self-feeders. Greens are scarce here in fall and early winter, and there is little advantage in free range for the hens, so they are kept in the house except for an hour's run every evening, when they find a little filaree. Alfalfa was planted for 1918 greens in a patch 100 feet square; but previously sprouted barley supplied the need. Barley was the principal grain used, and it was all sprouted. There was no slackening in egg production when the change was made from wheat to sprouted barley. The latter, however, is not considered a good growing feed, though it equals wheat for layers.

SPROUTING THE BARLEY.

A sack of barley made two days' feed with some left over. It was dumped into a barrel loose and soaked 24 hours or more. Thence it was put into four wash tubs with holes punched in their bottoms for drainage. Each tub of grain was covered with a sack and they were all stacked up. Twice per day a bucket of water was thrown into the top tub. It dripped down through all the rest, so the grain did not get too warm to sprout. Two days of this sprouted the barley nicely. Besides the morning feed, some of this was given to the pullets with oats at 10 a. m.; and the rest of the day's barley feed was given to hens and pullets at 4 p. m.

OTHER FEEDS.

Old horses were occasionally bought for their hides and the meat was boiled in a big kettle outdoors and fed to the chickens two or three times per week. Shell is kept before them all the time.

The mash consisted of the following, by weight: 16 pounds bran, 8 alfalfa, 12 middlings, 6 cottonseed meal, 6 meat scrap, 2½ bone, 2½ coarse beach sand, 1 charcoal, and ½ salt. This made about 2.5 parts digestible carbohydrates to one part protein. More weight of grain was used per day than mash. If they were eaten equally, the ratio between carbohydrates and protein would be about 4.5 to 1, as figured by George H. Croley. With more grain than mash, the fowls get a little wider ration.

FRESH WATER.

Fresh water was provided and kept clean by letting it drip from a barrel into a trough alongside the house, where chickens must reach through woven wire to get it.

DOES THE WORK HIMSELF.

All the work was done by Mr. Andressen and his wife, besides raising 10 acres of wheat, 37 of oats, 100 of barley, and caring for 500 young olive trees.

LEG WEAKNESS.

To the Editor: My Barred Rocks have developed leg weakness and seem to mope around all day. Later on they twist their heads back, hold the bill vertically, and seem to have trouble in breathing. They are fed corn and have unlimited range on green grass. What is the trouble and the remedy?—W. B. C., Live Oak.

Leg weakness in grown fowl is usually the result of feeding a starchy diet, but when offset with a grass run this should not injure your flock. Turning the head back indicates poison. If you could, confine the hens a few days while looking up the trouble, which is likely to be some moldy grain in the field. Give the hens half a teaspoonful of tincture of nux vomica in a quart of water and let them have no other water to drink for a few days. For those with legs too weak to stand give them five to ten drops in a little water with a medicine dropper or teaspoon and rub the legs with tincture of arnica.

ASPERGILLOSIS, NOT LIMBER-NECK.

To the Editor: I lost in two or three days about 26 hens. My veterinary told me that it was limberneck. At the same time one pig took sick and he said it was the same trouble. But the pig eats all right. The veterinary told me the cause was the feeding of corn that was slightly frozen and moldy.—M. S., San Francisco.

This is a case of aspergillosis, not limberneck. The veterinary was right about cooking the corn. However, cooking would be sure to kill it. Soaking in a strong solution of bluestone would do it, too, but you would have to spread it out to dry or the bluestone would be too strong for the chickens. After drying it would not hurt them.

Given the same care and feed, purebred fowls make a greater profit than mongrels.



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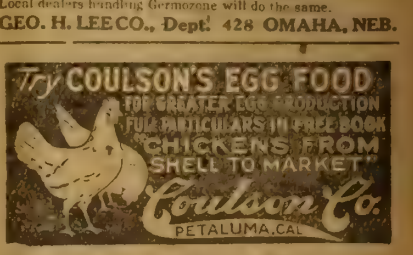
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Poultry-Keepers' Chance to Make Money

Well-selected hens or pullets that are given the right attention in care and feeding, together with good winter quarters, stand a good chance of making a real record in profits this winter. Feeds are gradually going down in price, and eggs are up. At least three square feet of floor space should be allowed each hen and the poultry house should be kept dry and well ventilated. Only clean grains should be fed and they should be mixed to afford a variety. The mash which is made up of ground grains, including equal parts of same, also bran and middlings, should contain 20 to 25 per cent beef scraps.

Second Thousand **ANSWERED QUESTIONS** Postpaid $1.50

IN CALIFORNIA AGRICULTURE

PACIFIC RURAL PRESS, Publisher

525 MARKET STREET SAN FRANCISCO, CAL.

Agricultural Notes

Seedbeds for about 1000 acres of cannery tomatoes around Keyes, Stanislaus county, are now being prepared.

Ten thousand sacks of Yolo county rice were recently shipped to San Francisco to be trans-shipped to Porto Rico.

The Sperry Flour Co. reported, December 21, that they had sold 14,000,000 pounds of wheat for seeding purposes.

Several Russian families have come to Sutter county to raise sugar beets near Meridian for the Alameda Beet Sugar Co.

What is said to be the northernmost college of agriculture in the world is the one whose building is just being completed at Fairbanks, Alaska.

Field corn grown for seed in California turned out very good and netted the growers about $2 per bushel, according to a well-known seedsman.

Rice recently threshed has been so moist, due to the weather, that it could not be graded in the fields, but is being graded on arrival at the mills.

A Sudan grass seed sprouted and stooled into about 100 stems which grew about eight feet tall and were exhibited at the State Fair last September.

Some rice in the Sacramento Valley is showing 18 to 20 per cent moisture, whereas it cannot be milled until it is dried to about 12 per cent or less.

The Lodi cannery, which has recently closed a season's run on tomatoes and pumpkins, plans at once to install equipment for handling spinach and fruit.

A thousand acres can be plowed in the peat land of the San Joaquin delta and the plowshares would still be sharp, according to J. D. Happy of the Brack Tract.

Military camps in Southern California expect to use nearly 1,000,000 pounds of potatoes in January. About 55,000 pounds of onions also have been bought for January.

Packers are now permitted to sell to other markets the 45 per cent of canned tomatoes which were reserved for Government use; or they may deliver to the Government if they prefer.

Vetch planted with grain does not bloom soon enough to seed before harvest. Therefore, it leaves more nitrogen in the soil; for if seed were formed much of the nitrogen would be taken out for them.

The Farmers' Union of Tulare county has already sold 24,000 sacks of wheat for seed as against 4000 last year. Many growers who used their own seed last year are buying this season. The acreage is greatly increased.

Prof. R. L. Adams of the University of California, who has been in charge of investigations chiefly of farm labor during a year or more past, has been called to Washington to become acting director of the Office of Farm Management of the U. S. Department of Agriculture.

Delta potatoes may be safely left in well-drained ground until May if they have been well ripened by frost, according to a well-known San Francisco potato dealer. But many potatoes injured by rain would rot in the ground. A Sacramento dealer says it is unsafe to leave island potatoes in the ground after New Year's.

IMPORTANT TO DECIDUOUS FRUIT MEN.

An important conference took place at Hilgard Hall, University of California, on December 30, comprising the committee of growers on deciduous fruit experiments and the agricultural committee from the State University board of regents.

A full discussion of the needs of the growers was entered into and a list of the outstanding needs of the growers outlined and agreed upon for all varieties, including grapes. Following is the list: (1) Orchard surveys, (2) modification of structure, (3) irrigation of old orchards, (4) water requirements and reaction of deciduous fruits, (5) control of orchard diseases, (6) control of pear blight, (7) control of injurious orchard insects, (8) investigation and application of insecticides and fungicides, (9) land equipment and management, (10) a test of root stocks, (11) pruning investigation and demonstration, (12) dried fruit investigation, (13) fruit storage investigation, (14) frost protection, (15) utilization of wine grapes and culls, (16) diseases of the vine, (17) demonstration of viticultural methods.

THE COLD SNAP AND CITRUS FRUIT.

The temperatures in Los Angeles and the adjacent citrus growing sections these frosty nights have ranged from 24 to 34 degrees, according to locations and conditions. Up to January 1 growers said that the loss, except of young lemons, was nominal. Heavy protective smudging has been the order of the night.

A CORRECTION.

In the statistical exhibit published in the Pacific Rural Press of December 28, page 709, setting forth the value of the per capita production of the farm population, an inadvertence occurs in the figures of production and value of oranges for 1917-18. These figures should read: Production, 7,958,248 boxes; value (on an estimated average of $3 per box), $23,874,744. The 1916-17 production of oranges is estimated at 46,447, or about 18,393,012 boxes.

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THE MISSION HATCHERY.
The utility breeds that pay the best—our White, Brown, and Buff Leghorns, R. I. Reds, Barred and White Rocks, Black Minoreas. Our breeding stock is good, selected for laying qualities; chicks hatched right and priced right. If interested in poultry for profit, write for circular, it's free and should interest you. The Mission Hatchery, Box 17, Campbell, Cal.

HALF BOOKED on chicks to April, last year's prices. Our 200-290-egg Brown, Buff, White Leghorns; Barred, White Rocks; Reds; Anconas; Minorcas; Wyandottes; Orpingtons; Ducks, clearing customers $5 each yearly. Many repeat orders. 40,000 capacity. Hatcheries full now. Valuable 1919 circular ready. Few pullets, cockerels, hens. J. Beeson, Pasadena, Cal.

BABY CHICKS—We specialize this season on money making White Leghorns—hatching from stock with high records that are unimpeachable. Also Brown Leghorns, Anconas, Minorcas, Rocks, Reds, Orpingtons, and White Wyandottes. Especially interesting circular with price list ready January 1st. B. W. Archibald, Soquel, Santa Cruz Co., Cal.

PEERLESS WHITE WYANDOTTES—Our 200-egg strain, bred for years for show qualities and high egg production. 50 cockerels, 100 pullets for sale. Trios and mated yards. Eggs for hatching. Catalogue free. J. W. Atkinson, Box B, 130 Willard St., San Jose, Cal.

BABY CHIX R. I. REDS
My specialty. Bred for eggs, size, color. Hens on free range means strong chix. 17c. each; 16c in 1000 lots. Denton Poultry Yards, Box 360, Campbell, Cal.

EASTERN BRED Mammoth Bronze Turkeys. Being sure my birds will give the usual satisfaction, I guarantee them to be as I represent. If not return at once. C. O. D. R. M. Dodge, Stafford Farm, R. D. 2, Box 129, Bakersfield, Cal.

BABY CHICKS—Ready in January. Order early and get the date you want. White and Brown Leghorns, Black Minorcas, R. I. Reds, Barred Rocks. Safe delivery guaranteed. Write for circular. Stubbs Poultry Ranch and Hatchery, Palo Alto, Calif.

BRONZE TURKEYS—Young toms and hens for sale; also yearling hens. Order breeding toms now and have them shipped when wanted. Eggs in season. Albert M. Hart, Clements, Cal.

PRUSSIAN HILL POULTRY RANCH.
A few more fine Andalusian and Minorca cockerels at $3 each, or two for $5. Eggs for hatching at $2 for 15. Geo. I. Wright, Mokelumne Hill, Cal.

RHODE ISLAND RED CHIX or eggs from our Hoganized standard and utility breeding combined. Prices no higher than ordinary stock. Buff Orpington eggs or chix from prize winners. Munier Poultry Yards and Hatchery, Cupertino, Cal.

BABY CHICKS—Hatched from our own stock in our own hatchery. Hens are of S. C. White Leghorn utility stock, bred for commercial laying. H. A. George, Route 2, Box 29, Petaluma.

BARRED PLYMOUTH ROCKS—Winners at leading shows and wonderful layers. Choice stock for sale. "Nothing better in poultry." Catalog free. Chas. H. Vodden, Box 396, Los Gatos, Cal.

MODEL POULTRY FARM—White Leghorn specialists. Our fifteenth year. Baby chix and hatching eggs for sale. Also first-class breeding cockerels. Our prices are right. W. C. Smith, Prop., Corning, Cal.

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MAMMOTH BRONZE show and breeding toms. Big, heavy-boned, good color. Eastern blood. $10 and $15. H. G. Stevenson, Jr., Winters, Cal.

WHITE LEGHORN BABY CHIX from heavy laying (Hoganized) stock, $15 per 100. We guarantee safe arrival. The Pioneer Hatchery, 408 Sixth street, Petaluma, Cal.

EASTMAN'S BRED-TO-LAY Hoganized and trapnested Barred Plymouth Rocks. January chicks. Eggs. Cockerels. Fairmead Poultry Farm, Fairmead, Cal.

BABY CHICKS (White Leghorns) shipped on approval before remitting. No weak ones charged for. Schellville Hatchery, Schellville, Cal.

MAMMOTH BRONZE TURKEY TOMS and hens for sale. Order now before prices advance. Also Collie dogs for herding. John G. Mee, St. Helena, Cal.

CHOICE S. C. B. MINORCAS—Cockerels for sale. Also eggs for hatching. Mrs. J. W. Moore, Exeter, Cal. Box 446.

FOR SALE—MAMMOTH BRONZE TURKEYS—The best in the West. Geo. A. Smith & Son, Corcoran, Cal.

BUFF ORPINGTONS, BUFF DUCKS, BOURBON RED TURKEYS—The Ferris Ranch, R. 2, B. 144D, Pomona, Cal.

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DON'T FAIL to order now if you want early chicks from our Hoganized S. C. White Leghorns. Tupman Poultry Farm, Ceres, Cal.

FOR SALE—One Mandy Lee incubator, large size, $25. E. V. Elick, Alpaugh, Cal.

CHICKENS, DUCKS, GEESE, GUINEAS, Pea Fowl, Pigeons. Wm. A. French, 545 W. Park St., Stockton, Cal. Stamps.

PLACE ORDERS EARLY for chicks with the Madera Hatchery, Madera, Cal.

Write for our Illustrated Circular
"SHIP EGGS WITHOUT BREAKING."
Tells how to get more for your selected eggs
Diamond Box Mfg. Co., Minneapolis, Minn.

California Hog Book

"The Hog Dictionary"

Following is a letter received from W. F. Sandercock, carrying a fine endorsement of the "California Hog Book." Perhaps this book would be of equal value to you.

December 13, 1918.

Pacific Rural Press:

Gentlemen: I have thoroughly enjoyed and have derived much benefit from the California Hog Book, written by Mr. W. S. Guilford. I think it is the most thorough book I have ever read and we are using it on the Natomario Rancho as a "Hog Dictionary."

SANDERCOCK LAND CO.

The California Hog Book contains 250 pages, is fully illustrated, bound in cloth, price $2 postpaid.

PACIFIC RURAL PRESS
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525 Market St. San Francisco

Make Poultry Pay

One of our subscribers was completely disgusted with poultry raising. Every morning forty of his hens would brag about what they were going to do, but at night he would find that only about eight had laid. The rest had simply lied.

So he bought a copy of our poultry book and in less than two weeks his hens had quit lying and gone to laying. They were shelling out enough extra eggs to pay for the book in less than two days.

California Poultry Practice Tells How

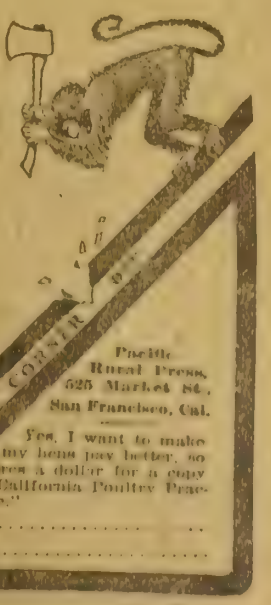
This great book will do as much for you. It was written by a Californian for Californians. The author, Mrs. Susan Swaysgood, after years of successful experience, has succeeded in showing the farmer how to make poultry raising more profitable. She knows what to tell and how to tell it. She deals out hard-headed poultry sense and still has every paragraph full of snap and sparkle.

The book deals with actual conditions—not theories—and covers every phase of the industry. It gives advice about location, buildings, equipment, choice of breeds, best way to begin, how to select stock, etc. There are valuable instructions for incubating, brooding, culling, feeding, breeding for heavy laying, showing, treating diseases, marketing products, etc. You will find everything necessary to insure your success.

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Never was there a better time to take up poultry raising in earnest. The nation's supply of meat animals is not keeping pace with the increase in population, and the people must turn to poultry raisers for nitrogenous foods. Eggs will be the cheapest concentrates, and table fowls the cheapest meat.

A golden market awaits all poultry products here on the coast, where we don't even produce enough to supply the local demand. As a government expert puts it: "The Pacific Coast offers a wider and more inviting field for future development in poultry raising than any other section of the United States."



Costs Only a Dollar

But play safe. Start right by getting this book and following the methods which have already proved successful. It will cost you only a dollar; you would not sell it for ten.

Send Coupon Today

THE HOME CIRCLE

THE NEED.

The touch of human hands
That is the boon we ask;
For groping, day by day,
Along the stony way,
We need the comrade heart
That understands,
And the warmth, the living warmth,
Of human hands.

The touch of human hands;
Not vain, unthinking words,
Nor that cold charity
Which shuns our misery;
We seek a loyal friend
Who understands,
And the warmth, the pulsing warmth,
Of human hands.

The touch of human hands—
Such care as was in Him
Who walked in Galilee
Beside the silver sea;
We need a patient guide
Who understands,
And the warmth, the loving warmth,
Of human hands.

—Thomas Curtis Clerk.

TEN MINUTES.

Aunt Emma and her daughter Mary, about eighteen, are sitting on the long front veranda of a large, old-fashioned Southern house. Vines clamber over the ends of the veranda and shrubs and flowers hug its basement. Long, broad steps lead down to the graveled walk which stretches away under the shade of a double row of carefully trimmed cedar trees to a white picket gate. Mary embroiders pink roses on a green cloth. Scattered bits of rose-colored thread cling in pretty contrast to her white dress. It is early spring and long transverse shadows throw themselves across the lawn to the east; the afternoon is waning. Aunt Emma, of the real mother type and perhaps sixty, wearing a becoming mocha-colored silk gown, has closed her book. Her kindly face wears a thoughtful but rather dubious expression as she turns to her youthful daughter. Evidently she and Mary have been conversing.

Aunt Emma resumes as if in reiteration and to emphasize some conviction. Mary's attitude is that of one who disagrees.

Aunt Emma: No, mark me, Mary dear, Cad will never marry. When a woman is thirty and rejects, actually rejects, such 'men as Robert Bonner and Frank Graces, and won't ever be civil to him when she thinks a man is going to propose, you may be very sure, dearier, that she is absolutely estranged from all the natural instincts of womanhood. I cannot understand Cad—such eyes and such a voice, both full of love—but evidently unawakened. She was made to be adored—and yet she——

Mary (biting a rosy thread): But, mother (persuasively), you know Caddie is very ambitious. She has talent undoubtedly, and she says if she should marry, no matter how worthy or fine the man, it would take from her individuality, and, of course, disarrange all her plans for a career. She has always intended to be different from ordinary women.

Aunt Emma (quickly): Pshaw! A career! What does a career amount to after all, dear? Nothing can fill the life of a woman like home and children (with an air of absolute knowledge). She is first an emotional being, intended to love and to be loved, and to respond to natural law just as any other creature. Why should her powers for normal happiness as wife and mother lie dormant simply because she has a talent, say—for talking?

Mary (viewing her stitches with a pleading look): Yet, motherest, Caddie is something more than a mere animal. She has a beautiful mind. Shouldn't it be developed? Her mentality far surpasses that of any of the men who hover about her, except—perhaps—Carter's (rips out some of the stitches—frowns). But Carter, of course, wouldn't be considered, as he is Caddie's cousin (blows away the broken threads—smiles). He and Cousin Caddie are always playing pranks on her sweethearts, too, and he always seems happy when she has discarded a new one.

Aunt Emma: O, Carter is sly. He wants Cad himself. They are both brilliant minds, but Cad's career (sarcastically) wouldn't permit her to be a mother to Carter's two boys (with increased sarcasm). Her individuality would undoubtedly be lost in the undertaking, as two worse little scamps never existed. Poor children (reflectively). But, then, Cad evidently intends to remain single, and as to her being more than a mere animal, I say again that the career of motherhood, however humble the environment, deserves more of the myrtle than that of the woman who leaves behind her the exquisite joy of human companionship and climbs to some superficial height, where looking down makes her lonely instead of happy. (The dusk of evening has come.) But, there is Caddie now. Who is that with her, can you see, dearie?

Mary: It is Carter, mother. Caddie went over to the library to look up some data for a biological essay she is preparing and no doubt stopped in Carter's office afterwards. (Musingly.) It does seem that Carter is attracting Caddie even without her knowing it. They do look well together, too. I wonder——

Carter and Cad approach—Carter medium height, hair turning gray, eyes gray, with heavy black brows and lashes, decidedly handsome and forty: Cad tall, dark, intellectual, thirty, but looking younger; both faces glowing—Cad defiant, Carter suave. They reach the veranda. Cad stoops to pick violets by the steps.

Carter (shaking hands with Mary and Aunt Emma): Hello, Mary mine. How do you do, Aunt Emma? I found Caddie in the library and thought I had better bring her home. She was turning her back on that delightful Albert Hosmer to investigate a musty old book on biology. What do you think of that? Hosmer is not a day over forty, and handsome and rich.

Cad walks quickly up the steps and into the house.

Aunt Emma: O, we all know Cad. She is determined to remain a spinster. She has been as my own daughter for the last ten years and I know at least six men who have proposed during that time, only to be rejected by her. But how are you, Carter, and how are the little boys?

Carter: Everything is fine with me, Aunt Emma, and the boys are as happy as little orphans can be. They ride, fish——

Cad (returning to door): Carter, come into the library, will you, please, and read what I have written? (her tones are conciliatory and the look of defiance has given way to a certain triumphant look. Matrimony apparently is of no interest to her just now).

Carter (following her, looking rather baffled): Certainly, Caddie. Pray excuse me, Aunt Emma. Mary, be good (twinkling at Mary).

Mary (rising): Shall we not go in, too, mother? Dinner must be ready. (Goes in.)

Aunt Emma: Yes, dearie (stands looking thoughtfully out into the deepening dusk). How James would grieve to know that Cad ignores his old friend's son. There are few men like Alfred. What can Cad mean? She is gifted, yet what are talents, attainments, careers, if the crowning of all is not happiness? And there is no real happiness where no human bond exists. To be alone is to enjoy less, to suffer more. How Cad misinterprets life! (Sighing, goes into house.)

Cad and Carter returning to veranda.

Carter (positively): But, Caddie——

Cad (more positively): But, Carter——

Carter: Caddie (peremptorily), listen this time and the last time. My vain repetitions of the last ten minutes make me contemptible to myself. You are absolutely abnormal, cold, selfish. Think of the men you have discarded right and left. You have done this until it has become mere pastime for you. Now (forcibly), dare you let me go this time?

Cad (almost frightened): O, Carter, I——

Carter (emphatically and ignoring Cad's cowering tones): Shall I put the boys in a boarding school and rent the place, or (metrically—eyes piercing Cad, who feels their stab and can barely recover an attitude of indifference) shall I—sow turnips?

Cad (gives a helpless clutch at the violets at her belt, tosses her head at last and looks directly down the walk; says nothing).

Carter (after one minute): Well, I'm off for Australia, Cad. Goodbye. (Walks quickly to gate, opens it, turns, lifts his hat to the statuesque Cad and strides away.)

One second elapses.

Cad (wildly—suddenly changed into throbbing life): Carter, Carter, sow turnips!

Curtain.

—Bertha Borussi.

NEW YORK CHICAGO SAN FRANCISCO

The Original NUCOA NUT BUTTER

BUTTERS BREAD—STAYS SWEET



CHURNED FROM NUTS AND MILK
FREE FROM ANIMAL FATS

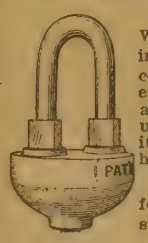
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MEMORIES



Pleasing recollections mark this, the passing of our third mile stone. While sure after long extended experiment, that in "The Simplest Thing in the World" we had indeed solved the long baffling problem of perfect combustion, and that in the "Premier" we had a burner of limitless enduring quality, the real assurance of this state of perfection did not arrive until near the end of the first year, when the good word of the users brought its effect. The second year was even greater—and now it has become an ever increasing Gibraltar, on which rock the business has been built.

If this interests you—the story of clean heat and economy—write for our circular "B," ask for drawing of complete installation and give size, style, and number of your stove.

The Burner is $5.00 Complete Installation $9.85

One burner for medium sized cook stove or average heater. Two burners for large cook stove or kitchen range.

Details, price list of standard fittings—all desired information yours for the asking.

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Federal Farm Loans

Long Term *Low Rate*

All loans made on an amortization plan whereby the borrower repays the principal gradually with each interest payment.

Over three thousand satisfied borrowers in this district. It will pay you to investigate.

For information apply to the nearest National Farm Loan Association or write direct to

Federal Land Bank of Berkeley
Berkeley, Cal.

MAKING LIFE EASIER FOR THE FARM MOTHER.

This is the tractor age, not only for the farmer himself but for his wife. Alongside of professional farming comes business-like home-keeping, and the wide-awake farm mother does not lag behind her husband in finding out how her end of the partnership may be accomplished with the least expenditure of labor and discomfort on her part. Her energies must necessarily be distributed over numerous matters of house and home, so it behooves her to practice economics throughout, watching every chance to eliminate wastage of time and labor.

The saving of labor particularly is the means by which life may be made easier for the farm mother, and this saving is her right. Any modern convenience or appliance which will lighten the burdens and lessen the steps of her daily routine should be within her reach and she should grasp them by all means. As a first aid to her comfort, the construction of the house should be considered. Simple built-in features will help to change the weary treadmill of housework into a pleasing occupation and by their handiness save both time and labor.

For instance, in one modern farm house, built to practical ideals, what appeared to be a chimney seat was really a wood box and ashes chute combined. The seat was on the right-hand side of the chimney, filling the space between it and the wall. In the end of the seat next the chimney was the zinc-lined chute through which the ashes were shoveled into a receptacle on the outside of the house. The remainder of the box was utilized for the logs, which were loaded into it from the outside through a hanging door nicely camouflaged in the weather-boarding. This novel arrangement provided a saving both in cleaning and in steps. Another convenience in this home was a splendid ironing board, which stood hidden in a panel in the kitchen. When it was to be used, the panel opened automatically upon pressing a simple device, the board descending at the same time to the floor, all ready for the iron. No lifting or strenuous adjusting was necessary. When the ironing was done, by lifting the board to a slight angle it resumed its place within the panel. Still another convenience noted in the same house was a contrivance something like a dumb waiter from kitchen to cellar. Things to store were sent down, while the return trip brought up things for present use, a saving of heavy armloads and numerous journeys up and down steps for the busy farm mother.

SALT TOWEL BATH.

Prepare a brine strong enough to float an egg in which soak a good Turkish towel, not too large. When thoroughly saturated with the brine, hang on line without wringing. When dry, rub body briskly, beginning at the calves of the legs, rubbing across back of body and upward to the neck, then the front of body, beginning with ankles and up to throat, finishing with arms, which should be rubbed from the back to the front. This excellent tonic bath produces a most delightful glow over the whole body and makes one feel like running a race. It is especially recommended where the shock of the cold plunge is too great for the constitution or a hot bath is weakening.

CARE FOR EXPENSIVE SHOES.

People who know insist that shoes wear much longer if worn alternately, rather than to wear one pair until they are gone.

Shoes should never be put away dirty—they should be cleaned and polished and put in pockets on a wall or door, if no shoe trees are available. Throwing them on the floor causes them to lose their shape.

White shoes should be well cleaned, rubbed with chalk and wrapped in tissue paper before putting away. Light colored shoes that have become very soiled, may be dyed either black or brown and will be much improved.

Wet shoes should be carefully dried, not too close to a direct heat and if they seem stiff, rubbed well with oil.

THE FIRST THIMBLE.

There is a tradition that a Dutch silversmith pondered over a certain notion which he had cherished long and silently in the slow-working senses which he deemed his brain—a notion for a trinket, a fallal, for a dignified lady of Holland. It must be a useful trinket, albeit a costly one, meet for so good a seamstress as Dame Alixe Van Rensselaer. When the notion took definite shape the thing was quickly wrought in precious metal by fingers as deft as the brain was slow; and the industrious housewife proudly wore not only her first thimble, but the first thimble possessed by any Dutch frau.—Alice Moore Earle.

A small boy entered the office of a doctor the other day, and, on catching sight of the doctor, he whispered quietly into his ear:

"Please, sir, mother wants to know is measles catching?"

"Tell your mother of course they are," replied the doctor.

The boy, not being satisfied with this, exclaimed:

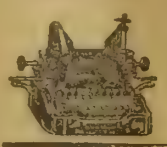
"Please, sir, mother wants to know what you will give her to spread 'em around the town? My sister's got 'em awful."

The following letter is a rare example: "My Darling Peggy: I met you last night, and you never came! I'll meet you again tonight, whether you come or whether you stay away. If I'm there first, sure I'll write my name on the gate to tell you of it; and, if it's you that's first, why rub it out, darling, and no one will be the wiser. I'll never fail to be at the trystin'-place, Peggy; for, faith, I can't keep away from the spot where you are, whether you're there or whether you're not. Your own Mike."

Most things go to the buyer; but the coal goes to the cellar.

WAS $100—NOW $57

Here is the famous Oliver Typewriter offering you a saving of $43. The $57 Oliver is our identical $100 model, brand new, never used. Not second-hand nor rebuilt. The same as used by many of the biggest concerns. Over 700,000 sold. We send an Oliver for Free Trial. Not one cent down. If you want to keep it, pay us at the rate of $3 per month until the $57 is paid. This is the greatest typewriter bargain in the world.



Write today for our new book, "The Typewriter on the Farm."

The Oliver Typewriter Co.
3791 Oliver Typewriter Bldg.
Chicago, Ill. (11.07)

Service BARKER BROS. LOS ANGELES, CAL. Quality Value BARKER BROS. LOS ANGELES, CAL. Service

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A Furniture Catalog Picturing Hundreds and Hundreds of Articles Direct from Actual Photographs.

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Repairs all injuries to inner tubes large or small. Sold in two sizes:

No. 1—30 square inches
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Firestone Cementless Tube Patches, Firestone Cure Cut, Firestone Hook-On and Lace-On Boots and the Firestone Blow-Out Patches are other Firestone Tire Accessories which every motorist should carry as travel insurance.

These big helps in little troubles save expense and unnecessary road delays.

If your dealer is not supplied ask him to order direct or through his jobber.

FIRESTONE TIRE AND RUBBER COMPANY
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World's Largest Manufacturers of Tire Accessories and Repair Materials.

Market Comment

Price Fixing Under Surveillance.

It is officially announced, in answer to what may happen to war-time price-fixing when the War Industries Board went out of existence at the close of 1918, that "concentrated price-fixing by any industry after the Government ceases to exercise price control January 1 will be regarded by the Department of Justice as in restraint of free competition. The attitude of the Department of Justice, as outlined by Attorney-General Gregory, is that the anti-trust laws will be enforced vigorously by the department. They have been in full effect throughout the war, but the department has not regarded the action of industry in maintaining prices fixed by the Government as contrary to law."

Anent Removal of Sugar Restrictions.

Some inquiries have been made relative to reasons for removing restrictions on the use of sugar. The Food Administration explains that while some of the Atlantic States still lack a plentiful supply of sugar, it is a fact that with the Cuban crop soon due we have a large surplus of Western beet sugar and Louisiana cane sugar, and therefore it is permissible to return to the normal use of sugar wherever it is available.

Citrus Freight Rates Too High.

The existing freight rates on California citrus fruits is being made the subject of a protest by the California Fruit Growers' Exchange. The rate is now $1.44 per cwt. on oranges and $1.25 on lemons. This rate went into effect last June and added 28½ cents per box to oranges and lemons shipped East. The Interstate Commerce Commission will be petitioned to afford relief.

Butter Manufacturers' Margin.

A new license regulation of the Food Administration says that the manufacturer of butter must not sell butter at an advance over the cost of butterfat necessary to produce a pound of butter of more than 5c per pound of butter, except on sales through branch houses or sales to retailers in less than car lots.

Japan Gets California Cotton.

The Los Angeles Chamber of Commerce is authority for the statement that one-half the 1918 crop of California cotton has been bought up by Japan. Extensive installation of machinery for the manufacture of cotton fabrics have been made there within the last year or two.

Xmas Dividend for Raisin Growers.

A dividend of 8 per cent on the stock of the California Associated Raisin Co. has been distributed to the 3000 stockholders, or thereabouts, scattered throughout the raisin belt, mostly growers.

Horse and Mule Demobilization.

Nearly 45,000 "surplus" horses and mules will be auctioned in camps and cantonments on the four Tuesdays in January, it is announced This "horse power" demobilization is expected to help the spring plowing.

Low-Weight Butter Prints Released

The Butter and Cheese Section of the Food Administration has repealed Special Rule 5, which prohibited the manufacture and sale of prints of butter weighing less than one pound on and after January 1, 1919.

England Welcomes American Apples.

A consignment of nearly 30,000 boxes of American apples recently exported to England brought top figure. It is believed that heavy shipments will follow to appease the apple hunger of that country.

1919 Tomato Contracts.

It is rumored that canners are already contracting with tomato growers on a basis of $20 per ton, which was the price at which most of the crop went in 1918.

Restrictions on Bean Trading Lifted.

With the exception of the general rules prohibiting speculation and profiteering, all rules covering transactions in beans by bean dealers have been rescinded.

THE MARKET REPORTS

Where commodities are consigned on a commission basis, the only price obtainable is the San Francisco price, from which customary charges are deducted to ascertain actual price paid to producer. Lines of commodities sold on exchanges, as butter, eggs, cheese, grain, etc., are priced according to exchange figures, which are not the prices paid to grower. From these figures must be deducted the legal percentages permitted to be taken by wholesalers before remitting balance of sale price to shippers. Schedules of discounts governing these transactions may be obtained from the offices of the Food Administration or of various exchanges.

SAN FRANCISCO

San Francisco, December 31, 1918.

WHEAT.

ANNOUNCEMENT.

The following are the prices announced by the Federal Grain Corporation, which are still in effect:

Per bushel	
No. 1 hard	$2.20
No. 2	2.17
No. 3	2.13
No. 1 soft	2.18
No 2	2.15
No. 3	2.11
Club or Sonora, No. 1	2.16
do, No. 2	2.13
do, No. 3	2.09
Recleaned for seed, per ctl.—	
California Bluestem	$4.15@4.25
Early Baart	4.15@4.25

BARLEY.

There is a firmer tone to the barley market, although there is no change in quotations. It is reported that some bottoms for barley shipments have been secured and that more are promised in the near future. There is no activity on the exchange and no sales reported there.

Choice feed, per ctl	$2.17½@2.22½

OATS.

Oats continue unchanged. However, if a demand develops in barley sufficient to advance the price it is expected that oats will move upward sympathetically. No one is willing to make predictions as to the probable course of the market during the early months of the coming year.

Red feed, per ctl	$2.40@2.55
Red for seed	2.75@2.95
Black for seed	2.80@3.00
Recleaned Red or Black for seed	3.35@3.50

CORN.

There was no buying of corn during the past week, but a small demand may develop after the first of the year among those whose stocks have been allowed to run down to a low ebb during the period of stock taking. Quotations are nominally unchanged.

Egyptian, choice	$2.75@3.00
Milo	2.70@2.75

HAY.

Receipts of hay for the past week were 573 tons, compared with 775 the previous week. Such reduction in receipts is always looked for during the holiday season. Trade has been practically nominal during the week, no one even looking for hay. Even with the small arrivals, there has been more than enough to meet all requirements. What little trading that has taken place has been at prices made by the buyers and in most cases they have not been made public. The present is not the time to consign hay to this market, as shippers are likely to be disappointed in the results. It is generally believed that after the first of the year business conditions will improve as they have in all preceding years.

Wheat, No. 1	$22.00@24.00
do, No. 2	16.00@20.00
Choice tame oat	21.00@23.50
Wild oat	16.00@18.00
Barley	16.00@18.00
Alfalfa	14.00@18.00
Stock	14.00@17.00
Barley straw	.50@ .80

FEEDSTUFFS.

Rolled barley is somewhat stiffer in response to the firmer tone in the whole grain. Mill run is becoming more plentiful and is quoted somewhat lower. Bran is again on the market, the price being from $35 to $36. Otherwise there are no changes in the market, which on the whole is very quiet.

New alfalfa meal, per ton	$35.00@36.00
Coconut cake or meal	45.00@47.00
Whole yellow corn	77.00@80.00
Cracked corn	80.00@82.00
Linseed Oilcake Meal	77.00@78.00
Rolled barley	46.00@48.00
Rolled oats	55.00@57.00
Mill run	35.00@36.00
Bran	35.00@36.00
Fish meal per 100 lbs	4.80@ 5.00

BEANS.

The Government entered the bean market this week as the purchaser of 100,000 sacks. However, the supply is so large that this considerable purchase did not make a ripple. Garbanzos developed some strength during the week, but cranberries and whites, both large and small, showed weakness and sold at lower prices. The quotations on other descriptions remain as last week.

Bayos, per clt	$7.25@7.50
Blackeyes, new crop	5.50@5.75
Cranberry beans	7.60@7.75
Limas (south, recleaned), new crop	$10.25
Pinks	$6.65@6.75
Mexican Reds	$6.75@7.00
Tepary beans	5.00@5.50
Garbanzos	9.25@9.40
Large whites, new crop	8.10@8.25
Small whites, new crop	8.90@9.10

POTATOES, ONIONS, ETC.

Potatoes on the bank are weak, with little demand. A better market is looked for about the middle of January, but at present the market is dead. There are no more onions on the bank and quotations are now made on warehouse stock. While these prices are somewhat higher than those quoted on the bank, there is no real strength in the onion market. Garlic is held very strong and the price on the best has been advanced to 35 cents. There is not much lettuce on the market and the price was advanced to $3 per crate for choice. Most of the vegetable market is very quiet and no other changes of importance are noted.

String beans	12@15c
Lima beans	8@9c
Carrots, per sack	85c@$1.00
Rhubarb, San Jose, per box	$1.00@1.25
Pumpkins	75@90c
Cucumbers, hothouse, box of 30	$2.50@3.00
Los Angeles lugs	$3.00
Eggplant per lb	8@10c
Lettuce, per crate	$2.00@3.00
Celery, bunch	20@25c
do, crate	$3.75@6.00
Tomatoes, per crate—	
Southern	$2.00@2.50
Potatoes—	
Fancy whites	$1.90@2.15
Choice	1.75@1.85
Sweets, per sack	3.50@3.75
Onions, Warehouse Stock—	
Yellows	$1.10@1.25
Australian Browns	1.10@1.25
Garlic, new	25@35c
Green corn, Alameda, per sack	None
Okra, per box	None

POULTRY.

The poultry market continues very firm. The receipts have been lighter and the demand continues sufficient to hold prices to last week's level. In the case of hens and roosters prices were advanced on the holiday demand. The demand for turkeys has been small, but the receipts were just about enough to take care of the demand and to maintain the high prices of last week.

Turkeys, live, young spring, lb	38@40c
do, old	36@38c
do, dressed	45@48c
Broilers, 1½ to 2 lbs	39@42c
do, 1¼ lbs	43c
do, ¾ to 1¼ lbs	43@45c
Fryers	35c
Hens, extra, per lb., colored	35@37c
do, Leghorn	35@37c
Smooth young roosters, per lb. (3 lbs. and over)	35@36c
Old roosters, colored, per lb	24c
Geese, young, per lb	34@35c
do, old, per lb	30@32c
Squabs, per lb	55@60c
Ducks	33@35c
do, old	30@33c
Belgian hares	20@22c
Jack rabbits	$3.00@4.00

BUTTER.

Butter showed weakness after the opening and closed the year at 64½c for extra. The high price of butter for the past year was 68c, which figure was reached October 3. Shortly after this the daily call was abandoned and the weekly price fixing plan was adopted. Butter eased off to 62½c immediately and early in November it fell below 60c, touching 59c. From that time it advanced slowly to 64c on December 23, when the daily call was resumed. On December 24 it jumped to 67c and then slowly sank back to 64½c, at which figure it closed the year.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extra	67	67	66	66	64½	—
Prime first			Nominal			
Firsts			Nominal			

EGGS.

Eggs, both extras and extra pullets, showed weakness this week after Christmas, which many believe is the forerunner of prices considerably lower after January 1. Eggs have been remarkably high throughout the year, the high point for extras being 89c and for pullets 82½c.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extra	80½	75	73½	74½	74½	—
Extra 1sts	81	Nom.		—	—	—
Firsts			Nominal			
Extra pullets	76½	71½	69½	70	70	—

CHEESE.

There was a good demand for Oregon triplets and last week's price was maintained. California fancy flats were weaker and sold down to 33½c. This description was high for the year on December 17, when it sold at 37c. Its low for 1918 was during May, when it sold at 21c. Oregon triplets, which closed at the high price of the year, sold as low as 23½c about the middle of May. The cheese makers have been handicapped throughout the year by the high price of milk and the competition of the milk canneries for supplies. As a consequence many cheese factories restricted their output and others closed down.

Fancy California flats, per lb	33½c
Firsts	Nominal
Oregon triplets, fancy	40c
Monterey cheese	26@29c

FRESH FRUITS.

The fresh fruit market continues steady. The demand for apples is good and prices are being well maintained. This week there were few cases of strawberries on the market, but the public did not care for them and a price of $8 per chest was obtained with difficulty.

California apples	$1.00@2.00
Northwest apples	2.00@3.75
Winter pears	$2.00@3.00
Persimmons	1.00@1.50

CITRUS FRUIT.

The Christmas trade caused a good demand for all citrus fruits. Stocks in the city, however, are excellent and no changes in quotations were made. There is a difference of opinion among wholesalers as to whether there will be a recession of prices after the holiday trade comes to an end. Some claim that there will be lower prices, while others say that they look for prices to continue at about the present basis. Grapefruit was a little lower this week, $2.75 being the top price obtained.

Oranges, navels	$3.00@5.00
Mandarins	1.50@1.75
Tangerines	2.50@3.00
Lemons, fancy	4.50@5.00
do, choice	4.00@4.50
do, standard	3.50@4.00
California limes	1.50
Grapefruit, new	2.25@2.75

HONEY.

The honey market is weak. There is no local demand and no movement in export. It is understood that Great Britain is importing honey from Australia at a price considerably below what California growers are asking, and local dealers say they do not see how the growers expect to dispose of their stock. According to the dealers, it is expected that importing honey to this market from Australia will soon be inaugurated, and they say that this is another element in the weakness of the present market.

DRIED FRUITS.

Dried apples are firmer since Christmas. The stock still in the hands of growers is being cleaned up rapidly at prices ranging as high as 13½c. There is no other change in any other description of dried fruit.

RICE.

Paddy rice, 1918 crop	$4.82
Clear No. 1, 1918 crop, at mill	7.00

LOS ANGELES

Los Angeles, December 31, 1918.

BUTTER.

There was a further advance in this market the past week under scarcity. The receipts for the week were 234,300 pounds, against 249,600 pounds the same week last year. Not only were the receipts the lightest for a long time, but there was an increase in the consumptive demand. The big winter hotels and apartment houses are filling up and they are taking more butter. There was also a further reduction in the cold storage stocks during the week of 15,530 pounds, reducing the holdings now down to 75,800 pounds, and much of this sweet butter. Under this showing a steady and firm market was had up to Monday, when extras on 'change sold up to 64c and not much to be had at this advance. A decline of 1c in San Francisco during the week and unchanged markets East failed to influence the market here, which is both high and firm.

We quote—

California fresh extra creamery	64c
do, prime first	62c
do, first	61c
Same time last year—	
California fresh extra creamery	50c
do, first	46c

Daily quotations—

1918—	Tu.	Wed.	Thu.	Fri.	Sat.	Mon.
Extra	63	63	63	63	63	64
1917—						
Extra	51	51	50	50	50	50

EGGS.

There was quite a break in this market the past week. There was a noticeable picking up in the receipts of fresh ranch eggs during the week and prices were too high for free consumption. San Francisco broke 9c during the week and New York was 1 to 2c lower. Hence, under this showing, the market broke here on 'change 5c on extras and 4c on case count and pullets. Receipts for the week by rail were 636 cases, against 709 cases the same week last year. The truck receipts continue to run about four times as large as the arrivals by rail, making the supply for the week 3180 cases, against 3545 cases the same week last year. There were withdrawn from cold storage during the week 3543 cases, reducing the holdings down to 7449 cases, only two weeks' supply. But this failed to influence the market in the face of the increase in the receipts of fresh eggs. Extras are still 19c higher than a year ago, case count 15c and pullets 18c higher, and as this difference the market is thought to be top heavy, and with the coming of better receipts in January lower prices are anticipated.

Daily quotations—

1918—	Tu.	Wed.	Thu.	Fri.	Sat.	Mon.
Extra	72	72	72	67	67	67
Case count	64	64	64	60	60	60
Pullets	66	66	66	62	62	62
1917—						
Extra	49	49	48	48	48	48
Case count	47	47	46	45	45	45
Pullets	47	47	45	45	44	44

POULTRY.

The Christmas demand being over, the market quieted down the past week. But as the Christmas demand reduced the holdings pretty low, a steady market was maintained for everything and last week's prices were fairly sustained.

The following prices were agreed upon last Friday, December 27, and hold good until the coming Friday:

Broilers, 1@1¼ lbs	40c
Broilers, 1¼@1¾ lbs	45c
Fryers, 2@3 lbs	35c
Roasters (soft bone), 3 lbs. and up	30c
Stags and old roosters, per lb	20c
Hens	28@32c
Tom turkeys	28@30c
Ducks	22@28c
Geese	26c

VEGETABLES.

There was a little firmer tone to the market the past week, but as usual holiday week the volume of business was light. Green stuff is coming in less freely and all really good offerings found ready sale. Potatoes were higher under lighter receipts and what are coming in are sold without trouble. Onions were quiet but market steady; white very scarce and firm. Bell peppers a little higher and in very good demand. Chiles steady and selling fairly. Cabbage steady but dull. Cauliflower selling a little more freely and market higher. Garlic scarce and

rum. Tomatoes about finished. Only a few scattering lots in the past week and they not very good. We drop quotations. Celery steady and the best selling fairly. Squash and pumpkins in good supply and slow sale. What are moving in brought steady prices. Sweet potatoes coming in less freely and the best in fair demand and higher.

We quote from growers:

Peas, per lb	10@14c
Bell peppers, per lb	10@12c
Chile peppers, per lb	9@10c
Potatoes, northern, per cwt	$2.25@2.50
do, Idaho Russets, per cwt	2.00@2.10
Sweet potatoes, per cwt	1.75@2.25
Garlic, per lb	12c
Onions—	
Australian Brown No. 2	$1.10@1.15
Australian Brown, per cwt	1.35@1.50
White Globe, per cwt	4.00@4.50
Cabbage, per 100 lbs	.40@ .45
Celery, local, per crate	3.50@4.00
Cauliflower, standard crate	1.00@1.25
Hubbard squash, per cwt	$1.00
Banana squash, per cwt	1.00
Pumpkins, per cwt	.75

FRUITS.

Apples continue to make up the offerings in the deciduous fruit market. The offerings were very good, but the demand was light the past week. The Christmas trade has killed the market for the time being. Prices, however, remain steady and the best offering are held firm.

We quote from growers:

Apples—	
King Davids, 4-tier	$2.75@3.00
Black Twigs, 4-tier	3.00
Baldwins, 4-tier	2.50
Red Pearmains, 4-tier	1.75
White Pearmains, 4-tier	2.00
Yellow Newtown Pippins, 4-tier	$1.75@2.00
Bellefleur, 4½-tier	1.60@1.75
do, 3½-tier	1.85@2.00
Bellefleur, 4½-tier	1.75@1.80
Jonathans, Northwestern pack	3.00@3.25
Winesap, loose, per lb	6@6½c
Roman beauties, Northwestern, per peck	$3.00

WALNUTS.

As usual, holiday week there was little or nothing doing in this market since our last review. No more orchard run or No. 1 nuts are to be had from first hands. The association is now sending out only about two cars a day on its contracts. It will not be long now before the crop will have been marketed. Some culls are still coming in and they are selling at 14c to 15c a pound.

F. o. b. California points—

	1918	1917
Fancy budded	33c	24c
Standard budded	32c	21c
No. 1 soft shell	31c	20c
No. 2 soft shell	28c	18½c

HAY.

There were very good receipts in the past week and little or no demand. Even the dairy people held back and bought sparingly. Hence there was a sharp break in the market. Horse hay declined $2 to $3 a ton and alfalfa $1 to $2 a ton, and even at this decline buyers were inclined to take only such lots as they had to have.

We quote f. o. b. Los Angeles:

Barley hay, per ton	$22.00@23.00
Oat hay, per ton	23.00@25.00
Alfalfa, northern, per ton	19.00@20.00
Alfalfa, local, per ton	21.00@23.00
Straw, per ton	9.00@10.00

BEANS.

The market the past week was practically dead. Buyers are holding back until after the opening of the new year. After that a better movement is anticipated. Limas declined 25c a cwt. during the week, but otherwise prices are unchanged.

We quote from growers—

Limas, per cwt	$9.75
Large white, per cwt	$8.00@9.00
Small white, per cwt	8.00
Pink, per cwt	6.50
Tepary, per cwt	4.00
Blackeyes, per cwt	4.50

COTTON.

There was a more quiet tone to this market the past week. The export demand showed a falling off and there was a disposition on the part of many longs to take profits. Hence prices worked a little lower. January in New York by Saturday had worked down to 28.90c and March 27.75c. In New Orleans January closed at 29.70c and March at 28.28c. Monday opened the current week with a little more active and firmer market. Still trading was not heavy and most of the trading on home account. But little export buying. In New York Monday January closed at 29.95c and in New Orleans January closed at 28.90c.

Special Citrus Market Report

Los Angeles, December 30, 1918.

The navel orange was very popular during the holidays, both East and West. Markets were good and remain strong. Central California navels, which composed the bulk of the offerings, showed some signs of decay from sweating. Instances of 3 to 5 per cent decay were numerous and cases of 50 per cent were recorded. The average price in Eastern markets was around $5 to $6 per box. According to size. Shipments from Central California total 2643 cars—1,221,066 boxes, as compared with 741,048 last year. With increased prices, a value of five million dollars, as against two million of last year, is the record of Central California. Shipments of navels from Southern California have been light, and have been disposed of mainly at private sales. Prices have been good. F. o. b. quotations range from $3.75 to $4, according to quality.

A total of 1186 cars have been shipped this year, as compared with 2065 cars to date last year. The low temperature in the south has had practically no effect up to date. Pickings of lemons are heavy, but there has been no particular change in the situation. Slight damage has been caused by the frosts. The season's crop is estimated to be the largest in the history of the industry. A cargo of 13,000 boxes of foreign lemons arrived in New York this last week.

Total to date this season: Oranges, 3824; lemons, 1323. Total to date last season: Oranges, 3669; lemons, 551.

Special Livestock Market Report

San Francisco, December 31, 1918.

CATTLE—Although poultry, as usual, was the principal attraction to meat buyers during the holiday season, and there was consequently a comparatively dull market for dressed meats, nevertheless the choice steers brought premium prices. The situation not much changed. The shipments, though small, are sufficient to take care of the reduced demand occasioned by the holidays.

Hay-fed steers—	
No. 1, weighing 1000@1200 lbs	12¾@13c
do, weighing 1200@1400 lbs	13@13½c
do, second quality	11@11½c
do, thin	9½@10c
Cows and heifers—	
No. 1	9@10c
do, second quality	8@8½c
do, common to thin	6@6½c
Bulls and stags—	
Good	6@7c
Fair	6@6½c
Thin	4½@5½c
Calves—	
Lightweight	11@11½c
Medium	10½@10¾c

SHEEP—There has been a weak market in both lamb and mutton stock the past week. Some choice light lambs, however, bought top prices. Some sheep, both wethers and ewes, of good quality, though heavy weight, were offered, but the demand was light and the market weak. Sheep are coming out of the feed lots in fine condition.

Sheep—	
Yearlings	12@12¼c
Lambs	13½@14c
Wethers	11½@12c
Ewes	9@9½c

HOGS—Hogs continue in plentiful supply and the market has been a little sagging, as usual after the pre holiday season, though the demand has been fair. Hard, grain fed 100@150 lbs | 16c
do, do, 150@250 | 16½c
do, do, 250@300 | 16c
do, do, 300@400 | 15¾c

Los Angeles, December 31, 1918.

CATTLE—There was very little done in this market the past week. It being Christmas holidays, the call for beef was but nearly everyone turning to poultry for the time being. Hence killers catered but few cattle and confined their purchases to good light stuff. But while the market was very dull prices remained unchanged.

Per cwt. f. o. b. Los Angeles—

Prime steers, 1000 to 1100 lbs	$9.00@12.00
Prime cows and heifers	8.00@ 9.00
Good cows and heifers	7.00@ 7.50
Canners, per cwt	5.50@ 6.00
Calves, per cwt	8.50@10.00

HOGS—Not so many in the past week and the quality of the offering very good. In sympathy with steady and rather firm markets East, prices held steady at last week's figures and what came in was placed without trouble.

Per cwt. f. o. b. Los Angeles—

Heavy, averaging 275@350 lbs	$14.00@15.00
Mixed, 225@275 lbs	15.00@16.00
Light, 175@225 lbs	16.00@16.50

Rough docked 20 lbs., piggy sows 40 lbs., and stags 40 per cent.

SHEEP—Not many coming in the past week. What arrive are mainly from Utah and Idaho. Choice muttons and fat lambs were in very good request at old prices, but poor and medium lots were dull and weak.

Per cwt. f. o. b. Los Angeles—

Prime wethers	$9.00@10.00
Prime ewes	8.50@ 9.50
Yearlings	9.50@10.50
Lambs	14.00@15.00

Portland, Ore., December 31, 1918.

CATTLE—Strong; receipts, 196. Steers, prime, $12.50@13.50; good to choice, $11.00@12.50; medium to good, $11.00@11.50; fair to medium, $9.00@9.50; common to fair, $8.00@9.00. cows and heifers, choice, $9.00@10.50; medium to good, $8.00@9.50; fair to medium, $7.00@ 8.00. canners, $4.00@5.00. bulls, $6.00@8.00; calves, $8.00@12.00. stockers and feeders, $7.00@9.00.

HOGS—Firm; receipts, 257. Prime mixed, $17.00@17.25; medium mixed, $16.50; rough heavies, $15.00; pigs, $14.00@15.25; bulk, $17.00.

SHEEP—Steady; receipts, 909. Prime lambs, $12.00@13.00; fair to medium, $8.00@11.00. yearlings, $10.00@11.50. wethers, $9.00@10.00. ewes, $6.00@8.00.

EASTERN.

Chicago, December 30, 1918.
(U. S. Bureau of Markets.)

HOGS—Receipts, 40,000; market 5c to 10c higher than Saturday's average; bulk of sales, $17.50@17.90; butchers, $17.70@18.00; light, $16.90@17.90; packing, $16.90@17.70; throwouts, $15.75@16.85; pigs, good to choice, $14.50@15.50.

CATTLE—Receipts, 24,000; good and choice steers, butcher cattle and weighty feeders, strong to 25c higher, medium steers, light stockers and calves steady. beef cattle, good, choice and prime, $16.25@19.75; common and medium, $9.75@16.25. butcher stock, cows and heifers, $8.25@14.75; canners and cutters, $7.25@8.25; stockers and feeders, good, choice and fancy, $10.50@13.75; inferior, common and medium, $7.50@10.75; veal calves, good and choice, $15.25@15.75.

SHEEP—Receipts, 18,000; fat lambs and light yearlings, 25c to 50c higher; sheep, steady to higher; lambs, choice and prime, $16.00@16.25; medium and good, $14.75@16.00; culls, $11.00@13.25; ewes, choice and prime, $10.00@10.50; medium and good, $8.75@10.00; culls, $5.00@7.50.

NEW SUGAR-BEET PLANTING.

The Spreckels Sugar Company at Stockton have planted sugar beets three years in succession on 850 acres of land rented from the Boggs estate and had good results each year. It is a silty clay loam and has yielded an average of 12 tons of beets to the acre. We asked if sugar men were afraid of peat land. Mr. Holt told us that on the Rindge place, on peat land, they had had 15 tons to the acre. $10.00 a ton was paid for beets that contained 15 per cent of sugar and 60 cents a ton additional was paid for each per cent above that. Excellent results were obtained where beets followed corn, beans, and potatoes. The Spreckels people are also starting another piece of land to grow sugar beets and wheat or barley in rotation. Mr. Holt considered the peat land was good for beets for four years in succession, but thinks regular rotation desirable.

The Spreckels people are raising 600 acres of sugar beet seed in the Salinas Valley this year. George Scott, the supervisor, expected to raise from 1,000 to 1,200 pounds to the acre. The amount of seed they generally use to the acre is from 13 to 16 pounds with the rows 18 to 20 inches apart. A good many acres are already seeded in December and the seed beds as we saw them were in excellent condition.

RANCHER'S SONS ARE HIS PARTNERS.

Ranch life has been made attractive for A. B. Spooner's three sons on their ranch in San Luis Obispo county. Mr. Spooner came onto the ranch many years ago as a renter. He soon bought some of it and has been adding since then, so that now he can ride several miles down the seashore on his own land. But it is not his own now. Mr. Spooner and the three sons have incorporated into the "Pecho Ranch and Stock Co." Each son received a share in the company and each one receives a regular salary from the "company" for the management of one of its departments. Dividends are paid to themselves on their stock and the father takes general supervision. One of his sons has charge of the dairy, hogs, and cattle, which form a large part of the cash crops. Another has charge of the farming operations, raising grain, beans, and feed for the livestock. Another has entire charge of the machinery of ranch and dairy. They have a delightful ranch, a lot of purebred stock, and up-to-date machinery. Automobiles and riding horses make transportation easy and save the men and their families from isolation which might otherwise counterbalance the delights of such ranching.

A NEW CATALOGUE

Has just come to hand from the California Nursery Company at Niles, publishing a very full line of deciduous fruits of all varieties on all stocks, including pear on quince and apple on Northern Spy roots. Also all kinds of nuts and citrus fruits and berries. The Landscape Department with its long list of ornamental, shade, and decorative trees, shrubs and plants, occupies two-thirds of the catalogue and is very comprehensive in its scope, including an enormous stock of coniferous and broad leafed evergreens. Apparently this nursery contains any kind of ornamentals that is grown in California. Write for the catalogue.

The Pacific Pea Packing Company at Oakdale will plant an experimental patch of spinach this spring for canning purposes, a new departure for this cannery which, since the war commenced, has been packing lima beans, hominy, tomatoes, beans, etc.

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FOR SALE—Holt Tractor, No. 18, $1220. Moline 4-disc plow, $275. 8-foot double disc harrow, $170. 12-foot double orchard drag, $35. Implements in good condition. Terms cash. Mrs. C. H. Evans, Gilroy, Cal.

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3-4 BOTTOM 12-inch John Deere power lift plow, latest model, nearly new. Lloyd Gardner, Leigh Ave., Campbell.

DR. B. HEARN, VETERINARIAN—Breeder New Zealand and Flemish Giant Rabbits. R. R. 2, Porterville, Cal.

FOR SALE—Bean Tractor, in good condition. Price reasonable. Kerr Bros., Moorpark, Cal.

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EXCHANGE—Beautiful home in Berkeley for country realty. Address 5809 Ocean Drive, Oakland, Cal.

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YOUR ALFALFA SEED should meet the needs of your soil and moisture conditions. One of the seven different kinds of Green Gold brand seed will yield heaviest and live longest because they are selected for particular conditions. Our illustrated booklet tells you all about each kind. Write for it now. Bomberger Seed Company, Desk B, 725 Tenth street, Modesto, Cal.

BUDDED AVOCADOS—Fuerte, Sharpless, Lyon, Dickinson, Blakeman, Puebla, Spinks, Taft Linda, Rey, Queen, Knight, and others. A fine stock of field-grown trees, $2.50 for one. $2.00 each by the 100. 25c per tree for packing. Newbery-Sherlock, 2202 East Colorado St., Pasadena.

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BUY ALMOND TREES from an almond specialist. Have a large stock on bitter almond roots. Get my prices before buying. Wholesale price to the trade. W. T. Hohenshell, Le Grand Nursery, Le Grand, Cal.

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TREES, TREES, TREES.

No war prices!
Cook Nurseries, Sebastopol, Cal.

BARGAINS in Bartlett pear. Address L. J. Eccles, Lakeport, Lake county, Cal., Oak Mound Nursery.

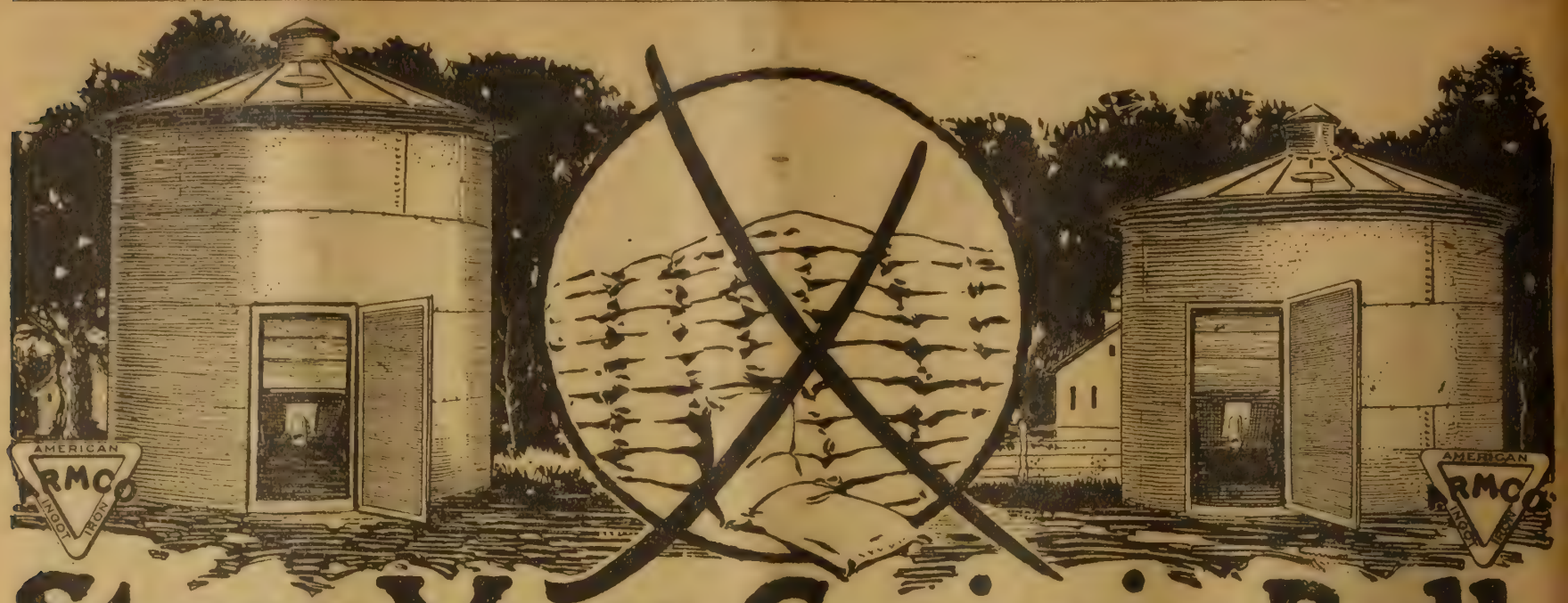
WALNUT TREES—Placentia and Eureka grafted. Send for Placentia Walnut Nurseries, Placentia, Cal. Phone 104.

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ASPARAGUS ROOTS—We have many thousand 2-year-old Conover's Colossal and Mammoth White roots for sale wholesale or retail. Stanislaus Nursery Co., Modesto, Cal.

WANTED.

WANTED—Position as superintendent or foreman on big ranch, dry or grain, fruit farm or vineyard. Understand also driving and selling and packing of fruit. Can give good references. Box 1340, Pacific Rural Press.



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Don't Sack it

The bulk way of handling grain is the safe--the more economical way. It cuts out the entire cost of sacks, twine and the wages of EXTRA help needed to sack grain for shipment.

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Leaking sacks, either at the twine or from weak weaving or snags and rips, allow a constant, costly flow of grain.

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Thresh your grain directly into dump wagons and haul immediately to a safe metal storage bin on your own farm.

Stop the waste of sweating and blistering sacks. A metal bin will keep your grain clean and sweet—away from the weather.

Calco Metal Grain Bins are proof against the attacks of rats, mice and gophers. Birds cannot reach grain in a metal bin. Since you need no sacks with a metal bin there is absolutely no loss through leakage, carelessness or forgetfulness.

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Write for the Calco Grain Bin Booklet

In this booklet, one grain grower makes a comparative cost tabulation of handling his grain in sacks and handling it in bulk. He found out, and set down exactly where he saved in handling grain in metal bins. This letter and a great deal of other information are in the booklet, "Calco Grain Bins." It is free—write for it at once.

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Los Angeles
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406 Parker Street

Calco Metal Grain Bin

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Vol. XCVII—No. 2 THE PACIFIC RURAL PRESS Forty-ninth Year

SAN FRANCISCO JANUARY 11, 1919 LOS ANGELES

What Our California Solons Propose to Do

Written for Pacific Rural Press by R. E. Hodges

WHAT are the most important measures to come before the California Legislature, which convened January 6 for the first period of its bifurcated session? For a month the law-making body will be concerned chiefly with the introduction of bills and their reference to appropriate committees. These committees will give the bills searching detailed study to eliminate jokers, determine their effects on various interests in the State, and finally recommend to the Assembly and Senate their passage or their death. Be it said that probably 90 per cent of the bills meet the fate recommended by the committees. No legislator claims to know in a detailed way what is in most of the bills he votes for or against. Being human, he must depend on the committees to thresh out the details. The threshing is done after public hearings in which anyone may appear against or in behalf of any bill. This is where our readers will have to defeat or secure the passage of most of the bills affecting agriculture. It is because of the importance attached to the committees' recommendations that the men on the committees must be chosen with utmost discretion. Lieutenant-Governor Young has been Speaker of the Assembly for three terms and the policy he followed as Speaker in appointment of committees has been followed in this session with the Senate committees. He has asked all the Senators to state their highest three preferences regarding the committees they want to work on. Committees must be made up of men representing the State geographically, they must be men inclined to do the work honestly, ably, and conscientiously, and should be so chosen that no two of the committees to which they belong will be meeting at the same time. In the past three sessions the Assembly committees have met at regularly scheduled times and Mr. Young hopes the Senate committees will do the same. This facilitates the hearings and makes it easier for citizens to attend.



The State Capitol at Sacramento, now a hive of legislative industry.

Most Important Measures.

Senators, Assemblymen, and State officials are loath to state their opinions as to which measure is most important. Each one loves his own pet and admits ignorance of what pets other legislators are likely to spring. It may be said in general that this session has few of the outstanding constructive measures such as characterized other Legislatures a few years back. It will be concerned chiefly with retouching and perfecting the structure of government so rapidly rebuilt a few years ago.

But the campaign which preceded last fall's elections, along with the subjects on which legislators warm up most easily, indicate quite definitely which are the most important, most interesting measures, and which are likely to occasion the biggest scraps.

Foremost in interest and probably the one most unanimously supported by farmers of the State as a whole, excepting those in the wine-grape counties, is the ratification of the national constitutional amendment prohibiting manufacture, sale, or use of intoxicating liquors. The campaign was made chiefly on the wet or dry platforms. State officials and legislators were pledged before election either for or against ratification. The drys have a clear majority in both houses and they elected both Governor and Lieutenant-Governor by overwhelming majorities over their wet opponents. They are insisting on the national prohibition amendment being ratified early this month. The only possibility of their defeat lies apparently in some members being false to the expectations on which they were elected. Aside from San Francisco members, legislators are two to one for prohibition, it is estimated. From the standpoint of the wine growers, it may be said that they oppose the ratification of national prohibition on the ground that the two prohibition amendments voted upon at the last State election were both overwhelmingly defeated. They point out that while the State elected "dry" representatives the majority of the electorate were not in favor of bone-dry laws for California.

Less Taxation—More Efficiency.

Second in interest will be the report of the Committee on Efficiency recently appointed by the Governor to study the activities and expenses incident to the State Government and the laws which authorize them, with particular reference to the multitude of Commissions now costing the State more or less. It is claimed with reason that while these Commissions all had a definitely important work to do when they were created, in many cases their powers and responsibilities overlap or are duplicated in several other bodies; that their employees are not kept busy; that outside influences have been successful in creating new and unnecessary jobs under various commissions, attorneys are retained for many of them at excessive and unnecessary cost; that office rents and expenses are unwisely incurred; that some of the commissions have outlived their usefulness; and that consolidation of many of them would result in greater efficiency, economy of expense, and saving of the time of citizens who have business with them. The Committee on Efficiency has appointed eleven sub-committees, who are working on various phases of the State Government activities. Public hearings are to be held for any citizen to express his ideas. The recommendation of the committee may include sweeping reorganization and elimination. Then a merry scrap will be on, for the jobs to be eliminated are desired by quite a few folks. It is quite probable, however, that expenses will not be cut down enough so taxpayers will notice any great lightening of taxes, though it is also probable that governmental efficiency will be greatly improved. Every legislator is fervent in expressing a desire to reduce taxation without impairing efficiency, though a number of them are unaware of the details by which this can be done. They certainly will favor reduced taxation if they can be shown that it will result in increased efficiency—before the scrap starts. Then watch the privileged interests whip some of them into the opposition! They will be able to say rightly that many of the highly necessary commissions now serving the State are underpaid, that greater efficiency would be secured by paying them more. It is true that great difficulty is experienced in getting capable men to do the work for the pay offered by the State. It may be well to eliminate in some quarters in order to pay more in other places and get the services of the best men without increasing the total cost. The value to the State's citizens of the services performed by many of the commissions is far in excess of the cost, and it will be a sorry day if their services are discontinued.

More Money for Education.

A measure of general interest and of much added importance in view of revelations made by the war is the proposition for the State to allow $17.50 per year for public school education of each child instead of $15 as heretofore. Despite the campaign for reduced expenses, this measure has a good chance to carry. The marvelous springing to arms of American youth in the early days of the war and their splendid morale in the name of patriotism and high ideals may be easily traced to their training in the public schools. On the other hand, the number of illiterates, espe-

(Continued on page 44.)

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EDITORIALS

SOUL-SINKING BOLSHEVIKISTRY.

AS WE write on Monday, the barometer still hangs high over the interior plateaux of the continent and Pacific storms cannot enter our coast States in spite of the fact that the sun-spotters and planet-conjunctors have scheduled them to drown us and quake us every other day for a fortnight or more. Current experience adds to our conviction that what we need to forecast storms successfully is more knowledge about the earth and less speculation about the heavens. The former is reasonable: the latter is purely visionary—and not always innocent, because to predict an earthquake always shakes the sensibilities of timid and credulous people and renders them unqualified to live without fitting them to die. To predict an earthquake, which to so many people means a catastrophe or cataclysm, and then justify it afterwards by pointing to a harmless tremor somewhere on the earth for justification, should be punished as a misdemeanor. Such harmless tremors are always occurring and are but a part of the maturing process of the mundane orange on which we live and teaching people to live in terror of their assuming disastrous magnitude is a contribution to the unfitness of mankind to resolutely realize creative design and purpose in man's endowment of religion, morals and industry. To do this under the guise of science is a most insidious and enervating form of Bolshevikism. From the point of view of science, such action is outlawry: from the point of view of human welfare, it is one of the worst forms of anarchy. And yet journals otherwise reputable keep on publishing such pseudo-science and false prophecy for the demoralization of credulous readers who take them seriously. Why they do it we cannot conceive, unless it be to develop a greater constituency of credulity for their advertisers of soothsaying and divination to prey upon. If that is the motive, it should be prohibited by law. We are getting quite keen about regulating offenses against our purses and we do well therein—but why are we blind to offenses against science and reason which not only empty the purses but also destroy the souls of men!

THE BATTLE AGAINST FREEZING.

OUR meteorologists and our memories tell us that the cold spell we are now traversing is neither the worst nor the longest we have ever endured. To our feeling, however, it is like the wound of Mercutio—"not so deep as a well nor so wide as a church door; but 'tis enough." At the south, where commercial indulgence in winter vegetables is usually safe, there has been considerable destruction of crops which do not mind light frosts. There has also been some injury to winter-ripening citrus fruits which it is still too soon to measure. The chief lessons of the experience seem to be two: first, the saving service of firing against frost and the advantage of everybody's doing it. Preliminary reports indicate that never before was there so wide co-operation in frost-prevention—to such a picturesque extent that smoke clouds really enveloped large areas of landscape and moved beneficently considerable distances, screening whole districts much as real clouds do. Of course, such movement is not desirable to those who put money and labor into frost-prevention: it is better for them to have the clouds hang around as long as possible over their own property. But as clouds will move, it is morally up to every man who has endangered property to make his contribution to the general protection. Let us, therefore, have a quickened interest in frost-prevention appliances and materials and count it into the normal costs of production. It is not alone for the producers' advantage to do this: the consumer will also be benefited, for the small added cost to all the fruit will be insignificant compared with the added price the consumer has to pay when the crop is short or the disadvantage of not being able to afford so desirable an addition to his menu. Unless early reports are very misleading, the saving by frost-fighting has been so great that the same welfare should be widely assumed by those who are in danger of losing deciduous fruits and vegetables by spring frosts. This is a matter which should be more seriously considered than it has been hitherto.

COWS AND CITRUS?

THE other lesson which we discern in the current experience with frost seems to be a support to Dr. H. J. Webber's thesis that extra-frosty places in citrus districts should be populated with cows and creameries and not with citrus trees and packing houses. We cited Dr. Webber's conclusions with reference to some of the older, lower citrus plantations at Riverside in our issue of April 6 last year. The point was not only that citrus planting should be pursued on the higher and less frosty lands, but cows on the lowlands would pay better than oranges and would also manufacture fertilizers in generous quantities to be used on lands where oranges ought to be grown. Thus a region of diverse topography would fit its varied crops not only to its market requirements but to its diverse adaptations, and beyond both of these suitabilities would insure enduring profitability by constant rejuvenation of its soils. It takes a good pinch on the pocketbook usually to arouse a man to sound economic philosophy, and it seems as though this year's frost might enforce general interest in Dr. Webber's theorem and keener appetite for demonstration of it in terms of local applicability.

A GREAT AMERICAN RECALLED.

JUST as we are writing of frost there seems to us a heart-chill in the dispatch that the noblest American of them all has been recalled to the heaven whence he came to inspire, guide and bless his countrymen. Theodore Roosevelt falls asleep at the end of sixty years of strenuous struggle to do his best: first, to fit himself for virility; second, to use every moment of his manhood for the good of mankind. We were counting upon a decade or two more of such public service as he alone has rendered. It seems incredible that such an embodiment of force and action as Roosevelt could be released just as he stepped upon the threshold of what Howells aptly called "the sunny sixties"—but possibly the design is that this generation shall learn to walk alone in the paths of progress which he marked out with his own footprints. It is not in our line to undertake general comment on the life and services of Roosevelt: if journals dealing with public affairs overlook any item of just appreciation and admiration, the universal thought of the country will omit nothing. No man's reputation is safer with his fellow citizens than Theodore Roosevelt's. What impresses us most at the moment is the fact that he was the embodiment for his generation of fair estimation of the significance and the achievements of the farther west in the development of the United States. He sent the "great white fleet" to demonstrate to the world that our country breasted two great oceans and that our western seaboard was given us for the commercial development and christianization of all Pacific countries and that our ocean was not designed for a quiet pond for copra-floating and seal hunting—as most Americans had previously esteemed it. To the same end he put through the Panama Canal and made that great enterprise 100 per cent American. His purpose was not to favor us nor to court favor with us but to exalt before the country a vision of the value to national development of the great spirit and the great resources of the free, untrammeled west and to put to shame the mollycoddling, pussyfooting and malefactoring with great wealth, in which the country was too freely aping the effete Europe of a decade ago. It is chiefly to Roosevelt that our country owes the survival of pioneer spirit of red-blooded adventure for principle and human progress which enabled our men and women to acquit themselves victoriously in the great world-achievement of 1918. It was the survival of that endowment which had led the American people, like a cloud by day and a pillar of fire by night, to strike for free manhood from Plymouth Rock to Atlanta and Gettysburg, and from Manila bay to San Juan hill. It was the same spirit which demonstrated to the world in 1917 that Americans were not "too proud to fight" for principles which their forefathers had established. It was Theodore Roosevelt who would not allow us to forget that spirit and the purposes for which we were endowed with it.

OLD BOYS CALLED HOME.

THE death of Roosevelt reminds that we are meeting many bereavements nearer home. The chill of loneliness has fallen upon many homes from which the youth went forth to war and reached their shining objectives on the other side. The widespread epidemic has also levied toll, which seems to us very heavy, upon lives which we have all held very dear. It will be hard to proceed unattended by those upon whom there has been joyous leaning—but that is the burden of life and must be bravely borne. There is no help for it but sympathy for the present and hope for the future.

A group of men prominent in California agriculture has been called hence—several of them in what is commonly called the fullness of years. Col. E. J. De Pue, largely interested and active in farming business and property in Yolo county and a recognized leader in city affairs also, was called to lay down his last public effort as president of the directors of the coming livestock show in this city. Another call from the ranks of prominent Californians summoned E. T. Earl, for a number of years active in Los Angeles enterprises but previously in Central California, where he built up the great fruit business which still bears his name. Some of his achievements are also mentioned elsewhere in this issue. Both Col. De Pue and Mr. Earl were close to the sixth decade and were counted to have still much time to enjoy the fruits of their successful enterprises.

PUBLIC SERVICES OF ELLWOOD COOPER.

RIPER in years and more widely known for public services was Ellwood Cooper of Santa Barbara, who came to California in 1870 with commercial experience in Philadelphia and the West Indies, on the basis of which he proceeded to practical studies of California agriculture on a tract of land about twelve miles west of Santa Barbara and considered suburban thereto. His early undertakings, which gave him the crown of leadership in the latter '70s and later, were the planting of eucalyptus and the manufacture of olive oil. Upon both subjects he wrote pamphlets in the '80s which were counted classic by those who desired to follow him in these two lines. In olive-growing and oil-making in particular his experience set the pace for many other early ventures, while his commercial trend enabled him to develop a trade in his brand of oil which was for many years very profitable. Mr. Cooper's conservatism and positivism held him largely to Spanish

California Weather Record

The following rainfall and temperature record is furnished the Pacific Rural Press by the United States Department of Agriculture Weather Bureau at San Francisco for the week ending at 5 p. m., January 7, 1919:

Stations	Rainfall Data: Past Week	Rainfall Data: Seasonal To-Date	Rainfall Data: Normal To Date	Temperature Data: Max'm	Temperature Data: Min'm
Eureka		11.72	18.26	60	30
Red Bluff		14.45	10.89	70	24
Sacramento		7.39	7.73	58	28
San Francisco		10.92	9.11	60	37
San Jose		9.91	6.75	64	22
Fresno		3.84	3.96	62	28
San Luis Obispo		7.37	6.95	76	28
Los Angeles		4.06	5.76	78	36
San Diego		4.24	3.52	70	38
Winnemucca		3.89	3.14	38	10
Reno		3.93	4.23	44	8

methods and appliances and American revision of machinery and processes enabled others to advance later far beyond his attainments in the line in which he is entitled to honor as a pioneer. In 1881 Mr. Cooper received his first appointment to the Board of State Horticultural Commissioners and was elected president thereof in 1883. For twenty years subsequently he held this position. In 1903 Mr. Cooper was appointed sole State Commissioner of Horticulture, replacing a board thereof as provided by the law of 1903, and held that office four years. Thus during more than twenty-five years Mr. Cooper was the head of executive horticulture in California. His service was, of course, broad and varied, but two protracted undertakings impress us as particularly effective: the protection of our fruit products against competition with foreign cheap labor and transportation and the securing of national pure food legislation, which freed the olive from competition with adulterants and substitutes. Mr. Cooper was indefatigable and very influential in both these attainments. During the last decade Mr. Cooper has not figured in public affairs. A few years ago he disposed of his landed interests. He died in Santa Barbara on December 29, aged 89 years.

CALIFORNIA'S WORLD-BEATER, DAVID LUBIN.

THE best known California in circles where great things are said and done was David Lubin of Sacramento, who died at his post in Rome, Italy, on January 1, at the age of 69. Fifteen years ago he was widely known throughout Central and Northern California as a prominent merchant of Sacramento, with a genuine interest in the welfare of farmers and a proponent of what seemed then strange measures to secure for them a square deal among other producing and financial interests. Today he is known to all governments and to individuals in all nations as the most profound student of agricultural economics and finance in the world. His early studies of individual productive efforts in California soon convinced him that in food production and distribution all the world is akin in its needs and problems, and before we who were constantly watching him were sure that he had reached the apex of California farming troubles, he was aloft and away seeking light for local darkness in international illumination. In his height and depth of economic thought and in his pursuit of fundamental facts and conditions, as a basis for his conclusions and resultant actions, we can find no illustrative metaphor except in the science and practice of modern aviation. We saw him first trundling his economics over a meadow. When we looked again he was in the sky, mapping the world beneath him that he might clearly see whence and whereto economic thought and action should move to enable governments, institutions and individuals to do their work best to serve the welfare of all concerned. It was at first a strenuous, lonely task. All the strong winds of bureaucratic and professional distrust buffeted him: all the deadly chill of popular unconcern and neglect impeded his movements—but he made the flight and brought back the achievement he sought. The King of Italy was his first great friend, for he endowed the International Institute of Agriculture at Rome and provided a proper landing place after such a great flight. When the war began there were affiliated with this institute founded by Mr. Lubin nearly fifty nations—all of them with representatives active in the world work which he designed. Mr. Lubin lived to see in this institute and in the "international commerce commission on merchant marine," which the Congress of the United States approved at his suggestion, a strong link in the league of nations which is about to be realized. And while Mr. Lubin was working to secure these world-regulating powers for human welfare he did many other things corollary thereto—such as rural credit in this country, etc. How could a single man do so much in a decade and a half? The better one knew Mr. Lubin the less he will wonder at that. His was the most penetrating, retentive and analytic mind we have ever personally known: his was the most tireless energy and capacity for work: his was the warmest philanthropic soul and the clearest vision of all men as they ought to be related to each other from an economic point of view. And to give these natural endowments, which he had trained so well during more than thirty years of active, purposeful living, their opportunity for public achievement they were themselves endowed by the fortune which he had accumulated and which he freely expended in pursuit of his purposes. So far as we know, Mr. Lubin never received for his own use a cent for public service: all that came from it went into it as compensation to others who assisted him. And now David Lubin, who has been called a "benefactor of farmers," has gone to his reward—leaving a name which will be remembered with enduring and increasing honor.

QUERIES AND REPLIES

By the Editor.

Inquirer Must Give Full Name and Address.

Killing "Greasewood."

To the Editor: I have about four acres covered by "greasewood." Is there any way of destroying it? I have tried digging up the roots to a depth of six to ten inches, but they do not die. I am told this brush has roots about twenty feet long. In cold weather the top of the plant dries off, but they begin to grow again in July.—J. B. F., San Ardo.

The name "greasewood" is rather indefinite, for it does not mean the same plant in all places. However, all the shrubby plants which we know under the name are to be found on soil too alkaline to grow crops until part of the alkali is washed out. Unless one is prepared to reclaim the land by deep drainage so that either rainfall or irrigation or both can wash out the alkali, it does not matter much whether you kill the greasewood or not. If, however, you have some other plant to deal with and the soil is not alkaline, we would snake out with a team and chain all the roots we could during the winter, while the ground is soft and wet, plow and harrow in the spring and broadcast thickly with kafir or milo, cut for cow hay and get as much second growth as the moisture will allow. In this way you may smother out the greasewood or you may not. If the soil is alkaline, you will not see much milo; if it is not alkaline, you will not see much greasewood.

Only Cherries on Cherry.

To the Editor: We have a dozen cherry trees that we should like to graft over to some other fruit. The linnets, sparrows and bush robins eat or spoil the crop every year. We can poison them when the apricots begin to ripen, but it is then too late to save the cherries.—Reader, San Jose.

Nothing but birds and small boys can be grafted on the cherry.



MR. PLANTER:

The coming season promises to be the most favorable in many years for orchard planting. With such a season and

FIRST CLASS TREES

a successful start for a profitable orchard is assured. WE GUARANTEE OUR STOCK—BETTER CANNOT BE HAD ANYWHERE AT ANY PRICE.

OUR SPECIALTIES:

FRENCH PRUNES on all roots, grown from carefully selected bearing trees, unsurpassed for size and quantity of fruit.

PEAK'S CLING PEACH, in great demand by canners; ripens between Tuscan and Phillips and is fully equal to those old stand-bys in quality and productiveness.

KNOBEL APRICOT, an improved Blenheim; larger fruit and a heavier, more dependable bearer.

JAPANESE PERSIMMONS "Made in America." These home-grown trees live as readily as other fruit trees and are true to name; of the imported trees the few which live are usually untrue.

A FULL LINE

of all that is best in Fruit, Nut and Ornamental Trees, Vines and Plants; and our prices are very low as compared with other commodities. Write for our Price List; free.

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From highest nitrogenous feed.
Decomposed and concentrated by age in their own liquids, containing the highest percentages of Nitrogen, Phosphoric Acid, Soluble Potash, and readily available Humus.
Shipped commercial dry. Cars average 22 to 24 tons. Saves four-fifths labor in application. Thousands of tons now being shipped to citrus and deciduous growers in California.
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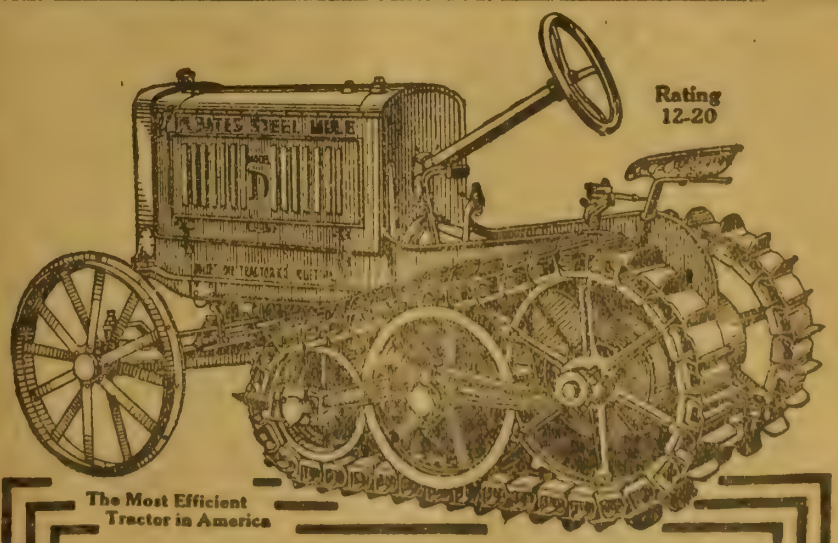
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Cows and Co-operation Make Humboldt Hum

Written for Pacific Rural Press by J. A. Robson, Eureka

THE VALUE of team work, which has been so convincingly demonstrated by the many phases of war activities, is fittingly illustrated in the accomplishments of the Dairymen's Association of Humboldt county for the dairy interests of the north California coast section. Preparations are now under way for the annual meeting of this organization, which, because of the wide scope of its influence, has come to be recognized as one of the chief events of the year in rural Humboldt. This year unusual importance attaches to the meeting because of the fact that the country at large is just entering an unprecedented industrial era, the watchword of which is co-operation, and the possibilities of the future loom large to an association that represents a vast amount of wealth controlled by men who have already learned the value of team work.

According to the report of the State Dairy Bureau, just issued, Humboldt county stood second in the State in butter production for the year ending September 30, with a record of 5,717,406 pounds. This is only about 50 per cent of the output of the dairy farms—evaporated and powdered milk, casein, albumen, milk sugar, cheese, etc., all being made on a commercial scale in Humboldt, and fully equaling in valuation the butter products. Dairying has long since passed the experimental stage in this section, and the business is conducted on a wonderfully systematized and scientific basis.

The Humboldt Dairymen's Association has been one of the big factors in making possible the past year's record. Through it the dairymen have been able to solve the two big questions that confronted the pioneers in the business—how to farm their lands so as to produce the necessary rations for their cattle, and how to rid their herds of unprofitable cows. Because of the heterogeneous character of the population, concerted action in the solution of mutual problems was unusually difficult among the pioneer dairymen and on this account the achievements of the present effective association are all the more noteworthy.

Pioneers Were Thrifty Foreigners.

Valley dairying on the bottom lands of the Eel river section was begun in 1874 by a few thrifty Scandinavians, including J. Rasmussen, Nissen Brothers and J. P. Jacobsen. These were the forerunners of a large immigration from Schleswig and Denmark, who also settled in the bottom lands and engaged in dairying. Later, many of these original settlers preferred leasing or selling their lands to operating the dairies themselves and this brought in a great influx of Italian-speaking Swiss. The leases brought a high market price, ranging from five to fifteen thousand dollars, including the stock. Many Portuguese from the islands off the coast of Portugal were the next to enter the Humboldt dairy field. Interspersed among them were a number of Americans who believed in the future of the dairy business.

When the pioneers entered the field the Eel River Valley was heavily timbered. The small clearings could not be made to yield a profit in ordinary farming, the climate being too damp for grain raising. Red clover grew prodigiously and the climatic conditions made green feed available throughout the year. Dairying was the natural occupation. However, by the time the land was fully cleared, the heavy cropping and immense rainfall had so depleted the lime in the soil that the grass grew less luxuriantly and other cropping systems had to be developed. This led to a common interest in forage crops and a greater feeling of unity among those in the business despite the differences of nationality.

Dairy Associations Helped.

In 1909 a great step forward in co-operative work was taken in the organization of the Ferndale Cow Testing Association through the efforts of C. L. Mitchel, then dairyman with the Government. It has been of great value in helping the dairymen to weed out their unprofitable cows and determine the most valuable blood to perpetuate. It is the direct forerunner of the Dairymen's Association, the latter being organized in July, 1912, on the occasion of the visit of Dr. Leroy Anderson. He was at the time in the employ of the United States and took a prominent part in the discussions of the Ferndale Cow Testing Association, which, through its efficient work, was already showing the dairymen the value of co-operation. The new organization was formed on intensely practical lines, one of its first official acts being the purchasing of seeds in bulk allotments for its members, thus saving dealers' profits.

Testing Improved the Herds.

The value of a cow to the dairyman depends chiefly upon two factors—blood and feed. The cow testing association in a large measure took care of the first of these. The three regularly employed testers scientifically analyzed the product of the various herds and were able to give the exact amount of butterfat given by every cow on the association list. The results spoke for themselves, for it was found that cows of pure blood more than made up in butterfat for their additional cost. The immediate tendency was to improve the standard of the herds, until today some of the finest cattle of the Jersey, Guernsey, and Holstein-Friesian blood are to be found in this section.

"Agriculture's big job in 1919 will be easier if farmers are organized," says Secretary Houston. "We should especially strengthen the local farm bureaus and other organizations which support so effectively the extension forces and assist them in their work."

No matter whether you live in Humboldt or Hoboken, you will profit by reading this article, which tells of the results of co-operation in the first county in California to have a farm advisor and a regularly organized cow testing association.



The valleys of Humboldt county provide ideal conditions for dairying, and in this prosperous little kingdom are found more cows to the square mile than in any other section of the world.

Root Crops Largely Fed.

The problem of securing a properly balanced ration for dairy herds from the soil was the one to which the Dairymen's Association turned its attention. Nowhere in the United States are root crops so popular as a feed for dairy cows as in the Humboldt country. This is partially due to the fact that the soil is naturally adapted to the production of root crops, and also to the fact that these crops are popular in the old country, from which so many of the pioneer dairymen came. The root products, which are carbohydrate in character, are balanced by feeding clover, alfalfa, vetch or peas.

The First Farm Advisor.

The members of the Dairymen's Association were quick to realize that the soil and climatic conditions of Northern California were essentially different from other sections of the State and that its agricultural problems varied accordingly. Working on this theory, they began an agitation to have an experimental station established there. This resulted in the employment of a resident farm advisor sent out from the University of California to lend his knowledge of soil conditions to those engaged in agriculture. Humboldt thus came to have the first farm advisor in the State, and she was also first to have a regularly organized cow testing association. Upon the advice of this official, the dairymen were able to seed the inexhaustible soil of the bottom lands to produce the maximum of food that formed a balanced ration for dairy use. By systematically rotating crops and occasionally adding a little lime, marvelous crops were possible 365 days in the year. These, of course, were marketed through the cows.

Only Woman Tester in State.

An interesting feature incident to the war is found in the employment of Miss Margaret Folsom, former student at the University of California, as one of the three cow testers in the employ of the Ferndale Cow Testing Association. Through the enlistment of its employees this association was unable to keep a full force of qualified cow testers. Learning of the shortage in help, Miss Folsom prepared herself for the work by taking a short preparatory course at the Agricultural College at Davis and now finds herself in the unique role of being the only woman cow tester in California. Altogether, there are twenty-seven women in the United States engaged in this novel employment, and the great majority of them, like Miss Folsom, took it up as a patriotic service. The work means arising at three or four o'clock in the morning and working long hours, and necessitates a continual moving from place to place. Because of these features it is difficult for a woman, but it has so many redeeming features that Miss Folsom is inclined to make it her permanent occupation.

In Humboldt the value of the cow tester is fully recognized and most of the important dairy ranches in the Eel and Mad river section are affiliated with the association, which entitles them to a monthly testing of their herds. Each cow tester has a given circuit of dairy farms to make in a month. There are approximately 1300 cows to be tested out on each route. The testing requires great care, although the process is comparatively simple. Composite samples of the evening and morning milking from the cows are placed in separate bottles, and a certain amount of sulphuric acid is added to burn out the solids other than butterfat. Hot water is added, and the fat then rises in the neck of the bottle, where it is measured and recorded, and by close computation the tester is able to tell the dairyman the exact amount of butterfat produced by each of his cows.

Through the efforts of the Dairymen's Association, the milk delivered throughout the county is pasteurized and is if uniform quality and standard price. This provides a protection alike to the public and to those men in the business who seek to maintain a high standard for their dairy products.

Protecting Dairymen's Interests.

In addition to encouraging better and more productive dairy herds and the more economical farming of the dairy lands, the Dairymen's Association keeps a close watch upon all legislative measures that in any way might affect the dairy business. These subjects are discussed at length before the association by men familiar with the proposed laws and the dairymen are thus able to cast the weight of their organization for or against such legislation as has a bearing on their business.

The past year has been one of marvelous prosperity to the dairymen and creamery operators of Humboldt county, for, despite the fact that the war occasioned a shortage of labor, the dairy products brought fabulous prices and many private fortunes were made by those fortunate enough to be engaged in the business. An idea of the vastly increased output can be gleaned from the fact that one creamery establishment furnished 750,000 pounds of butter for the navy alone. The systematized business arrangement existing between the creamery men and the dairymen greatly facilitates the carrying on of the business at the present time, the latter devoting their entire attention to butterfat production and the creameries taking care of the raw product.

Co-operation has done much for dairying in Humboldt county and will be an even more potent factor in the era of development ahead.

The Federal Land Bank and Its "Associations"

Written for the Pacific Rural Press by John J. Fox

WHEN the Federal Land Banks were established, their prima facie function was to enable the farmer to obtain money at a reasonable rate on absolute security. Also to relieve him from worry by the long-term loan. But of greater value even than this was their fostering of the neighborhood spirit by the establishment of local associations. These feel strongly the importance of the trust reposed in their deliberative councils and the grave responsibilities they are willing to bear in accepting applications and appraising properties of new members. The neighborhood spirit is the most valuable asset of any agricultural district. It results in the interchange of domestic experiences and rural and political ideas that are the very soul of country life and progress.

A tentative suggestion has appeared recently that runs as follows: "Some people think that time could be saved if farmers were allowed to borrow directly from the (Federal Land) Bank through the medium of resident agents rather than through farm loan associations." It would undoubtedly save time. It would also emasculate the Act under its present form and convert this Federal institution into a public competitor with private and corporate banking institutions. But, fortunately, it is not the purpose of the Federal Land Bank to make money. The question is: Would the associations stand for having their business run by a resident agent? The Federal Farm Loan Act, in providing for the responsibility of the stockholders, also provided them with a right in the administration of their business.

Fixing the Valuation.

The writer, as an appraiser for this bank from the time it started until last July, has an intimate acquaintance with over forty associations, and, having been a farmer for nearly thirty years, found the moral tone of each association very readily. In practically every one of them a strong sense of responsibility and enthusiasm were prominent, and in most instances the men chosen as local appraisers were well qualified men, who were keen to be both fair and safe in their valuations. At first, where prices were set high, they explained that they figured on being cut by the bank's appraiser. Or they sometimes appraised land away below its real value because there was ample security for the loan desired. Again, land might be appraised above its real value because it would "sell" for that—by reason of desirable location or adept salesmanship. But it was explained to them that agricultural (not horticultural) "productive" valuation was the basic valuation of the land; that, no matter how great or how small a loan was required, an accurate base should be placed, because the appraiser considered the bank was establishing a base on different classifications that should endure for all time, with only such fluctuations as exist on land in old-established communities. The appraiser felt that this work was the beginning of equalization of taxation that might some day be applied to the State and help to allay dissatisfaction among smaller taxpayers.

> The spirit of a live man is supported by his spine. The spirits of others rest on their stomachs —or their purses! Of these latter, if their pockets are molested or they go a bit hungry they collapse. Virtue passes from them like wind from a pricked bladder. But the man whose spine and spirit are one, only gives in when life departs. Hang together. The man in country districts who holds aloof and takes no interest in politics or in the welfare of his neighborhood is about as valuable as a lump on a log.

Self-Interested Men Not Desirable.

Generally speaking, where there have been any basic over-valuations made by loan committees after this system of valuation has been once explained to them, it has been in associations where the secretary-treasurer has been interested by his employment in the granting of loans. Personally I found such men very nice to do business with. They were prompt in keeping engagements, had their papers in order and were good, honorable men. But they see through rose-colored glasses and are prone to impart this optimistic view to their members. That is why it is undesirable for an association to employ a man as secretary-treasurer who has a specific motive other than the furthering of the interests of the farmer and advancing the farm loan system. Are not the values, endorsed by neighbors who have backed those values by a pledge up to one-fifth of the value of their own loans, safer than any that could be recommended by a resident agent who is also the appraiser?

As it is now, in many small districts neighbors keep an eye on each other's farms to see that values are not being permitted to decline with a view to default. The improvements provided by one farmer serve as an impetus to others to go and do likewise. When a bunch of men are in the same lodge—so to speak—they are going to come across with their dues more promptly than with private liabilities unknown to others.

Service—Not Paternalism.

The strength of the government of a country lies not in its laws but in its service. It encourages effort, but does not confer favors. It affords also protection but without encroaching on the liberty of the individual in representation. The Federal Government not only fosters the rural spirit in one line, it recognizes how this must be safeguarded in all lines. For instance, in encouraging small stockmen in the uses of the ranges in the West, it offers protection from "varmint" and fire through the Forestry Department; from disease and poisonous plants through the bureaus at Washington. In encouraging the planting of cotton, rice or what not in a new country, the Government establishes laboratories and experimental stations, and pays scientists to aid in its successful fruition. And the primary cause of this is the building up of good, strong resident groups of individuals who shall, by faith in themselves and joint action, become strong and active supports of the nation at large as well as producers.

Democracy itself depends on this unit of "husking" spirit. The farmers who are stockholders in the Federal Land Bank are not likely to acquiesce in the establishment of resident agents and borrow through this medium. They have the right to choose who their associate shall be and have a voice as to the extent in which they are willing to recommend him as a borrower through their own board of appraisers. No matter whether a resident agent were paid by salary or salary plus commission, he would want to make good and bring in business. In a little while, it is plain, he would be after only the cream of it and let the small man go hang. If we keep to the principles for which the Federal Land Bank was founded, it will always be what it is today—a splendid thing for the farmer. A wonderful co-operative organization in which one can foresee incalculable benefit to the American farmer. If this control gets out of the hands of the farmer, it is his own fault.

Many of the associations have had to wait a long time for their money. That was frequently because they did not send in all their documents promptly after their loans had been passed. Also perhaps 90 per cent of the bank's business is in irrigation districts, and it is absolutely essential that it should be known that the bank is getting first mortgage on the water as well as on the land. In the early days of the bank it was because large numbers of associations had been formed and they could not all be visited at once. But one way that the work of appraising could be facilitated would be by employing only appraisers who had the confidence of the farmer as well as of the bank. Appraisers should be put on probation, their systems of basing values explained to the bank's satisfaction, and their work checked up. When the bank is absolutely assured of their integrity, ability and industry (the importance of these qualities being in the order set forth) their recommendations could be safely accepted and they should be hampered with as few injunctions as possible. Appraisers should be paid a salary commensurate with the importance of the service they render, as their judgment constitutes the buttresses of the safety of the institution. The associations are its very foundation.

The working method of the Federal Land Bank as it is today is not unlike that of our co-operative fruit selling organizations. It encourages the spirit of collective individualism—the same spirit that actuated our forefathers in organizing husking bees and logging bees, but without any room for leveling the man of spirit down to the same status as the shiftless or the indifferent. May its benefits increase and the institution prosper.

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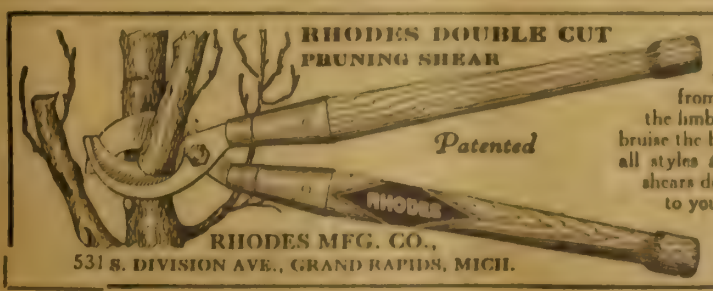
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Deciduous Fruit and Nut Experiment Station

[Written for Pacific Rural Press by H. C. Dunlap.]

THE STATES OF THE UNION have come to recognize the need of fostering and aiding the rural producer. This function has, in our state, been delegated to the agricultural department of the state university. As producers, many who have given the matter attention, are inclined to feel that proper appropriations are lacking, due to the fact that the needs of the agricultural department are in some measure balanced against the purely academic requirements of other departments.

For some years past a very substantial and representative committee of orchardists in the Santa Clara Valley have advocated and worked for the establishment of a deciduous fruit experiment station for the State of California. Their work has been wholly without personal or community interest, other than the value to the industry of the State that would result from such an establishment. The locating of such a plant would naturally be desired by any producing community, and this committee has disproved any selfish motive, having suggested in the past certain State properties in other districts as suitable locations.

Without going into details, will say the work of this committee has been confined largely to conferences with the authorities of the University of California, where they have for four years past requested desirable appropriations and greater attention to deciduous fruit and nut production.

During the month of June, in conference with the board of regents and President Wheeler of the State University, also Dean Hunt of the College of Agriculture, the demands of our committee were most conservative on account of war conditions. We requested them to include in their budget, to be presented at the coming session of the Legislature, an additional appropriation of $50,000 to be expended during the next two years in greater attention to the needs of deciduous fruit and nut producers. Our demand met with a most favorable expression on the part of these authorities, and the $50,000 requested has been included in the budget and passed on by the State Board of Control. Since that time the war having closed it has been considered only proper to ask for the greater appropriation that can be so profitably expended during the next two years.

UNANIMOUSLY APPROVED.

This committee, with which our association has seen fit to affiliate, arranged for another meeting with the University authorities and, after corresponding with farm bureaus and growers' organizations throughout the State, secured unanimous approval and considerable attendance in support of a request for $150,000. In a meeting with the regents on December 17 the following specific request was presented.

"To the Honorable Board of Regents and President of the University of California—Gentlemen: In behalf of the deciduous fruit and nut growers of the State, our committee wishes to thank you for the opportunity of again meeting and discussing with you matters pertaining to our deciduous fruit industry. Since our last meeting in June, numerous growers' organizations representing deciduous fruit producers have associated themselves with our committee. Also, we have recently corresponded with farm bureaus throughout deciduous fruit producing districts of the State, and we find them in every instance heartily in sympathy with our work. Altogether we feel that the demand for department work such as we are requesting is insistent and State-wide.

"There are two principal reasons for our requesting this meeting today: First, the changed war conditions certainly warrant an increased appropriation; second, a change in our ideas as to the system of administering the work, which we trust may meet with your approval. Our original idea was for the establishment of one central station from which observation and research work would be carried on. Our opinion in regard to that matter has changed and we feel that in a State like ours, where we have the greatest diversity of soil and climatic conditions, the requirements of producers could hardly be attended from any one establishment. From a department with the administrative head in Berkeley or Davis or elsewhere, we now feel the work could be accomplished to the best advantage through the establishment of sub-stations in the several districts of the State, where, under varying soil and climatic conditions, several deciduous products are raised.

"During the discussion on the occasion of our meeting with you last June our suggestion of a committee of practical growers to assist the department with advice as to the producers' needs met with your favor. Having recently taken the matter up with farm bureau organizations throughout the State, we are led to suggest that the practical touch the department would require might best be secured through some affiliation with these organizations.

"The sub-stations we are suggesting would include ownership or rental on the part of the State of small tracts of land, say ten or twenty acres, where experiment work, in many cases extending over a series of seasons, could be accomplished without interference. In no case are we asking for a large outlay for buildings or equipment. In order to carry out plans as thus briefly outlined, it is the opinion of this committee that you should include in your budget an appropriation of at least $150,000 in place of the $50,000—our war-time request. The greater portion of this sum to be expended in experimental work and the development of an adequate personnel in the department.

"The deciduous fruit industries of the State amount to investments totaling several hundred millions, with a yearly output of values in excess of $50,000,000.

"Respectfully submitting this as a specific request on the part of the producers of the State, and thanking you for your earnest and favorable attention to the matter, we remain,

"Yours very truly,

"Deciduous Fruit and Nut Producers' Committee."

APPROPRIATION TO BE ASKED FROM STATE LEGISLATURE.

During the lengthy discussion that followed, representative growers from all districts of the State brought out most emphatically the desirability of work contemplated. The University authorities appeared most reluctant about requesting further attention from the State Board of Control, and many members of the growers' committee are now considering the desirability of presenting a bill to the present session of the Legislature to include the additional $100,000. Any small success in experiment work along many lines would certainly develop a value warranting many times the expenditure. The bill would have the advantage of being absolutely a conservation measure entitled to attention in the face of retrenchment plans.

Some little experiment and success in the development of artificial fruit drying, more absolute control of red spider, oak fungus and other pests, pruning experiments and deciduous fruit irrigation results scientifically observed, would all conserve many millions of dollars for California producers.

In case the attempt is made to secure legislation, we have no doubt that growers will, through their selling organization as well as granges and farm bureaus, unite in the support of the measure.

PROGRAM OF EXPERIMENT WORK.

A small committee calling on Agricultural Department authorities at Berkeley on December 30 were most favorably impressed with the excellent understanding of the growers' problems evidenced by the department in their excellent program for

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Submit a list of your tree wants for special quotation. Do it right now.

We have also a complete assortment of Shipping Plums, Cherries, Prunes, Bartlett Pears, Fall Pears, Peaches, Almonds, Apricots, Walnuts, etc.

Our foot-hill grown trees are free from root diseases common to other localities. Our trees insure your future profits in fruit growing.

And remember—we will accept Liberty Bonds as full or part payment for trees. Write us today.

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experiment and research work. The whole difficulty lies in the lack of funds necessary to carry forward the work. The list of necessary work will require close to $200,000 during the next two years and we should have at least the full $150,000 requested. Any smaller sum would so retard the work as to make it either ineffective or entirely neglected in some important details.

Following is the list of lines of work to be undertaken in deciduous fruit and nut experiment and research work, to include also attention to olive, fig and grape cultural problems: 1, orchard surveys; 2, modification of soil structure; 3, irrigation of old orchards; 4, water requirements and reaction of deciduous fruits; 5, control of orchard diseases; 6, control of pear blight; 7, orchard insect control; 8, investigation and application of insecticides and fungicides; 9, land, equipment and management; 10, a test of root stocks; 11, pruning investigation and demonstration; 12, dried fruit investigation; 13, fruit storage investigation; 14, frost protection; 15, utilization of wine grapes and culls; 16, diseases of the vine; 17, demonstration of viticultural methods.

It is now the plan of the growers' committee to secure the backing of all interests and, failing to secure further attention from the University regents, we will introduce a bill before the present session of the Legislature

CALIFORNIA GRAPES TO NEW ZEALAND.

While large quantities of grapes are consumed in New Zealand, it transpires that owing to the opposite growing seasons in that country and California, the only available table grapes in New Zealand during their off season are products of the hot-houses which are for sale at prohibitive prices ranging from 25 cents to 75 cents a pound.

As a result of fruit market investigations conducted in New Zealand by the United States Bureau of Markets, co-operating with the American Consul-General at Auckland, grapes from the United States will now be received into that country, which previously allowed imports from Australia only. This opening of New Zealand markets will afford an outlet for varieties that thrive in California, such as Malaga and Red Emperor.

PRUNE AND APRICOT ASSOCIATION—APRICOT CARTONS.

It has been found possible to get out a small pack in the one-pound apricot carton, and we confidently look forward to favorable reception of these goods in the trade. The little start possible this season will certainly make for a wider field in the seasons to come. We have waited very patiently the possibility of this start, as the individual package seems to be the foundation of success in modern merchandising concerns.

The original sanitary package direct from the producer to the consumer will bring to the consumers and popularize with them the brands in which we desire to develop values. Until such method of distribution is considerably established, a real consumer advertising campaign will hardly be warranted.

A PATHFINDER PASSES ON.

The death of Edwin T. Earl at Los Angeles on January 2 removes a man who was one of the most important pioneers in marketing our green fruit and vegetables in the East. Born on a farm in Inyo county, he entered into business with the vigor of a mountain constitution. He was one of the first men to commence the development of the Eastern market for our fresh fruits and invented the first ventilator-refrigerator car for their transportation. He was the founder of the Earl Fruit Company and later he originated the Continental Fruit Express a private car line for the handling of perishable fruits and vegetables. He retired from the fruit business in 1900.

Green Recruit—Do you think we'll ever get back?

Scared One—I don't know about you, but if the first shot doesn't hit me the rest are all going to fall short.

CROP Production

Is controlled by the kind and quantity of plant food furnished the tree or plant.

It is not enough to merely fertilize. It is important that the tree be fed material giving maximum results under California conditions

These materials are furnished in

Hauser's Organic FERTILIZERS

Correct Fertilizer for California conditions.

Send for Fertilizer Booklet Tells you why.

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The FRUIT GROWER says=

"for tree planting genuine GIANT is most satisfactory"

The Giant Farm Powders—Eureka Stumping and Giant Stumping—**loosen and pulverize** the soil instead of packing it and throwing it high in the air.

Western fruit growers have used hundreds of tons of these Giant Powders for blasting beds for trees. They have proved that blasting with genuine Giant Powders provides free drainage, increases moisture-storage capacity and insures vigorous growth and early bearing.

"My trees planted three years ago in beds blasted with Giant Powder are 75 to 100 per cent bigger and better than the trees that I planted in dug holes," writes H. H. Smith, Oregon City.

You will enjoy reading "Better Farming with Giant Farm Powders." It describes all the new and money-saving methods of blasting beds for trees, subsoiling established groves and orchards, clearing land, ditching, etc. Write for it now.

THE GIANT POWDER CO., CON.
"Everything for Blasting"
216 First National Bank Bldg., San Francisco
Branch Offices: Denver, Portland, Salt Lake City, Seattle, Spokane

GIANT FARM POWDERS
STUMPING EUREKA

Plant Fruit Trees

APPLES
PEARS
PEACHES
PLUMS
NECTARINES
APRICOTS
WALNUTS
ALMONDS
CHERRIES
ORANGES
LEMONS

Be Sure and Send for Our Catalogue

The land around Fresno is particularly well suited to the growing of fruit-bearing trees. Here both tree and fruit attain their highest perfection.

We exercise great care in the selection of our buds and our trees —"From the Roots Up"—can quite properly be called thoroughbreds.

Write to us—let us know just what you are thinking of planting, character of the soil, water, etc. We are always pleased to advise with intending planters.

The demand for trees will be heavy again this year, so we would suggest that you order early.

Fresno Nursery Co.
P. O. Box 615-P
Fresno, Calif.

Here and There in the Fruit Business

[Written for Pacific Rural Press.]

A Novel Red Cross Fruit Exhibit.

A novel and artistic apple design has been on exhibition in the window of the Santa Cruz Chamber of Commerce. It is called the "Heart of the World" and is in the shape of a heart composed of three-tier Newtown Pippins, with a red cross in the center of highly-colored Baldwins. Scattered on the floor are leaves of the maple in all the brilliance of their autumn colors and a tasteful arrangement of Isabella Regia grapes, oranges, lemons and persimmons, while the title is outlined in small rosy lady apples. The fruit comes from the Henry Dakin ranch, off Soquel Canyon. After the exhibit, it is to be sold for the benefit of the Red Corss.

Is Handing Us Lemons.

Santa Barbara claims she will be one of the lemon centers for supplying the world if those contemplating planting out their acres carry their plans out. The harvest there this season has been satisfactory to growers. The many young orchards we saw there have every appearance of vigor and promise. California is now a leader in lemons and estimates indicate that 10,000 carloads will be packed in the State this year, a 25 per cent increase over the largest previous yield—an indication of large new bearing areas. From September 1 to November 25 this year California shipments of lemons amounted to 1540 carloads.

Co-operative Company Counts "Kale."

At a recent meeting of the members of the Auburn Fruit Exchange, distribution of the amounts of two dividends was made. Also checks for loss and damage claims were distributed. Addresses were made by George H. Cutter, president of the California Fruit Exchange; W. D. Bennett, sales manager, and E. H. Gammon, one of the directors, who is also a well-known pear grower of the Sacramento. Co-operation in this instance left its members well satisfied and the turkey dinner which followed the meeting brought the proceedings to a pleasant conclusion. Which is not surprising!

Forecast of Greek Olive Oil—1918.

Estimates of the olive oil production in Greece for 1918 place the quantity at 31,702,800 gallons, according to Vice-Consul C. M. Corafa at Athens. This is 30 per cent more than last year's output. Present prices range from $2.51 to $2.64 per gallon. The mainland of Greece is only credited with 1,678,500 gallons. All the rest comes from the Ionian Islands, Crete, Mitylene and Sporades Islands, Eperus and Peloponnesus and Pelion.

"California Fruits" (Wickson).

A number of applications are coming to the Pacific Rural Press office every week for "California Fruits" (Wickson). Orders from England for 25 copies came in last Saturday. We are sorry to announce that the latest edition is now exhausted and the new edition will probably not be published before next fall. Orders are being placed on file pending such publication.

Sharp Tools—Clear Conscience.

Fruit men all over the State are now busy pruning their trees and vines. When a man knows why he is making certain cuts on a tree, then pruning is learned. And all that is requisite is that he should keep his shears sharp and have his wits about him. The writer knows from experience that it sometimes happens that men present themselves as "professional pruners" who are, as a matter of fact, "tree wreckers," whose chief object seems to be to get something on the ground—the fruits of their industry. And thus a branch is very often severed that is easiest to get at rather than the one that ought to come off. A good pruner must have knowledge of his trade, good, sharp tools, judgment, industry and a conscience. With these qualifications he can always get a job and earn his wages.

Pruning to Bring Trees in Early.

Professor W. P. Tufts of the University Farm at Davis has been demonstrating methods of pruning to bring young deciduous trees into bearing from one to three years earlier than old methods accomplish. They are the result of four years' experimentation on many young trees of the University orchards. He shows that the less young trees are cut the heavier they are at the butt and head at three or four years, at which age prune trees are large enough to be brought into bearing on suitable soil. A large number of growers and professional horticulturists from all over the State have attended the demonstrations and lectures given by Mr. Tufts at Davis.

Cheap Paint Sprayed On.

A stain or dressing made of equal parts of crude oil and kerosene makes an excellent dressing for outbuildings and fences, according to Professor J. W. Gilmore of the University of California. The kerosene in the mixture gives it penetrating power and it is all the better if it is sprayed on during the heat of the day. It has good weather-resisting qualities. It dries on a soft brown that harmonizes with practically anything in color.

Federal Land Bank of Berkeley.

Following is a report of the business done by the Federal Land Bank at Berkeley from the time of its organization up to November 30:

9,973 loans applied for amounting to	$31,891,937
5,950 loans rejected or cancelled =	17,952,531
4,712 loans approved =	13,988,860
1,102 loans withdrawn or cancelled =	3,058,760

The total of loans closed to the above date amounted to $9,008,600 to 2963 farmers.

Early Planting for Paso Robles.

Trees planted early in this district get away and make better growth than when planted later, according to P. S. Brown, who has 30,000 trees. Trees planted in December had up to over four feet of growth by the end of the season, while trees planted two or three months later did not average over half that.

Thoroughness in Spraying Cannot Be Overemphasized

In order to get maximum results in spraying for any pest thoroughness of application is the most important factor to be considered. Too often failures result because of the fact that large trees are sprayed with from 1½ to 3 gallons per tree, when from 5 to 10 gallons would be required. The great rapidity with which insects breed and with which fungous diseases develop make it necessary to kill practically 100% of the insects or spores that are present at the time of spraying in order that an orchard may be practically free from these pests afterward.

The aim in spraying should always be to miss no portion of the trees with the spray; that is to say, every square inch of surface should receive its supply of the insecticide or fungicide for maximum results. Good equipment is necessary in order that the most thorough spraying may be accomplished. Not only is the best of equipment desirable, but only men who recognize the value of careful work in applying the spray should be entrusted with the important operation.

Federal Farm Loans

Long Term *Low Rate*

All loans made on an amortization plan whereby the borrower repays the principal gradually with each interest payment.

Over three thousand satisfied borrowers in this district. It will pay you to investigate.

For information apply to the nearest **National Farm Loan Association** or write direct to

Federal Land Bank of Berkeley

Berkeley, Cal.

Thompson Seedless Cuttings

20,000 well rooted thrifty cuttings made a growth of 12 inches last year

Feather River Orchard Co., Marysville

Office, 706½ K St. Sacramento, California



"This Is *My* Hired Man"

"I never had a man who was as willing to work as this little stick of dynamite—nor one who did his work as well either. Rain or shine, hot weather or chilly, day or night—this little fellow is always on the job.

HERCULES DYNAMITE

is what you need to help you work *your* place this season. I used to try to do all my heavy work by hand too. Dug post holes and ditches and the holes to plant my young trees in until my back was nearly broken. But no more of that for me. *I use dynamite now.*

Last year I sent to the Hercules Powder Co. for their book "Progressive Cultivation." It's easy to get—they send it to you *free* if you sign and send in the coupon that is printed at the bottom of every one of their advertisements.

Better send for this book. It tells you all about the use of dynamite on the farm and in the orchard."

HERCULES POWDER CO.

1025 Chronicle Building

San Francisco California

Hercules Powder Company, 1025 Chronicle Building, San Francisco, Cal.



Gentlemen: Please send me a copy of "Progressive Cultivation."

I am interested in dynamite for_____

Name _____

Address _____

The War Is Won

But the consumer of Food
Must Still Economize

and the producer of Food
Must Fertilize

The Food Administration is at this very time warning our people of the danger of any let up in the economical use of food.

While food will be needed next year more than ever, there are thousands of acres of valuable land idle as a result of the war. Therefore every acre under cultivation must be made to produce its utmost.

Just as our soldiers must be well fed to make them efficient, so the soil must be well fed in order to make it produce larger and better crops.

GOLD BEAR FERTILIZERS

are scientifically manufactured to meet California soil conditions and crop necessities. They are made from animal products that contain the necessary elements to feed your crops.

SEND FOR OUR NEW FERTILIZER BOOKLET

Western Meat Company

SAN FRANCISCO, CAL.

PURE ANIMAL MATTER AMMONIATES

GOLD BEAR FERTILIZERS

FOR CALIFORNIA SOILS

MUSCAT GROWING YIELDS GOOD RETURNS.

[Written for Pacific Rural Press.].

When Muscats give a return of two and a half tons to the acre at 5½c, it represents a net 10 per cent interest on $1,200 an acre, after paying operating expenses. One realizes that a good many lean years in the past have to dip in on this return, but it is there.

To give an instance of the manner of results obtained, C. W. Adams of Fowler (Fresno county) has a 60-acre Muscat vineyard 25 years old, whose bearing capacity has been increased by management. In 1912 this old vineyard yielded 87 tons of raisins. The following two seasons gave only 48 tons each year. In 1915 the tips of the shoots were all pinched back when they first showed forms. It took two boys two days helping him to do this at a total cost of $12. Every cane saved has fruit on. Plowing has been deferred until about blossoming time, which Mr. Adams claims makes the grapes set better. He then irrigates in June or early in July, when there is plenty of water, starting as soon as possible after the grapes are well set, then cultivates thoroughly—sandy loam soil. In 1915 the vineyard produced 108 tons of raisins and the three following years yielded 120, 132, and 150 tons respectively. These are results that attract.

WALNUT CROP DOUBLED BY GOOD MANAGEMENT.

[Written for Pacific Rural Press.]

Peter Irvine of Goleta has an eight-acre walnut grove that produced six and a half tons of nuts this year. It formerly produced an average of half a ton to the acre, but he has increased the productivity to the present standard by putting in a pumping plant and systematically irrigating.

In November Mr. Irvine was irrigating right after the crop was off preparatory to sowing of cover-crop of melilotus. Water comes to within seven feet of the surface and goes down to about 21 feet by steady pumping. He gets a 14-inch stream with his outfit at a running cost of 10c an hour.

Many of the trees were in good foliage, even this late in the season. Mr. Irvine, in answer to a question of ours, relative to inducing new growth in the late fall by irrigation, told us that last year he had some trees bloom and set fruit as late as August and he could not see that it made any difference to this year's crop. Eugene Kellogg, the County Horticultural Commissioner, has known this orchard since it was planted and wished us to see it, as an example of a crop being doubled by irrigation and good orchard management.

A RECORD OF COLOR AND FORM IN FRUIT.

A correct representation of every variety of fruit is desired by the United States Department of Agriculture at Washington, and W. F. Wright, a botanist, has been detailed to collect specimens which will be used as models by a water color artist. These illustrations will be filed for reference as to the origin and nature of the fruit named. "The value of a standard of this sort is readily recognized by fruit men," according to Mr. Wright. "Old species of fruit are constantly appearing under new names and with an official classification to refer to it will be possible to prevent misrepresentation and mistake." He says further, with regard to peaches, that on the west coast of South America, Chile and Peru peaches are grown almost entirely from seeds. That in all Peru there are only one or two men who understand budding trees, while Peru has but two commercial nurseries.

With regard to the pictures, he says that Washington already has a good collection of pictures of Florida fruits, but this is the first attempt to preserve California products in this manner. These illustrations may also be reproduced in publications.

CATERPILLAR

Reg. U.S. Pat. Off.

DISC PLOWS

The same accurate knowledge of Pacific Coast farming conditions, the same careful and simple designing, the same high quality of material and workmanship, the same high standards of strength and sturdy construction that have made the "Caterpillar" Tractor supreme in the farm-power field, have gone into the building of "Caterpillar" Disc Plows.

"Caterpillar" Plows are not a new product—we have been building them for years. They were produced primarily for use with the "Caterpillar" Tractor, so they had to BE good and MAKE good—we couldn't afford to endanger the enviable "Caterpillar" reputation by offering a plow that wouldn't prove equal to the severest tests of strength and service.

With any make of tractor, we know that they will help the farmer do a better job of plowing and enable him to get more out of his tractor by increasing the tractor's capacity for work and eliminating delays due to plow troubles.

Get the "Caterpillar" Disc Plow catalog and learn of the many exclusive features not found on any other plow!

THE HOLT MANUFACTURING CO.

Stockton, California — Peoria, Illinois
Spokane, Washington — Los Angeles, California





"Over There" and "Over Here"

Necessity has taught the thrifty peasants of Europe the golden value of manure. Every ounce is painstakingly returned to the soil, even if it must be done by hand to get good distribution. That is why "Over There" they get such large yields per acre.

"Over Here" we have not been forced to raise as many "bushels per acre," but modern machinery enables us to produce more "bushels per man."

Progressive farmers who realize the value of manure and leading authorities agree that one of the best paying machines for the farm is the

NISCO
The New Idea

Saves time, spreads even and wide, pulverizes thoroughly and distributes the manure just right to get its full value. One man with the "Nisco" can do more and better work than several with pitchforks.

The "Nisco" Spreader has been widely imitated, but an imitation is never more than an imitation. To get the best spreader get THE ORIGINAL—the "Nisco"—the machine that revolutionized old-fashioned methods, that has always been the leader, that has stood every test.

See the wide spreading "Nisco" at your dealers. Look him up or write us for his name. We will send you our booklet, "Helping Mother Nature," which gives much valuable information on soil fertility. Send for a copy today.

"Last Winter my son purchased one of your spreaders, though I had an old one that I thought he could get along with. I know of no better way to tell you what I think of yours than to say that it is just as far ahead of my old one as the old one was ahead of the fork and wagon. Every farmer should have one."
Marion Sears. Indiana.

"I have used one of your Spreaders for four years and it has given the best satisfaction. We spread manure every day during winter and even when weather conditions are very unfavorable. I would not give your machine for any other make of spreader that I have ever seen. I consider it the best paying investment a farmer can make."
C. M. Hatch. Ohio

"NISCO" Straw Spreading Attachment—Gives You Two Machines in One.



New Idea Spreader Co.
Spreader Specialists. Coldwater, Ohio
(9)

PRUNE TREES

French--Sugar--Robe de Sargent. Grafted Grape Vines, Apples, Peaches, Pears, Etc.

Large Stock. Best Trees. Lowest Prices.

We Ship on Approval. Write for Prices.

MILLER & GOBBI Inc. HEALDSBURG, CALIF.

Now's the Time

to get in your dormant or winter spraying. If done properly—this will prevent the accumulation of certain insect and fungus enemies; will clean your trees and soften the bark; and will keep the trees in better health, vigor and fruitfulness. For this purpose there is nothing so effective as

Crude Oil Emulsion

Remember—Universal Orchard Sprays are made by us from the finest materials, under expert supervision. They are quick and sure. And—*they penetrate.*

Among the other sprays manufactured or distributed by us are;

Dormant Soluble Oil
Bordeaux Mixture
"Triumph" for Citrus Trees
Lime Sulphur Solution
Arsenate of Lead
Miscible Oil No. 1 for Olives
Miscible Oil No. 2 for Thrips

Order now—don't wait until your trees are laden with deadly insects.

Never hesitate to write our Service Department—in charge of Paul R. Jones, Expert Entomologist. His advice is dependable—and it's yours *free.*

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350 California Street
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UNIVERSAL BRAND ORCHARD SPRAY

Ask the Man Who Has Used It

Whether or not he has made g crops with Nitrate. Why spec late with Non-Nitrated forms o Nitrogen when, by using Nitrate, you can insure crops against adverse conditions? With the rational use of Acid Phosphate, always recommended by us, there will be no interference with normal soil conditions, either in one year or in one hundred.

W. LAMBERT MYERS
Chilean Nitrate Committee
P.O Box 248 Berkeley, Cal.

SCHOENER - HANDY GARDEN TOOLS

4 Tools That Fit on 1 Handle. Can be set at any angle. Saves stooping and bending.

Sold by Most Dealers

Schoener Adjustable garden tools are sold by most dealers. If your dealer cannot supply you, let us know, and we'll tell you where to get them. Illustrated Folder on Request.

SCHOENER MFG. CO., 412 Schoener Bldg., St. Cloud, Minn.

Government Estimate of State's Farm Crops

We present below a summary of estimates of crop production and total value to the producer of California crops grown in 1918, with comparisons for 1917, as compiled by the Bureau of Crop Estimates, United States Department of Agriculture, and transmitted through the office of the California Field Agents.

Year.	Acres.	Yield per Acre.	Production Bushels.*	Price Dec. 1.	Total Value.
CORN					
1918	85,000	35.0	2,975,000	1.93	5,742,000
1917	75,000	32.0	2,400,000	1.85	4,400,000
OATS					
1918	175,000	32.0	5,600,000	.94	5,264,000
1917	196,000	35.	6,860,000	.85	5,831,000
BARLEY					
1918	1,320,000	26.0	34,320,000	1.15	39,468,000
1917	1,350,000	29.	39,150,000	1.20	46,980,000
WINTER WHEAT					
1918	506,000	15.0	7,590,000	2.16	16,394,000
1917	375,000	19.8	7,425,000	2.00	14,850,000
POTATOES					
1918	90,000	143	12,870,000	1.20	15,444,000
1917	105,000	145	15,225,000	1.50	22,838,000
SWEET POTATOES					
1918	6,000	170	1,020,000	1.50	1,530,000
1917	6,000	167	1,002,000	1.50	1,503,000
RICE					
1918	106,220	66	7,011,000	1.90	13,321,000
1917	83,000	68	5,644,000	1.75	9,877,000
HAY (TAME), TONS					
1918	2,376,000	1.25	2,970,000	20.00	59,400,000
1917	2,400,000	2.00	4,800,000	19.20	92,160,000
HAY (WILD), TONS					
1918	182,000	.95	173,000	19.00	3,287,000
1917	225,000	1.15	259,000	13.50	3,496,000
HOPS (POUNDS)					
1918	11,000	1136	12,500,000	.20	2,500,000
1917	11,900	1320	15,708,000	.31	4,869,000
APPLES (TOTAL)					
1918	.....	.....	5,577,000	1.30	7,250,000
1917	.....	.....	5,871,000	1.15	6,752,000
PEACHES					
1918	.....	.....	11,570,000	1.40	16,198,000
1917	.....	.....	14,151,000	1.00	14,151,000
PEARS					
1918	.....	.....	3,600,000	1.40	5,040,000
1917	.....	.....	3,523,000	1.00	3,523,000
ORANGES (BOXES)					
1918	.....	.....	14,322,000	5.50	78,771,000
1917	.....	.....	7,093,000	2.75	19,506,000
ONIONS					
1918	6,900	350	2,415,000	1.25	3,019,000
1917	7,100	394	2,797,400	1.50	4,196,000
BEANS					
1918	592,000	15.0	8,800,000	5.40	47,952,000
1917	558,000	14.5	8,091,000	6.20	50,164,000

The table summarizing the crop production of California briefly tells the story of the State's agriculture and horticulture during the past year. Figures for 1917 are also included for comparative purposes. Previous reports during the year have been but forecasts of production, based on the preliminary estimates of acreage, average yield per acre, and the condition compared with a normal or "full crop" during the growing season. Here are the final estimates for the year of the crops named, obtained by a thorough revision of the estimates of acreage and yields per acre.

The total acreage of all crops given acreage figures and covered by the table was 5,456,120 in 1918, compared to 5,392,000 in 1917. By reducing all to the same unit of measure—that of tons—the total production in 1918 was 6,404,675 tons, compared to 8,251,931 in 1917, and the total farm valuation in 1918 is $320,580,000, compared to $305,096,000 in 1917. The decreased tonnage is due to the greatly lessened production of hay, both tame and wild.

DRY LIME-SULPHUR VS. ITS SOLUTION.

[Written for Pacific Rural Press.]

Professor G. W. Gray of the University of California has reported to the State Commission of Horticulture on dry lime-sulphur as follows: Samples of dry lime-sulphur have been analyzed by the laboratory and found to contain the same constituents as lime-sulphur solution. In addition, however, they contain about 20 per cent organic matter. The material does not go entirely into solution in cold water and there is some free sulphur. So far as can be judged, the dry form of lime-sulphur will produce a spray in all respects similar to the usual dilution of lime-sulphur solution—provided equivalent quantities are used.

If the manufacturer's directions for winter spraying are followed (10-12 pounds of dry lime-sulphur dissolved in 50 gallons of water), a spray will be obtained containing only about one-half as much active sulphur as in the customary 1-10 dilution of lime-sulphur solution. In defense of this half-strength recommendation the manufacturers claim that certain organic material which is incorporated into their dry compound prolongs the effectiveness of the applied spray, so that much less than the usual amount of sulphur is required. Field tests have not been made in California to determine whether or not these claims are valid. Doubtless many farmers will experiment with this during the winter. It will be helpful to all if careful notes are kept on results obtained, how and when the spray is applied and report to the Pacific Rural Press.

Orchard Trees

French Prunes
Bartlett Pears
Almonds { Texas, Drakes, Nonpareil, Peerless
Cling Peaches { Phillips, Tuscan
Cherries { Purple Guigne, Black Tartarian

Pears on Japanese and French Pear root; Prunes on Myrobalan; Almonds on Almond; Peaches on Peach.

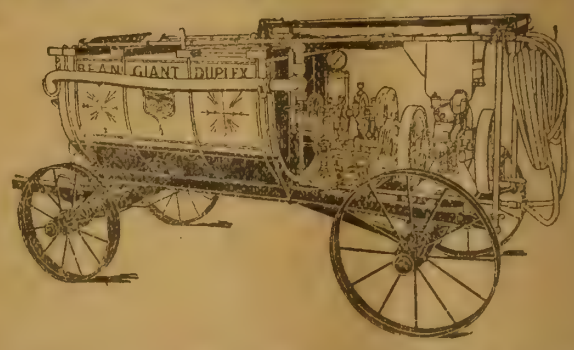
Choice, well-grown trees.

Prices on Request.

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"THE BEAN IS THE BEST."

Spray Now!



Clean up your trees! Rid them of moss and scale! Go after big crops of good fruit! Growers all over this State are busy with their winter spraying—and these are the growers who will get the money in harvest time. If you haven't a good sprayer—pick from the complete line of

BEAN Power Sprayers

Built in a variety of sizes from the sturdy, efficient little Bean Pony Duplex Outfit to the big Bean Giant Triplex, which supplies several lines of hose.

All are BEAN QUALITY through and through—it's simply a matter of how large your orchard is.

You'll get Bean dependability—reliability—efficiency—sturdiness—in any Bean outfit you buy. Better see your nearest Bean dealer at once—or send the coupon to us without delay. The quicker you clean up your trees the better.

You can't afford to miss any clear weather until the work is done.

Bean Spray Guns are supplanting spray rods this year. They save time, money, labor. Check coupon for descriptive folder.

BEAN SPRAY PUMP CO.

213 W. Julian Street

SAN JOSE, CAL.

BEAN SPRAY PUMP CO.,
213 W. Julian St., San Jose, Cal.
Gentlemen—Send me your catalog. I am interested in
POWER SPRAYERS
HAND PUMPS
ACCESSORIES
SPRAY GUNS
Name .....
Address .....

Horticultural Jottings

The Los Angeles market has been paying about $5 a box for the best grade of oranges.

A new map of Merced county has been prepared by the County Surveyor and will soon be ready for distribution.

The Growers' Exchange confirms the estimated damage to oranges and lemons by the recent frosty weather at from 20 to 25 per cent.

Tulare county shipped about 3000 carloads of citrus fruits during the year 1918, chiefly oranges, only about 230 cars being lemons and grapefruit.

Twenty-seven acres of orchard property belonging to the estate of the late Mrs. Mary Wilbur near Yuba City have been sold to F. C. Turner for $11,500.

The orange packing house at Lemon Cove is now closed for the season. The yield of Washington navel oranges exceeded expectations and the quality was A1.

The McGhee wholesale nurseries at Loomis, in Placer county, are being extended. The picturesque oaks that formerly grew on the premises have been removed for this purpose.

A bill providing for Government inspection of fruit and vegetables by the Department of Agriculture at points of shipment has been introduced at Washington, D. C., by Senator Jones of Washington State.

Pacific Fruit Express Company officials have estimated that 20,000 carloads of fresh deciduous fruit was shipped to the East from California during the past season—an increase of 2000 cars. Large shipments were wine grapes.

Citrus growers in the Riverside district met in conclave, January 2, and signed an agreement not to pick any fruit for two weeks, so as to protect the market against the possibility of finding any frozen oranges. It is said that 90 per cent of the growers were represented.

The citrus fruit shipments this year are expected to run over 50,000 carloads. About 25 years ago one heard the alarmist wondering what we should do with the fruit when Eastern shipments should reach 10,000 carloads and swamp the markets!

The Turlock cannery is shipping three cars of canned goods daily—peaches, apricots, tomatoes, etc.—to clean up everything for the coming season. They hope to increase the number of products they handle so as to keep the plant open eight or ten months in the year.

Forty-five pear growers of Northern California met at the office of G. H. Hecke, State Commissioner of Horticulture, recently to discuss ways and means for an efficient campaign against pear blight. The conference was called by Fred C. Brosius, Horticultural Commissioner of Sacramento county.

It is estimated that walnut growers will market something better than $9,500,000 worth of nuts this season from 65,000 acres. A record of quality has been established by this year's crop that will stimulate still more the endeavor to produce a high-class article. Association methods of grading and marketing facilitate a high grade of standardization.

George Compere of the Inspection Service at San Francisco has been sent to New Orleans at the request of Chas. L. Mariatt, chairman of the Federal Horticultural Board at Washington, to aid the Federal Government in the establishment of an inspection service their similar to that operated by our own Quarantine Division in San Francisco and other points in California.

MENDER ON THE MEND.

"I understood you to say the other day that your wife was ill, but I suppose she is better; I saw her this morning sitting by the window, sewing," said one man to another.

"Quite right!" replied the other. "As you observed, today she is on the mend."

Used By Three Generations of American Farmers

P&O

Implements That Prove Their Worth In Every Field Test

Light Draft Tillage Implements



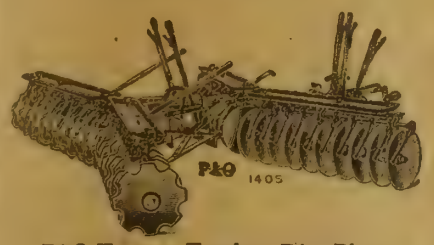
P&O Power Lift Disc Plow



P&O Little Genius Tractor Plow



P&O Bean Planter



P&O Tractor Tandem Disc Plow



P&O Four Row Beet Cultivator

3 P&O Features
Simplicity
Strength
Ease of Operation

Simplicity. The founders of this company determined upon the principle of simplicity and this feature has been applied in the building of all P&O Implements for more than three-quarters of a century. The P&O Line is noted for this—the absence of superfluous parts, and yet for the masterly provision for all needed and useful adjustments.

Strength. Strength is obtained, first—by the weight and quality of material; second, by the scientific use of material, securing that strength, rigidity and freedom from trappiness for which P&O Implements are noted.

Ease of Operation. Ease of operation is secured by a combination of simplicity with the application of certain mechanical principles which have been followed out in the construction of all P&O Implements.

76 Years of "Knowing How" Hammered Into Every One of Them

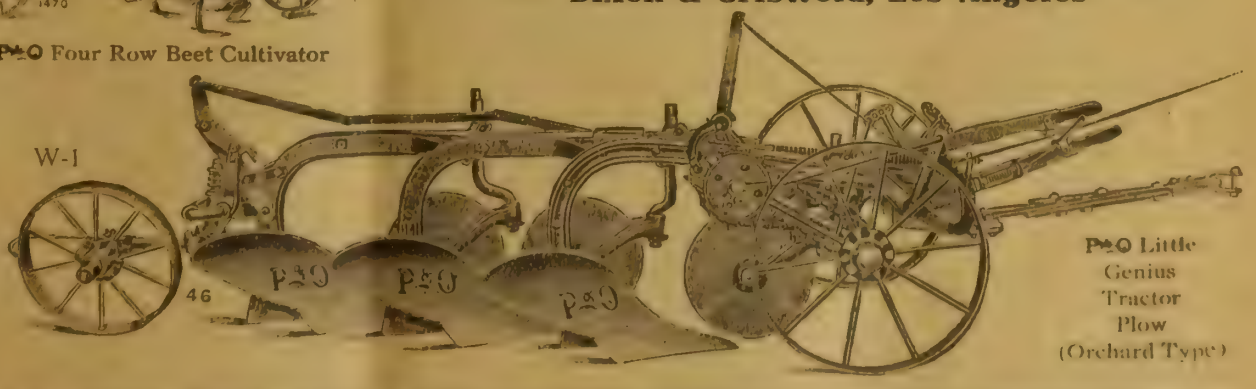
The P&O Line has been delivering the goods for over 76 years. It is a line built upon the idea that quality must receive first consideration—must be maintained regardless of any other consideration. It is not only a real quality line, but is a complete line, consisting of Plows, Harrows, Planters and Cultivators in all standard styles and sizes.

P&O goods are sold exclusively through the retail implement dealers, and we have agencies throughout the country. We shall be pleased to send our catalog describing the entire line of P&O Tillage Implements or the P&O Tractor Plow Catalog to any address. If you are interested in Tractor Plows, Tractor Disc Harrows, Tractor Listers or any other Tillage Implements, it will pay you to study the P&O line before purchasing.

Every Implement Carrying the P&O Trademark Is Backed By An Unqualified Guarantee

PARLIN & ORENDORFF CO., Canton, Illinois
Largest and Oldest Permanently Established Plow Factory on Earth

Baker, Hamilton & Pacific Co., San Francisco
Dixon & Griswold, Los Angeles



P&O Little Genius Tractor Plow (Orchard Type)

THE BEST RUBBER BELT EVER MADE
TEST SPECIAL

PLEASE SEND AT ONCE
For Our New Catalogue
It is full of valuable information.
Leonard Coates Nursery Co. Morgan Hill, Cal.

SEED POTATOES
We specialize in selected SEED POTATOES. Certified White Rose, American Wonders, British Queens, Burbanks, Garnet Chile and other varieties. Also fancy recleaned Alfalfa Seed. Write for prices.
WM. A. CURTIS & CO. - San Francisco, Cal.

Grain in California Warehouses

The following figures are taken from tables compiled by the San Francisco Chamber of Commerce committee on grain. They do not include grain in farmers' private granaries. Figures are for grain and beans in California warehouses December 1.

Barley men will note that stocks now on hand are but slightly greater than at the same time last year and that seven times in the past ten years the quantities have been comparable with this year. Beans on hand are more numerous than during the past ten years and there is about a 50 per cent increase over the same time last year. Wheat and oats are approximately normal, but rye is stored in relatively heavy quantities.

Date.	Wheat, Centals.	Barley, Centals.	Oats, Centals.	Beans, Sacks.	Rye, Centals.
1918	2,420,780	7,719,320	465,460	2,892,952	54,580
1917	2,142,704	6,815,360	462,370	1,936,193	9,900
1916	2,055,540	4,835,120	180,460	2,032,942	23,540
1915	2,506,780	7,030,980	656,980	1,799,511	31,680
1914	2,226,420	8,882,600	711,080	1,317,747	22,040
1913	1,265,360	3,922,660	280,180	806,142	6,960
1912	1,876,620	5,497,520	386,460	1,351,782	34,560
1911	2,734,480	3,750,780	552,660	1,196,126	13,020
1910	3,483,260	7,608,280	827,920	1,002,698	25,960
1909	1,945,580	5,201,960	395,940	1,196,170	11,200

Important Pomona Grange Meeting

A county grange meeting met in executive session at Mountain View, Santa Clara county, on Saturday, January 4, for the election of officers for the four county granges, as well as transacting business of the Pomona Grange. F. L. Hunt, Master of the State Grange,, presided over the sessions and installed the officers. The meeting was crowded with members well known in the fruit game and men prominent in business connected therewith. Matters of the greatest importance to us all were discussed at the meeting, including co-operation in all its phases; legislation in relation to husbandry, with particular attention to the proposed "experiment stations for deciduous fruit and nuts." The writer has found that the demand for this provision is earnest and insistent among the growers everywhere and a resolution was passed at the meeting, without a negative, endorsing the measures already taken by the growers to provide for such stations.

Farmers' mutual fire insurance was highly recommended by Past Master E. T. Pettit, who, in an earnest speech asked for co-operation which should be more comprehensive, which should become a habit of mind and action throughout with the farmer and not only confined to his own local and locality. Only by such broad co-operative action could large achievements be brought about.

Other matters of interest that were brought up were collaboration of the University with the farmer in field experiments and the necessity of such collaboration being disinterested; fertilizers, in which everybody is interested and nobody knows or will say anything to go on; and lastly spraying—a subject in which the grower is always interested.

A half a day could have been very profitably spent in any one of these subjects if a few men had been "loaded and primed." As it was, the writer esteemed it a privilege to be present at a meeting which stimulates the flow of ideas and provides new viewpoints on important subjects.

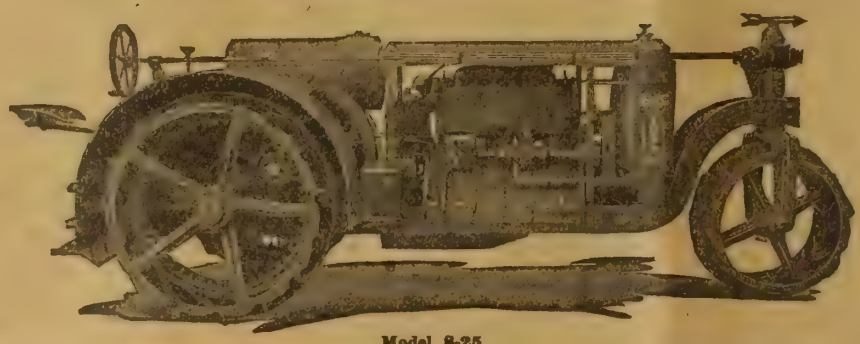
Also, a nice banquet was provided by the ladies of the grange—a repast both dainty and satisfying. Long life to the grange, which is probably the oldest, largest and most powerful farmers' organization of its kind in the world!

Changes in plans for construction of levees and pump systems have permitted the State Reclamation Board to cut over $4,000,000 from its original estimate of about $15,000,000 for construction of the Sutter-Butte bypass to relieve flood waters of the Sacramento river.

Samson

GMC TRACTORS SIEVE-GRIP GMC TRACTORS

Tractor



Model 8-25

Efficient tractors are the need of the hour. In the GMC SAMSON SIEVE-GRIP, we have the tractor that meets every requirement. It is a proven product.

The GMC SAMSON SIEVE-GRIP TRACTOR displaces ten horses on the farm and does the work better, cheaper and faster.

Its strength is equal to the most trying demands of the grain farmer. Its low, compact and simple structure makes it a most desirable machine for orchard and vineyard. Its adaptability for countless tasks upon the farm is well established.

The GMC SAMSON SIEVE-GRIP TRACTOR is a demonstrated success in every field of tractor endeavor, made possible by years of careful study and practical experience. It will CUT YOUR COSTS. It will INCREASE YOUR INCOME.

BUY A PROVEN PRODUCT.

Our illustrated catalogue, Better Farming, is yours for the asking.

Samson Sieve-Grip Tractor Company

DIVISION OF GENERAL MOTORS CORPORATION Stockton, Cal.

WHAT OUR CALIFORNIA SOLONS PROPOSE TO DO.

(Continued from first page.)

cially in the drafted armies, was an alarming revelation.

ALL INTERESTED IN FARMERS.

Of strictly agricultural importance many laws will be proposed. Some of them are amusing, but they all indicate the awakening of city and farm people to the importance of agriculture. One city legislator earnestly championing the cause of the producer intends to introduce a bill providing that all ground squirrels must be killed. A few days before the Legislature convened, he was entirely ignorant of the existence of a similar statute passed at the last session. But he and other city legislators realize the benefits to be derived from giving farm interests some apparent consideration.

HORTICULTURAL CONSOLIDATION.

One of the most important and far-reaching of the measures proposed for this session of the Legislature is the plan of Horticultural Commissioner G. H. Hecke for centralized authority and responsibility in the horticultural inspection, standardization, and quarantine work. Authority and responsibility are now divided among about fifty county horticultural commissioners, none of whom can operate efficiently in all measures of interest in other counties or of State-wide importance.

IRRIGATION AND DRAINAGE.

Use of State credit for the building and early years of operation of large irrigation projects is another measure. A further step is for the State to build reservoirs and sell water. A law empowering irrigation districts to use their water power to develop electricity for their own use and for sale is generally endorsed by farmers, but likely to bump into mountains of vested interests. If you want such a privilege with your own water for your own use, watch for announcement of when the committees on agriculture will consider this measure and be on hand with petitions and speakers to defend it. An effort may be made to get permission to award contracts for irrigation and drainage work to other than the lowest bidders. The Rice Growers' Association wants a law regulating the drainage of rice lands. The old quarrel regarding the comprehensive reclamation scheme of the interior valleys is likely to warm things up again. The U. S. Government has been helping in the work already done on this project, which involves reclamation of overflow lands of the Sacramento and San Joaquin Valleys from the standpoint of the whole. It pinches some folks who already have reclamation projects of their own and it pinches others who do not want to pay for reclamation of their tule lands.

KNOW WHAT SEED YOU BUY.

The bill providing that all field seeds offered for sale must be labeled as to purity and germination will have had a public hearing the day before this article appears. Amendments are likely to be offered which will make it obnoxious to seedsmen without adding to the protection of seed users. But protection should be obtained, and users of seed should post themselves on what is a reasonable germination test for various kinds of seed and in various years.

FOR SPECIAL INTERESTS.

The Legislature will be asked to pass a resolution asking Congress to raise the tariff on imported rice from six mills to two cents in order to protect our rapidly growing industry. They will also ask for protection from wild ducks, for regulation of drainage, for regulation of rice planting in fields badly infested with water grass, etc. The fresh-fruit standardization law will probably be amended in various details on which hearings are already being held. A law providing that a man must accept employment at reasonable wages under reasonable living conditions or work for his board for the municipality where he refuses a job, is one of interest to farmers. Various other bills will be noticed hereafter in the Rural Press.

When Your Tractor Hits the Tough Spots

Make sure in advance that the Tractor you buy will make good on the extra hard job. There's a lot of tough going in a tractor's work.

Most tractors are sturdy. They don't often break down, but they may lie down. It's the engine that counts, and the most important thing in keeping an engine going is the ignition. So be sure that the tractor you buy has

BOSCH Magneto Ignition with Bosch Impulse Starter

The reasons for Bosch superiority are easy for anybody to see. Bosch is built like a locomotive for strength, like a watch for painstaking attention to detail. It has the ruggedness to stand up. It won't fail you in a pinch.

Bosch design has been developed by years of constant study, based upon experience under all sorts of actual working conditions. As a result, its rip-roaring sparks drive so powerfully into the mixture that every drop of fuel yields every ounce of its power.

The new Bosch Impulse Starter ends all Tractor starting difficulties. It starts any engine easily and certainly without the nuisance of batteries or hard work in cranking.

Before you decide on your tractor, see a Bosch Magneto and compare it with other ignition systems. Then you'll surely specify on your order: "Bosch Magneto Ignition." You can have Bosch fitted to your present tractor.

Be Satisfied — Specify Bosch

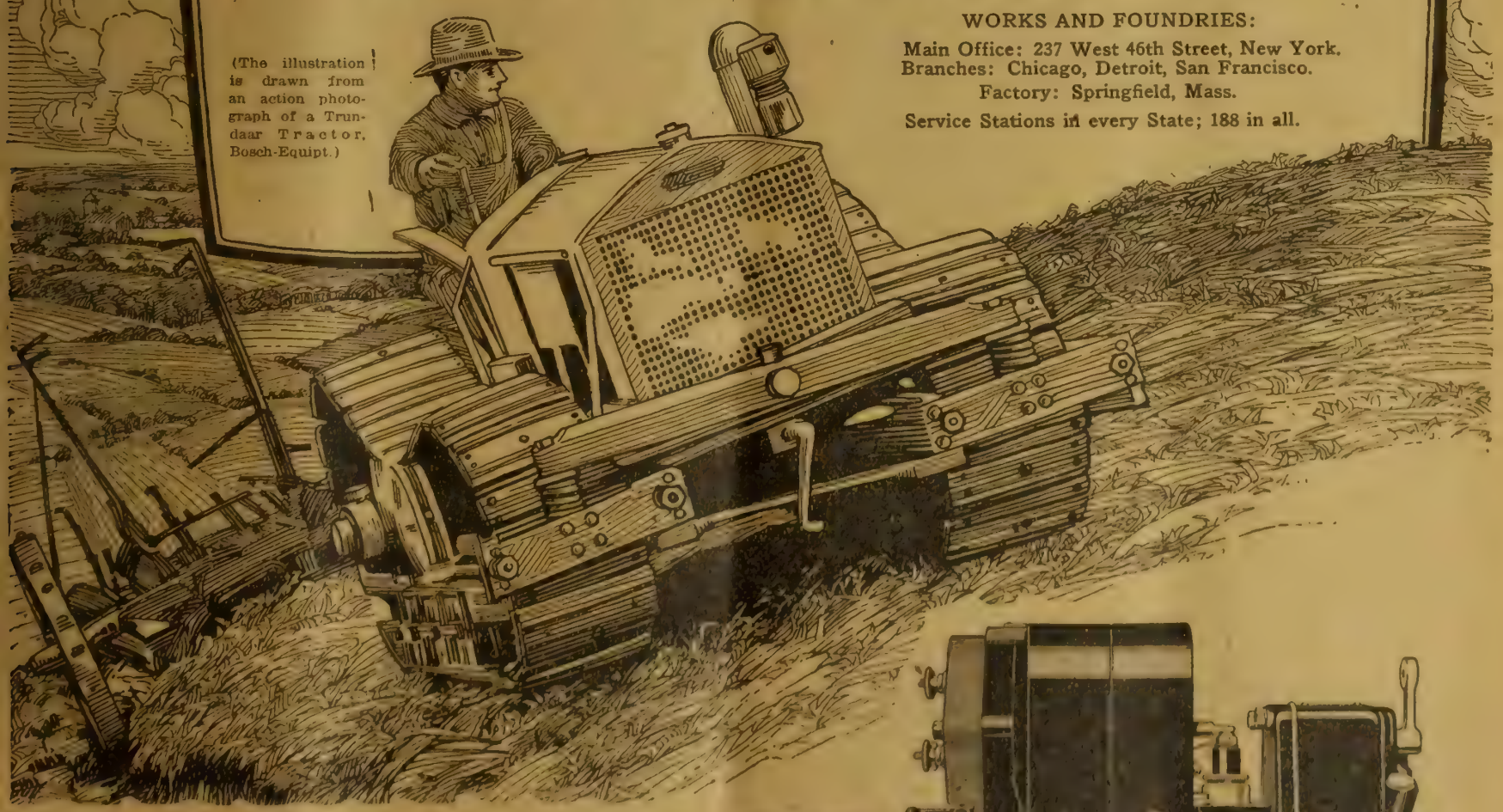
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Branches: Chicago, Detroit, San Francisco.
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Service Stations in every State; 188 in all.

(The illustration is drawn from an action photograph of a Trundaar Tractor, Bosch-Equipt.)





BOSCH

AMERICA'S SUPREME IGNITION SYSTEM

MOTOR TRUCKS - TRACTORS - AIRPLANES - MOTOR CARS - MOTOR BOATS - MOTORCYCLES - GAS ENGINES - ETC

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Those Community Councils

To the Editor: Our attention has been drawn to an editorial on California community councils, which appeared in your issue of December 21. We thank you for the interest which this article shows. You raised a question as to the purposes of these organizations which most assuredly is entitled to an answer. You say, "but we do know and do not hesitate to say that to undertake to keep rural youth away from their home and the work which is suffering through their absence is an impertinent and outrageous wrong."

It is not the intention that the Community Councils, which are composed of the whole people, should function to the detriment of any of those who either are now or formerly were residents of the particular community in question. We understand that the Government proposes to discharge its soldiers as rapidly as they can be returned to this country. The Community Councils, as they apply in this particular work, are to assist not in retarding this process but in aiding those discharged in being reabsorbed into commercial pursuits of their own choice. Through an organization such as the State Council of Defense is now creating it can be made materially easier for the soldier or sailor to find work along the lines for which he has the greatest desire.

It is our contention that those who have served in the army and navy are our creditors and that to them we owe a debt which must be met without question and without delay.

We enclose a pamphlet, entitled "The Community and the Post-War Problems," in which you will find a number of marked paragraphs. We trust you will read the whole book carefully and particularly those paragraphs which are marked, and in these we believe you will find promise sufficient to justify you in supporting the Community Council movement whole-heartedly.—O. E. Lucas, Associate Commissioner on Community Organization

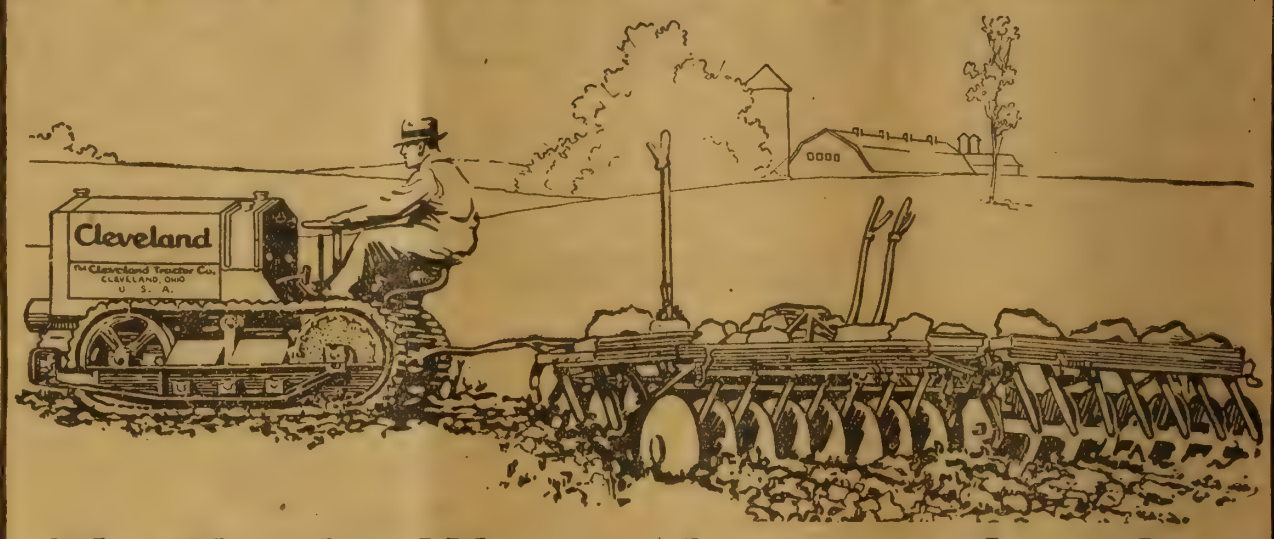
Ferry Building, San Francisco.

[We are glad Mr. Lucas repudiates the doctrine that demobilization should be delayed and returning soldiers "infiltrated." His previous favor (which we printed in full in our issue of December 21 for the sake of fairness) certainly included that idea. We are glad it has been abandoned. It ought never to have been conceived. The pamphlet to which Mr. Lucas refers and of which he gives the full name is interesting and should be considered by all. It can be had by applying to the State Council of Defense at Sacramento. We see no reason to launch a new outfit of local organizations to disseminate the truth which the pamphlet contains. We have more local organizations now than are well maintained and they should be strengthened. If the State Council of Defense desires to undertake farther propagation of patriotism and humanitarianism, why not install a bureau of men and women, as well qualified as Mr. Lucas is, to propagate good will through the schools, churches, lodges, farm bureaus, clubs, etc., which we now have. We see no Americanism in organizing at public expense "community councils" heading up in a state or national administration and receiving instructions from it. There is too much danger that we shall soon be taught that an incumbent administration possesses all the patriotism there is, and forced to conclude that patriotism is the property of some ruling party and not of the whole country. We are not objecting to patriotic propaganda, but we are insisting that it be carried on in an American way.—Editor.]

WHERE WILL OUR BARLEY GO?

Food for barley growers to think about is contained in a statement of Secretary William Schuldt of the California State Brewers' Association. Mr. Schuldt says that since the Food Administration has lifted the ban on all barley sales except to brewers, who are not allowed to buy, we must look to South America and Japan, which formerly used German malt and barley, and to England. As these markets are not likely to take all that America has normally been growing, the barley acreage had better be decreased. Mr. Schuldt is not concerned with the market for barley for stock feed. This will depend on livestock breeders' operations, which now are on the increase in a big way to help resupply Europe with meat, dairy products, and breeding stock. On this we must depend largely for our markets. So will our barley mainly be turned into real food for men.

Cleveland Tractor



The Cleveland Tractor *does more than plow*

Your tractor, to be of real service and value to you, must do more than simply draw a plow. Plowing is *only the beginning* of what a tractor should be able to do.

It should also be able to do everything else in the preparation of the seed bed—the discing and harrowing, the planting. And it should do these things in a way that will not injure the coming crop.

The tractor should not only be able to draw the implement easily, but it should not spoil the good work the implement has done.

After the ground is broken, The Cleveland Tractor *goes over it* with the disc and the harrow, then *goes over it* with the seeder.

The Cleveland *rides on top* of the seed bed; *it does not sink into it and it does not pack the soil.*

The Cleveland *goes over soft ground* because it travels on its own endless tracks which it picks up and lays down as it goes along.

These tracks have about 600 square inches of traction surface, so the pressure on the ground is only about five pounds to the square inch—therefore there is not enough weight on the ground at any one point to inflict damage.

We repeat, The Cleveland Tractor *rides on top* of the seed bed. It *does not sink into it;* therefore *it does not have to wade or wallow through it.*

And because it *does not sink in,* it does not have to push the dirt in front of it and pack it down in order to navigate.

And because it is not obliged to push the earth in front of it and pack it down, the greatest possible amount of The Cleveland's power is available for accomplishing the work it has to do.

This is one of the reasons why *The Cleveland performs so much work on such a small amount of kerosene.*

These are but a few of The Cleveland Tractor's many advantages. It is capable of performing almost endless tasks in both tractive and stationary engine work.

The Cleveland does its work. It does it well. It keeps on doing it. It is the tractor that does the work you want a tractor to do, in the way you want it done.






The Cleveland Tractor Co. 19079 Euclid Ave., Cleveland, Ohio

The largest producer of crawler type tractors in the world

Layne & Bowler Pumps

—over 6000 in successful operation. Built by the world's largest water developers.

Ask for new folder No. 25.

Layne & Bowler Corporation

900 Santa Fe Ave., Los Angeles



Get 'em Quick!

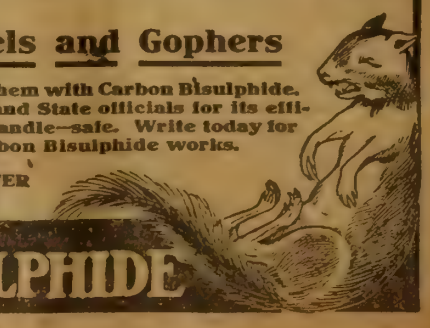
Rid your place of squirrels, gophers, prairie dogs, etc. Do it now when the young of these crop-destroying pests are being born. It's easy and cheap—when the ground is full of moisture to

Exterminate Squirrels and Gophers

and other rodent pests. Just gas them with Carbon Bisulphide. Used and recommended by U. S. and State officials for its efficiency and economy. Simple to handle—safe. Write today for prices and folder telling how Carbon Bisulphide works.

WHEELER, REYNOLDS & STAUFFER

625 California St., San Francisco, Cal.



with CARBON BISULPHIDE

Agricultural Notes

Kern county has about 23,000 acres planted to wheat. An effort will be made to increase this by 5000 or 7000 acres this year.

An order has been issued by the State Railroad Commission to protect small shippers of potatoes and onions along the San Joaquin river from discriminatory rates.

The building being erected on the railroad right-of-way by the Globe Mills Co. at Stratford, Kings county, is rapidly assuming shape. Its space will be entirely devoted to alfalfa meal.

Large numbers of potatoes, sacked and lying on the wharves of the Sacramento river awaiting shipment, were nipped by the recent cold weather. The temperatures were the lowest in years experienced in this district.

Strong efforts are being made to extend the cotton-producing area of Central California. It is hoped to see 60,000 acres in the San Joaquin planted to cotton. The growers are to be urged to pool their crop for marketing purposes.

David Lubin of San Francisco, founder of the International Institute of Agriculture and the American representative on its permanent board, died in Rome, January 1, of pneumonia. His fatal illness followed an attack of la grippe.

Oat exports from the United States jumped from 1,859,949 bushels in the fiscal year 1914 to 96,869,551 in 1915, to 95,918,884 in 1916, to 88,944,401 in 1917, and to 105,837,309 bushels in 1918. That ought to leave quite a vacancy in America.

Twenty-two sacks average per acre of Lady Washington and Red Mexican beans on 24 acres and an average of 28½ sacks of the Reds on 4.7 acres resulted this season from R. H. Frazer's system of preparing land after grain in Stanislaus county, as described in our issue of May 18, 1918.

The setting of the Bermuda onion crop is progressing in the Coachella Valley. Contrary to expectations, the acreage will be about the same as last year, in spite of seedbed failures, thrip damage and plant shortage. Preliminary estimates indicate that 822 acres will be grown in the Coachella Valley.

There are fourteen rice mills running without interruption in the operation of milling the State's great crop. The rice committee is picking out the dry lots for early milling. Fully 50 per cent of the crop had been harvested before the rain set in, and was in milling condition, but much of the rest was soft.

Cotton picking is under way on the A. M. Sanborn ranch, west of Porterville, and promises satisfactory returns. J. H. Stevenson, who is handling the crop for its soldier proprietor, says that the picking so far promises a bale and a half to the acre. The lint appears to be uninjured to any appreciable extent either by the rains or by frost.

The large harvesting machinery companies of the country have designed a bulk-handling equipment for combined harvesters to be used in California grain fields. It consists in attaching a bin of variable capacity to the side of the combined harvester. Both the International Harvester Company and the Holt Manufacturing Company announce that this equipment is available for all sizes of their combined harvesters.

Modern agricultural methods and equipment are to be brought to the door of the farmer for demonstration under a new plan adopted by the Kin Han Railway, which has equipped and sent out China's first agricultural campaign train. This train consists of three large cars filled with all kinds of agricultural products and farming implements for exhibition. Two agriculture experts, with assistants, have the exhibits in charge.

Connecticut has been conducting a campaign to test out the germinating qualities of its seed corn. In one county 700 samples showed only 30 per cent germinating power and in another county only 10 per cent of the corn tested was fit for planting. As a net result of the State's efforts it was able not only to supply the State's need for good seed corn, but to get together six carloads of tested seed corn for shipment to North Dakota and Wisconsin.

Carrot seed got wet this fall on the bankets during harvest, and had to be redried. The crop was somewhat reduced, according to T. A. Cox of the Pacific Seed Growers' Co., but that is all right from a market standpoint because there is a surplus. The seed was darkened but probably its germination was not injured.

Celery prices to California growers, January 1, are given by the U. S. Bureau of Markets as follows: Northern California Golden Heart, crates of 5 to 7 dozen bunches, 75c to 80c per dozen; 7 to 8 dozen bunches per crate, 65c to 70c per dozen. Southern California, mostly 8 to 10 dozen bunches per crate, 55c to 60c per dozen. Crates extra. On the same day California stock on Eastern markets was quoted firm at $8 to $8.50 per crate. The price was just about double between California and the East.

Giant Winter Rhubarb

Now Best Time to Plant

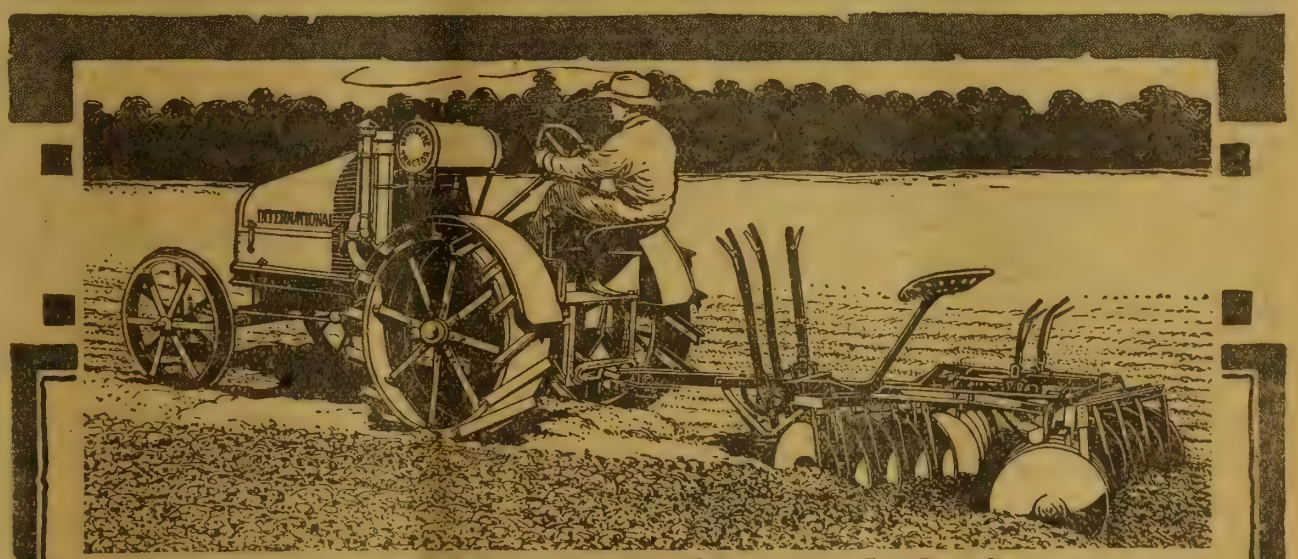
Should return from $1,000 to $1,500 per acre first year. If interested in Rhubarb or Berries, write J. B. WAGNER, Specialist, Pasadena, California.

The KT System of ALFALFA IRRIGATION



No matter what your irrigation problem, our advice is free. Write today for our special literature, or any specific information you may require.

KELLAR-THOMASON CO., 1234 East 28th St., Los Angeles, Cal.
"Originators of the Valve System of Irrigation."



Tractor Use, Profit, and Safety

TRUE progress is always slow. The change to mechanical power for farm work has been twelve years in the making, but today there are few American farmers who have not given serious thought to the question of tractorizing their farms.

For the benefit of those who may not yet be convinced that the tractor is a useful, profitable farm power machine, we present again a few of the opinions of farmers who are using the International Kerosene Tractor. Some of these are about essential features, and some mention only conveniences, but taking them altogether, almost any farmer will feel, after reading them, that the International 8-16 is a tractor worth considering.

"My International supplies a power flexible enough to handle the large amount of seedbed, harvest and other work without delay."

"It can be used for continuous work if emergency demands it."

"It produces power at much lower cost than horses, and it can be used for both drawbar and belt work."

"I like the steady way it works. Without seeming to hurry, it gets through a surprising amount of hard work."

"It does a lot of good work at a cost so low I could hardly believe it. You did a wonderful thing for Eastern farmers when you made this tractor to run on kerosene."

"It is not bothered by flies, nor by bumble bees. It works steadily on the hottest days."

"Requires very little care. When the day's work is done, I run the tractor tail first into an inexpensive shed. In the morning, I fill the fuel tank and the oiler, look into the radiator, and am ready for another day's work."

These opinions are typical. They prove at least that the International 8-16 is a useful, profitable tractor. Now consider just one other thought for a minute.

This tractor is the outgrowth of twelve years of active tractor experience by a company that has sold all kinds of farm machines for many years. The beginning of this business goes back to 1831—almost 88 years ago. Does it not seem reasonable that with this experience we should offer you a tractor that you could use with profit, especially when we expect to come back some day and sell you more of the machines listed in this advertisement?

If you are now convinced that the International 8-16 is a useful, profitable tractor on some farms, and that you don't have to be an expert to buy one safely, write us to find out what this tractor will do for you, on your farm. A post card will bring you full information.

The Full Line of International Harvester Quality Machines

Grain Harvesting Machines
Binders — Push Binders
Headers — Rice Binders
Harvester-Threshers
Reapers — Shockers
Threshers

Tillage Implements
Disk Harrows — Cultivators
Tractor Harrows
Spring Tooth Harrows
Peg Tooth Harrows
Orchard Harrows

Planting & Seeding Machines
Corn Planters — Corn Drills
Grain Drills
Broadcast Seeders
Alfalfa & Grass Seed Drills
Fertilizer & Lime Sowers

Haying Machines
Mowers — Tedders
Side Delivery Rakes
Loaders (All Types)
Rakes
Combination Side Rakes and Tedders
Sweep Rakes — Stackers
Combination Sweep Rakes and Stackers
Baling Presses
Bunchers

Belt Machines
Ensilage Cutters
Huskers and Shredders
Corn Shellers — Threshers
Hay Presses
Stone Burr Mills

Belt Machines—Cont.
Cream Separators
Feed Grinders

Power Machines
Kerosene Engines
Gasoline Engines
Kerosene Tractors
Motor Trucks
Motor Cultivators

Corn Machines
Planters — Drills
Cultivators
Motor Cultivators
Binders — Pickers
Ensilage Cutters
Shellers
Huskers and Shredders

Dairy Equipment
Cream Separators (Hand)
Cream Separators (Belted)
Kerosene Engines
Gasoline Engines
Motor Trucks

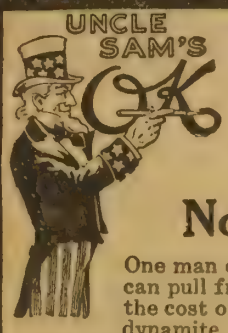
Other Farm Equipment
Manure Spreaders
Straw Spreading Attach.
Farm Wagons
Farm Trucks
Stalk Cutters
Knife Grinders
Tractor Hitches
Binder Twine

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Mechanical Power on the Farm

Users of tractors, engines, pumping plants, motor trucks, automobiles, electric motors, and other mechanical farm power are invited to make this department an exchange of their experiences and troubles.

HIGH SCHOOL TRACTOR COURSES

To the Editor: A tractor training course for a period of three weeks is to be established by the State Board of Education in Lincoln from January 20 to February 8. This course will provide for both day and evening classes. It will consist the first week of a study of gas engines, carburetors, ignition systems. The second week tractors, their assembling, disassembling operation and repair. The third week, a practical operation of a tractor in plowing a field. The instruction will be in the hands of experts. The course is open to anyone interested. The training center will have its headquarters at the Lincoln Garage. All interested in this matter, enroll at once with C. M. Fulkerson of the Lincoln Union High School.—Chas. M. Fulkerson, Lincoln, Cal.

To the Editor: A tractor school will be held in Paso Robles, beginning January 13 and lasting three weeks. This school is put out by the State Board of Control, cooperating with the Paso Robles High School. In order to train more tractor men to meet the food emergency, the State decided to establish 36 training schools and we are fortunate in having one here. The first week is spent on gas engines, the second on a combination of gas engine and tractor work. This includes the assembling, repair and care of the machines. The third week is the actual work in the field, plowing, cultivating and the like. The work is all of an absolutely practical nature. You put on your overalls and set up tractors, repair them and run them yourself. You do this under the supervision of the tractor experts the State is sending down. If you own a tractor or are planning to buy one, you cannot afford to miss this course. If you are not a tractor owner, but are going out to work, the tractor mechanic, you know, gets about double the ordinary wages. Instruction day and night, absolutely free.—James Haynes, Paso Robles High School.

WHY CARBON IN ENGINES.

A kerosene lamp burner has a perforated base through which air feeds the flame. If the wick is turned too high, it smokes and leaves a deposit of carbon because too much fuel is supplied to the flame by the increased surface of wick exposed and not enough air can be drawn through the base to burn all of it. If enough oxygen is supplied in the form of air or otherwise, all of the oil, including its carbon, will be entirely consumed and pass off as invisible gas and heat. The same is true in burning distillate or gasoline in gas engines. Carbon is due to incomplete combustion of the fuel and of any lubricating oil that passes the piston rings or lodges under the head of the piston and bakes due to the intense heat there and the lack of oxygen.

There are several conditions which result in incomplete burning and consequent carbon, as explained by P. R. Melchert of the Standard Oil Co. in a lecture under the auspices of the California Tractor Association at the State Fair. Eighty per cent of carbon found in engines is from fuel oil incompletely burned due to incorrect proportioning of air and fuel in the carbureter. Adjustment can be made to entirely burn the fuel, sending the remains out through the exhaust as a clear gas. When the mixture is enriched to start a cold engine, it is often forgotten and continues too rich to burn entirely. Some of the unburned carbon passes out as black smoke, but some stays in the engine. Avoid excessive carbon by adjusting for a light mixture.

Do not drive with spark retarded. The gas explosion takes an appreciable amount of time. If the spark is set to fire on dead center, by the time the gas is ignited and the greatest force of explosion occurs, the piston has gone far on its power stroke but with little power. The exhaust stroke then comes with the fuel incompletely burned and carbon is deposited. The spark should be advanced to occur before the piston arrives on dead center. A weak spark is often the cause of incomplete combustion. Only a film of oil is needed between pistons and cylinder walls and this will be placed there by the pistons themselves if the proper amount of oil is supplied them. Too much oil in the crank case or too much pumped to the piston causes some of it to be pushed into the combustion chamber, where there is not enough oxygen to burn it clean. Carbon results. Too much oil in the crank case also results in some of it coming in contact with the under side of the piston head. As the piston head is practically red hot while working, this oil bakes. Some of it drops onto the wrist pins and connecting rod bearings and into the lubricating oil. This makes a fine mixture to grind out the bearings. Such trouble cannot be avoided by changing the brand of oil. It can be minimized by using just the correct amount. Overpriming also causes carbon, especially under the upper piston ring, as noted in another article.

The only way to really remove carbon, according to Mr. Melchert, is to use a chisel. Putting kerosene through the carbureter only adds to the carbon; for kerosene burns less completely from ordinary carbureters than the fuel that originally caused the trouble. Water will clean out carbon to a limited extent, but only when the carbon is red hot.

SMALL COMBINED HARVESTERS.

Small combined harvesters are quite popular in northern San Luis Obispo county, about 25 of them having been in operation in the San Miguel district last season, according to E. J. Wickstrom of the San Miguel Flouring Mill Co. They enable grain growers to harvest before squirrels do it for them and before winds shatter the grain, which is mostly wheat here in normal years. The small farmer can cut his own grain with his own horses and help without waiting for the big combines, whose operators don't like the small jobs anyway. Where the big machines require five or six men and 30 to 32 horses or a 75-horsepower tractor, the small ones are pulled by eight or ten horses. A disadvantage is that they do not level up on the hillsides as larger ones, but this objection should be overcome in the near future. Certainly the timeliness of harvesting which saves even part of a sack per acre will repay interest on investment in one of these machines.

OWN A SMALL BEAN THRESHER.

Last season's experience with rain on beans many of which are still to be sold at low prices or hand-picked at great expense, taught many growers the economy of owning one of the several small bean threshers which are on the market. A few crops in Salinas Valley were threshed when the first rain came, and it is safe to say that these crops moved first at paying prices. Chris Fanoe was one who was fortunate in getting part of his crop threshed and stored in the dry because he had a thresher of his own. This is not large enough for a customs thresher and does not represent a great deal of capital invested, for it has a capacity of only about a ton per hour. It can be handled by a team of horses and operated by two or three men besides the drivers of wagons. The beans can be threshed at the owner's own convenience, and in the past season a few days' earlier threshing would have made many days less of hand picking.

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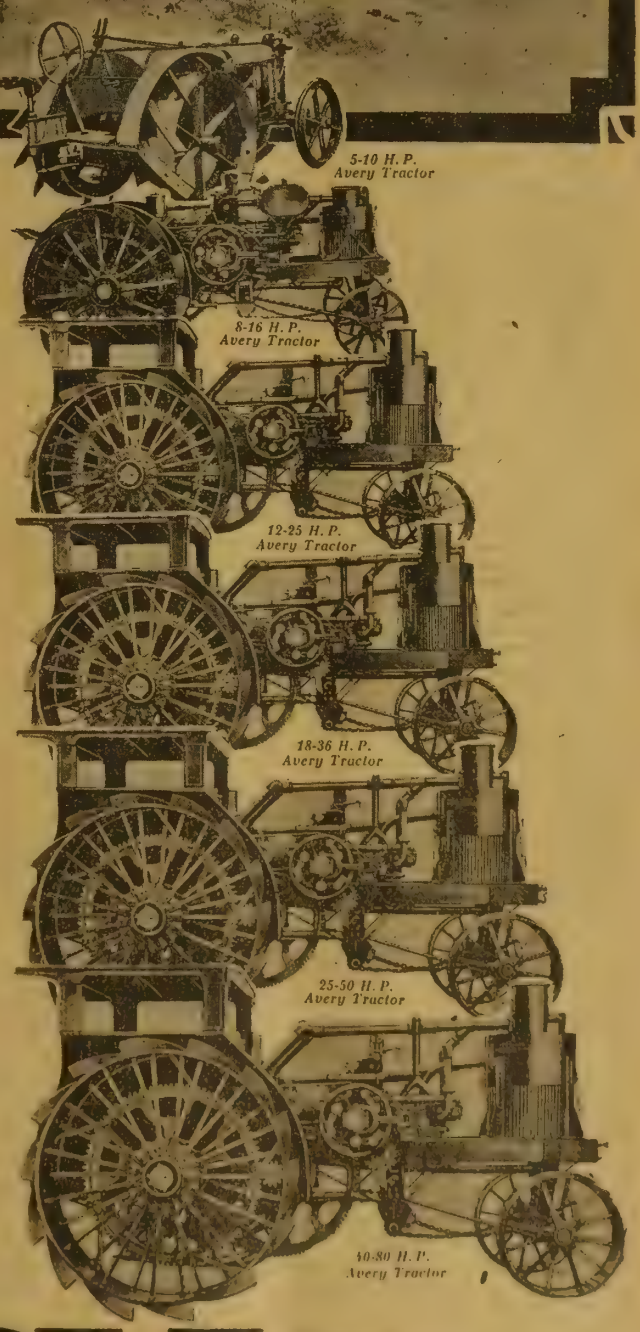
Each Avery distributor, besides showing a full line of Avery Tractors, carries a complete line of replacement parts.

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Forcible Inclusion in Irrigation District

To the Editor: I wish to get a little legal information in reference to the farming of an irrigation district, if this is in your line. What I want to know is this: In farming an irrigation district—if a land owner in that district has his own water system, as I have 200 acres, a good pumping plant and plenty of water in the river to pump from—am I compelled to pay the district tax, or can I put in an objection to becoming a member of the district, and be left out of the district? As I am a subscriber and a constant reader of your valuable paper, I wish to get your opinion. I have inquired of several attorneys and they do not agree as to what I must do. Your answer to this may be of value to many who are in the same position as I am.—J. Reminghaus & Sons, Livingston, Cal.

[Answered by Frank Adams, Government Irrigation Manager.]

Your correspondent will have opportunity to present his claim for exclusion from the proposed Merced Irrigation District when the petition is before the Board of Supervisors for hearing. The irrigation district law states that on final hearing the Board of Supervisors shall not modify the boundaries as presented so as to exclude any land which is susceptible of irrigation from the sources proposed except in accordance with some general modification of plans, nor shall any lands be included which will not, in the judgment of the board, be benefited. Lands already irrigated may be included if in the judgment of the board they will be benefited.

I should say that if your correspondent can show that his lands will not be benefited he will have a good ground for exclusion. On the other hand, if by reason of bringing in additional water the lands will be benefited as by means of raising the ground water and thereby reducing the pumping lift, it may be questionable whether they can properly be excluded. The general purpose of the law is that only the lands shall be included that can be most economically irrigated as part of the district. In other words, it is not, in my judgment, intended that lands shall be forced into a district merely to help pay the cost of the district development when the actual cost of irrigation to them by being in the district will be greater than if excluded from the district and irrigated independently. I am advised that such will be the attitude of the State Department of Engineering in passing on any proposed irrigation district formation.

SPROUTING POTATOES QUICKLY.

"I dug six potatoes out of a hill six weeks after planting last spring and the smallest was the size of a hen's egg," said A. B. Jamieson of Monterey county. "I got sprouts of Oregon Burbanks and just threw a handful of them into a hole as you would seed potatoes, covering them four to six inches deep. The sprouts must not dry out, so I wet the ground right after planting and raked it to avoid baking. Early Rose or American Wonder would probably have done even better."

HOPE FOR THE HOP INDUSTRY.

Santa Rosa is responsible for the report that three-year contracts are being entered into with hop growers in that vicinity by brewers who are establishing plants in China and Japan. It is felt that this outlet will rescue the California hop-growing industry from utter extinction.

FINAL ESTIMATES ON GRAPE CROP.

Estimating the grape crop of California is no sinecure at any time, and with such adverse weather conditions at harvest time as prevailed last season the task is a most difficult one. The total shipments of grapes in 1918 amounted to 16,358 cars, of which probably 6000 cars were wine grapes. This would leave shipments of table grapes about on a par with the shipments of the previous three years. Prices were somewhat better the past year and the growers would receive about $8,000,000 in the vineyards for table grapes. Wine grapes early in the season promised a full crop or better, and the condition continued high until the advent of September rains, when the crop sustained more or less damage. Prices paid to growers were higher than in 1917 and the total value of wine grapes would undoubtedly reach the sum of $8,000,000.

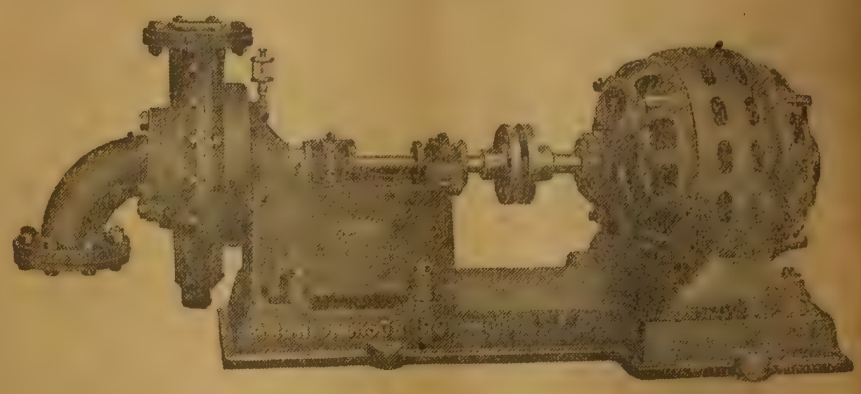
The acreage of raisin grapes has increased rapidly the past few years and about 150,000 acres were producing raisins in 1918. A crop of better than 175,000 tons was in sight September 1, but rains the latter part of September and fore part of October, followed by cloudy, foggy weather, caused heavy damage in both quantity and quality. The total production is estimated at 135,000 tons, although it is realized that conditions were such as to raise or lower the above figure by 10,000 or 15,000 tons.

The total value to the growers will probably be about $16,000,000.

UNCLE SAM DEPENDS ON YOU!

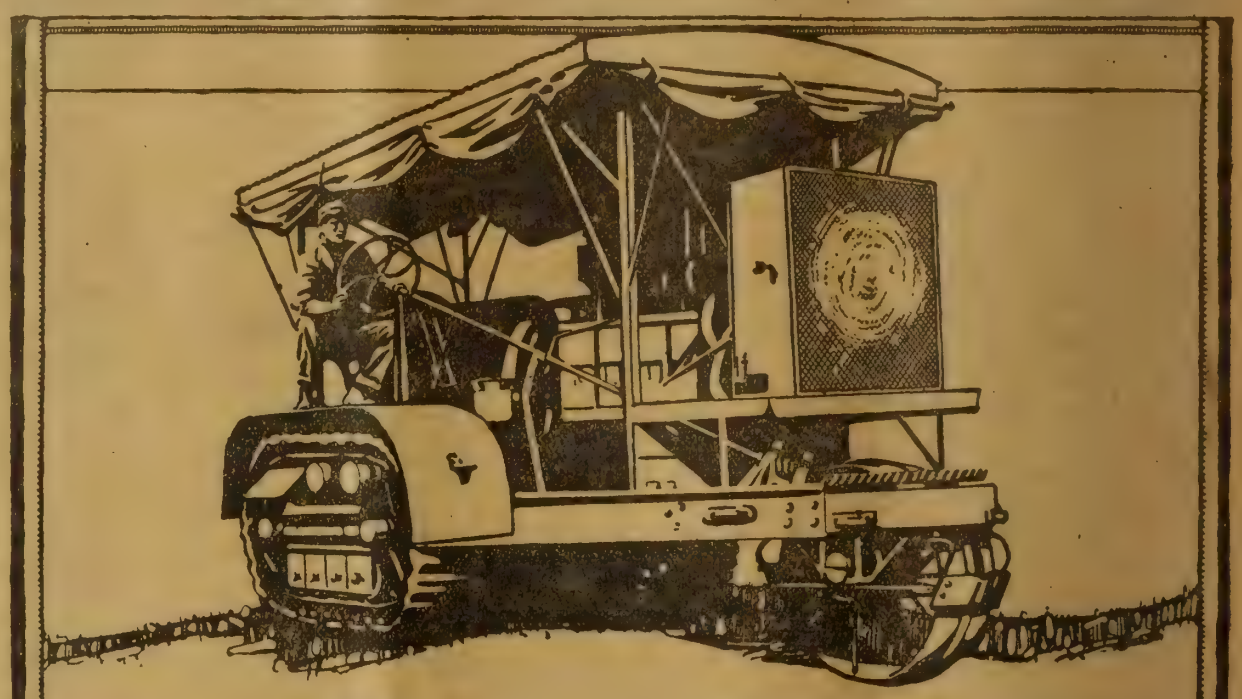
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The tractor you purchase should have a powerful motor—but that isn't all. The power of the motor should be delivered in actual pull without undue losses. The high percentage of its motor power delivered at the drawbar is an important point of "Caterpillar" Tractor supremacy.

The "Caterpillar" Tractor has a remarkably simple and direct transmission. It has no complicated, power-robbing differential. Its simple, long-lived track positively eliminates power losses due to ground-slippage. Those items mean superiority in design, and it is because of superiority in design that the "Caterpillar" Tractor invariably stands foremost not only in public and private competitions of every description, but also in the continuous test of severe every-day work.

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These points in construction and materials are explained in "Caterpillar" Tractor Catalog No. 392, which also tells many other things you will want to know if you are interested in tractors. It will be sent on request.

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Annual Review of California Crops

[Prepared by Field Agents of the U. S. Crop Bureau.]

WINTER WHEAT.

The estimate made by the bureau arly in the season of the acreage own for the 1918 crop has been re-ised. It is now seen that 633,000 cres had been seeded in the fall of 917, of which 506,000 acres were arvested, yielding 15 bushels per cre, making a total production of ,590,000 bushels. Weather and soil onditions in California are favor-ble. These conditions, plus the ppeal of our honorable secretary or an increased acreage to wheat, ave resulted in a larger acreage eing sown to this crop in Califor-ia than for many years past—about 00,000; this for the 1919 crop. here has been seeded in the United tates 49,027,000 acres, as compared ith 42,301,000 acres last year. his is the largest acreage sown to inter wheat that we have ever had.

CORN.

It will be seen that the acreage as increased. In 1917 it was 75,-00. In 1918 there were 85,000 cres. The yield per acre was three ushels more than in 1917.

OATS.

The acreage to this crop was 21,-00 less than last year, and the yield er acre was three bushels less.

BARLEY.

This crop, too, shows a falling off acreage of 30,000, and the aver-ge yield per acre was three bush-s less.

POTATOES.

In comparing the potato acreage or 1918 with the acreage of the rop for 1917 it will be seen that here were 15,000 acres less. The verage yield per acre was two bush-s less

RICE.

It is interesting to note to what roportions this crop has grown in ur State. Comparatively speaking, new industry, it was this year orth to us over $13,000,000. Though he average yield per acre was less han last year, the increase in acre-ge harvested was 23,000 over 1917.

HAY.

The acreage harvested and the eld per acre were less than in 917, and this year the hay crop rops to second place in money alue to the grower of all the State's rops.

APPLES.

In the Watsonville district early pples were a light crop. In the ebastopol district the late crop was ghter than 1917, while the new earing acreage in San Bernardino nd Riverside counties materially creased the output in that sec-on. The commercial crop is esti-ated at 3,381,000 boxes and the utput of evaporated apples is placed 5200 tons, being about 58 per nt of the 1917 tonnage.

PEACHES.

The peach crop of 1918 was disap-ointing, particularly in those varie-es used for drying. Practically very month saw a decline in condi-on, and the final estimate of dried eaches is about 20,000 tons, com-ared to 38,000 tons in 1917. The nnage of peaches for consumption fresh fruit was 29 per cent reater than in 1917, while the ton-ge canned was probably about the me as the previous year, which, owever, showed an increase of 35 r cent over 1916.

PEARS.

The condition of the pear crop nproved as the season advanced; e final estimate being for a pro-uction but little greater than in 917. About 61 per cent of the op was shipped as fresh fruit, 14 r cent dried and 25 per cent nned and consumed within the ate.

PRUNES.

On September 1 there was prom-ed a prune crop of 71,000 tons, ut forty-eight hours of rainfall velve days later, following a week cloudy, foggy weather in the rincipal prune-growing districts, ayed havoc with all the estimates. The final figure is for 29,000 tons, of which probably 50 per cent was damaged to some extent in quality. The heavy rainfall and resulting damage so upset all calculations that it was practically impossible to estimate the production by districts to conform to the monthly condition reports made during the growing season. The total value to the grower will be about $4,500,000.

OLIVES.

The olive crop the past two years has suffered from adverse climatic conditions. In 1917 the total production was only 50 per cent of a full crop and the present year the total tonnage was but little better. The value of the crop to the grower is fully $1,500,000.

APRICOTS.

Early estimates of the apricot crop were not borne out by the harvest records. The total tonnage on a green basis was about 140,000 tons, equaling the record crop of 1914. Shipments were large, totaling 5500 tons. About 52,000 tons were canned and the balance dried. The Santa Clara district more than made good on early estimates, but Southern California lagged considerably behind the production of 1917. The growers will receive approximately $8,000,000 for this year's crop.

ALMONDS.

The average yield per acre of almonds the past year was light and yet the new bearing acreage produced the largest crop ever grown in the State. The estimate is for 5100 tons, compared with 3900 tons in 1917; also a record crop. Almond growers will receive approximately $2,250,000 for the 1918 crop.

WALNUTS.

The walnut crop of 1918 was a record one. The bureaus' estimate November 1 was for 16,800 tons, and it now looks as though this figure will need a little revision upward.

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Bah! Bah! Baby Lamb

[Written for Pacific Rural Press by R. H. Whitten.]

The lambing season is here again. It is the shepherd's harvest time, and his profits are determined by the size and quality of the crop. Consequently, when the lambs begin coming, close attention should be given the flock. If a record of service dates has been kept, the approximate date of lambing can be foretold, as ewes carry their young about 145 days—five days less than five months.



Lambs, properly raised, are as good as Government bonds. You can clip the coupons and still have the bonds left.

If possible, plan the farm work so that someone can keep a close watch over the flock both day and night. Keep the ewes that are about due to lamb away from other kinds of livestock, as large animals may injure them and hogs will eat young lambs. In cold weather provide sheltered quarters, but do not allow crowding, and do not overlook ventilation. During the last few nights before lambing, pen the ewes where it is intended that they shall lamb.

Each ewe should be "tagged," or "crutched," as it is called. To do this, set the ewe on her butt and shear wool off the udder and inner thighs and up to the dock. This is to prevent the young lamb from sucking the filthy wool when looking for the teat, which forms a ball in the lamb's stomach, stops the passage of the bowels, and sometimes causes death. Also, when the wool is removed, it is easier for the lamb to find the teat.

While tagging the ewe it is a good plan to examine her feet and trim the toes if they are grown out excessively.

CARE OF THE EWE.

Just before lambing, the ewe becomes restless and appears sunken in front of the hips. She should be put into a separate pen about four feet square, which can easily be made of two light panels fastened together by a hinge and set in a corner. These panels permit the ewe to see the rest of the flock, which prevents her from getting excited. They also prevent other sheep from trampling on the lamb and give the ewe a good chance to get acquainted with her lamb at the start.

When the ewe is giving birth to the lamb do not disturb her as long as everything seems to be going well. But if no progress is made after much laboring, she may need help, and the aim of the attendant should be to work the lamb around so that it will be presented front feet first, which is the normal position.

Don't worry if the ewe refuses to eat for the first three to six hours after lambing, but if she continues to refuse feed, make sure that she is not constipated. If she needs a physic, use 4 ounces (one-third pint) of raw linseed oil, or 4 to 5 ounces of Epsom salts dissolved in water. As a stimulant and to aid the appetite, give three times daily a teaspoon each of tincture of gentian and ginger in a half pint of lukewarm water. If the ewe is thin in flesh, add a teaspoon of tincture of iron to each dose.

The ewe's udder should be watched carefully to see that it is in good condition, for a good lamb cannot be raised from a mother not milking freely. Feed the ewe lightly at first, and do not bring her to full feed until the third or fourth day. This will tend to keep the fever down and also limit the flow of milk until the lamb is strong enough to take large quantities.

FIRST AID FOR LAMBS.

And now for the little lambs themselves. The ewes should be seen often, so that the lambs when dropped are not allowed to get chilled or become weak from want of milk. If a lamb is chilled before it gets up, it soon loses all chance of life unless attention is given, but once it gets on its feet and finds a teat it will have little trouble.

A lamb too weak to nurse should get a fill of its mother's milk as soon as possible. If it is willing to nurse, back the ewe into a corner and hold the lamb to the teat, increasing its anxiety to feed by patting it on the rump. If it refuses to nurse, draw some milk from the ewe and feed the lamb frequently from a bottle until it gains in strength and develops a strong appetite.

If the lamb has become chilled, it may be wrapped in hot flannel cloths, which should be renewed as often as necessary. Another excellent method is to place all but its head in as warm water as the elbow can bear. As the water cools, put in more hot water to keep up the temperature. When the lamb becomes somewhat lively, take it out and rub it briskly with cloths until dry. Then feed it, wrap all but its nose in a thick blanket or a sheepskin and put it in a warm place to sleep. Don't keep it away from its mother any longer than is necessary.

WHEN THE EWE IS HELPLESS.

If the ewe is too weak to attend to her lamb when it is born, wipe away the phlegm from the nose and sever the navel cord if it is not already broken. Rub the lamb dry, and if it is too weak to nurse, blow

(Concluded on page 57.)



IT'S over, over there. Once more farm conditions are drifting toward normal. Grain farming, made necessary by labor shortage and war, will no longer yield its big profits. The world's grain supply is now released for distribution where most needed, and again the "Yanks are coming"—but this time to relieve the labor shortage at home. Now, as before the war, the origin of **sure profits**—the one **dependable source of income**—is the cow. And with the cow comes the demand for that greatest of all producers of cheap feed, the

INDIANA SILO

Before, and during, the war the Indiana Silo made millions for its owners by the cheap feed it produced and the saving it brought about on over 70,000 American farms. Now, during reconstruction, it will continue to be the greatest producer of cheap feed in the world. It is, indeed, the "watchtower of prosperity."

Released from Government work, our big mills are again cutting our choicest old Yellow Fir logs into stock for Indiana Silos. Our big 1919 silo feed book is now off the press and our EARLY BUYERS' DISCOUNT is in effect. Let us send you your FREE copy of our book and tell you just how much you will save by ordering your silo now for later delivery. Cut out this ad, write you name and address on the margin and mail to us **today.**

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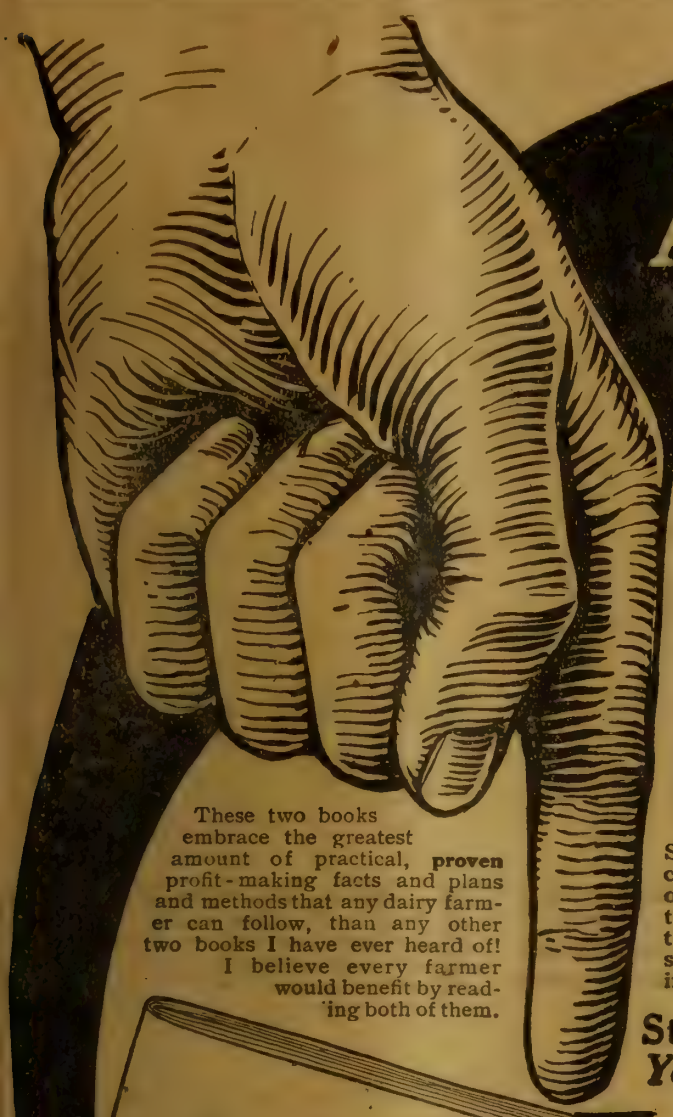
Silo Department, Salem, Oregon

Distributors of MONEY-MAKER Cutters—the SAFE Silo Filler.

GOOD WORK DONE BY DAIRY INSPECTORS.

The annual report of the State Dairy Bureau shows that its inspection work has been handicapped on account of war conditions, as six on the force either resigned or joined Uncle Sam, and it was difficult to fill their places. Nevertheless, the report shows that during the period from December 1, 1916, to November 1, 1918, the inspectors have made inspections of and scored 37,116 dairies and factories and have collected and tested 4862 samples of dairy products. Many additional inspections were made within a few days after the first inspection to ascertain whether or not the operators had complied with the instructions left with them.

While the inspection of dairies and factories is the principal work of the dairy inspectors, they have many other duties to perform. They are mentioned in the annual report as follows: To prevent the sale of substitutes for butter, if they have a color resembling yellow butter; to check up oleomargarine sales at the wholesale establishments in the different cities in the State; to investigate whether the cheese factories are labeling their cheese properly, so as to inform purchasers as to the quality of the cheese, whether "full cream," "half skim" or "skim"; to investigate as to the purity of the milk, cream and ice cream sold to consumers by dealers, restaurants and hotels; to examine for accuracy and fitness the testing apparatus used in the factories to determine the per cent of butterfat in the milk and cream bought in such factories; to investigate as to the qualifications of the men charged with the testing of such milk and cream; to prohibit the mislabeling of butter and to see that it is not sold for a greater weight than the true net weight; to investigate whether the cows tested for tuberculosis by the State Veterinarian on dairies selling raw market milk or making butter have been removed and kept separate and apart from the herd from which the milk or butter is sold.



Here's the Way to Add Dollars to Your Dairying Profits!

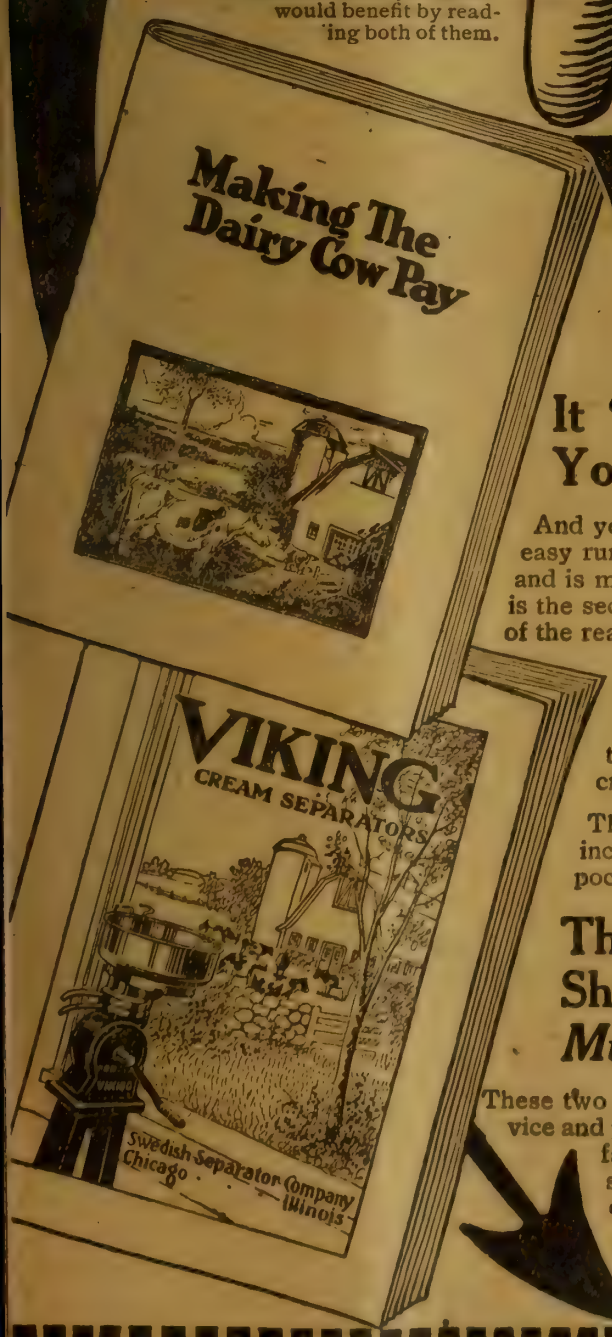
"IT isn't what you make—it's what you **save** that makes you rich," is an old proverb.

Maybe the reason why your dairy cows are not paying you as much hard cash net profits is because you are, without knowing it, wasting the real profits that they **are** giving you. If you are still using the old-fashioned gravity or shallow-pan method of cream separation, you certainly are wasting a big percentage of the high-priced cream your herd yields daily. If you are trying to "get along" with an old separator, or a cheap, inferior machine, you are also robbing yourself of profits that your herd is trying to give you.

Millions of Dollars Are Lost Every Year by American Farmers Through Wasteful Cream Separators

Swedish farmers don't waste any cream. They can't afford to. They have to make every penny of profit possible. That's why the cream separator industry was born in Sweden. And—today—the most popular, the most efficient Swedish separator is the **Viking.** Here is the record-maker in close skimming. It is guaranteed to skim down to three one-hundredths of one per cent. As a rule it skims as close as one one-hundredth of one per cent! Everywhere it is used it proves itself a profit maker for the farmer. It will pay you to investigate it. Drop in on your local **Viking** dealer the next time you go to town.

These two books embrace the greatest amount of practical, **proven** profit-making facts and plans and methods that any dairy farmer can follow, than any other two books I have ever heard of! I believe every farmer would benefit by reading both of them.



Stop This Waste *Forever* on *Your* Farm by Using a VIKING CREAM SEPARATOR



It "Gets" *All* the Cream You Get *All* the Profit

And you do it with **less work.** The **Viking** is marvelously easy running. It has less gears than most other separators, and is more scientifically constructed. Its simple construction is the secret of its easy running. And its easy running is one of the reasons why it "gets" all the cream.

A hard-running separator will always waste cream. The vibration and trembling caused by the jerky, hard-running separator causes the cream to mix with the milk—with the result that good cream goes out the skim-milk spout.

The smooth, easy-running **Viking** lessens work and increases butter-fat profits. It is your duty to your pocketbook to learn more about the **Viking.** Get

These 2 Books—Both *FREE*—Show Exactly How to *Multiply Milk Profits*—Write For Them

These two volumes contain the most practical kind of advice and pointers. Not a word of theory. Just proven facts, plans and methods that other highly successful dairy farmers have tried out and **proved out** to their great profit. Write for both RIGHT NOW!

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Livestock and Dairy Notes

Livestock breeders all over the State are invited to send on postal cards, notes regarding their sales, State and County Fair intentions, new stock, etc.

S. F. Show Called Off

On account of the continued prevalence of the influenza epidemic and the possibility of not being allowed to hold the show, the San Francisco International Livestock Show has been called off for the season. The present organization will be kept intact, with W. T. Sesnon as president in place of Edgar J. De Pue, deceased. A meeting of the executive committee will be held within a month to discuss the date, place and other details for a rousing big show next season.

The Dairy.

Three cheers for Tilly Alcartra! She completed her sixth year on official test last Monday, making during the past year the world's record of 33,424.8 pounds of milk and 1058.39 pounds of butterfat.

Dairymen in Stanislaus county are now paying from $15 to $16 for loose alfalfa.

California has 16 cow testing associations, which regularly test nearly 20,000 cows.

The Riverside Cow Testing Association is being enlarged so as to include about 300 additional cows. The charge for testing is $2 per cow per year.

A. A. Jenkins of Tulare reports that the Jersey cow, Irene's Cadora, has completed a yearly test with 804 pounds of butterfat from 13,485.4 pounds of milk.

Farm Advisor Sullivan of Kings county, who has been so successful in conducting hog sales, is planning on forming a dairy department of the County Farm Bureau.

W. J. Higdon of Tulare recently sold a foundation herd of Holsteins to J. H. Posty of Atwater, including a son of King Korndyke Pontiac 20th and three A. R. O. heifers.

The latest registration book of the Holstein-Friesian Association shows that during the six months from September 1, 1917, to February 26, 1918, 14,080 males and 32,165 females were recorded. The entire number of animals recorded to the latter date is 654,375.

Bock Bros. of Pacheco have made the following sales of registered Holstein bulls: A grandson of Dutchland Sir Korndyke Colantha to California State Prison, San Quentin; two grandsons of Tirzah La Polka Pietertje Lad, one to Dominik Wiget, Meridian, and one to Joseph Lucas, La Fayette.

To develop better dairy herds, the purebred breeders of Wisconsin are encouraging boys' and girls' clubs, and where clubs are formed consisting of not less than five members the breeders help the youngsters to buy their stock. At the last State Fair sixty boys and girls exhibited, and a great improvement was noted in the quality of the stock. Why isn't work along this line being done in California?

Two weeks ago we attempted to make an announcement that Kenneth Abbott is back in the Holstein swim again, but evidently our compositor had been celebrating Christmas, as two paragraphs became mixed up. Mr. Abbott joined Uncle Sam some time ago and sent his herd to the ranch of Gotshall & Magruder of Ripon, where some excellent records have been made. Mr. Abbott is now looking around for a suitable location and expects to be back in the game again soon.

Beef Cattle.

W. D. Duke of Likely has sent a carload of Herefords to Nevada to be fitted for the annual Hereford sale to be held in the spring.

James Brown, San Francisco, last week sold 1000 head of beef steers for slaughter and received 12c per pound. The steers were raised on Brown's ranch, 25 miles southwest of Kings City.

During 1918, 11,594 head of Herefords were sold at public auctions throughout the United States, averaging $481. Of this number, 3233 were bulls, which averaged $425, and 8361 females, averaging $503.

Thompson Bros. of Westpoint, Neb., recently sold 55 head of Herefords at auction for an average of $986. Forty-five females averaged $936 and 10 bulls averaged $1,212. Thirteen cows sold for over $1,000 each, with a top of $3,950.

Swine and Swinemen.

W. H. Thompson, a Stanislaus county farmer, estimates that he is getting $3 per hundred for his barley by feeding it to his hogs.

Cloverdale Farm of Escondido, owned by George J. Bach of San Diego, now owns the Whitten ranch herd of registered Poland-Chinas.

The Travelers Hotel at Sacramento offers a $200 silver cup for the best 12 Berkshire hogs shown by one exhibitor at the next California State Fair.

Anchorage Farm, Orland, has 110 fine Berkshire sows bred for spring litters. Last spring the Anchorage sows made the excellent average of 8¾ pigs to a litter.

A. L. Tubbs of Calistoga has sold two bred Yorkshire sows and a boar to Julie Covarrubias F, Santiago de Chile, S. A. We ought to be making more shipments to South America. It is a wonderful field.

Last call for the Tulare County



Veramont Stock Farm

Taylorsville, Cal.

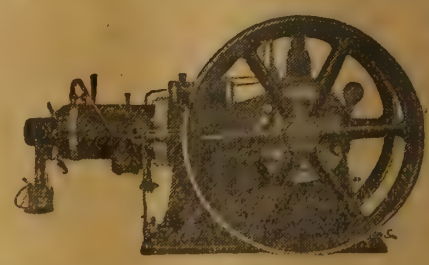
Purebred HEREFORDS

Patrician 5th and Don Woodford 4th at head of Herd. Fine lot of young bulls for sale, also few cows and heifers.

Address H. M. BARNGROVER, = Santa Clara, Cal.

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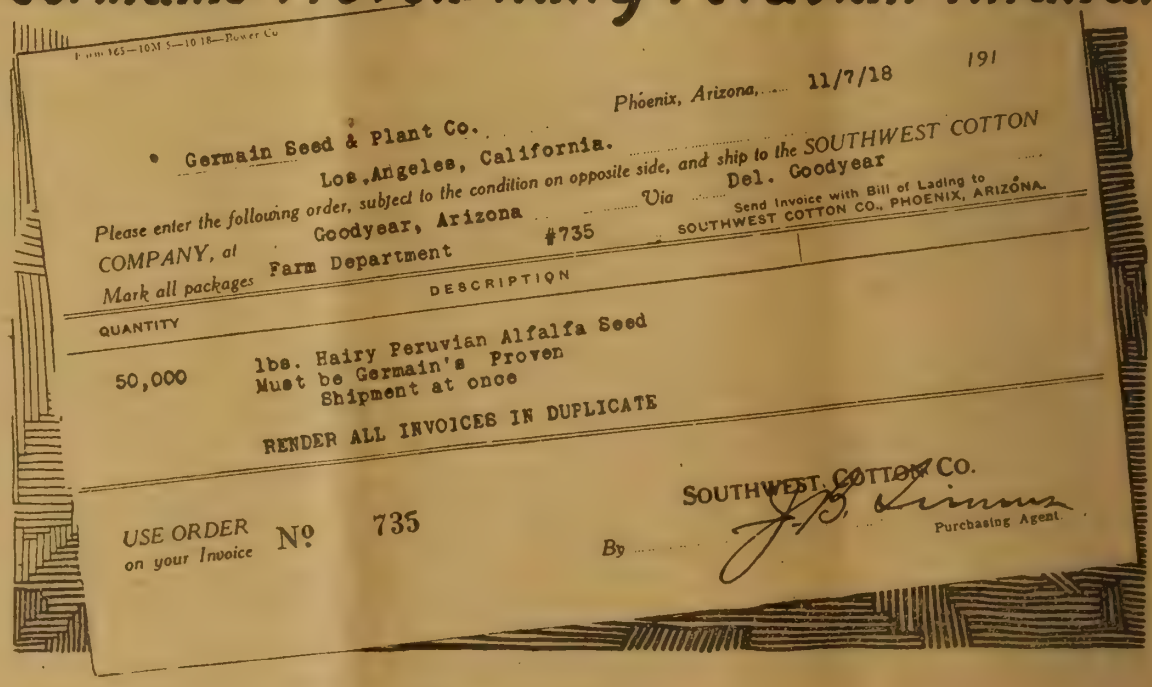


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Here is a copy of 50,000 lb. order for Germain's Proven Hairy Peruvian Alfalfa.



After a thorough investigation this company purchased 50,000 pounds of Germain's Proven Hairy Peruvian Alfalfa Seed to plant on their own Arizona ranch. This will be one of the largest fields of alfalfa in America. What MORE proof of the SUPERIORITY of Germain's Proven Hairy Peruvian Alfalfa do you need? Buy NOW—before the supply is gone.

Write for Free Folder and Testimonial Letters

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Established 1871

Seed & Plant Co.

N.E. Corner Sixth & Main Sts.

Opp. P.E. Depot

Los Angeles, Cal.

Duroc-Jersey Breeders' Sale, to be held in the new pavilion at Tulare, January 15. The offering will consist of about 30 bred sows and gilts of the most popular blood lines and bred to the best boars in the State.

Miscellaneous.

Edgar J. De Pue, president of the California International Livestock Show Corporation, died last week of influenza.

The Pacific International Livestock Exposition has been reorganized, and the dates November 15 to 22 set for the next show.

E. C. Voorhies is back from service with Uncle Sam and has resumed his duties in the dairy department at the University Farm, Davis.

Increase in the cost of honey, due to the big export demand, makes it safe to predict that this year will see the greatest effort ever made in furthering beekeeping.

A ten days' meeting of the California Forest Supervisors will be held at the University Farm, Davis, January 20 to February 1. Varied topics relating to the interests in the forest reserves will be discussed.

The Government will hold fortnightly sales of its wool holdings until the stock on hand is disposed of. At the first sale only a small amount of wool sold equal to the first cost, the entire sale showing a considerable loss.

LIVESTOCK DIRECTORY.

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SWINE.

Berkshires.

CASTLEVIEW GIANT TYPE BERKSHIRES are the thrifty, typey, quick-growing kind that will make larger profits for you. Prizes and Championship honors are awarded—by the greatest judges in America—only to animals possessing the essential qualities for economical meat production, viz.: heavy bone, good feet, broad strong backs, large hams and easy feeding qualities. Our grand champion herd includes Riverby Princess, grand champion sow of the world; Rookwood Lady 100th, 1917 grand champion of America; Mayfield Laurel 15th, 1917 grand champion of California. Bred sows, bred gilts and fine weaned pigs for sale. **Castleview Ranch** Santa Rosa, Cal.

MONEY-MAKING BERKSHIRES—The prolific easy feeding kind that make the highest priced pork from the lowest priced feed. They will increase your profits. Prices reasonable; satisfaction guaranteed. Write for free booklet describing our world's reserve champion, Star Leader. Anchorage Farm, Orland, Cal.

BERKSHIRES—GUERNSEYS
GRAPE WILD FARMS
A few fall boars left, by Royal Superbus; also a limited number of fall gilts. We have early spring pigs of both sexes, and we are breeding some top gilts for fall farrow. Prices upon application. A. B. Humphrey, Escalon, San Joaquin county, Cal.

$25.00—$35.00—$50.00
BARON DUKE 201ST
Omaha Grand National Champion
BOAR PIGS: 3, 5, and 6 months old, from 550 pound prize-winning sows. We will sell nothing, now we wouldn't use ourselves.
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BERKSHIRE BOARS—Some exceptionally good young prospects, from weanlings to serviceable age. Write or call and see us. Our prices and class of stock will interest you. J. J. Merrill & Son, Morgan Hill, Cal.

CROLEY'S BALANCED HOG FEED—The cheapest feed to fatten hogs. Write Geo. H. Croley Co., Inc., Livestock Supplies, 8th and Townsend streets, San Francisco.

MAPLEWOODE RANCH, Calistoga, Cal., offer some fine Berkshire fall and spring pigs of both sexes. Prices consistent with quality and breeding.

BERKSHIRES IN PERRIS—They make money for me. Write for catalogue and prices. L. Hall, Perris, Cal.

BERKSHIRES—Sired by Star Leader, the 1,500 boar. Kounias Registered Stock Farm, Modesto.

FOR REAL GOOD BERKSHIRES write Frank B. Anderson, R. 7, 24W, Sacramento, Cal.

HOPLAND STOCK FARM—Registered Berkshires. Prices on application. Hopland, Cal.

CARRUTHERS FARMS BERKSHIRES—Boars immune. Live Oak, Cal.

BERKSHIRES—Fair Oaks Ranch, Willits, California.

Poland-Chinas.

SOW BARGAINS—We are offering some exceptionally nice tried sows, bred and open gilts, at attractive prices. They are all sired by the undefeated and world's grand champion Superba and out of big type sows, which cost me $200 and over. Investigate before buying elsewhere. Rough's Greenfields, Arlington Station, Riverside, Cal.

NOW BOOKING ORDERS for spring pigs, either sex, from my prize-winning, large type Poland-China hogs. Also will book a few orders for bred gilts, February and March farrow, and a few good, serviceable, aged boars. Hale I. Marsh, Modesto, Cal.

McCARTY'S POLANDS—Cholera immune. Big, vigorous boars. The kind Kansas King sires. Price reasonable. "Money back if no like." Alex D. McCarty, 324 Insurance Exchange Building, San Francisco.

REGISTERED POLAND-CHINA bred gilts safe for March and April farrow; bred to "Fresno Sampson," our big Nebraska-bred boar, a hog with size and an easy feeder. Fred Gatewood, Route J, Fresno.

THE BEST IN THE WEST—California Gerstdale and President's Equal are my herd sires. Fall and spring boars now ready to move—each one a corker. Dr. J. A. Crawshaw, Hanford, Cal.

GATEWOOD BRED SOW SALE—On January 28 we will sell forty big type sows and gilts bred to King's Big Bone Leader and Giant Bob. Chas. Gatewood & Son, Route J, Fresno, Cal.

BIG TYPE POLAND-CHINAS—Young serviceable boars and spring weanlings from my best sows and Blucher, an exceptionally good boar. P. E. Mitchell, Atwater Cal.

WEANLING PIGS, both sexes, Gerstdale, Jones and Caldwell's Big Bob blood lines. Booking orders for spring. Forest View Ranch, Paradise, Cal.

ELDERSLY FARM—Big type Poland-Chinas with quality. Young stock from the breed's best big type sires for sale at reasonable prices. J. H. Ware, Live Oak, Cal.

OXBONE HERD offers March boars for sale from King's Big Bone Leader, grand champion at State Fair, 1918. Write F. E. Fay, Tipton, Cal.

40 SOWS and daughters of Big Bone Bob and I B A Wonder sows for sale. Price right. N. K. Horan, Lockeford, Cal.

REGISTERED POLAND-CHINA SWINE—Prize winners. Finest stock in the State. $20 up. M. Bassett, Hanford, Cal.

BIG TYPE POLAND-CHINAS—Stock from the best herds of the Middle West. N. Hauck, Alton, Humboldt county, Cal.

20 HEAD of Big Bone Bob, Grand Model and I B A Wonder Stock for sale. J. W. Wakefield, Acampo, Cal.

LAKE SIDE STOCK FARM—Large, smooth and big boned Poland-Chinas. Geo. V. Beckman & Sons, Lodi, Cal.

POLAND-CHINA PIGS WITH RIBBONS. Prices right. Johnnie Glusing, Winton, Cal.

REAOAKS RANCH herd of registered Poland-Chinas. W. J. Hanna, Gilroy.

POLAND-CHINA PIGS—Bernstein, Trewhitt, and Ross blood. B. M. Hargis, Tulare.

Chester Whites.

"BILLIKEN" CHESTER WHITES—How about the spring farrows? Are you going to use a good boar and produce some growthy, smooth pigs? If so, you need one of my yearling boars and I have but 3 left. Yearling gilts bred for March farrow. Have but 6 of these left for December delivery. A few fall weaned pigs. C. B. Cunningham, Mills, Cal.

Duroc-Jerseys.

DUROCS—Orion C. King blood. Very typey boars ready for service. Some gilts and boars 4 months, from 800-pound junior yearling sows, same blood. Something worth while. Prices reasonable. Also one junior yearling champion sow. Will be bred for second litter this week. Garden City Sanitarium, San Jose, Cal.

DUROC-JERSEYS AT IRELAND—Home of Cherry Volunteer II. Grand Champion Boar at Riverside. Ireland's Orion Defender and Orion's King of Ireland are excellent sires in service. Booking orders for spring delivery. Ranch at Owensmouth. City office, 1219 Brockman Bldg., Los Angeles.

THE JOHNSON HERD of Duroc-Jerseys—Spring gilts and boars, sons and daughters of Johnson's Defender, the 1917 junior champion, for sale. Weaned boar pigs, $25. Frederick M. Johnson, Napa, Cal.

WE WON MORE MONEY on Durocs at the State Fair than any other exhibitor. Why not buy some of this winning stock? June Acres Stock Farm, Davis, Cal.

DUROC-JERSEYS—Burke's Good Enuff, Golden Model, King's Colonel and Pathfinder blood. Derryfield Farm, National Bank Building, Sacramento.

OPEN GILTS and two extra good service boars, one year old, grandsons of Taxpayer 13th. F. W. Gardiner, Rt. 4, Box 735, Sacramento.

WE ARE CONSIGNING to Tulare sale an Advancer sow bred to Chief Defender. McDowell & Kendall, Lemoore.

A FEW CHOICE BRED GILTS, spring boars and gilts of the best blood lines. H. P. Slocum & Sons, Willows.

HEAVY-BONED DUROCS—A few service boars for sale. Ormondale Co., Route 1, Redwood City, Cal.

DUROCS—Defender, Clinton B. and Golden Model strain; the big type. Allen Thompson, Tulare.

WEANLING PIGS for sale, by a son of the grand champion of 1917. Jack Borge, Los Banos.

DUROC-JERSEYS—Weanlings of either sex ready for immediate delivery. R. E. Boudier, Napa.

REGISTERED DUROCS—All from prize-winning stock. W. P. Harkey, Gridley, Cal.

DUROCS—University Wonder and Advancer breeding. McDowell & Kendall, Lemoore.

Hampshires.

MY HAMPSHIRES are money makers. Stock for sale. Buy now. L. A. Donker, Saugus, Cal.

Yorkshires.

LARGE YORKSHIRES. The ideal hog for the progressive farmer. Young stock for sale. A. L. Tubbs Co., Calistoga, Cal.

DAIRY CATTLE.

Holsteins.

SUNNYBROOK RANCH, Willits, Cal. Registered Holstein cows and heifers in milk for sale.

A PRICE ON EVERY ANIMAL.
Herd free from tuberculosis. All sales subject to sixty days' retest. Sons of **Finderne Soldene Valdessa**, whose dam is not only a world record cow in seven-day division, but has two sisters holding world's records for yearly production.
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HIGH-CLASS HOLSTEINS—I have for sale some sons of Sir Veeman Korndyke Pontiac from A. R. O. dams. Write for particulars or come see them. R. F. Guerin, Visalia, Cal.

REGISTERED HOLSTEINS—Sires in service, Prince Butter Boy, King Mead of Riverside, and Yolo Valdessa Hengerveld. J. H. Harlan Co., Woodland, Cal.

FANCY GRADE HOLSTEIN COWS and heifers from herd testing 100 per cent. Animals qualified for certified dairies. The Lewis Company, San Jose.

THE McCLOUD RIVER LUMBER CO., McCloud, Cal.—High-class thoroughbred Holstein bulls for sale. Write for prices and pedigrees.

BREEDERS OF REGISTERED HOLSTEIN cattle and Berkshire pigs. Whittier State School, Whittier, Cal.

PALO ALTO STOCK FARM, Palo Alto, breeders of registered Holsteins. Heifers and service bulls. Reasonable prices.

GLORIETTA STOCK FARM, WOODLAND, CAL.—Registered Holsteins. Special offering of fine heifers and young bulls.

REGISTERED HOLSTEIN BULLS with world's record backing. Kounias' Registered Stock Farm, Modesto.

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F. H. STENZEL, SAN LORENZO, CAL.—Breeder of Registered Holsteins. High test producers.

REGISTERED HOLSTEINS—A. W. Morris & Sons Corp., Importers and Breeders, Woodland, Cal.

REGISTERED HOLSTEINS—Best blood lines of the breed. R. L. Holmes, Modesto, Cal.

GOTSHALL & MAGRUDER—Breeders of registered Holstein-Friesians. Ripon, Cal.

BREEDERS OF REGISTERED HOLSTEIN cattle. McAllister & Sons, Chino, Cal.

CHOICE HOLSTEIN bulls for sale. No females. Millbrae Dairy, Millbrae, Cal.

HOLSTEIN BULLS and bull calves from A. R. O. cows. C. A. Miller, Ripon.

REGISTERED HOLSTEIN CATTLE—E. E. Freeman, Route B, Modesto, Cal.

HENGERVELD DE KOL BLOOD. High producers. T. B. King, Visalia.

EL DORADO HERD OF HOLSTEINS—Alex Whaley, Tulare, Cal.

Jerseys.

FOR SALE—Young registered Jersey bull. Sire, Valet's Peter of L. Dam, Rebekah's Foxy Girl. O. J. Ames, Oakdale, Cal.

SUNSHINE FARM JERSEYS. Tuberculin tested. Production counts. E. E. Greenough, Merced.

REGISTERED JERSEYS—Young bulls and bull calves. T. B. Purvine, Petaluma, Cal.

YOUNG BULLS from Register of Merit cows. W. G. Gurnett, Orland, Cal.

Guernseys.

EDGEMOOR FARM GUERNSEYS. First in the show ring and in official records. Few animals of either sex for sale. Edgemoor Farm, Santee, Cal.

HIDDEN VALLEY FARM offers for sale young Guernsey bulls, ready for service, out of high record advanced register dams. A. J. Welch, proprietor, Redwood City.

CLAREMONT GUERNSEYS—Young bulls of serviceable age from A. R. dams. L. D. Smith, 515 Vicente Road, Berkeley.

PALO ALTO STOCK FARM, Palo Alto—Breeders of registered Guernseys, both sexes, prices reasonable.

Ayrshires.

SORABEL FARM AYRSHIRES. Purebred young stock for sale at reasonable prices. Le Baron Estate Company, Yakima, Wash.

AYRSHIRES. Registered stock for sale. E. B. Morgan, 411 Claus Spreckels Building, San Diego.

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Shorthorns and Berkshires

HOME OF THE CHAMPIONS

Ten splendid young Bulls for sale, also several heifers. We have on hand the best lot of young Berkshires we ever raised. Come and see them. Prices reasonable.

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SACRAMENTO, CAL.

Milking Shorthorns.

BREEDERS OF REGISTERED SHORTHORNS—Milk strain; choice young stock for sale. John Lynch Ranch, Box 321, Petaluma.

INNISFAIL DAIRY SHORTHORNS—Registered young bulls for sale. Alexander & Kellogg, Suisun, Cal.

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AM A SPECIALIST in registered beef cattle and familiar with the best herds in the country. If you need Shorthorns or Herefords, make use of my experience, save money and be satisfied. R. M. Dunlap, Hotel Land, Sacramento.

ALAMO HERD REGISTERED HEREFORDS (founded by Governor Sparks). Herd and range bulls. Reasonable prices. W. D. Duke, Likely, Modoc county, Cal.

REGISTERED MILK AND BEEF SHORTHORNS, bulls and heifers for sale; catalogue free. Thomas Harrison, Santa Rosa Stock Farm, Santa Rosa, Cal.

REGISTERED YEARLING SHORTHORN Bulls—Heavy-boned, thick-meated Scotch and Scotch-topped breeding. Ormondale Co., Route 1, Redwood City, Cal.

RANCHO SAN JULIAN SHORTHORNS—Purebred range bulls, unregistered, for sale. Estate Thos. B. Dibblee, Santa Barbara or Lompoc, Cal. John Troup, Supt.

THE NEVADA HEREFORD RANCH, Jno. H. Cazier & Son Co., props., Wells, Nevada. Registered Hereford cattle. Breeding stock for sale.

REG. SHORTHORNS—Calves and yearlings for sale, both sexes, reds and roans. Choice Goods breeding. Fair Oaks Ranch, Willits, Cal.

JACK LONDON RANCH—Breeders of prize-winning beef Shorthorns. Glen Ellen, Cal. Eliza Shepard, Supt.

HOPLAND STOCK FARM—Registered Shorthorns. Prices on application. Hopland, Cal.

REGISTERED HEREFORDS—H. H. Gable, Diamond G Ranch, Esparto, Cal.

SIMON NEWMAN CO., breeders of Registered Herefords, Newman, Cal.

GEORGE CALLAHAN, Breeder of registered Herefords, Milton, Cal.

GEORGE WATTERSON—Breeder Registered Herefords, Bishop, Cal.

HEREFORDS—Mission Hereford Farm, Mission San Jose, Cal.

SHORTHORNS—Carruthers Farms, Live Oak, Cal.

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F. A. MECHAM ESTATE, Petaluma, Cal.—Breeders and importers of Shropshire, Rambouillets and American Merinos, both sexes. Also Red Polled cattle. Take electric car at Petaluma or Santa Rosa for Live Oak Ranch.

100 HEAD of fine young ewes for sale. All bred; some with lambs. Address John G. Mee, St. Helena, Cal.

DORSETS AND ROMNEYS—Dorset ram lambs for sale. John E. Marble, South Pasadena, Cal.

BISHOP BROS., SAN RAMON, CAL.—Breeders and importers Shropshires.

KAUPKE BROS., WOODLAND, CAL.—Breeders importers of Hampshire sheep.

CHAS. KIMBLE—Breeder and importer of Rambouillets, Hanford, Cal.

CALLA GROVE FARM, MANTECA, Cal.—Breeders and importers of Hampshire sheep.

HORSES AND MULES.

FOR SALE—Percheron stallion with pedigree; color grey; weight about ton. Correspond with J. E. Trosi, Box 97, Sparks, Nevada.

MISCELLANEOUS.

BUTTE CITY RANCH—Shorthorns, Shropshires, Berkshires and Shetland ponies. Write for prices and descriptions before buying. Butte City Ranch, Box P, Butte City, Glenn county, Cal. W. T. Dwyer and W. S. Gulford, owners.

DAIRY HERD FOR SALE—70 head of dairy cows and bred heifers, also some younger heifers and heifer calves. Nearly all high grade Holsteins. Also one fine registered Holstein bull. Address Box 1250, Pacific Rural Press.

MULE FOOT HOGS, large type, booking orders for spring litters. These are the farmers' easy feeding, profit producing kind. H. P. Bailey, Box 37, Lodi, California. The Blue Grass.

CROLEY'S BALANCED DAIRY FEED—The choice milk producer, and Croley's Calf Meal the best California calf raiser. Geo. H. Croley Co., Inc., Eighth and Townsend streets, San Francisco, Cal.

DARLCOOK BIG TYPE POLANDS—A few top sows for sale. Both bred and open gilts for sale. Herd boar Logan Longfellow 2nd and Herbert 2nd ready for service. Fred Hartcook, Lankershim, Cal.

WANTED—Yearling Durham bull, registered, milk strain. Egbert Vanderkamp, Route A, Box 111, Placerville, Cal.

POLLED JERSEY breeder's names etc. See advertisement on Jersey page.

Hog Lice Mean Hog Loss

[Written for Pacific Rural Press.]

We heard the other day of a high-toned swine breeder who would not use crude oil on his hogs because he objected to anything that was not refined. And we'll bet our last dollar that it would be as hard to find one of this poor simp's hogs free from lice as it is to find pearls in oyster soup.

How about your hogs? Have you looked them over lately? If you don't get close enough to see the lice, perhaps you can see a lot of little yellow specks on the hair behind the ears. These are nits from which lice will hatch. And if you don't get rid of them you'll have to pay their board bills.

At this season of the year crude oil is the best and cheapest dope for killing lice and nits. It causes the hogs to get too heated if used during the summer months, and if they are turned out in the hot sun they may even blister. So during the hot months it is better to use liquor cresolis, compound creolin, kreso, zenoleum or some similar coal-tar dip. A two-ounce solution should be used, which means about three ounces to a gallon of water.

The trouble with all of these solutions is that they quickly evaporate, and while they may kill all the lice alive when applied, they will not affect the nits, and these nits will hatch out a new crop of lice in a week or ten days. Consequently, it is necessary to go through the performance a second time, and even then generally a few nits or lice remain, and soon another generation is on the job.

CRUDE OIL BEST IN WINTER.

But crude oil does not evaporate or lose its strength, and it does not wear off quickly. One application not only will kill all lice on a hog, but will stay with the hog long enough to kill the young lice as they hatch from the nits.

Crude oil may be used as a dip or a spray, or may be put on a rubbing post. If it is used in a dipping vat, the proper amount of water should be put in and the oil poured in afterwards. It will remain on top of the water, and as a hog rises after his plunge the oil will completely cover every part of his body.

If the crude oil is too thick to use with your spray pump, use an ordinary sprinkling can, making the holes larger with a nail. Drive the hogs into an enclosure where they will be close together, and spray them thoroughly. Of course most of the oil will be on their backs, so take a broom and rub it all over them. Be sure to reach every part of their bodies. And be sure to have on some old pants that you can discard afterwards, for if you don't wifey won't let you in the house to supper. It's a dirty job, but it's worse for the lice than it is for you.



Besides ridding hogs of lice it is necessary to keep the buildings and pens in a sanitary condition to prevent reinfestation.

A HOME-MADE SCRATCHING POST.

If you don't want to go through this performance and haven't a dipping vat, give the hogs a scratching post and let them do the work themselves. It won't eradicate the lice entirely, but it will keep them down to reasonable numbers.

Set a fence post firmly in the hog pen, coil a rope around it as high as a hog will stand, and fasten the rope on securely with staples. Then thoroughly saturate the rope with crude oil, and replenish every few days. It will do you good to see the hogs rub and grunt to their hearts' content, and they will pretty well rid themselves of both lice and scaly skin.

THOROUGH CLEANLINESS NECESSARY.

After treating hogs for lice, the buildings should be cleaned out and sprayed thoroughly. Also, the yards should be cleaned of litter and sprinkled liberally with freshly slaked lime to prevent reinfestation of the herd. If any new hogs are bought, dip or spray them thoroughly before putting them in with the herd, or in buildings to which the other hogs may have access at some later time.

Lice are the forerunner of disease. These parasites lower the natural resistance of hogs and make them more susceptible to disease germs. They are simply awful, but it's awfully simple to get rid of them. Go to it!

Japan is officially going into the sheep business. The plan is to start farmers with flocks of sheep, so that ultimately they can supply the nation with woolen goods without having to import wool. This year the Government has produced its first crop of 300 purebred lambs, which will be distributed among farmers.

GATEWOOD'S DISPERSAL SALE
January 28, 1919 at Fresno
of Big
Poland-Chinas



Including KING'S BIG BONE LEADER, grand champion of California, 1918. Fifty bred sows and gilts. Fourteen fall and summer pigs.

Catalog on request.

CHAS. GATEWOOD & SON, Route J, FRESNO

January 15, 1919
30 Head of Pure Bred
Duroc-Jersey Sows and Gilts

The Tulare County Duroc-Jersey Breeders' Association will hold its first consignment sale of purebred sows and gilts in the sales pavilion in Tulare, Cal., JANUARY 15, 1919, commencing at 10 o'clock.

These sows and gilts are the choice of our herds and are of the most popular strains. They have been bred to some of the best boars of the State, representing the following noted blood lines: Defender, Orion Cherry King, Cherry Chief, Model Wonder, Burk's Good Enough, Crimson Wonder and California Defender.

Catalogs will be ready about January 1, 1919. Get your name on the mailing list now. Remember the date, JANUARY 15, 1919.
Write R. C. Sturgeon or Allen Thompson, Tulare, Cal., for catalogs.

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Geo. A. Bell, Auctioneer.

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Herd of Hampshires
FOR SALE.
Brood Sows, litters at foot.
Sows bred for fall litters. Young Boars and Gilts.
Best families.
Finest individuality and clean-cut markings.
Call or write.



Address F. V. GORDON or F. A. LANGDON, Llano Vista Ranch, Perris, Cal.

OAK KNOLL FARM
LAKEPORT CALIFORNIA
We have sold all our young boars and are now booking orders for March delivery. Highlander, the $1,000 Grand Champion Boar, heads our herd of
CHESTER WHITES
SAN FRANCISCO OFFICE, 601 BALBOA BLDG.

The JOHNSON HERD OF DUROCS
We have for sale at the present time 20 Spring Gilts, daughters of JOHNSON'S DEFENDER, the 1917 Junior Champion, and out of winning sows; 5 Spring Boars old enough for service, and weaned boar pigs. Also 700-pound prize-winning Junior Yearling Boar, a grandson of ORION CHERRY KING, dam by Joe Orion II.
Frederick M. Johnson, Napa, Cal.

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Send for Sensible folder on feeding hogs
WESTERN MEAT COMPANY
Animal Food Dept. 704 Townsend St., San Francisco

HAUSER'S DIGESTER TANKAGE
Gives Greatest VALUE for LEAST MONEY. IT MAKES THEM FAT.
HAUSER PACKING CO. LOS ANGELES

Grand Champion
BERKSHIRES



AMES RIVAL 70TH

We have in our herd the Grand Champion Boar, Grand Champion Sow and First Prize Senior Herd at State Fair.

Forty-three litters this year averaged ten to the litter. Let us supply you with foundation sows and boars to head your herd.

JAMES MILLS CO.
Hamilton City : : California

TAMWORTHS
(The Bacon Hog)
Largest Herd in the State
DUROC-JERSEYS
Mature Stock and Weanlings of both sexes. Sure to please.
SWINELAND FARM.
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Purebred Stock Sales a Specialt
Sales Conducted in All Parts of California
Ben A. Rhoades, Auctioneer
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Calf Scours

Save every Calf. High meat and milk prices make control of Calf Scours more necessary than ever before.

Scouring calves indicate a germ infection that is likely to run through your entire herd with serious losses. The loss of one calf is bad enough, but nothing compared to your loss when the infection spreads, as it will unless checked. Then your year's work in building up your herd is wasted and your profits lost.

B-K, the powerful germicide and disinfectant will promptly stop scours and finally banish it from the premises. B-K contains no poison, acid nor oil. When used internally it destroys germs, heals inflamed membranes, relieves irritation, restores healthy action. B-K may be given freely in milk and drinking water.

The B-K plan is simple and practical. It is giving wonderful results. Send for "evidence"

FREE BULLETINS: Send for our valuable bulletin No. 136, "Calf Scours," also information on other farm uses and our "Trial Offer." If your dealer does not have B-K, send us his name.

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Easy Milking

Is largely a result of a healthy udder and teats. Any condition that makes a cow restless interferes with the milk flow and makes milking hard.

To keep the udder and teats always in the pink of condition use BAG BALM, the great healing ointment. A sure, quick remedy for Caked Bag through its soothing and penetrating effect on the tissues. Great for any external hurt, chapping, cuts or inflammation.

A 60c package is a good investment. Druggists and feed dealers sell it.

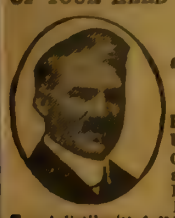
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STOP LOSING CALVES

You can **Stamp Abortion Out** OF YOUR HERD and **Keep It Out**



By the use of DR. DAVID ROBERTS' **"ANTI-ABORTION"**

Small Expense. Easily Applied. Sure Results. Used successfully for 30 years. Consult DR. DAVID ROBERTS about all animal ailments. Information free. Send for FREE copy of "The Cattle Specialist" with full information on Abortion in Cows.

DR. DAVID ROBERTS VETERINARY CO.
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Calf Profits

Are you getting them? Calf profits mean more to you now than ever before.

Blatchford's Calf Meal

has been known since the year 1860 as the complete milk substitute. Costs less than half as much as milk - prevents scouring - promotes early maturity. Sold by dealers or direct from the makers.

Write for New Data See actual figures showing you how to increase your calf profits

COULSON CO. - - - Petaluma, Cal.

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37-45 First St., San Francisco
Blake, Moffitt & Towne, Los Angeles
Blake, McFall Co., Portland, Ore.

BAH! BAH! BABY LAMB.

(Continued from page 52.)

into its mouth and nostrils and slap it gently on the ribs, first on one side and then on the other. This will often save the life of a lamb apparently dead. Get it to nurse as quickly as possible, holding the ewe in position for it if necessary. Sometimes you will have to squeeze out the wax in the ends of the teats. In the case of a single lamb, be sure that it alternates on the teats, as otherwise one-half of the udder will become caked.

DISOWNED LAMBS.

Little trouble will be experienced with disowned lambs when lambing sheds are used. Occasionally, however, the ewe will refuse to own her lamb, especially if she has not been well fed, or if she has twins or triplets. In the latter case it is the weaker lamb that is disowned. The stronger one should be taken away for an hour or two and the mother usually will turn her attention to the weaker one, after which the stronger one can be put back and she will own them both. If this plan does not work, draw some of the ewe's milk and rub it on the nose and rump of the lamb. In an extreme case, hold the ewe four or five times a day for the lamb to suckle, and generally after two or three days she will own it.

ORPHAN LAMBS.

If it is impossible to get the ewe to own her lamb, or if the ewe dies, often the lamb can be given to another ewe—a heavy milking one that has only one lamb, or one that has lost her own lamb. When there is difficulty in having the ewe adopt another lamb after losing her own, the skin of the dead lamb should be fastened over the one to be adopted, and left on until the ewe owns it.

If an orphan lamb cannot be given to another ewe, it can be raised on cows' milk. When a lamb suckles its mother it takes a small amount of milk every little while, and this milk is warm and comes from a clean udder. Consequently, in raising lambs by hand, this same plan should be carried out as nearly as possible, and the following points should be observed:

First: As ewe's milk is considerably richer in fat than that of cow's, the milk should be taken from a cow whose milk tests high in fat.

Second: For the first three or four weeks the milk from this one selected cow only should be fed to the lamb.

Third: For the first three weeks the lamb should be fed four times daily, giving about a half pint at each feeding. After three weeks, change to three feedings per day and increase the amount to one pint each time. After two months, change to twice a day and gradually increase to one quart each time. At about six weeks the lamb will begin to eat grain and it should be started with a small amount and worked up to a half pound daily. Fresh hay or pasturage also should be provided.

Fourth: The milk fed the lamb should be warmed to 92 degrees, as this is about the warmth of sheep's milk. Be careful not to let the milk boil, as this will cause constipation.

Fifth: The bottle and nipple should be thoroughly washed each time after use, so as to prevent the collection of sour matter in them, which might poison the lamb. Special "swan-bill" nipples for feeding milk to lambs may be procured at any country drug store.

When a lamb is first born it is delicate and has a rather weak stomach, and great care must be exercised in raising it by hand. After about a month it becomes strong and vigorous and the task is not such a difficult one.

Lots of work? Yes, but it comes at a time of the year when the average California rancher is not busy with other tasks, and it proves time most profitably spent. Lambs, properly raised, will prove as good as Government bonds. And you can clip the coupons from them and still have the bonds left.

Splendid Dairy Opportunity

Have one of the best dairy propositions in California FOR LEASE OR SALE on long-term payment. Located within three-quarters of a mile of rail shipping point. One hundred acres of alfalfa; modern buildings, etc. For further information address

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The home of MISS RIALTO 2ND, NEVER defeated Grand Champion. Over 900 breeding cows, representing choicest blood lines. Great Bulls in service. Look up our records at the BIG live stock shows.

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Wm. Cox, Herdsman. Raymond S. Husted, Vice-Pres. Gen. Mgr.

ORMONDALE SHORTHORNS

Are all heavy boned, and of Scotch and Scotch-topped breeding.
Suited for either the range grower or breeder.

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One three-year-old bull bred by H. R. Clay.
Three outstanding under-a-year bulls sired by Sir Type, a son of Cumberlands Type.
A few under-a-year heifers of same breeding.
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SAMSON SIEVE-GRIP 10-25 Tractor, in first-class mechanical condition, used very little. Price $1350. Also 21-foot Western Land Roller and Mulcher nearly new, $225. A Kremp Sub-soil Plow, $150. I. L. Dienstag, Modesto.

REMANUFACTURED PIPE.
All sizes standard pipe and wrought iron screw casing. All kinds of fittings. Guaranteed good as new. Write for prices. Weissbaum Pipe Works, 160 Eleventh street, San Francisco.

FOR SALE—Two five-point 14-inch bottom P. & O. engine plows; almost new and in fine condition. Listed now at $550 each. Will sell both gangs for $400 each. J. H. Rowe, Watsonville, Cal. Phone 1685.

FOR SALE—Holt Tractor, No. 18, $1220. Moline 4 disc plow, $275. 8-foot double disc harrow, $170. 12-foot double orchard drag, $35. Implements in good condition. Terms cash. Mrs. C. H. Evans, Gilroy, Cal.

CO-OPERATION (not operated for profit) reduces living expenses. Particulars and catalogue from Co-operative League, Commercial street, San Francisco.

ALL SIZES OF PIPE and screw casing, both new and second-hand, dipped and undipped. Guaranteed. Prices right. Shecter Pipe Works, 304 Howard St., San Francisco.

CLEVELAND TRACTOR; used but little; in best of condition. Also a four-bottom 10-inch P. & O. plow. All for $1,300. W. J. Cooper, 31 Harriet street, San Francisco, Cal.

PATENTS THAT PROTECT are procured through Pacific Coast Patent Agency. Savings and Loan Building, Stockton, California. Established fifty years.

I HAVE 175 TONS alfalfa hay and 50 tons corn ensilage, to be fed on place. Concrete milking barn and corrals available. I. L. Dienstag, Modesto.

DR. B. HEARN, VETERINARIAN—Breeder New Zealand and Flemish Giant Rabbits. R. R. 2, Porterville, Cal.

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FOR LEASE—SUMMER SHEEP RANGE—Solid tract of approximately 50,000 acres logged-off lands, Butte and Tehama counties, California, for term of years beginning with season of 1919. Accessible and well watered. Estimated capacity based on previous use, 14,000 head. For particulars apply to the Diamond Match Company, Grazing Dept., Chico, California.

EXCHANGE—Beautiful home in Berkeley for country realty. Address 5809 Ocean Drive, Oakland, Cal.

SEEDS AND PLANTS.

YOUR ALFALFA SEED should meet the needs of your soil and moisture conditions. One of the seven different kinds of Green Gold brand seed will yield heaviest and live longest because they are selected for particular conditions. Our illustrated booklet tells you all about each kind. Write for it now. Bomberger Seed Company, Desk B, 725 Tenth street, Modesto, Cal.

BUDDED AVOCADOS—Fuerte, Sharpless, Lyon, Dickinson, Blakeman, Puebla, Spinks, Taft Linda, Rey, Queen, Knight, and others. A fine stock of field-grown trees, $2.50 for one, $2.00 each by the 100. 25c per tree for packing. Newbery-Sherlock, 2202 East Colorado St., Pasadena.

BUY ALMOND TREES from an almond specialist. Have a large stock on bitter almond roots. Get my prices before buying. Wholesale price to the trade. W. T. Hohenshell, Le Grand Nursery, Le Grand, Cal.

ALFALFA SEED FOR SALE—Write for sample and freight prepaid price to anywhere in the State. O. L. Divens, Dos Palos, Cal.

TREES! TREES!—Eureka and Placentia walnuts on black; a general assortment of high-grade nursery stock. A. R. Marshall's Nurseries, 1212 Ross street, Santa Ana, Cal.

BERRY PLANTS—Blackberries, raspberries, strawberries, currants, and gooseberries. M. J. Moniz, Berry Specialists, Sebastopol, Cal.

GENUINE FRANQUETTE GRAFTWOOD—3c per ft. Ogden Bolton, Jr., Route 4, Box 447, Santa Rosa, Cal.

FOR SALE—Walnut grafting wood, selected Franquette, Mayette, Eureka, and Payne varieties—5c foot. Bowman, Kuhn Ranch, San Jose, Cal.

TREES, TREES, TREES.
No war prices.
Cash Nurseries, Sebastopol, Cal.

BARGAINS in Bartlett pear. Address L. J. Eachus, Lakeport, Lake county, Cal., Oak Mound Nursery.

WALNUT TREES—Placentia and Eureka on black root. La Puenta Walnut Nurseries, Puente, Cal. Phone 103.

ASK FOR SNOW'S GRAFTING WAX—In use all over the State. If your grocer does not keep it, send to D. A. Snow, Route 1, Box 143, San Jose, Cal.

ASPARAGUS ROOTS—We have many thousand Conovers, Colossal and Mammoth White roots. Low wholesale prices. Stanislaus Nursery Co., Modesto, Cal.

WANTED.

WANTED—Manager of 1,250-acre grain and hog ranch in Fresno county, must be familiar with tractors and machinery; university man preferred; give experience and reference in first letter; good salary, or salary and percentage to right man. F. W. Phillips, care Johnson & Phillips, Mendota, Cal.

TWO YOUNG MEN (one married) would like to rent a dairy on shares. Apply Box 1360 Pacific Rural Press.

Try this for insomnia produced by mental worry: A cup of hot, strong tea with a lump of ginger in it.

Livestock Queries

Sugar Content in Milk for Babies.

To the Editor: Is there an easy test, outside of tasting, for sugar content in milk? I prefer for family use sweet milk to the greasy kind. Does any breed of cows excel in sugar content of milk? My limited experience points to Durhams. Would not milk of a high sugar content be best for babies and for use as milk in general in contrast with its use to make butter?—J. A. B., Paradise.

[Answered by Prof. F. W. Woll, University Farm.]

The only way in which the amount of sugar in milk can be determined is by chemical analysis. Milk sugar is less sweet than ordinary sugar, and even if such were not the case the variations in the sugar content of different kinds of milk would very likely not be sufficient to appreciably affect the taste of the milk. The sugar content of cow's milk will range from below 4 per cent to over 6 per cent, the average amount being about 5 per cent. Milk rich in butterfat contains a higher percentage of sugar than milk of a low fat content, but the increase is not in proportion to that of the fat. The taste of milk is not dependent on the amount of any one component present in the milk, however, although the fat content very likely has more to do with it than any other constituent, either alone or with certain flavoring substances present in milk, in very small amounts.

Milk from Shorthorn (Durham) and Ayrshire cows contains on the average about 5.4 per cent sugar, while Jersey milk, as a rule, contains at least 5.7 per cent sugar. It is generally recognized that cow's milk of a low sugar content is best for babies because such milk also contains less fat and protein substances than milk high in sugar. The size of the fat globules in the milk and the character of the coagulum from the casein are, however, important factors in the make-up of a good quality of baby milk, and cow's milk of a low fat content has the advantage in this respect.

Silage for Horses and Hogs.

To the Editor: Is silage a good feed for horses and hogs, and if I don't feed it all this winter will it keep through the summer?—L. B. W., Bakersfield.

[Answered by Livestock Editor.]

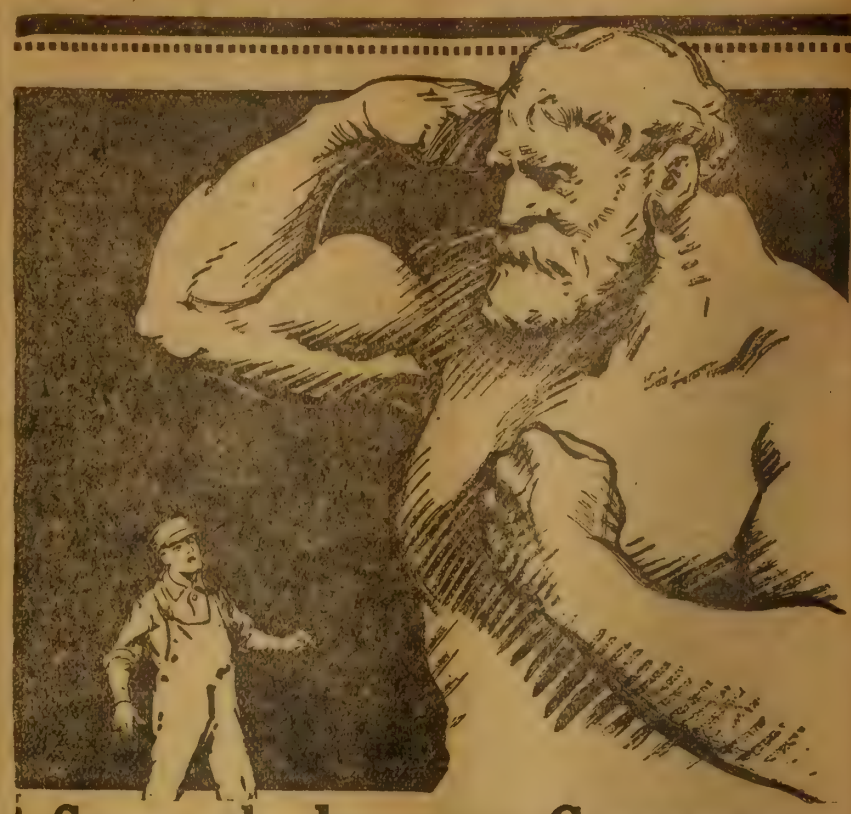
Many horses have been killed by the careless feeding of silage, but if you watch to be absolutely certain that your horses are getting silage that is neither spoiled nor moldy and that they are not fed too much, you will find it a perfectly safe feed for them. An average of 10 or 15 pounds per day is about right. Silage is too much of a roughage for fattening hogs. It has been used as a maintenance ration, but with only fair results. If you have other animals that will use up the silage, it will be better to feed it to them. Silage will keep through the summer, but it must be fed off rapidly enough so that it will not spoil. It is necessary to lower it at least two inches a day to avoid spoiling. If it is not all fed up during the summer, it will keep until another winter with only a few inches on top spoiling.

Milo Heads for Horses.

To the Editor: Will the cobs from milo maize, in which considerable corn has been left by the threshers, hurt horses?—C. M. E., Newman.

[Answered by Livestock Editor.]

An analysis shows that for horse feed milo is quite good, although a little less valuable than corn. The greatest drawback to feeding it in the head is that as the kernels are small and hard they are not thoroughly masticated by horses, and not only pass through whole but also tend to cause constipation. When milo is ground it gives much better results, but it is better to feed it in the head than to have it wasted.



Strength does not Guarantee Constant Clean Skimming with Fixed Feed Separators

Even if you had the arm of a Hercules you could not make fixed feed separators skim clean 365 days in the year. But a ten year old boy, with practically no effort, can get every bit of butterfat with a Sharples Suction-feed Separator. With a Sharples, it is not a question of strength or guesswork, as no matter how you turn, the Sharples skims clean.

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"Skims clean at any speed"

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"LOTHIAN MARMION"
The Kind You Want.
Will sell any quantity of stock—from a single animal to a carload.
Maxwell-Miller Cattle Co.,
STEAMBOAT SPRINGS, COLO.

AUCTIONS



Sell your stock or implements at public auction. I can get big prices for you. Have cried successful sales in all parts of the State. Customers always satisfied. Write for terms and dates.

ORD L. LEACHMAN
1004 5th St., Sacramento.

Poultry Breeders' Directory

Rate in this directory 3c. per word each issue.

GIANT BRONZE TURKEYS—Gold Nugget Strain. Prove their superiority by winning Gold Special Sweepstakes for best turkeys at the following great shows: Arizona State Fair, 1916; Texas State Fair, 1917; California State Fair, 1917-1918; Los Angeles Show, 1917-1918; Pacific Coast Land and Industrial Exposition, Oakland, 1918. An unequaled record. Large turkeys can be raised at practically the same cost as small ones. Toms for sale that will increase size and improve any flock. I am the originator of the Gold Nugget Strain. J. Will Blackman, 607 East Third St., Los Angeles, Cal.

BABY CHICKS—Why pay more from ordinary layers? "Best chicks I ever bought"; "Greatest layers we ever had." Why? Bred 20 years to lay 200-290 eggs yearly; 12 varieties clearing customers $5. Valuable circular with proof—free. Half booked to April. Few hundred open January. Bargain. 40,000 egg hatcheries full now. Many repeat orders monthly, yearly. Breeders, pullets, reasonable. J. Beeson, Pasadena, Cal.

BABY CHICKS—We specialize this season on money-making White Leghorns—hatching from stock with high records that are unimpeachable. Also Brown Leghorns, Anconas, Minorcas, Rocks, Reds, Orpingtons, and White Wyandottes. Especially interesting circular with price list ready January 1st. B. W. Archibald, Soquel, Santa Cruz Co., Cal.

BABY CHIX R. I. REDS
My specialty. Bred for eggs, size, color. Hens on free range means strong chix. 18c each; 17c in 1000 lots. Denton Poultry Yards, Box 360, Campbell, Cal.

EASTERN BRED Mammoth Bronze Turkeys. Being sure my birds will give the usual satisfaction, I guarantee them to be as I represent. If not return at once C. O. D. R. M. Dodge, Stafford Farm, R. D. 2, Box 129, Bakersfield, Cal.

BABY CHICKS—Ready in January. Order early and get the date you want. White and Brown Leghorns, Black Minorcas, R. I. Reds, Barred Rocks. Safe delivery guaranteed. Write for circular. Stubbe Poultry Ranch and Hatchery, Palo Alto, Calif.

ATKINSON'S PEERLESS ANCONAS lay more and eat less than other breeds. 50 big husky cockerels $5 and up. 200 pullets, trios and pens for sale. Hatching eggs. Catalogue free. J. W. Atkinson, Box B, 130 Willard street, San Jose, Cal.

MODEL POULTRY FARM—White Leghorn specialists. Our fifteenth year. Baby chix and hatching eggs for sale. Also first-class breeding cockerels. Our prices are right. W. C. Smith, Prop., Corning, Cal.

BRONZE TURKEYS—Young toms and hens for sale; also yearling hens. Order breeding toms now and have them shipped when wanted. Eggs in season. Albert M. Hart, Clements, Cal.

PRUSSIAN HILL POULTRY RANCH.
A few more fine Andalusian and Minorca cockerels at $3 each, or two for $5. Eggs for hatching at $2 for 15. Geo. I. Wright, Mokelumne Hill, Cal.

BABY CHICKS—Hatched from our own stock in our own hatchery. Hens are of S. C. White Leghorn utility stock, bred for commercial laying. H. A. George, Route 2, Box 29, Petaluma.

BARRED PLYMOUTH ROCKS—Winners at leading shows and wonderful layers. Choice stock for sale. "Nothing better in poultry." Catalog free. Chas. H. Vodden, Box 396, Los Gatos, Cal.

COLUMBIAN POULTRY RANCH, Box 5, Sunnyvale, Cal.—S. C. White Leghorns that have been bred to standard and for egg production for ten years. Chicks $15 per 100. Order now.

BABY CHICKS—Hatched from our S. C. White Leghorns, a result of many years' careful selection and breeding. San Jose Poultry Yards, Fifteenth and Margaret streets, San Jose, Cal.

SPRING CHIX—Rocks, Reds, Orpingtons, Minorcas, Brown and White Leghorns; satisfaction and safe delivery guaranteed. Tobener Poultry Ranch, Washington avenue, San Jose.

BABY CHICKS—Hoganized White Orpingtons Sicilian Buttercups, Rhode Island Reds; also eggs and all breeding stock for sale. M. S. Woodhams San Mateo, Cal.

WHITE LEGHORN BABY CHIX from heavy laying (Hoganized) stock, $15 per 100. We guarantee safe arrival. The Pioneer Hatchery, 408 Sixth street Petaluma Cal.

EASTMAN'S BRED-TO-LAY Hoganized and trapnested Barred Plymouth Rocks. January chicks. Eggs. Cockerels. Fairmead Poultry Farm, Fairmead, Cal.

BABY CHICKS—Booking orders for spring deliveries. White and Brown Leghorns, Rhode Island Reds, Barred Rocks. E. W. Ohlen, Campbell, Cal.

MAMMOTH BRONZE show and breeding toms. Big heavy boned, good color. Eastern blood. $10 and $15. H. G. Stevenson, Jr., Winters, Cal.

RABBITS—Thoroughbred New Zealand Reds; fine size and color; young and old bucks and does; bred does. Baker Rabbitry, Box 521, Dixon.

BABY CHICKS (White Leghorns) shipped on approval before remitting. No weak ones charged for. Schellville Hatchery, Schellville, Cal.

FOR SALE—Golden Bronze turkeys. Big boned breeding toms of America's best strain. Eggs in season. M. M. Redman Planada Cal.

DON'T FAIL to order now if you want early chicks from our Hoganized S. C. White Leghorns. Turman Poultry Farm, Ceres, Cal.

WHITE WYANDOTTES—Purebred, vigorous breeding cockerels and hens for sale. R. W. Stawetski, Route B, San Jose, Cal.

CHICKENS, DUCKS, GEESE, GUINEAS, Pea Fowl, Pigeons. Wm. A. French, 545 W. Park St., Stockton, Cal. Stamps.

CHOICE S. C. B. MINORCAS—Cockerels for sale. Also eggs for hatching. Mrs. J. W. Moore, Exeter, Cal. Box 446.

BUFF ORPINGTONS, BUFF DUCKS, BOURBON RED TURKEYS—The Fertis Ranch, R. 2, B. 144D, Pomona, Cal.

A. C. TAGGART—Prize Anconas exclusively; eggs $2, $3.50, $5 setting. 1620 Fifty-fifth avenue, Oakland.

FOR SALE—MAMMOTH BRONZE TURKEYS—The best in the West. Geo. A. Smith & Son, Corcoran, Cal.

PLACE ORDERS EARLY for chicks with the Madera Hatchery, Madera, Cal.

Poultry for Profit

By Susan Swaysgood, Pomona.

MAXIMUM EGG PRODUCTION FAVORED.

Having increased the size of their flocks and improved them in quality to meet world food requirements, poultry raisers are now asked by the Food Administration for a record-breaking output of winter eggs. The urgent need for a large supply of fresh eggs in the immediate future is a result of several factors among which the following are especially noteworthy: Stocks of storage eggs late in November were about 21 per cent less than a year ago. The United States is sharing these storage eggs with the Allies whose production of poultry products is low. Importations of Chinese dried eggs was stopped in February, 1918, and bakers have since been using shell eggs. Domestic demand for eggs has been large, a condition attributable probably to the noticeable improvement in quality as a result of compulsory candling.

Current receipts of poultry at the markets consist chiefly of cockerels, and laying hens are rarely found. For these reasons and from direct field reports, stocks of pullets and hens in producing areas are believed to be larger than in any previous year. In addition, the cost of commercial poultry feed is less than a year ago. With these important factors favorable to poultrymen, the Food Administration emphasizes the need for methods which will result in maximum output of winter eggs.

There is both a national and world need for more eggs and the ultimate aim should be to make every farm poultry house an egg factory rather than a fattening pen. Winter weather conditions play a dominant part in prices, but best calculations point to a good market for all fresh eggs even though a maximum number is produced.

COULD NOT DO WITHOUT INCUBATORS.

Poultry raising could not be looked upon as a business; it could not even be considered a profitable side line, if incubators had never been invented. Nowadays, when every minute counts for something, it is doubtful if very many farmers' wives by hatching and brooding with hens would have time to hatch and raise more than enough chickens for home use, but with an incubator and suitable brooding equipment it is no great chore for anyone on a farm to raise from 200 to 500 chicks in a season. On many farms it is not uncommon for as many as 1000 chicks to be raised each year. Before incubators came into existence poultry raising was never given much consideration by anyone. Quite a contrast with what is being done now by the Government, agricultural colleges, experiment stations and various other institutions in behalf of the humble hen. The incubator has revolutionized this business of raising chickens and has made of it a business worth while. Is your incubator ready for business this season?

HENS REFUSE TO LAY.

To the Editor: I have 200 pullets, hatched last April 3. They look fine (although some are pale around the eyes), but they do not lay as they should. Some days I get 32 eggs, some days only 24. I feed them sprouted barley about ¼-inch long in the morning and whole barley in the evening, with a dry mash before them at all times. I allow them to run out about thirty minutes at night for their greens. They are well housed in large open-front houses. The mash I give them is Sure-lay. Should I add meat scrap to the mash? W. A. Hinds, El Cerrito, Cal.

This is a very hard winter on pullets all over the State. Pale faces indicate anaemic conditions. Are you sure there are no mites feeding off the pullets? If you are sure on this question, then there is a lack of blood. Give them a little sulphate of iron in the mash, a tablespoonful to a dozen hens. No, the Sure-lay mash is well supplied with beef scrap.

WHITE HOLLAND turkey toms for sale; choice fine birds. Earl V. Smith, Loma Vista Ranch, Willows, Cal.

TURKEY INFORMATION.

To the Editor: Please give me information regarding turkeys. I have a turkey hen that hatched 21 poults April 28 last. Since then she has laid off, and on 124 eggs, the last 18 eggs being laid this month (December), and she is still laying every day. Do you think I could set a hen this time of the year on those turkey eggs with good results? Will one mating fertilize the eggs for the entire season? How long can I keep the eggs this time of the year before setting them?—C. K. Garrison, Modesto.

Turkey eggs may be set in winter to very good advantage, always remembering to put the nest in a sheltered spot. Any time in winter or early spring is the proper time in California, the earlier the better. Keep the poults dry for a few weeks after they come and they will be all right. You certainly have a good hen. I would not sell all of her poults if I had a place to keep them. Yes, one service of the tom is sufficient for one batch of eggs. After she lays that lot out, another service is necessary. You can keep the eggs a month in winter so long as they are not allowed to get chilled from low temperature.

WHAT'S BACK OF YOUR BIRDS?

Gradually poultry breeding is becoming more like livestock breeding. It will not be many years until every buyer of a cockerel to be used in the breeding yard will insist on knowing the sire and dam of the cockerel before he buys the bird. The buyer will also want to know how many eggs the dam of the cockerel produced, and how many eggs were produced by the dam of the sire of the cockerel he is buying. Right now many buyers—some of them farmers, too—are demanding to know what's back of the birds they contemplate purchasing before laying down any money. The day of the scrub rooster in the farm flock has just about passed.

POULTRY NOTES.

The Asiatic breeds are: Brahma, Cochin and Langshan.

The English breeds are: Sussex, Cornish, Dorking, Orpington and Redcap.

The Mediterranean or egg breeds are: Leghorn, Minorca, Ancona, Spanish and Blue Andalusian.

Chickens Sick?—Use Germozone
Roup, colds, bowel troubles, sore head, limber neck, etc. At dealers or postpaid 75 cts. with 5 book Poultry Library.
GEO. H. LEE CO., Dept. 428 OMAHA, NEB.



TIRES

BARGAINS STANDARD MAKES

These tires are all new, fresh goods and NOT retreaded or so-called rebuilt tires.

Goods Shipped C. O. D., Express or Parcel Post.
Money Refunded on Goods Returned to Us Intact Within Ten Days.

	Plain Tread Guaranteed	First Non-Skid Guaranteed	Tubes Guaranteed Gray
28x3	$8.75	$11.40	$2.35
30x3	9.85	11.90	2.35
30x3½	12.60	13.95	2.85
32x3½	13.90	16.40	3.00
31x4	18.25	21.40	3.65
32x4	18.55	21.85	3.75
33x4	19.35	22.80	3.85
34x4	19.80	23.40	3.95
34x4½	26.20	29.90	4.80
35x4½	27.00	31.20	4.95
36x4½	27.50	31.70	5.10
35x5	29.90	35.60	6.00
37x5	32.25	37.70	6.20

All other sizes in stock. Write for them or call and see them.

SPECIAL

NON-SKID SECONDS
30x3½ Clincher.....$11.75
33x4 Straight Side.....$18.70
34x4 Straight Side.....$19.25

Prices subject to change without notice.

Automobile Tire Co.
Sixth and Olive Sts.
F3737 Los Angeles Bdwy. 4049
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533 Van Ness avenue, San Francisco.
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Second and B streets, San Diego.
Hotel Fresno Building, Fresno.
The Oldest Automobile Tire Jobbing Concern in the United States and the Largest in the World.
Open Sundays and Evenings



Eggs Higher than Ever—And You CAN get them

if you help your layers. Hens cannot lay heavily unless they *eat, digest* and *assimilate* plenty of feed. Many poultry rations, especially in these times of food conservation, are inferior and do not produce results. They are not palatable, are coarse and hard to digest.

Pratts Poultry Regulator

makes good rations better, is an absolute necessity in infertile ones. "*Guaranteed satisfactory or money back*"

Pratts Poultry Regulator flavors feed mixtures, thus inducing the layers to eat more. It aerates and invigorates the organs of digestion and assimilation so the birds "get the good" of what they eat. It wakes up the whole system causing that perfect health which is the basis of regular production. It speeds up the layers and brings a steady flow of high-priced, profitable winter eggs.

Get a supply of Pratts Poultry Regulator from your dealer today. Make every hen lay *now* while fresh eggs are bringing big money.

Big Poultry Book FREE on request

PRATT FOOD COMPANY

Philadelphia Chicago Toronto

Pratts

THE HOME CIRCLE

THE NEW YEAR.

A Flower unblown, a Book unread,
A Tree with fruit unharvested;
A Path untrod, a House whose rooms
Lack yet the heart's divine perfumes;
A Landscape whose wide border lies
In silent shade 'neath silent skies;
A wondrous Fountain yet unsealed,
A Casket with its gifts concealed—
This is the year that for you waits
Beyond To-morrow's mystic gates.
—Horatio Nelson Powers.

THE TOY-MENDER FOR SANTA CLAUS.

Bennie was fond of toys. Most little boys of seven like them. Some little boys, however, take better care of their toys than Bennie did of his.

Every year Santa Claus called at his house with a big bag of gifts. Christmas morning, when Bennie got up and found them bulging from his stocking or standing around the fireplace he would shout with glee. Oh, how fond he was of those toys at first!

In a day or two, however, he would begin to tire of them. Then he would leave them around on the floor instead of putting them away when he was done playing with them. Often someone would come in and step on them. Then those toys were done.

"If you are not more careful of your toys," his mother said, "Santa will stop calling at our house."

Now Santa Claus may have been listening when mother said this. It was only a few evenings after as Bennie sat in the twilight, before the fire that he heard a queer, rumbling voice up the chimney, calling:

"Bennie—Bennie Bright!"

"Hello!" exclaimed Bennie. "Who are you? What do you want?"

"Step up here, will you?" the voice answered, and before Bennie had time to think what a very funny request this was he noticed that the fireplace had yawned wide, and the fire separated to show a little path inside that seemed to lead up and out through the darkness. Bennie jumped up and ran along the path to see who was calling him.

It grew lighter as he ran. When he turned to look back at the grate the fire had closed in behind him and the flame rose high and pink just as he had heard the northern lights looked. Underneath he saw that all was snow.

As he stared ahead he saw the walls and gates of a tremendous big white castle. It seemed to be built of blocks of snow and ice. There was a huge silver latch on the gate with a silver plate that said, "Don't knock; walk right in." Bennie went in.

Inside the gate was a courtyard, and it swarmed with little white elves. The Christmas elves are all white, you know. In the midst of them stood Santa Claus ordering them about in fine style. They were putting away the Christmas toys that had just come from the workshop, and whenever they had a chance the elves would stop to play with the toys. In that way a good many toys were broken.

"Here you," called Santa as soon as he saw Bennie coming in the gate. "I've just been waiting for you." And he motioned to two of the biggest elves. "Take that boy into the repair room and set him to work fixing the broken toys."

Before Bennie had a chance to object one little elf grasped his right hand and another little elf grasped his left hand. Then they whisked him through the door into the castle and through more doors until they reached a big hall full of broken toys.

They took him to a workbench. On the bench Bennie found glue and tacks and small nails and paste, with all sorts of brushes and tape—everything that is needed in mending toys. And the elves set him to work. As fast as he had one toy mended they would be at his elbow with another, for outside the elves kept breaking more toys all the time.

"Oh, why can't they be careful?" groaned Bennie in despair. And just then Santa Claus came in.

"Why aren't you careful with the toys I bring you?" he asked severely. Bennie blushed and hung his head. At last he was ashamed of himself.

"Please, sir, I will try to be careful after this," he answered humbly.

It does seem strange that no sooner had Bennie made this answer than he opened his eyes in the chair before the fire. The fire was burning just as usual, and the only voice he could hear was his father's:

"Come, Bennie; it's time to go to bed."—Canadian Churchman.

SEWING HELPS.

If the growing daughter has to have a longer skirt, a very good way to do is to add a new hem. This may be of the same material as the skirt and double the width of the hem you wish to add. Sew on carefully on the outside, then, after turning the hem, be careful the second stitching exactly corresponds with the first and it can be hardly detected.

An added hem of a contrasting material is sometimes quite an addition to a skirt if the same material is applied on the waist in some attractive way.

Tape is very good for mending small holes and torn places in white materials. It is also good to sew on as a foundation for buttons to prevent their tearing out the material in laundering.

Never patch a lace curtain. To mend it in the neatest fashion, use a piece of net or lace similar in pattern, starch well and iron in position—it will scarcely be noticeable.

PLENTY OF FRESH AIR IS GOOD HEALTH INSURANCE.

Do not close up the house the first cold day.

The best protection against colds and influenza is plenty of fresh air.

Open all the doors several times a day and thoroughly air the whole house.

Fresh air is more quickly heated than stale, hence it saves fuel as well as health to have good ventilation.

All winter leave at least one screen in a window in each room. Cover it with muslin—an old flour sack is excellent for this purpose. In this way fresh air is secured without a draft and dirt is kept out.

Sleep at night with the windows open. The body replaces the waste of the day during the sleeping hours and plenty of oxygen is its first aid.

PROTECTING THE BABY.

At this time of year babies should be protected from the cold floors in houses. If old enough to want some freedom, the little pens, set on legs with castors, furnish a very satisfactory way of giving them a place to play without allowing them on the floor. These pens may be made of a heavy wire or lumber, as desired. It is much better to have them a little narrower than the doorways so they can be moved from room to room or out of doors if desired. These can be purchased in the stores, but are tolerably expensive.

GARDENING IN JANUARY.

Very little actual work will be done in the garden during this month, but a great deal of planning and study may be indulged in that will be of material advantage later. During the past two years of stress and labor shortage most of us have let our flowers and ornamentals take care of themselves, so that now is the time to catch up. If the rains permit during the month, prune and fertilize, send to your nursery and seedsman for catalogues and study how to make your place more attractive with the least effort. Many of these catalogues now contain plans and information that will help you to lay out your grounds, also lists of plants that should be planted together. A neat home place adds materially and morally to the home.

"Is de left hind foot of a rabbit a sign of luck?" "'Tis," remarked Mr. Erastus Pinkley, "if you owns de rest of de rabbit."—Washington Star.

food

is mightier than pen and sword

It is the foundation of health and human energy. It produces the stamina and the strength to do things. On the field of battle—as well as on the tables where peace and plenty reign—chocolate has proved itself a 100% food.

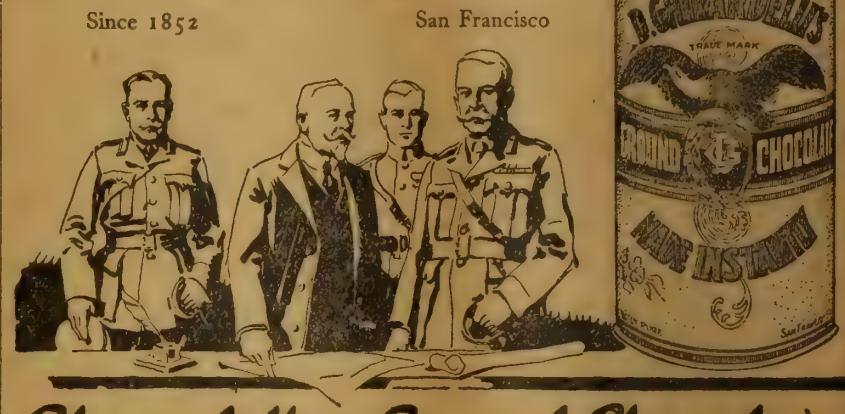
To insure supreme quality chocolate you must *insist* upon Ghirardelli's. It comes *only* in cans *—for your protection.*

At the store where you do your trading—in ½ lb., 1 lb. and 3 lb. cans.

"Say Gear-ar-delly."

D. GHIRARDELLI CO.

Since 1852 San Francisco



Ghirardelli's Ground Chocolate

NEW YORK CHICAGO SAN FRANCISCO

NUCOA

The Original NUT BUTTER

BUTTERS BREAD—STAYS SWEET



CHURNED FROM NUTS AND MILK
FREE FROM ANIMAL FATS

Nucoa has the full Butter Flavor of the Best Creamery Butter

Ask Your Dealer

OEST FRUIT COMPANY, (Distributors)

18th and Florida Sts. San Francisco, Cal.

CHURNED IN CALIFORNIA

YOUR BOY AND MINE.

I saw the star against your window pane,
And knew your only boy must be somewhere
In France; and so I offered up a prayer
That God would keep his soul without a stain,
And make the path of duty always plain.
And now I see a golden star is there
And know he's anchored in the haven fair.
Rejoice with us; he did not die in vain.

My son will soon be home; his wounds are slight;
But life's great battle he has now begun,
And many foes await him ere 'tis done.
Happy art thou whose boy, in realms of light,
An everlasting victory has won,
While mine—who knows? God help him in his fight.

—Josephine S. Roupe.

USES FOR OLD STOCKINGS.

Stockings make fine sleeve protectors when working in good clothes, especially if a narrow elastic is sewed in at the wrist. Of course it is understood that only the leg is used.

They also make very good pads for use around the stove in handling hot dishes, if opened up, folded and stitched into a square.

Dusters that are free from lint can be made of the legs opened up, sewed together and moistened lightly with a furniture polish.

Dry mops may be made of stockings that are practically gone to pieces or old socks.

For whole legs no better use can be found than to make tights for small children. The legs will have to be opened from the top and sewed each to the other and then an elastic run in the top and also one at each knee. These are warm and furnish a protection to the white knit underwear as well.

A HANDY MENDING BAG.

The large cretonne knitting bags which have been so popular make ideal mending bags. There should be a large pocket on either side to hold needles, thread, darning cotton, scissors, tape, or small pieces of material for mending and buttons.

When a small garment needs mending it can be placed in the bag and at odd moments it is easy to move bag and yourself to a pleasant place for a few minutes' work.

USE FOR LEFT-OVER RICE.

Here is a use for small quantities of left-over boiled rice: Heat 1 cupful of boiled rice in 2 tablespoonfuls of milk. Add 1 cupful grated cheese, ½ teaspoonful salt, and other flavoring if desired, and cook slowly until the cheese is melted. Then add 1 egg, well beaten. Serve on crackers or toast.

TO BE NO CORE.

The Kaiser says his troops are "loyal to the core," but the fact remains that the majority of them now begin to recognize there ain't gonna be no core.—Philadelphia Inquirer.

Champion
Dependable Spark Plugs



Champion Heavy Stone Price $1.25

Avoid Substitutes Look for "Champion" On the Porcelain

A VAST majority of car owners know from experience the wisdom of getting the Champion Spark Plug *especially* designed and recommended for *their* type of car.

For your protection, we suggest this caution—be sure the name "Champion" is *on the porcelain* as well as on the box. If it is not, you know it is not the genuine, dependable Champion Spark Plug.

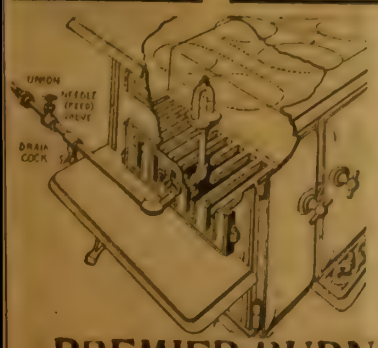
Most dealers call your attention to the name "Champion" on the porcelain when they recommend this make of plug.

There is a Champion Spark Plug for *every* type of motor car, motor truck, tractor, motorcycle and stationary engine.

Champion Spark Plug Company, Toledo, Ohio



YOUR TIME IS VALUABLE



Can you afford to waste both time and energy in sawing, splitting or hauling wood when you can get far better and quicker results—for less money and with no effort—by making clean, hot gas from coal oil in the same stove without any changes?

Time is money these days—investigate—Write for drawing and circular " ". Mention size and style of stove. Burner mailed anywhere, $5.00. Complete one-burner installation, $9.85. Unlimited guarantee.

PREMIER BURNER CO. 246 SOUTH SPRING ST. LOS ANGELES, CAL.

Western Canada's "Horn of Plenty" Offers You Health & Wealth



Western Canada for years has helped to feed the world—the same responsibility of production still rests upon her. While high prices for Grain, Cattle and Sheep are sure to remain, price of land is much below its value.

Land capable of yielding 20 to 45 bushels of wheat to the acre can be had on easy terms at from $15 to $30 per acre—good grazing land at much less.

Many farms paid for from a single year's crop. Raising cattle, sheep and hogs brings equal success. The Government encourages farming and stock raising. Railway and Land Co's offer unusual inducements to Home Seekers. Farms may be stocked by loans at moderate interest. Western Canada offers low taxation, good markets and shipping, free schools, churches and healthful climate.

For particulars as to reduced railway rates, location of land, illustrated literature, etc., apply to Supt. of Immig., Ottawa, Can., or

Gilbert Roche, 3-5 First St., Sheldon Blk. S. F.
Canadian Government Agent.

SAN FRANCISCO

San Francisco, January 8, 1919.

WHEAT.

The following prices were announced by the Federal Grain Corporation last year and are still in effect. They are figured f. o. b. San Francisco, Los Angeles, Seattle, Tacoma and Portland and guarantee the grower a minimum of $2 f. o. b. shipping point:

Per bushel—	
No. 1 hard	$2.20
No. 2	2.17
No. 3	2.13
No. 1 soft	2.18
No. 2	2.15
No. 3	2.11
Club or Sonora, No. 1	2.16
do, No. 2	2.13
do, No. 3	2.09
Recleaned for seed, per ctl.—	
California Bluestem	$4.15@4.25
Early Baart	4.15@4.25

BARLEY.

While few sales are reported, there is a stronger feeling in barley on prospect of foreign shipments.

Choice feed, per ctl	$2.22½@2.25

OATS.

Red feed and red for seed are stronger and slightly higher. The market for black for seed is about over, but its quotations are nominally unchanged.

Red feed, per ctl	$2.50@2.55
Red for seed	2.85@3.05
Black for seed	2.80@3.00
Recleaned Red or Black for seed	3.35@3.50

CORN.

There is no change in corn. Lack of demand indicates an element of weakness, but practically no sales are reported.

Egyptian, choice	$2.75@3.00
Milo	2.70@2.75

HAY.

Receipts of hay for the past week were 857 tons, compared with 576 the previous week. Damaged alfalfa from the river districts seems to be nearing its end. There is more or less inquiry for choice wheat hay and red oat hay, and a few cars would doubtless sell to advantage. The recent cold weather will no doubt cause a feeding of stock in several sections and if this continues any length of time it will affect the hay market. Already in many sections there is a tendency to hold hay for higher prices. This is especially true of alfalfa, which is quoted higher this week.

Wheat, No. 1	$22.00@24.00
do, No. 2	16.00@20.00
Choice tame oat	21.00@23.50
Wild oat	16.00@18.00
Barley	16.00@18.00
Alfalfa	18.00@22.00
Stock	14.00@17.00
Barley straw	.50@ .80

FEEDSTUFFS.

While corn products are weaker, rolled barley and rolled oats are both higher and there is decided strength in wheat feedstuffs. Both mill run and bran showed a good advance in prices.

New alfalfa meal, per ton	$35.00@36.00
Coconut cake or meal	45.00@47.00
Whole yellow corn	73.00@75.00
Cracked corn	76.00@78.00
Linseed Oilcake Meal	77.00@78.00
Rolled barley	47.00@49.00
Rolled oats	56.00@57.00
Mill run	38.00@40.00
Bran	36.00@38.00
Fish meal, per 100 lbs	4.80@ 5.00

POTATOES, ONIONS, ETC.

The cold weather has taken most of the green vegetables off the market, and the few arrivals have been held at high prices. As a consequence the potato and onion market scored better prices this week. Sweet potatoes and carrots also showed higher prices. Lettuce was scarce and sold even above $4 for some fancy stuff. Celery also was held very firm. Tomatoes were very poor and sold at less than last week. Really good tomatoes could have brought almost any figure.

String beans	20@30c
Lima beans	12½@15c
Carrots, per sack	$1.00@1.25
Rhubarb, San Jose, per box	1.00@1.50
Pumpkins	1.00@1.25
Cucumbers, hothouse, box of 30	2.50@3.00
Los Angeles, lugs	3.00
Eggplant, per lb	Nominal
Lettuce, per crate	$3.00@4.00
Celery, crate	5.00@6.00
Tomatoes, Southern, per crate	1.00@2.00
Potatoes—	
Fancy whites	1.90@2.15
Choice	1.75@2.00
Sweets, per sack	3.50@4.00
Onions, Warehouse Stock—	
Yellows	1.10@1.35
Australian Browns	1.10@1.35
Garlic, new	25@35c
Green corn, Alameda, per sack	None
Okra, per box	None

BEANS.

A livelier demand for beans was looked for after the first of the year, but so far it has not materialized.

Bayos, per ctl	$7.25@7.50
Blackeyes, new crop	5.50@5.75
Cranberry beans	7.60@7.75
Limas (south, recleaned), new crop	$10.25
Pinks	$6.65@6.75
Mexican Reds	$6.75@7.00
Tepary beans	4.50@5.00
Garbanzos	9.25@9.40
Large whites, new crop	8.10@8.25
Small whites, new crop	8.90@9.10

POULTRY.

The poultry market is firm, with higher prices on all descriptions of hens. During the week three cars arrived from the East and were readily disposed of. There are not many turkeys on the market, and the regular demand at this time of the year declined to pay the high prices of the holiday season.

Turkeys, live, young spring, lb	35@40c
do, old	33c
do, dressed	40@42c
Broilers, 1½ to 2 lbs	39@42c
do, 1¼ lbs	43c
do, ¾ to 1¼ lbs	43@45c
Fryers	40c
Hens, extra, per lb., colored	40@42c
do, Leghorn	40@42c
Smooth young roosters, per lb. (3 lbs. and over)	38@40c
Old roosters, colored, per lb	24c
Geese, young, per lb	34@35c
do, old, per lb	30@32c
Squabs, per lb	60c
Ducks	33@35c
do, old	30@33c
Belgian hares	20@22c
Jack rabbits	$3.00@4.00

BUTTER.

Butter continues strong and somewhat higher. The quotations for the week given below are the regular exchange prices, less the commission of 5½ per cent charged for butter selling on the exchange between 63c and 68c. These are the figures which should be paid the producer, less the usual freight and cartage charges.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extra	61	61	61½	61	62½	62
Prime first			Nominal			
Firsts			Nominal			

EGGS.

Eggs showed considerable weakness at the close today and dropped 4c from yesterday's quotations. As with the case of butter, the following quotations are the market prices established by the San Francisco Exchange, less the commission of 6 per cent, which is charged on eggs selling above 60c. By deducting freight and cartage charges, these are the prices paid the producer.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extra	70½	71	72½	70½	69½	65½
Extra 1sts	81	Nom.	—	—	—	—
Firsts			Nominal			
Extra pullets	67	69	72	70	68	62½

CHEESE.

Cheese is steady, with practically unchanged quotations. The prices given below are the San Francisco Exchange quotations, less the commission of 10 per cent, and, as in the case of butter and eggs, should represent the prices paid the makers after the usual deductions for freight and cartage. In the case of Monterey cheese, which is not sold on the exchange, the street price is taken and 10 per cent deducted for commission.

Fancy California flats, per lb	30c
Firsts	Nominal
Oregon triplets, fancy	36c
Oregon Y. A. fancy	38c
Monterey cheese	23@26c

FRESH FRUITS.

With the exception of a somewhat lower price on the Northwest apples, there have been no changes in quotations this week. The demand has been good for both apples and pears. Persimmons are getting scarce and not many are in the local market.

California apples	$1.00@2.00
Northwest apples	$ 2.00@3.25
Winter pears	$2.00@3.00
Persimmons	1.00@1.50

CITRUS FRUIT.

There has been an especially good demand for oranges this week. A good stock appears to be on hand, but all the dealers are trying to get a line on the amount of damage done by the recent cold weather in the State. Prices have been maintained unchanged.

Oranges, navels	$3.00@5.00
Mandarins	1.50@1.75
Tangerines	2.50@3.00
Lemons, fancy	4.50@5.00
do, choice	4.00@4.50
do, standard	3.50@4.00
California limes	1.50
Grapefruit, new	2.25@2.75

HONEY.

Honey is stronger this week, although there is no local demand and dealers decline to quote prices. The apparent betterment in shipping prospects has put heart in the beemen and it is said that they are now counting on shipping all their surplus to Europe.

DRIED FRUITS.

There has been no changes in the situation during the past week. Stocks in the producers' hands are getting scarcer, but prices are unchanged.

RICE.

Paddy rice, 1918 crop	$4.32
Clear No. 1, 1918 crop, at mill	7.00

HIDES.

The hide trade is still under the control of the War Industries Board. With the return of peace conditions, however, the hide market will doubtless return to private channels. Dealers are anticipating a decline in values.

Wet salted—Native steers and cows, 18@18½c; No. 1 buffs, 17½c; bulls, 14½c. No. 1 center branded hides in all grades 2c less than base price, and No. 2 center brand 3c less. Wet salt kip, 18½@20c; calf, 30½@31½c.

Wet salted horse—No. 1 large, $4.00@5.00; do, medium, $3.00@3.50; do, small, $1.00@2.50; do, colts, 50c@$1.00.

THE MARKET REPORTS

Figures Given Are Independent and Reliable.
Prices Quoted as Paid to Producers.

LOS ANGELES

Los Angeles, January 7, 1919.

BUTTER.

A firm market and good demand was had the past week for what little offerings. Receipts for the week were only 195,300 pounds, against 214,000 pounds the same week last year. The increased consumption by the big hotels and eating houses offset the growing demand for butter substitutes by the masses. There was taken into cold storage here the past week 1288 pounds of sweet butter. There was withdrawn from cold storage the same week last year 12,948 pounds. The cold storage holdings now are 77,088 pounds, against 104,476 pounds the same week last year.

We quote—

California fresh extra creamery	64c
do, prime first	62c
do, first	61c
Same time last year—	
California fresh extra creamery	50c
do, prime first	48c
do, first	47c

Daily quotations—

1919—	Tu.	Wed.	Thu.	Fri.	Sat.	Mon.
Extra	64	64	64	64	64	64
1918—						
Extra	50	50	50	50	50	50

EGGS.

There was more doing in eggs the past week and the market was advanced sharply all around. While fresh ranch eggs are coming in more freely than awhile back, the receipts are light for this time of year, and cold storage stocks are about exhausted. There is not over a week's supply on hand and many of the eggs in storage now are held on contract. Receipts for the week were 3345 cases, against 4370 cases the same week last year. There was withdrawn from cold storage during the week 3439 cases, against 1734 cases the same week last year. The cold storage holdings now are only 4010 cases, against 3454 cases this time last year, and the demand much better. The Eastern markets are 2c to 3c higher than a week ago.

Daily quotations—

1919—	Tu.	Wed.	Thu.	Fri.	Sat.	Mon.
Extra	67	67	65	67	67	67
Case count	60	60	60	65	65	66
Pullets	62	62	62	65	65	65
1918—						
Extra	48	48	49	49	49	53
Case count	45	45	45	45	47	47
Pullets	45½	45½	47	47	47	47

POULTRY.

The market brightened up again the past week. Receipts were light and altogether local. Demand good for everything coming in to the extent of the supply.

The following prices were agreed upon last Friday, January 3, and hold good until the coming Friday:

Broilers, 1@1¼ lbs	40c
Broilers, 1½@1¾ lbs	43c
Fryers, 2@3 lbs	33c
Roasters (soft bone), 3 lbs. and up	30c
Stags and old roosters, per lb	20c
Hens	30@31c
Turkeys	32@35c

Special Citrus Market Report

Los Angeles, January 6, 1918.

The demand for oranges is well sustained and prices are satisfactory. Good quality navels range from $4 to $4.50 f. o. b. shipping point. The effect of the late widespread freeze is the theme of much speculation. It has unquestionably done some damage, tapering off from a maximum of 50 per cent to nil, according to location and elevation and the prudence of the individual grower in using the right kind of heating equipment. Consumers, however, need have little fear of getting any of the frosted fruit, as shippers are determined to adhere to the spirit of that clause of the fresh fruit standardization law, which reads: "It is unlawful to sell, offer for sale, ship or deliver for shipment any citrus fruits which are immature or frozen to the extent of injuring the reputation of the citrus industry of the State of California if shipped, and for anyone to receive such fruits under a contract of sale, or for the purpose of sale, or for shipment, or for delivery for shipment." There is said to be a Federal statute also against the sale of frozen fruit. Tulare county is now shipping Valencias, the navel crop having been cleaned up.

The market for California lemons is in good shape, though prices are a trifle lower. A bountiful crop was promised, but lemons also were badly bitten by the cold wave, and the extent of the damage done has not yet been ascertained. There are a few foreign lemons in the Eastern market, which are of poor quality and hardly felt in competition with the California article.

Shipments for this season to date from all sections amount to approximately 5000 boxes of oranges and 1500 boxes of lemons.

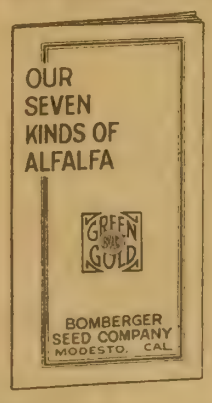
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Report of The Kansas State Board of Agriculture

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...cks .....30@32c
...ese 28c

VEGETABLES.

Very little green stuff is coming to market now, and what is offering finds ready sale at stiffer prices. The cold weather north cut down the shipments of Idaho potatoes and they sold higher the past week and met with a very good demand. River potatoes were also stronger under moderate receipts and sold with less trouble. Onions were sharply higher on White Globe, which are very scarce and in demand, the few offering in good demand. Brown onions were in very good supply. Cabbage was in better demand and somewhat higher. Choice peas were scarce and in good demand. Cauliflower steady and in fair demand. Choice celery steady and selling well. Green peppers scarce and higher. Sweet potatoes coming in less freely and meeting with a better demand. Pumpkins and squash in good supply and slow sale at old prices.

We quote from growers:

...eas, per lb.....10@15c
...ell peppers, per lb.....10@15c
...ile peppers, per lb.....10@15c
...otatoes, northern, per cwt.....$2.25@2.50
...do, Idaho Russets, per cwt.....2.20@2.25
...weet potatoes, per cwt.....2.25@2.75
...rlic, per lb.....32c
...ions—
Australian Brown No. 2.....$1.10@1.15
Australian Brown, per cwt.....1.40@1.50
White Globe, per cwt.....7.00
...bbage, per 100 lbs.....40@ .45
...lery, local, per crate.....3.50@4.00
...lery, northern, per crate.....6.00@6.50
...uliflower, standard crate .....1.00@1.25
...ubbard squash, per cwt.....$1.00
...anna squash, per cwt.....1.00
...umpkins, per cwt.....75

FRUITS.

There was a little more life in this market the past week. While apples continue to make up the offerings of deciduous fruits, they met with a better demand.

We quote from growers:

...ples—
King Davids, 4-tier .....$2.75@3.00
Black Twigs, 4-tier 3.00
Baldwins, 4-tier 2.50
...ed Pearmains, 4-tier 1.75
White Pearmains, 4-tier.....2.00
Yellow Newtown Pippins,
4-tier .....1.75@2.00
Bellefleur, 4½-tier .....1.60@1.75
...do, 4¾-tier .....1.85@2.00
Bellefleur, 4½-tier .....1.75@1.80
Jonathans, Northwestern pack 3.00@3.25
Winesap, loose, per lb.....6@6½c
Roman beauties, Northwestern,
per peck $3.00

WALNUTS.

There are no more No. 1 nuts to be had from first hands. A few culls are still coming in and are bringing 14c to 15c a pound. The association is now delivering only one to two cars a day on its contracts, and the season will soon be over.

F. o. b. California points—

	1918	1917
...hey budded	33c	24c
...andard budded	32c	21c
...o. 1 soft shell	31c	20c
...o. 2 soft shell	28c	18½c

HAY.

There was a dropping off in the receipts the past week and a little more moving. The dairy people made fair purchases of alfalfa at last week's decline and there was some little movement in horse hay.

We quote f. o. b. Los Angeles:

...rley hay, per ton.....$22.00@23.00
...t hay, per ton.....23.00@25.00
...lfalfa, northern, per ton.....19.00@20.00
...lfalfa, local, per ton.....21.00@23.00
...raw, per ton .....9.00@10.00

BEANS.

The market is still dull. There is a feeling that the demand must pick up, but it showed no improvement the past week.

We quote from growers—

...limas, per cwt.....$9.75
...arge white, per cwt.....$8.00@9.00
...mall white, per cwt. 8.00
...ink, per cwt 6.50
...pery, per cwt 4.00
...ockeyes, per cwt.....4.50

COTTON.

The market the past week lost tone. The new year started with the longs selling under a dull and weaker Liverpool market. The dry goods trade, too, was holding back and declining to pay present high prices, which caused many domestic buyers to keep out of the market. The result was that up to Monday, January in New York had declined to 28.50c and May to 26c. In New Orleans January for the same time had declined to 25.23c and May to 25.73c.

SUGAR BEETS.

The estimate of the production of beet sugar is based upon reports made before the close of the season and is subject to revision. California planted 120,900 acres of sugar beets, but harvested only 102,400 acres. The beets worked amounted to 843,760 tons, from which 109,300 tons of sugar were obtained. In 1917, 1,321,716 tons of beets worked produced 209,325 tons of sugar. The area harvested in 1917 was 158 per cent of the harvested area in 1918. The total value of the crop to the grower will approximate $8,500,000.

Now that restrictions on prices of millfeeds have been removed, prices are advancing, and it is predicted that both bran and middlings will be marked up from $15 to $20 per ton.

Special Livestock Market Report

San Francisco, January 8, 1919.

CATTLE—Not many cattle are being offered at the present time, but packers say that the receipts, though limited, suffice to meet all demands. While there is active inquiry for good cattle for future delivery, and feeders feel a trifle independent, nevertheless it is believed by those thoroughly familiar with the situation that holders who are keeping cattle on feed with the expectation of a higher market will soon be seeking a market for their stock, as the time approaches for the appearance of grass cattle here. Quotations are:

Steers—
No. 1, weighing 950@1100 lbs..$12¾@13c
do, weighing 1200@1400 lbs.....13@13¼c
do, second quality.....11½@12c
do, thin .....9@10c
Cows and heifers—
No. 1 .....9@9½c
do, second quality .....8@8½c
do, common to thin.....6@6½c
Bulls and stags—
Good .....6½@7½c
Fair .....5½@6½c
Thin .....4½@5c
Calves—
Lightweight .....11@11½c
Medium .....10¼@10¾c
Heavy .....8½@9c..

SHEEP—The sheep and lamb trade holds a pretty even course, despite the slight slump in values in the East and the lowering prices of wool. There is little change in quotations.

Lambs 14c
Yearlings 12½c
Sheep, wethers .....11½@12c
do, ewes .....8½@9½c

HOGS—The run of hogs is such as to fill all requirements, though they are not coming in quite as freely as for the past few weeks. A fractional advance in quotations is noted.

Hogs—
Hard, grain-fed, 100@150 lbs.....16¼c
do, do, 150@250 lbs.....16¾c
do, do, 250@300 lbs.....16¼c
do, do, 300@400 lbs.....16c

DRESSED MEATS.

Steers, No. 1.....19@20c
do, second quality.....18@19c
Cows and heifers .....14@17c
Calves as to size, etc.....17@20c
Lambs, suckling .....22@23c
do, yearlings .....20@21c
Sheep, wethers .....18@20c
do, ewes .....15@17c
Hogs 25c

North Portland, January 6, 1919.

CATTLE—Receipts for the beginning of the week total 2000 head, with a strong market prevailing in the steer division, other lines remaining steady. Quotations: Prime steers, $13.00@14.00; good to choice steers, $11.50@12.50; medium to good steers, $10.50@11.50; fair to medium steers, $9.50@10.50; common to fair steers, $8.50@9.50; choice cows and heifers, $10.00@11.00; medium to good cows and heifers, $9.00@10.00; fair to medium cows and heifers, $7.00@8.00; canners, $4.00@5.00; bulls, $6.50@8.50; calves, $9.00@12.50; stockers and feeders, $7.00@9.00.

HOGS—Receipts over Sunday total 5000 head, with a good demand and strong prices. Quotations: Prime mixed, $17.25@17.50; medium mixed, $16.86@17.00; rough heavies, $15.00@16.00; pigs, $14.50@15.50; bulk, $17.25.

SHEEP—Receipts are not very large, with 1500 head coming forward over Sunday. Quotations: Prime lambs, $12.00@13.00; fair to medium lambs, $9.00@11.00; yearlings, $10.00@11.50; wethers, $9.00@10.00; ewes, $6.00@8.00.

Los Angeles, January 7, 1919.

CATTLE—The market started the new year with a better tone than for some weeks. The offerings were light and mainly of poor and medium quality. Really fat steers were especially scarce and in sympathy with stronger markets East were advanced $1 a cwt. all around.

Per cwt. f. o. b. Los Angeles—
Beef steers, 1000@1100 lbs.....$10.00@15.00
Prime cows and heifers..... 9.00@10.00
Good cows and heifers..... 8.00@ 8.50
Canners, per cwt..... 6.50@ 7.00
Calves, per cwt..... 8.50@10.00

HOGS—Not so many coming in, and as the markets East keep up killers bid up full last week's prices and what coming in were sold without trouble.

Per cwt. f. o. b. Los Angeles—
Heavy, averaging 275@350 lbs..$14.00@15.00
Mixed, 225@275 lbs..... 15.00@16.00
Light, 175@225 lbs..... 16.00@16.50

Rough docked 20 lbs., piggy sows 40 lbs., and stags 40 per cent.

SHEEP—A firm and steady market was had the past week. Offerings light. Killers had to reach out to get what they wanted. Most of the arrivals coming from Idaho and a few from Nevada. No California sheep now coming to market.

Per cwt. f. o. b. Los Angeles—
Prime wethers .....$9.00@10.00
Prime ewes ..... 8.50@ 9.50
Yearlings ..... 9.50@10.50
Lambs .....14.00@15.00

Don't feed 'em!



OVER two hundred thousand men work from sunrise to sunset every day in the year to feed valuable grain to rats, gophers and other vermin. How many men do you hire to feed grain to rats?

How much of your last year's grain did the rats and vermin spoil? Probably considerably more than even you know about. You lost. The rats "beat you to" some of your deserved profit—they do it each year. They'll do it this season—unless you handle your grain in bulk.

The Calco Metal Grain Bin, for handling your grain in bulk, lasts a great many seasons. It starves the rats and gophers. It enables you to sell your **entire** crop—extra profit from the grain that otherwise would be lost.

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The Calco Grain Bin protects your grain from rain, fire and thieves. It's the safe and economic way. Write for the booklet, "Calco Grain Bins." It's full of things to think about. Write for it at once—it's entirely free.

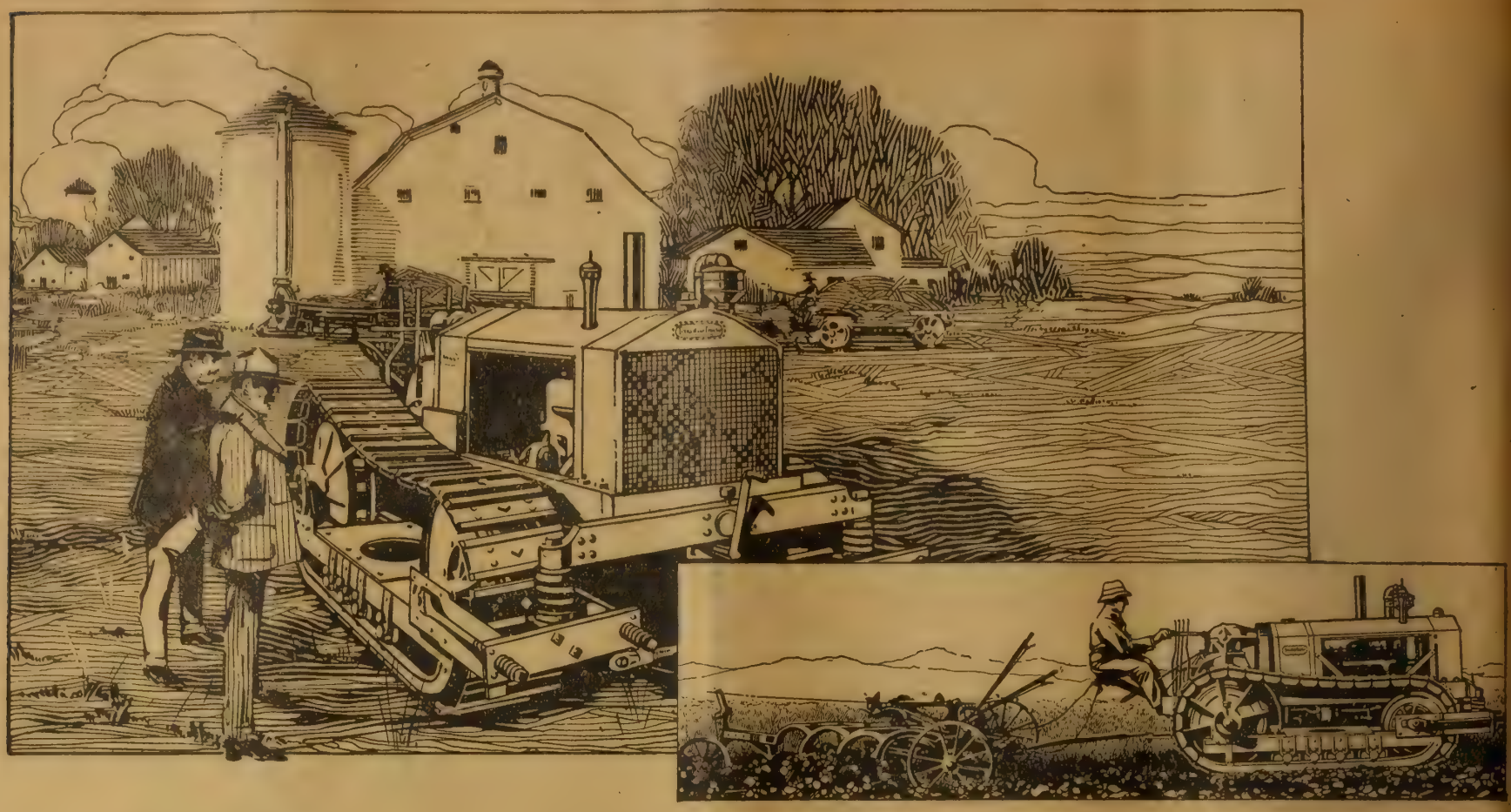
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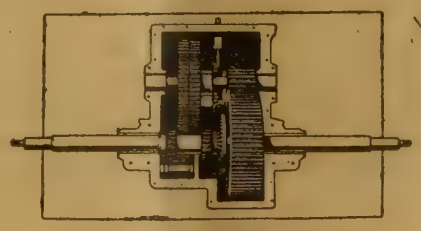
How to judge a tractor

PERFORMANCES, rather than promises, are the most satisfactory ways to judge a tractor. Judged by performances, Trundaar Tractors have given universal satisfaction to all who operate them. Every owner reports complete satisfaction with the Trundaar's plow-pulling ability, stationary work, economy and excess power. The one feature which more than any other has occasioned favorable comment is the absolute reliability of the Trundaar. When it is wanted for service it is ready. It is not laid up for repairs just when it is most needed.

With a tractor the idle days are the costly days and the Trundaar has no idle days.

Why there are no interruptions

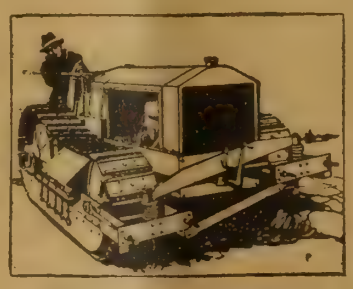
The biggest source of interruption on most tractors is the tread. The common practice of lubricating the tread of a tractor causes the mixture of dust and oil to work into the bearings, causing rapid wear. The Trundaar tread is built on the old log-chain principle and requires absolutely no lubrication. If a link or grouser plate on the Trundaar tread does break, it can be replaced in fifteen minutes by the removal of the four bolts. This eliminates costly interruptions in the busy season and decreases the repair bill considerably



The massive Trundaar transmission requires no differential,



A powerful drive clutch running in oil does away with the need of gear and pinion drive



The flexible suspension keeps the tread on the ground in the most uneven going

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The engine of a tractor is subjected to particularly strenuous work. It runs at full speed most of the time. It is subjected to bumps, shocks and exposure to clouds of dust. The Buckeye-Waukesha engine is built specially for the Trundaar Tractor. It is powerful and strong, and may be relied upon to give steady-running, dependable power.

Carl Scheneke of Vacaville, California, says:

> "We are pulling eight 10-inch bottom plows in adobe land to a depth of an average of six inches deep. The tractor is handling this load with no trouble so far as power is concerned as the motor never heats in the least."

The massive transmission, the special three-point suspension, the multiple disc clutch and all other parts of the Trundaar are built with the main idea of giving dependable service under the most difficult work.

If you are farming 200 or more acres, you should have complete information about what the Trundaar has done for others, and will do for you.

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Vol. XCVII—No. 3 THE PACIFIC RURAL PRESS Forty-ninth Year

AN FRANCISCO JANUARY 18, 1919 LOS ANGELES

The Profits From a Portable Motor

Written for Pacific Rural Press by R. H. Whitten

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When fond recollections present them to view;
The orchard, the meadow, the deep, tangled wildwood,
And the many hard jobs that dad set me to do—



CARRYING WATER, sawing wood, grinding grain, unloading hay by hand, helping ma churn, shearing the sheep, running the separator, 'n everything.

But it's different now—electricity does the work. Time was, and not so very long ago, when the man who could do the most physical work was considered the most capable farmer. But nowadays the one who succeeds best is the one who gets results with the expenditure of as little elbow grease as possible. Call it laziness if you want to, but you'll find that most of the progress of recent years may be ascribed to those men who have hunted diligently for a way to avoid constant manual labor.

A farmer used to be measured from his chin down, but now it's from his chin up. His great asset is not the six feet of stature that nature gave him, but the three cubic inches of gray matter at the back of his head. And the Great Question which constantly presents itself to him is not, how strong are you? but, how well can you plan?

Labor will be our big problem this year. Many farm soldier boys will return, but even so there will be a great shortage. We shall have to make our heads save our hands, and let machinery do more of our work. There have been frequent articles in this paper telling of the many uses of tractors and auto trucks, but I want to put in a few words for the portable motor—one of the best little money-makers on the farm.

Ranch Run by Brain Power.

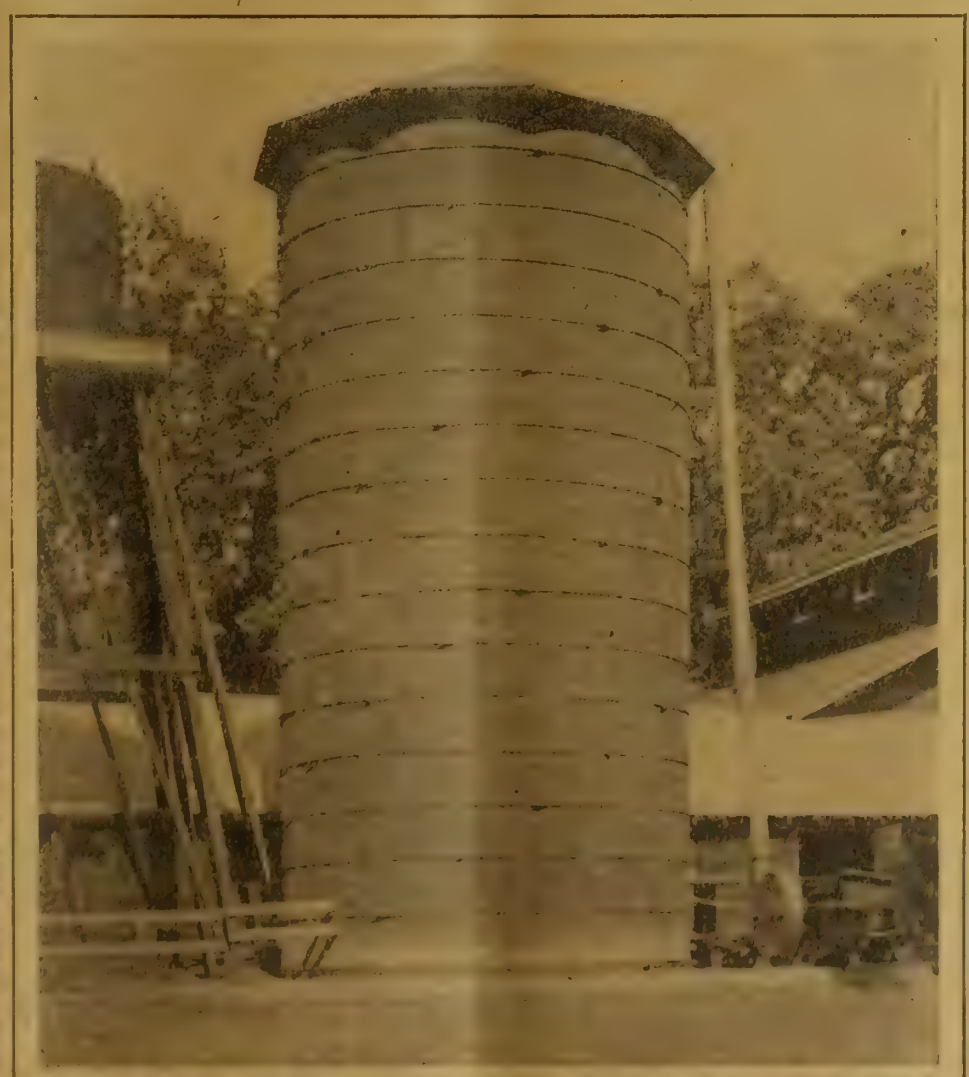
A short time ago I had the pleasure of visiting a farm where Brain had taken the place of Brawn, and where a smooth-running motor hummed nearly all day long at one task or another. It wasn't the home of a faddist; it wasn't the show place of a city business man with theoretical ideas of how to run a farm successfully, and enough money to stand the losses. There were no high-priced buildings or other signs of extravagance. But the minute I drove into the barnyard I was impressed with the system and convenience of everything, and I thought of what a noted authority once said: "The man who gets rich by ranching in California is not the one who is breaking his back all the time at some hard job or other. To all appearances he is taking it easy, but he is giving his muscles a rest so that he can use his brains more. The result is a regular system of doing things, and this enables him to make a barrel of money."

There certainly was system on this ranch, and electricity was made to do most of the work. In the center of the barnyard was a telephone pole on which were the transformers. From them three sets of power wires were carried to three different places. A 15-horsepower motor was mounted on a small, flat truck with low iron wheels, and this could be moved to any of the outlets and a connection for power quickly made.

All Hay Chopped.

One of these outlets was on the side of a regular California barn, having horse stalls on one side, a work shop and implement shelter on the other, and a big storage room in the center. This space was formerly used for loose hay, but now all of the hay is chopped. The owner purchased a silage cutter with an alfalfa mealing attachment, so that it will chop or grind alfalfa as desired. It is stationed just outside the barn, and the same blower pipe used for filling the silo is run from the cutter to almost the top of the barn, then through the side to the center, then downward about two feet. The cutter is run by the motor, and the chopped alfalfa is blown into the barn, which becomes an immense storage bin.

Dairy cattle, hogs and sheep are kept on this ranch, and all hay fed to these animals is chopped. We often hear it claimed that a saving of as much as 25 per cent can be made by feeding chopped hay, as there is then no waste, but let's be real conservative and figure on only 15 per cent. And let's figure alfalfa worth $16 on the ranch. A 15 per cent saving on $16 hay amounts to $2.40 a ton, and on this ranch it only costs about 50 cents per ton to chop the alfalfa, so there is a net saving of $1.90 on every ton fed. Besides this, there is a big saving in barn room, as a great deal more chopped hay can be stored in a space than is possible with whole hay.



Silage has from 35 to 50 per cent greater feeding value than dry fodder. It can be put up with little expense when a motor is used.

Grain Is Ground.

It is the policy on this ranch to raise practically all of the feed consumed by the animals, and both barley and milo are grown—the milo following the barley as a second crop for the same year. These grains are ground before being fed, another power outlet being located in a grain house, where there is a mill that will grind fine grains, milo in the head, or even corn on the cob.

The finer the grain is broken up the quicker the digestive juices act upon it and convert it into flesh or milk. If it were possible to get stock to eat slowly and chew the grain thoroughly, there would be no loss and no necessity for grinding it. But the kernels are hard, especially after the grain has been kept for several months; animals bolt it down, and much of it passes out undigested.

We can make the food a little finer than nature left it and thus assist the animals to make better use of it. In fact, by making meal of the grains we can force the stock to eat more slowly, and to more thoroughly mix the meal with saliva, thus aiding in a better digestion of grain

(Continued on page 85.)

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EDITORIALS

MID-WINTER POLITICS.

THEY are not so engrossing as the kind which blooms in mid-summer and in November drops juicy plums of personal advantage to the third and fourth generation of them that serve. Mid-winter politics are less engrossing because they have less to do with "me and mine"—although we must admit that they have not altogether gone over to "thee and thine" even though certain socialistic philosophers are claiming this for themselves. Still it is fair to claim that mid-winter politics are somewhat more disinterested and Platonic—not more than brotherly, perhaps, in their longing for the visions of beauty which they pursue. There are cases on record, of course, in which men have done mid-winter politics for mid-summer advantage, just as there have been deep-thinking youth who have courted the mother for the sake of the maid—but now we are surely overstepping the Platonic category which we have in mind to discuss. President Wilson is doing mid-winter politics in Europe for the sake of the world: his political part of it being, of course, unavoidably included. The Congress of the United States is doing mid-winter politics in Washington—some of it rather warm for the time of the year. The California Legislature is doing mid-winter politics in Sacramento—subject to the limitations of the influenza. And we propose to do a few ourselves right here and now—all for the sake of California agriculture.

HOW TO DO POLITICS.

OF COURSE, we do not mean great politics which determine control of great nations—nor little politics which enable a man togetanawfis: we know nothing about either. We mean the doing of the politics which are necessary to secure a square deal for farming from the shuffle which the war has given to the whole pack of things that were. We do think that we know something about that and have more confidence in our knowledge from the fact that we do not have to claim that we have discovered or invented anything new. Such knowledge as we have has been clearly gained from looking carefully and thinking hard about what others have been doing or trying to do for some time and the results which they have attained. If one has been able to look and think straight, such knowledge is dependable: that is the way to get as wise as a man can about anything. One thing we have learned in this way about doing politics for the promotion of the true interests of farming is this:

> The way to secure domination of a great social or industrial idea is not to organize a new political party for the enforcement of it but to shoot it into the minds and souls of all thinking, principled people and thus secure the endorsement and active support of it by all political parties.

Perhaps some reader may deny the truth of that declaration on the basis of party history in this country. We will not deny or argue that claim. We rest our assertion upon our prescription that this generation gets wise by straight looking and thinking, because of its discovery that it has a head and heart of its own and the electorate is therefore more fluid than formerly.

GREAT LESSONS FROM RECENT DOINGS.

IN VIEW of the last assertion of fact, it is clear enough to us that we can pay less attention to the history and philosophy of politics as they were formerly done in this country (and perhaps in all others) than to the facts about the way they have been efficiently done recently. Let us therefore try to get wise by looking around us. What happened to the "progressive" frog of corporation control and social welfare which leaped into the California political arena a few years ago. The old Republican snake tried to swallow it and was itself swallowed. The old Democratic snake chased it and got its head bitten off. Then the "progressive" frog jumped into national politics: the Republican snake tried again to swallow it and split its skin—electing a President known as a "progressive Democrat." Last week, as shown by the central committee action at Chicago, the progressive Republican frog swallowed the stand-pat Republican snake again and both old-line national parties are now progressive or nothing. The result is that progressive livery must be assumed by every party which wishes to get a place in a public parade.

Take another look: the prohibition idea organized a party of its own and made such progress that it might perhaps have won out in a century. But the prohibition idea escaped from its own party, took a good bite into the public conscience and economic sense and will win through the whole nation within a year from its adoption by the Congress of the United States!

Not so sudden, but just as clear in its domination of the public mind, is the idea of the rights of labor. It has reached its present mastery not through organizing its own party, but by invasion of all parties. The proper function of a great idea is to dominate all parties and doing this is the best practical proof that there is something in it which is great and fitted to win its way in the world.

WILL THE AMERICAN WAY WIN?

IT IS very interesting that the way by which the American Federation of Labor won its way in this country is to be put to a concrete test as to its suitability as a world-method. On January 11 this dispatch came from England:

The Manchester Guardian declared today that Samuel Gompers, president of the American Federation of Labor, and his associates are forcing European workmen to separate completely the trades unions from all political movements. Workers have learned to understand that Gompers advocates a purely allied trades union conference at Versailles. The whole labor movement in Europe is against them. There is not the slightest chance of the British, French, Belgian and German delegations allowing the Lausanne conference to be split in two on this question.

Thus is the American idea, that a great humanistic principle should dominate all parties and not create its own party, discounted by British labor leaders. It may be, of course, that they are right and that European workingmen have not reached the plane from which they can successfully invade all political parties as they have in this country. It must not be forgotten that the "common people" of Europe are still overlaid by classes holding privilege and exercising domination, such as has never been known in this country. Our workingmen therefore stand upon a plane of equal opportunity which is not known abroad. In this country a laboring man, if he has the sand and impulse, can educate his son, polish him in his speech and behavior, get him an efficiency certificate of some sort and the youth, if he inherits his father's progressive spirit, will do the rest for himself—capturing fees for commercial or professional service, marrying the daughter of a trust magnate and becoming himself "a malefactor of great wealth" and an honored member of the only ruling class which we have in this country. No European underling has open to him any such way up: it is an American way. We doubt if Mr. Gompers will be able to engraft it upon European conditions.

A LESSON FROM MR. GOMPERS' WAY.

BUT though we doubt the applicability in Europe of Mr. Gompers' prescription that organized labor should not enter politics as such nor have a party of its own, we have no doubt whatever that the policy is the secret of organized labor's success in this country. For it does not take much penetration to see that Mr. Gompers declines to enter special politics for the sake of dominating all politics. He does not risk a broken crown by lifting a pie from a rear window-sill under the eye of the cook: he enters the street door and buys the whole bakery with political legal tender. He has a great, dominating idea and all he has to do is to rustle around and let her dominate. His great idea is that the laborer is worthy of his hire—the higher the better—and there is no place in successful American politics for a party which does not get that into its platform.

The lesson from the facts we have cited is one which we have previously outlined, viz.: that agriculture has a great idea which is fit to command the attention of the people and the way to command the attention of all the people is not to go away by itself and do politics, which can never get more than a fractional support even of those who live by farming, but to do its politics in every place where politics are being done—just as organized labor has done and is doing it in this country. Organized agriculture should consist in the organization of each kind of farming by itself because only those engaged in the same line really know and feel the needs of that line and can authoritatively state and concretely contend for them. Mr. Gompers never enrolled a bootblack in a charcoal burners' union because, lacking community of interest and feeling in the small things of each other, the two could never federate and work for greater things which equally affected the prosperity of both. But having unionized them, each with those of his own craft, he has found it easy to proceed on good old biblical lines: having found them faithful in a few things, he made them rulers over many things.

WHY IS THE LESSON NOW PERTINENT?

IT IS this way. We hear that there is a propaganda now heading into California for the purpose of organizing our farmers into a political party for purposes which we do not impeach because we do not know what they are. We are willing to concede that they are all commendable—for the sake of argument. Our attitude is therefore not against the purposes, but is against the proposed way of pursuing them. We understand this plan is to assemble such groups of farmers as can be collected here and there to get force and funds enough to make it worth while for a bunch of professional, spell-binding organizers from some other State to come in and make a California farmers' political party, which will, of course, be promised to do everything which our agriculture needs to be done. This means a movement which will undermine and displace all the farmers' organizations which we now have and which have been for many years faithful and effective in our farming affairs. It will impeach all our granges, farmers' unions, farm bureaus, leagues, co-operative buying and selling exchanges, etc., as inefficient and worthless, because they have never created a farmers' political party in this State! And the promoters of the movement are willing to do this if the professional organizers are given one-quarter of all the fees col-

California Weather Record

The following rainfall and temperature record is furnished the Pacific Rural Press by the United States Department of Agriculture Weather Bureau at San Francisco for the week ending at 5 p. m., January 14, 1919:

Stations—	Rainfall Data: Past Week	Seasonal To Date	Normal To Date	Temperature Data: Highest	Lowest
Eureka	1.46	13.34	19.94	70	38
Red Bluff	.85	15.42	11.69	66	34
Sacramento	.08	7.60	8.44	60	34
San Francisco	.23	11.15	9.86	61	41
San Jose	.19	10.10	7.18	66	28
Fresno	....	3.93	4.30	66	34
San Luis Obispo	.10	7.56	7.99	78	32
Los Angeles	....	4.06	6.27	76	48
San Diego	....	4.20	4.66	76	46
Winnemucca	.02	2.91	2.93	44	2
Reno	....	3.93	3.83	50	12

lected and another quarter of them is sent to some distant central organization!

And all we have to say at this time is that it is not the kind of winter politics which needs to be done in this State. We can do better by strengthening and extending the special-purpose organizations which we now have and which have given us a wide reputation as the best organized agricultural State in the Union. What we need to do, in our mind, is to affiliate or federate what we now have and give the affiliation scope and power to make the California farmers' influence felt in political affairs as the industry requires. In this way we can apply the matured wisdom of Samuel Gompers, whose declaration is no politics and whose practice is all politics—not to declare but to dominate.

QUERIES AND REPLIES

By the Editor.

Inquirer Must Give Full Name and Address.

Boussingault's Bad Luck.

To the Editor: I am now studying the climate of California in respect to horticulture in this State. I have secured many invaluable suggestions from one of your publications, "The California Fruits." Will you kindly answer the following questions: What are the initials of Mr. Boussingault, whose name appeared in your book? Is there any publication of Mr. Boussingault about the climate of California, and, if any, what is the name of such book?—K. H., Los Angeles.

M. Boussingault had the bad luck of being born so early that he could not live to see the best demonstration of the accuracy of his conceptions. J. B. Boussingault was a distinguished French chemist and writer on agriculture, who was born in 1802, and his chief work, "Treatise on Rural Economy," was published in 1844. He lived to publish revised editions in 1860 and in 1874 and continued to live until 1887. He probably knew in the latter part of his life something of California horticulture, but such knowledge did not enter into the development of his treatise. He studied the climates of older parts of the world and set up standards of natural requirements of fruit production. As his standards were widely recognized, we used them in the first edition of our "California Fruits" (1887) to measure the pomological adaptations of California and by comparing our meteorological records with those cited by Boussingault demonstrated that our climatic conditions were better than those he laid down as essential to successful fruit production. We are not aware that Boussingault ever visited California nor that he wrote anything about this State.

Improved Lady Washingtons.

To the Editor: In the Pacific Rural Press of December 28, page 714, there is mention of a better Lady Washington. Do you know how many kinds of Lady Washington there are? I am thinking of planting Lady Washington on some subirrigated land. Some here have been trying them and they seem to do well. I am now raising blackeye beans, but the Lady Washington always bring a better price, so want to try them, and I ask you to tell me the best kind to buy.—E. L., Winton.

We are not aware that there are any recognized varieties of Lady Washington or large white, as it is usually called. It is, however, to be expected that distinctive variations should be recognized, as growers pay particular attention to the growth and productiveness of single plants. This has already been accomplished in the case of the lima and small white, and all beans can probably thus yield improved strains by selection of natural variations. The one to which you refer in Stanislaus county is probably a move in that direction and it seems to have one of the important points to be gained by selection, viz., especial adaptation to local conditions. It would be wise to try it widely in your valley.

Red Clover in Sacramento Valley.

To the Editor: I would like to know if Sacramento Valley land is good for red clover or white clover. The soil is medium, not sandy nor what you could call loamy. How high does it grow and how many crops can be cut in one season? Please let me know what is the best time for sowing clover.—W. S., Yolo.

Red clover grows well in the interior valley if it has irrigation in sufficient amount and often enough. It cannot stand drouth as well as alfalfa, for it is shallow-rooted and not deep-rooted like alfalfa, and it cannot go as long between drinks for the same reason. Dry surface soil brings it into distress. It is much the same with white clover. You can grow them if you keep them moist through the summer and you can grow them on low wet land better than alfalfa because they have no tap root to rot off. On the soil you describe you can get much better results with alfalfa. Unless your place is particularly frosty, you can start in now. Young plants stand frost better than alfalfa seedlings do. The height of the plant and the number of cuttings you make depends on the soil and the amount of water you give it. On the average, both will be about half as much as of alfalfa under the same conditions.

Rainfall and Lawn-Making.

To the Editor: Is it a satisfactory plan to sow blue grass for a lawn during the winter months and depend on natural rainfall to start it?—R. Y., Sacramento.

Although it is not customary to wait for the rainy season, it is quite common to depend considerably on rainfall in putting in blue grass lawns. It is, however, necessary to observe that natural temperature is quite as desirable as natural moisture and that in frosty places the seed should be sown soon after the fall rains begin and while the ground is still warm or it is well to wait until February, when spring temperatures come on. Blue grass does not start well when the soil is full of cold water, as is apt to be the case in December and January. In thermal situations this choice of months is less important and generally it does not apply to English rye grass as to blue grass, for the former starts more strongly and is active at a lower temperature. Even in the rainy season it is desirable to be ready to sprinkle during long dry spells to keep the young plants going until they get deeper rooting.

Orchard Use of Phosphates.

To the Editor: What is the proper time of year to apply superphosphate? What value has it as a fertilizer for orchard? I have been told it should be used with lime. If so, what kind of lime?—M. A., Reedley.

Phosphates are believed to minister more directly to the general nourishment of the tree and to the promotion of fruiting and possibly to earlier and fuller maturity of the fruit than to stimulation or increase of growth. They are generally prescribed in connection with nitrogenous manures which directly serve the last-named purpose. As for using any kind of lime with phosphate, it may be desirable if the soil is too heavy or sour. If not, we see no use in the combination, for phosphates are themselves largely lime—phosphate of lime. Superphosphates are phosphates which are readily soluble in water and application should be made after the heavy rains are over—that is, towards the end of the local rainy season.

Grafting on Wild "Cherries."

To the Editor: I read in a paper some time ago that you could graft a plum on a wild cherry. What do you think about it? Could I graft prune or some other kind of fruit tree on it?—J. J. S., Los Gatos.

As we recently stated, in current nursery practice nothing but cherries are grafted or budded on cherries. California has several drupes concerning which it seems to be nip and tuck among the botanists whether they are plums or cherries. On some of them plums were grafted in early days, but they were all abandoned decades ago as available stocks for fruit trees because they dwarfed the growth entrusted to them too much. Whether they have been fully tested in the production of satisfactory dwarf trees for garden use, we are not aware. They may be a chance to develop something interesting in that line.

The Market for Lady Bugs.

To the Editor: Can you advise me whether there is a market for "lady bugs," and, if so, where, and what they are worth?—A. M. C., Tulare.

Large collections of lady bugs are made in the mountains each winter by State Horticultural Commissioner Hecke (Forum Building, Sacramento). He may be in the market for these small cattle. They have also been introduced in the past by the Santa Cruz county apple growers, and you could learn the present demand at that point by addressing Carrol J. Rodgers, president of the Farm Bureau at Watsonville. Unfortunately we have no quotations.

Make Bigger Money This Year

Are you satisfied with your present position and its future prospects? If so, don't read this, as it is intended only for red-blooded men with the fire of ambition burning in their hearts.

If you really like this paper and believe you can convince others of its merits, we can use you in our circulation department, looking after renewals and getting new subscribers. Permanent work; straight salary; no investment except that you must have an automobile.

Your first step toward Greater Success will be to write us a little about yourself, and give us an opportunity to tell you what we have to offer. Better write today.

Wilt and Stem-Rot of Eggplant.

To the Editor: I have eggplants that are just coming into full bearing. I find a good many of the plants begin to wilt and then die. On cutting them back to the hard wood, I find that underneath the bark has turned brown. I had this same trouble last year, but did not pay much attention to it, as it was not bad. It does not seem to hurt the roots, as the plants start out again after being cut back. What is the cause and remedy?—G. Y. B., Carlsbad.

The plant doctors are still scrapping over the exact cause of this trouble, but the conclusion seems still warranted that it is the result of germ invasion from the soil and the more crops you grow in the same place the fewer eggplants you will get. The way to fight the disease is to run away. Put your eggplants on new ground and do not grow either potatoes or tomatoes where the sick eggplants have suffered.

Do Rabbits Eat Peanut Vines?

To the Editor: Must peanut vines be fenced against rabbits? I raised a few fine ones last year inside a fence, but would like to raise some to sell if no fence is required. I wish also somebody would tell me how to fence for birds! They ate half of my best fruit last year.—Dry Farmer, Claremont.

Presumably not, for peanuts are now largely grown all the way from Salt River Valley, Arizona, to Texas and Oklahoma, and that is a jackrabbit country which is surely not given to indulgence in expensive fencing. Will some reader give his experience on this subject? As for bird-fencing, tree covering with the open fabric known as "mosquito bar" is indulged in by amateurs, but it costs more than the fruit is commercially worth.

Vines Killed by Distillate.

To the Editor: I spilled about a hundred gallons of distillate and it ran around a lot of vines. In about a month they turned yellow and later they seemed to have died. Will they put out again? If not, is that ground killed for long or can I restore it? Shall I pull out the old vines and plant new ones?—A. T. F., Del Rey.

The vines are dead. Pull them out and plow up the land, leaving it on end as much as possible for aeration all winter. Dig large holes, fill in with fresh dirt and plant new vines in that, without waiting for the old soil to recover. By the time the new vines get beyond the fresh dirt the other will probably be all right.

Sick Prune Trees.

To the Editor: Can you tell me what is the matter with some of my prune trees? Some have brown resin come on some of the limbs and then such limbs die. Three or four trees died last year. They had a very large crop and the red spider was very bad this last summer and I sprayed with lime-sulphur. Some trees did not have any prunes on this last year.—Subscriber, Colusa.

An examination of the trees should be made by someone qualified to detect pests and judge of soil and moisture conditions and thus determine whether the real trouble is above ground or below, and the cause of it. Without such knowledge any reply would merely be guesswork.

No Apricots on Almond.

To the Editor: Can I graft over my almond trees to apricots?—C. G. G., Turlock.

No, they will grow all right if grafting is well done, but the union is insecure and the apricot wood will usually break off by weight or blow off. The French prune holds tight to the almond and such grafting-over of the almond has been successfully done for forty years past or longer.

Handling Bulk Grain at Shipping Point

Written for the Pacific Rural Press

AS A LINK in the bulk grain handling system proposed for California a design has been worked out for a moderate size grain loading station of comparatively low cost. This loading station provides for the adaptation of metal grain storage bins of a combined capacity sufficient for the transient storage of the average wheat crop of a thousand acres of land. Being of metal and concrete construction almost throughout, it makes available to a wheat-raising community a practically fire- and vermin-proof structure of considerable life.

LOW COST CONSTRUCTION.

It is estimated, taking average costs into consideration, that this structure can be built for between 28 and 30 cents per bushel of storage capacity. This is in comparison with nearly double these costs for a reinforced concrete fireproof structure of similar capacity. As there is little indication that construction costs will be lowered in any appreciable degree, it would appear the galvanized sheet metal, and corrugated iron construction, on concrete foundations, has much to commend it to the thoughtful grain grower or community considering the erection of a bulk grain handling station.

SHEET METAL AND CONCRETE.

As designed, this grain loading station will consist of four Calco grain bins, each 22 feet 1 inch in diameter by 21 feet 5 inches high, mounted on conical reinforced concrete bases. From the bottom of each cone a reinforced concrete chute 18 by 30 inches in size, having a regulating gate at the outlet end, leads to a receiving pit. Over this a 10x12-foot corrugated iron building 48 feet high is erected. This structure or elevator tower houses a simple elevator equipment capable of handling 1000 bushels per hour.

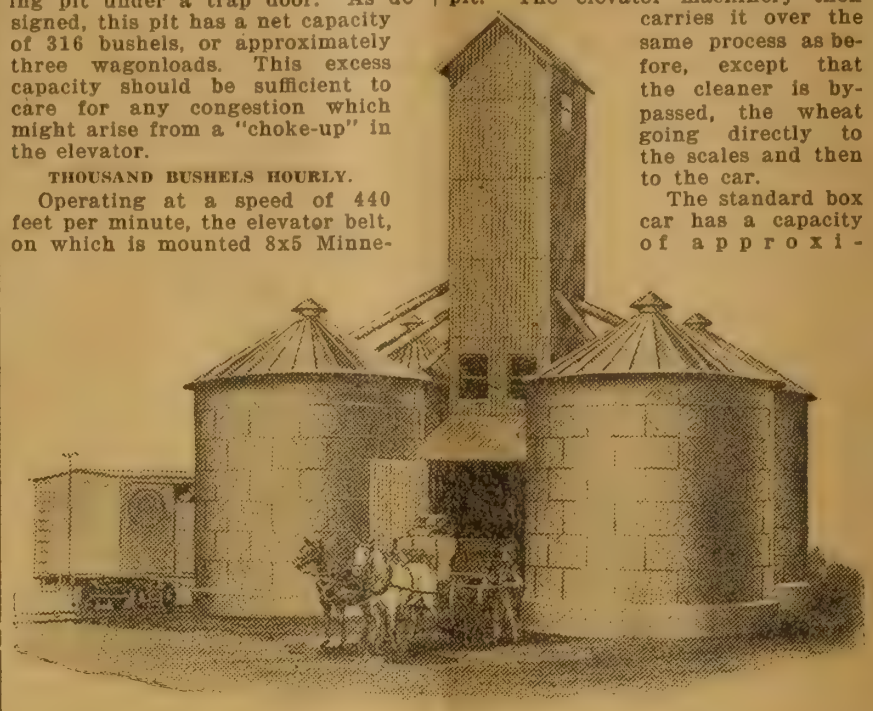
The entire structure of bins and elevating tower will be erected on an elevated foundation of filled land three to four feet above the level of the railway spur alongside which it is designed to be erected.

LABOR-SAVING EQUIPMENT.

Paralleling this railway spur and passing between the two pairs of metal grain bins through an opening in the tower is a wagonway through which grain may be hauled from the ranches in wagons and trucks to the loading station. Entering the corrugated iron building, the wagon or truck is driven onto dumping gear, which tilts it up, permitting the grain to gravitate through the end gate in the back of the wagon into a receiving pit under a trap door. As designed, this pit has a net capacity of 316 bushels, or approximately three wagonloads. This excess capacity should be sufficient to care for any congestion which might arise from a "choke-up" in the elevator.

THOUSAND BUSHELS HOURLY.

Operating at a speed of 440 feet per minute, the elevator belt, on which is mounted 8x5 Minneapolis buckets on 12-inch centers, has a capacity of approximately 1000 bushels per hour, allowing for a reasonable factor of safety on the bucket capacity.



BULK GRAIN LOADING STATION.

Linking growers who are ready to handle their grain in bulk with the railroads, the terminal storage elevators of the large milling companies of California, this fire, weather, and vermin proof metal structure furnishes the connecting link for the economical movement and handling of California grain in bulk at shipping points.

CLEANED AND WEIGHED.

The grain is elevated to the top of the tower and delivered into a hopper. From this hopper the grain passes to a cleaner, where all weed seed, cheat, etc., are removed. After passing through the cleaner it is delivered to an automatic scale, weighed and passed along through sheet metal chutes to any bin desired. When it is desired to load a car the wheat may be discharged directly into a railroad box car without being diverted into bins.

CAR LOADING SYSTEM.

Customary practice, however, is to discharge into the bins for storage, loading it into box cars when the bins are filled. To do this it is only necessary to open the regulating gates at the ends of the concrete chutes leading from the conical concrete bases, on which the bins are erected, permitting the grain to gravitate to the receiving pit. The elevator machinery then carries it over the same process as before, except that the cleaner is bypassed, the wheat going directly to the scales and then to the car.

The standard box car has a capacity of approximately 1500 bushels. The elevating machinery and scales are designed to load the standard car in approximately one hour and a half, which is considered sufficient for a loading station of this size.

EQUIPMENT FEATURES.

An electric motor of from 7 to 10 horsepower will supply the required power for operating all the machinery in the plant. This power requirement is available in the cost of construction along with several other factors, such as the elevating, cleaning and weighing equipment. All of these features are to be determined by the requirements of the community or individual building this station for handling and shipping wheat in bulk. The lower the rate of handling and loading grain from receiving pit to cleaner, scales and storage bins or freight car, the lower the cost of the structure, but this will result in increased operating expenses.

DETAILED CONSTRUCTION COSTS.

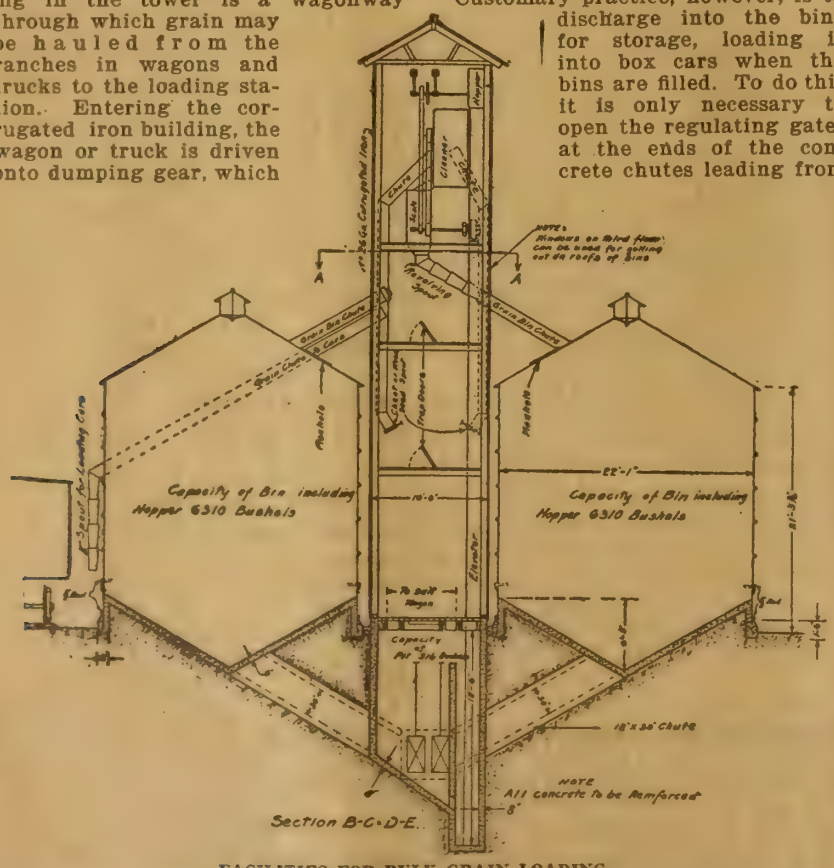
Costs of constructing the grain loading station proposed, totaling $7,425, and based on high labor and material costs, with the assumption that the builders purchase the material and hire labor, is distributed as shown in the following tabulation of the costs of the various parts of the structure.

Four bins, including manholes	$2462.20	33.2%
One 10x12x48 Corr. Iron Bldg.	423.26	5.7%
Cost concrete foundation	1746.00	23.4%
Cost erecting bins	356.00	4.8%
Cost erecting building	80.00	1.1%
Cost Superintendent	50.00	.7%
Cost Freight	120.60	1.6%
Cost Dumping gear	77.98	1.1%
Cost Conveying equipment	861.60	11.6%
Cost installing conveying equipment	72.00	1.0%
Cost Motor	244.00	3.3%
Cost Wiring motor	30.00	.4%
Cost Aut. Scale (1000 bush. per hr.	550.00	4.7%
Cost Cleaner (1000 bush. per hr.)	540.00	7.2%
Cost Miscellaneous extras	11.16	.2%
Total	$7425.00	100.0%

STORES SEVENTEEN CARLOADS.

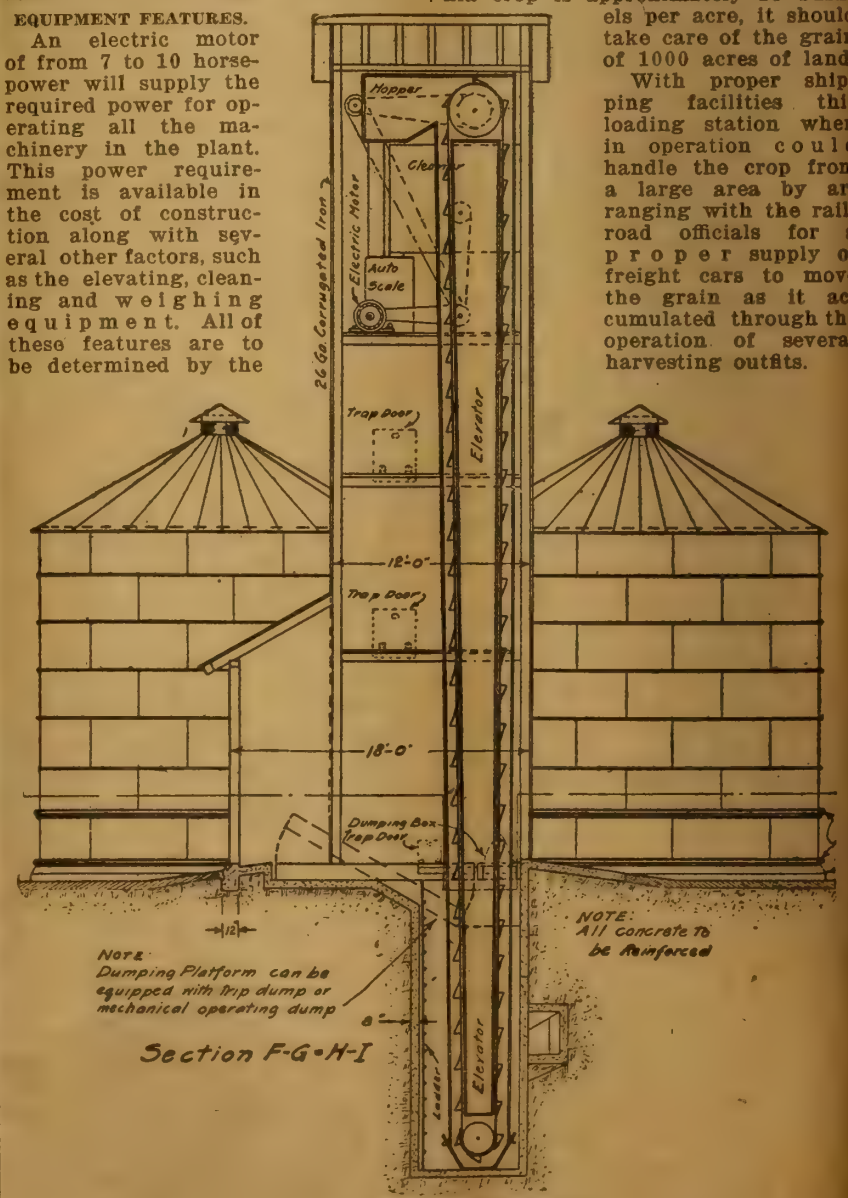
The 25,000-bushel capacity of this loading station is calculated to take care of the cut of the average combined harvester, cutting from 30 to 50 acres per ten-hour day for a continuous period of 250 hours of operation. It has a storage capacity of seventeen standard box cars or approximately 11,750 sacks of wheat. As the average California crop is approximately 25 bushels per acre, it should take care of the grain of 1000 acres of land.

With proper shipping facilities this loading station when in operation could handle the crop from a large area by arranging with the railroad officials for a proper supply of freight cars to move the grain as it accumulated through the operation of several harvesting outfits.



FACILITIES FOR BULK GRAIN LOADING.

Cross section of Bulk Grain Loading Station, showing detail of metal grain storage bins, elevator tower, reinforced concrete foundations, delivery chutes to and from storage bins, receiving pit, etc. The tower is 48 feet high, and houses a simple grain elevator equipment. Grain is cleaned, weighed, and then delivered through galvanized iron pipe chutes to storage bins of fire, weather, vermin proof galvanized sheet metal, or directly into the freight car on the railway siding.



FOR BULK GRAIN LOADING.

Section through Bulk Grain Loading Station, showing detail of grain elevator, location of cleaning machinery, automatic scales, dumping platform for unloading grain wagons, receiving pit, etc. Built of galvanized sheet and corrugated iron, on a foundation of reinforced concrete, it is practically indestructible, of comparatively low cost, and offers the grain growers of California an economical means of handling bulk grain at shipping points.

What the Legislature Is Doing to Farmers

Written for Pacific Rural Press by R. E. Hodges

TWO measures of primary importance have been taken up by the California State Legislature in the first week of its forty-third session. The first day of bill introduction usually brings an avalanche, but on Thursday, the first opportunity legislators had of presenting bills, only 36 were introduced in the Assembly and 32 in the Senate. This is conservation of several kinds.

Monday, January 7, was occupied in electing officers in each house and in getting organized. Tuesday witnessed the inauguration of the Governor and Lieutenant - Governor. Wednesday the Governor set a precedent by reading his message of recommendations to the Legislature in joint session. The feature of the afternoon session was the introduction by Senator S. C. Evans of Riverside of the prohibition amendment to the National Constitution. Senator Evans had already been appointed chairman of the Federal Relations Committee, to whom the measure was referred after introduction. He announced that the committee would hold a public hearing Thursday evening. The wets, with the exception of Theodore Bell, confined their remarks at the hearing to pleas for postponement of action on the ground that they were unprepared to present their case adequately. The dries analyzed the election and pointed out the prevailing sentiment in California for the national amendment, while being against the State amendment, which differed in important respects. The committee reported it to the Senate on Friday morning with a favorable recommendation and the Senate remained in session until 2 p. m., mostly to hear the arguments of the wets. The vote just before 2 p. m. stood 24 to 15 in favor of ratification. The wets then announced that they would move reconsideration Saturday, but this availed nothing and the prohibition amendment was then sent to the Assembly, where it was expected to pass easily unless flu should get too many of the members meanwhile.

FOR CONSTITUTIONAL CONVENTION.

Of well-nigh equal importance to the State was the resolution offered Wednesday by Senator M. B. Johnson of Montara, San Mateo county, to provide for the calling of a constitutional convention. This was introduced shortly after returning from the joint session, where Governor Stephens had urged its necessity as sketched below. Mr. Johnson has been conferring for two or three months with the Governor and other legislators and has found the great majority in hearty sympathy. At least five years must elapse before the new constitution can go into effect. It is 40 years since the present constitution was framed, and as Senator Johnson pointed out, it has been patched out of all resemblance to the original, much of the patchwork being the source of a lot of legal entanglements. As the Governor stated, "In the promotion of governmental efficiency the need of revision of the Constitution of our State is outstanding. * * * Now is an acceptable time to initiate a proposal for a Constitutional Convention in order that it may be voted on at the next general election. The only hesitancy heretofore in taking such a step has been the concern that the important amendments such as those providing for the initiative, referendum and recall, the direct primary, the reorganization of the State Railroad Commission, and other vital factors of California's governmental advances might be placed in jeopardy. We have, however, passed the period of such a danger. These provisions have now become thoroughly fundamental. They are securely established beyond the range of successful attack, and we may now safely proceed with the re-writing of the State's Constitution."

Thursday in both houses was taken up with introduction of bills and routine business. The bills of special interest to our readers are mentioned or sketched below.

GOVERNOR'S RECOMMENDATIONS.

After paying tribute to the 135,000 Californians who entered the service of Uncle Sam, and to the people of the State who oversubscribed every appeal for money and enthusiastically supported every organized patriotic service, Governor Stephens directed attention to the need of providing for returning soldiers, maimed or with sound bodies, so that they might receive special education and opportunities to regain something of the advantages which they sacrificed. He called for closest co-operation between State and Federal Governments to bring tracts of land under irrigation and reclamation, with provision for long-time payments and credit for improvements. The land settlement policy of the State was pronounced highly deserving of the fullest possible extension, with soldiers and sailors given the preference.

Pushing with utmost speed the completion of highways for which we have already voted bonds was pointed out as a possibility of immediate employment of all returning soldiers and sailors who do not find other work. Highways from the great central valley to the coast were urged. Special encouragement for local improvement of laterals to these highways should be extended by the State to provide for easier and cheaper marketing of crops.

IRRIGATION AND ELECTRICITY.

"It is manifest that the State must interest itself in further development and impounding of water for irrigation," said the Governor. The Federal Government offers substantial encouragement and we ought to co-operate fully. Hydro-electric development by irrigation projects should give us the cheapest electrical power in America.

EXPENSES OF THE GOVERNMENT.

"While the people of this State, without doubt, receive greater benefits from their government than do the people of any other commonwealth, it is also true that the cost of government has materially increased. I am convinced that economies can be effected through the better organization and co-ordination of the various boards and commissions without impairing the quality of the service. The Government of California has been reconstructed during the past few years with a development that surpasses the achievement of any other State. The same results have followed, however, that follow expansion in private business. After growth and development, we must remove all extraneous and unnecessary expense. If there be debris and structural staging necessary to the work of building but unnecessary and expensive to proper maintenance, such non-essentials must be removed.

"On the other hand, I have no sympathy with the cry for a reduction of expenses to a point that would destroy the highly beneficial service now rendered to the people of the State. It is not particularly important whether the government of California costs more or less per capita than some other States. Their problems are not our problems. If they care to spend less than we do for the education of the young, for the safety and protection of workingmen and women, for the operation of public institutions, for the building of highways, and for the safeguarding of person and property, that is their own concern. A State which is to parsimonious to render services that the people have a right to expect is not entitled to special commendation."

TAXATION SHOULD BE REVISED.

Since the Federal Government will more and more seek a large share of its revenues from sources now taxed by the State, one of the most important subjects for the immediate future is the devising of a uniform system of taxation and for the correlating of State and National tax levies and collections. The Legislature was asked for a resolution expressing its views as to the proposition for all inheritance taxes to be collected uniformly by the Federal Government, one-half being turned over to the States in which the property is located. The law providing that political subdivisions of the State should not make tax levies increasing the amount of their taxes by more than 5 per cent over the year preceding was commended and its re-enactment urged. State support for the schools which is based on average daily attendance would naturally be reduced this year on account of closing for influenza, but the Legislature was asked to continue its appropriations on the basis of regular school sessions.

LABOR STATISTICS, BUT NONE FOR FARMERS.

A peculiarity to be explained as our editor has so many times pointed out is the fact that the State Budget Board recommends a salary of $5,400 for a labor statistician in a total appropriation of $100,500 recommended for the Bureau of Labor Statistics, and including $4,800 for an attorney, besides $8,000 for the Labor Commissioner, while they refused to recommend anything for the collection of agricultural statistics. The State Agricultural Statistician is now paid out of the bounty of

(Concluded on page 79.)



How the Walnut Is Pruned

[Written for Pacific Rural Press by Eugene S. Kellogg, Horticultural Commissioner, Santa Barbara county.]

BEAR IN MIND:

There are a number of vital factors to keep in view when pruning walnuts. As the tree is most susceptible to attacks of wood destroying fungi, make as few large cuts as possible and never leave a stub. If the limb is large, first cut it off about a foot from the point at which it is to be cut ultimately. It is always advisable to cut a small way on the under side of the limb before beginning on the upper side. This prevents tearing and jagged cuts. Never use an ax in pruning a walnut orchard. A pair of large, sharp pruning shears, three sharp saws with handles one foot, six feet, and ten feet long, and a step ladder are enough. All cuts over an inch and one-half in diameter must be painted. A mixture of refined asphaltum and paraffine applied hot is about as durable a dressing as there is. Cuts six inches across should be protected by tacking down very closely, a very thin piece of sheet zinc, cut so as to fit about one-quarter of an inch inside the cambium layer. This should then be painted with asphaltum. The cambium soon grows over the zinc and thus seals the wound against air and water.

PRUNING THE YOUNG TREE.

The proper pruning of a walnut tree is best done in its infancy. When planted, trees are generally over six feet high and they should be headed back, the amount depending on their subsequent care. If no irrigation water is available, they are usually cut to a foot above the bud union and a new trunk is started.

This is necessary for the reason that a great proportion of the feeding roots of the young tree are left in the nursery row at the time of digging. This leaves the tree in a very weakened condition and unless it is cut back the lack of soil moisture will cause the tree to stand still for the first season and two seasons' growth will be required to make enough growth for heading at the proper point. Not only would the tall, bare trunk dry out excessively, but a great amount of damage would be done by exposure to the sun. To offset this condition, cutting back to a foot above the bud union will re-establish the natural balance between stem and root and a vigorous new shoot can be trained up from one of the buds. This should be carefully staked so as not to become injured by cultivating tools or strong winds. At the end of the first season's growth, this shoot should be headed to about five feet. You will then have a vigorous, healthy young trunk, which experience shows will make a more rapid growth during the next season than the tree would have made in two seasons had it been headed to five feet originally. The wisdom of this practice has been amply demonstrated in a planting of 55 acres of young Eureka trees on the S. P. Stow Co. ranch at Goleta. These trees, now at the end of the fourth season's growth, have the size of many plantings at least two years older.

Generally when the young tree is to have water they are headed about five feet above the ground. After the first season's growth, three main branches are selected and all others removed. Do not remove small branches and small spurs. These shade the tree. The three chosen branches should be about a foot apart and well distributed around the tree. If more than three branches are chosen, the tree becomes too spreading and the branches will later come down and become a nuisance. The three chosen branches should be headed to about three or four feet in length.

At the end of the second year's growth each of these three main branches will have thrown out from four to eight branches. All but two of these should be removed. These two should be headed to three or four feet from their origin and they should be in such a position so that their tips are equally distant from the center of the tree. In other words, the tree should have an open center. After the third season's growth, each of the six branches is allowed to give rise to two branches and these too are headed back. Many small branches and fruiting spurs will have appeared all over the trees. These should be left. Heading back is very necessary at this time. The tree will have thrown out an immense amount of growth and unless this is previously thinned and headed, the wind will either cause the tree to lean or else blow out large limbs completely.

PRUNING OLD TREES.

In the past no systematic pruning has been done on walnut trees; consequently in pruning old trees the chief aim is to admit the sunlight, remove interfering limbs and limbs that interfere with cultivation. Generally every tree will fall into one of three types. These are the central shaft, vertical gore and goblet types.

If a tree has a strong central leader, the chief aim is to emphasize this tendency. Thin out the branches which arise from the central leader. If a tree has a central leader and the main limbs originate one above the other, the best way to admit the light is by removing the smaller limbs in several wedge-shaped areas from the lower branches up. If four gores are cut, the tree would have the appearance of a four-leafed clover when viewed from a position above the tree. It will be necessary to thin out all weak wood in the areas between the gores. If there is no central leader and the tree has naturally an open center, this should be emphasized.





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FOR CALIFORNIA SOILS

Nursery Notes

The sale of pear stock is not up to the average of other fruits, but it is not disappointing and we look for a clean-up of this line.

There is already a good demand for citrus stock coming from all sections where citrus is grown. With the supply short in some varieties, the outlook is very favorable.

There is a good stock of apricots on the market—what some years would be termed a heavy stock. But with the present conditions of the industry a splendid demand is the result and sales will undoubtedly surpass those of the previous season.

Elmer Bros., nurserymen of San Jose, report a brisk demand for all kinds of fruit trees lately. They say that the demand for apricots is rather stronger than usual and they expect that the orders on hand already will take nearly all the Blenheims they have.

The already abnormal demand for all kinds of fruit trees seems daily to increase. Everything points to a quick clean-up of stock. It is our belief that those who delay in arranging for their stock in ample time this season will find it difficult to obtain their wants later.

Almond sales opened rather slow with a stock slightly above average. However, within the last week or ten days matters have taken a turn. The line is now active and the season bids fair to produce its usual quota of business. Walnut sales have been very good and the stock in some varieties is already short.

Early in the season the demand for grapes appeared about normal, with the prospect of a heavy stock. The unforeseen, however, has already made its appearance. Instead of a heavy stock, the season began with only an ordinary supply of good, number one vines, with a tremendous demand, which has already depleted the stock in many staple varieties.

The splendid profits that have been realized by the fig growers the past few seasons have encouraged the planting of trees to a very marked degree. The stock on all varieties with the exception of the Black Mission seems to be up to normal, with a demand equal to that of previous seasons. Black Mission or California Black, as it is sometimes called, opened with a stock rather below the ordinary and a demand if anything above normal.

The Fancher Creek Nursery reports: The nursery business at the present presents a very gratifying appearance. Not for a great many years has there been the general activity that is evident today. Every season presents its peculiarities, but generally only one or two kinds are normally affected, others normal and almost always a few slow sellers. This season practically all precedence has been broken. The nurseryman faces, for the first time in many years, a brisk and urgent demand for stock—a demand that cares little for price. The demand for peaches has been greater than in any preceding season for years and already more than the normal sales have been made — Muirs, Elbertas and Lovells in frees and Peak's, Libbee, Tuscan and Phillips in clings being particularly active. The market in prune and plum stock has been so active that late buyers will probably have to change their plans or abandon their planting.

A HEAVY PLANTING.

According to nurserymen's estimates, 400,000 fruit trees will be planted in Santa Clara county this year, creating a record in new acreage for the county and doubling last year's plantings. The majority of the trees are prunes and apricots, with some almonds and pears. As shown in our nursery notes, the demand for apricots has been steady and strong and the stock is good. A good large acreage has already been set out in small lots. Pears seem to be blight free in this neck o' the woods.

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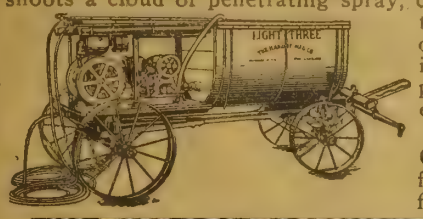
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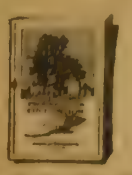
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"Ornamentals"---Their Charm and Profit

[Written for Pacific Rural Press by John J. Fox.]

It is probably generally recognized that the great improvement in our roads and the admirable system of paved highways that is still growing up, has had much to do with the enhanced values of our land in the last seven or eight years. California land is now, taken at large, probably the highest-priced land in the world, considering our population. And prices are highest in the most highly improved and desirable places to live; i. e., highest relative to their productive value.

We "let on" to esteem lightly the planting of anything that is not productive. But what are the facts? Here they are:

A PRACTICAL APPEAL.

A new man comes out from the East or from the city and looks over a ranch that perhaps appeals to him. It is a good buy. He can see where he is going to get his money back with good interest. He has mapped out an outline of just what he is going to do with it and he visualizes the improvements he is going to carry out. "But," he tells the real estate man, "I must bring my wife out to see it first. If she likes it I guess we can come together." He brings his wife out and points out the manifold material advantages of the prospect. But she has already made up her mind—as women unerringly do. "Oh, I could never live here with everything so bare and flat. It doesn't look home-like and never will. Let's go where we can get a little privacy of appearance. There is not a single tree to rest the eye on—nothing but a flat dead level of monotony."

Hubby knows it is suicidal—figuratively speaking—to settle on a ranch with a discontented woman, so he reluctantly abandons the purchase and buys an improved place perhaps, that is less productive and cost double the money. But he has done his best to insure harmony and contentment, without which a family cannot thrive.

A GLOWING MOTIVE.

All this "recitative" leads up to the fact that the esthetic side of life is relatively as important as the practical. It underlies the joy that governs every operation undertaken on the farm, from plowing to harvesting. This does not apply to the land wrecker, who is willing to take everything and return nothing—with an eye to "sale" when his land is worn out. The esthetic sense (of which most men are unconscious) gives him pleasure in the symmetry and vigor of his trees; in the texture and condition of his soil; in the strength and spirit of his work stock and in the quality and perfection of his products—quite apart from what these things are intrinsically worth. A woman's sense in these things is intensified. In addition to well-tilled soil and a productive orchard, her home must be surrounded by shade trees, flowers, shrubs and vines. It is not enough that she can roll home on a good road. A nice avenue of trees adds to her pleasure and pride every time she goes over that road. Southern California has recognized this fact and worked it for all it is worth—adding to the beautifying of her roads, streets and parks year by year.

WHERE VALUE LIES.

The towns and settlements that are most highly improved with ornamental tree planting and landscape work are generally the ones where the most money is to be found. The bare naked little towns may be making money, but they have not yet "arrived." They do not attract people of elegant and "homey" tastes, such as most of our Eastern farmers' wives possess.

The writer has many times been asked as to the best trees to plant in various sections. He has spoken on this subject in the San Joaquin, Sacramento and Napa counties on request. As the time for planting is now with us, we have made inquiries from well-known landscape men as to the best varieties to plant in street and yard, asking definitely for four large districts. The following are the districts with varieties recommended:

(1) Napa, Sonoma and Marin counties: For street planting, European Sycamore (Plane tree), Walnut (preferably a grafted variety), any of the Maples. For yard planting, the Chestnut, Birch, Vesuvius plum, Flowering Cherry, Flowering Peaches, and in Evergreens the White Fir, Nordmann's Silver Fir, Bunya Bunya tree, Monkey Puzzle tree, any of the varieties of Lawson Cypress, California Big Tree, Bald Cypress (Taxodium distichum) and Cryptomeria Japonica elegans.

(2) Valley, Red Bluff to Sacramento: For street planting, the Olive, Tulip tree, European Sycamore, Cork Oak and Fig. For yard planting, Silver Maple, Flowering Locust, Sophora, and in evergreen trees any of the Cedars, Cryptomeria Japonica, Irish Juniper, Incense Cedar, Italian Stone Pine, California Big Tree, California Redwood. For windbreaks, Eucalyptus, Casuarina Stricta, Monterey Cypress, Giant Bamboo.

(3) Valley, Modesto to Bakersfield: For street planting, Calorina Poplar, Balm of Gilead, Olive, Fig and Cork Oak. The yard trees recommended for Red Bluff to Sacramento would do equally well in this territory.

(4) Santa Clara Valley to Watsonville: For street planting, European Sycamore, Birch, any of the Maples, Elm, European Horse Chestnut, grafted varieties of Walnuts, Black or Hybrid Black Walnuts. For yard planting the same trees are recommended as for Napa and Sonoma.

Southern California knows just about what it wants and it has everything in the shape of ornamentals, from the perfect pyramid of the upright growing Bunya Bunya tree to the drooping, feathery Pepper. Of the latter tree an Eastern lady once said: "If I had to become a tree, I would like to be a California Pepper tree—then I should always be spicy and graceful." Palms are also in great variety and make a handsome contrast in park and garden with branched trees. An unbroken avenue of fan palms is about as inspiring as a row of telegraph poles. The northern coast counties have such a wealth of trees that are indigenous that we have not mentioned them. No doubt they will later go in for the Sweet Chestnut as a border tree as well as Elms and European Horse Chestnut, which is really a most beautiful Buckeye.

The past year has yielded good crops generally and good prices—conditions that always tend to make the farmer loosen up. Now that the war is over and we are settling back to normal conditions, it is to be hoped that not only farmers and fruit growers, but boards of trustees and supervisors, will see their way to helping to beautify our roadways with trees. The ladies of Oroville have taken this matter in hand and made a good start. When the long, dead-level areas of sparsely settled country in the San Joaquin and Sacramento valleys get some more street trees growing, they will settle up more rapidly with settlers who will be ready to spend money on furthering the good work. "It's the small things that count," as the chinch bug said.

"There's a man outside who says he's your tailor and wants to see you about a bill."

"Tell him I've gone to attend the funeral of a rich relative from whom I expect to inherit a great deal of money."

"Have you lost a relative, sir?"

"No; but that fellow has been here so many times I feel I ought to say something that will make him feel better."—Chicago News.

HOW TO FERTILIZE

Every farmer knows that plants need Food as much as cattle. He knows, too, that plants cannot get all the Food they need out of the ground alone. He must supply them with certain Foods himself, or they will not thrive and bear their full yield of fruit. Exactly as he supplies hay and oats to his horse, so he must supply Nitrogen and phosphate to his plants. He may buy these in the open market exactly as he does his hay or his oats, or he can buy them in combination. Moreover, there is no secret value in the "complete fertilizer," it is nothing more nor less than the ingredients combined and sold at a higher price. Nitrogen is by far the most expensive as well as effective of plant foods, and it will pay the farmer well to stop and think before he buys it in this combination form or waits season after season for legume nitrogen, or organic nitrogen to become available.

These compounds generally averaging 8–2–2 do not supply what nature requires, for the crops take out more nearly the equivalent of a 2-4-3; that is why we can in most cases and in most soils use Nitrate alone as a straight top dresser, and the earlier the better.

Translated into Commercial Fertilizer terms, the comparison is as follows:

	What Nature Requires	What the Average Brand Supplies
Phosphoric Acid	2.02	8.00
Nitrogen	4.33	2.00
Potash	3.65	2.00

THE BEST AND CHEAPEST NITROGEN

The cheapest and most practical form in which to furnish Nitrogen to plants is Nitrate of Soda. In the rainless region of Chile are stored away vast quantities of Nitrogen in what are known as Nitrates—the only form in which Nitrogen can be utilized by plants. The Nitrogen which exists in organic, vegetable or animal matter—that is, roots, stems, dead leaves, weeds, leather, tankage, dried blood—and also Nitrogen in the form of Ammonia salts—must first be changed to Nitrate before it can be taken up by plants. This change is dependent upon conditions of weather. If the season be backward, or there be a prolonged drought, this change may be so retarded as to deprive the plant altogether of Nitrate Food at the very time it needs it most; moreover, Nitrogen in the form of Ammonia salts leaves acid residues in the soil. Nitrate of Soda, on the other hand, is entirely independent of weather and leaves the soil sweet. It is immediately available under all circumstances, for it is readily soluble, and as soon as it comes within reach of the roots of plants it is taken up by them. It can, therefore, readily be seen that the practical value of various forms of Nitrogen ranges from nothing at all, where conditions of temperature or soil prevent Nitration, to 100 per cent. as Nitrate of Soda, where Nitration has already completely taken place. Moreover, the process of transforming the Nitrogen of cotton seed meal, dried fish, dried blood, tankage, and other Nitrogenous constituents into Nitrate is very wasteful, for much valuable Nitrogen is lost in the process, as well as by natural oxidation. Official soil experiments have shown that 100 pounds of Nitrogen in these organic forms has only about one-half to three-fourths the manurial value of 100 pounds of Nitrogen in its NITRATED form of Nitrate of Soda.

A GREAT SAVING

In view of these facts it seems extraordinary that farmers should continue to purchase their Nitrogen in compounded form in a ready mixed fertilizer, when they can procure it much cheaper, and ready for the plants' immediate use, in the form of Nitrate of Soda.

Nitrogen is often in a form which is not available as food for the plants, for it must first be converted into Nitrate. The time required to do this varies from a few days to a few years, according to the temperature of the soil and the kind and condition of the materials used.

It must be recognized that the grower should have a chance to derive some profit from the use of a fertilizer, and wise buying is a prerequisite to successful use.

HOW IT HELPS CROPS

If a young pig or a young calf does not have an abundance of the right kind of feed when it is young, it becomes stunted in growth, and never recovers fully, no matter how judiciously it is afterwards fed. The intelligent cultivator has learned that this holds good in the feeding of plants. Nitrogen is the element which enters most largely into the building up of the plant itself—roots, stems and leaves. Most plants need to take up the greater part of their Nitrogen during the early stages of their growth, as in oats. It is plain, therefore, that the cultivator cannot afford to overlook Nitrate, and thus endanger the chances of his crops, which must have Nitrogen in a form the growing plants can use. The presence of Nitrate at the outset enables the plant to get its food WHEN it needs it most, and develops a vigorous growth of roots, leaves and stems capable of withstanding the scorching rays of the sun or sudden changes of temperature, disease, or the attacks of parasites. It is then able to mature properly. Without Nitrate present, the young plant will fail to attain stem and leaf growth sufficient to mature its fruit or grain. Why take chances with makeshifts or substitutes when the real thing is 100 per cent. effective?

Nitrate of Soda is of high value for early crops, such as peas, corn, beets, cabbage, where rapid maturity is desirable. It is a special help to hay, grain, rye, wheat, timothy, cereals and orchards, all of which are unable to obtain sufficient Nitrogen from the soil just when they need it. It is a great specific in the production of sugar beets, potatoes, cotton, cane and apples, or other fruits.

Small fruits, such as blackberries, currants, raspberries and gooseberries, which need a steady, even growth, are greatly benefited by Nitrate of Soda, which can be furnished all ready for digestion when the plants require it.

The highest agricultural authorities have established by careful experimentation that 100 pounds per acre of Nitrate of Soda applied to crops has produced the increased yields tabulated as follows:

Apples	100	bushels.
Barley	400	lbs.
Corn	280	"
Oats	400	"
Rye	800	"
Wheat	300	"
Potatoes	3,600	" Tubers.
Hay, upwards of	1,000	" Barn cured.
Cotton	500	" Seed cotton.
Sugar Beets	4,000	" Tubers.
Beets	4,900	" "
Sweet Potatoes	3,900	" "
Cabbages	6,100	pounds.
Carrots	7,800	pounds.
Turnips	37	per cent.
Strawberries	200	quarts.
Onions	1,800	pounds.
Asparagus	100	bunches.
Tomatoes	100	baskets.
Celery	30	per cent.
Hops	100	pounds.

Nitrate of Soda is a plant tonic, and an energizer; it is NOT a stimulant in any sense of the word.

It may be used alone without other fertilizers, as a Top-Dressing, at the rate of 100 pounds to the acre.

RESULTS IN CALIFORNIA

For four years in succession samples of Nitrate of Soda were sent to farmers. In each experiment two patches were marked out side by side. One received an application of Nitrate of Soda at the rate of 100 pounds per acre, the other had none. The following are fair samples of the results reported:

CROP—BARLEY

Name, A. B. GANYARD,
P. O. Address, Lathrop,
R. F. D., 1,
State, California.

Plot without Nitrate produced average.

Plot with Nitrate produced extra good.

Date of applying the Nitrate of Soda, March 20.

Date of completing harvesting of the crop, cut for hay in June.

REMARKS: Could see a marked difference in the two plots at quite a distance. I shall always use NITRATE OF SODA on my Barley.

CROP—BARLEY

Name, R. R. PEFLEY,
P. O. Address, Murrieta,
R. F. D.,
State, California.

REMARKS: The Nitrate of Soda test I put out in the Spring on Barley yielded considerably more than twice as much as the adjoining plot. The results are so good that I intend to use the Nitrate on my grain crops in the future.

CROP—CANTALOUPES

Name, J. F. BRUMUND,
P. O. Address, Turlock,
R. F. D.,
State, California.

Plot without Nitrate produced 20 crates.

Plot with Nitrate produced 26 crates.

Date of applying the Nitrate of Soda, May 15.

CROP—OATS

Name, CHAS. BEEDLE,
P. O. Address, Los Gatos,
R. F. D., 15, Box 108,
State, California.

Plot without Nitrate produced 133 lbs.

Plot with Nitrate produced 190 lbs.

Date of applying the Nitrate of Soda, March 15.

Date of completing harvesting of the crop, May 31.

REMARKS: The crop of Oats was harvested for hay instead of grain. The Nitrate did not have a fair test as there wasn't any rain after it was applied.

CROP—CITRUS

Report of Results from the Use of Nitrate of Soda on Oranges by D. Mackenzie, Pomona, California.

"I bought an orange grove very much run down, and followed practically the method you recommend in the bulletin. From a crop of 106 boxes, there is now estimated 2,000 boxes on the trees and the limit has not by any means been reached."

THE RATIONAL AND IRRATIONAL USE OF NITRATE OF SODA

Everywhere in the world where there is unique qualities of Nitrate of Soda are putting it ahead of every other Nitrogenous plant food. Nobody who advocates the rational use of fertilizers ever recommends such large quantities of Nitrate of Soda per acre as would result in any abnormal accumulation of alkali salts. Moreover, the use of acid phosphates, associated as they are frequently with sulphate of lime, converts any alkali residue into harmless forms of soda.

The use of potash salts tends to leave acid residuals in the soil, as do acid phosphates even when rational quantities of acid phosphate and potash salts are used. Nitrate of soda is needed to help neutralize these residues.

In most of our experiments where Nitrate was used alone at the rate of only 100 pounds per acre, with no further application of fertilizers to the plots, a decidedly marked effect was noticed. This speaks very well indeed for Nitrate of Soda not leaching out of the soil. The readily soluble elements of fertility are the readily available elements. The natural capillarity of soils, doubtless, is in most instances a powerful factor in retaining all the readily soluble elements of fertility, otherwise all the fertility of the world would, in a season or two, leach away into the ocean; and be permanently lost. A case is yet to be seen where the after effects of Nitrate is not distinguishable, and in most cases such effects have been marked. The 2,000 or more tons of active service soil in an acre of land has a powerful holding capacity for all the useful, available elements of fertility.

HOW TO USE NITRATE IN CALIFORNIA

Recent experience in California suggests that Nitrate may be applied as a Top Dressing to best advantage as soon as growth starts in the Spring, or even better, before seeding or planting.

Generally in rainless or very dry countries staple crops root very deep in search of water and nourishment. Since there is little or no surface water to render plant foods available even when present, Nitrate of Soda should be thoroughly cultivated in, as should other fertilizers, so that they may properly nourish the plant roots of the seeded and cultivated crops during the growing season. Most fertilizers should not touch the seed.

Nitrate has no acid residue to leave behind and it will leave nothing deleterious in your soil after using. It will enable you to overcome the effects of droughts and frosts in the shortest possible time and prolong the bearing period of your trees. Nitrate does not have to wait to get busy.

PROOF POSITIVE

In a twenty year test to determine the value of various sources of Nitrogen, the New Jersey Experiment Station found "that crop yields and the percentage of Nitrogen *recovered in the crop* were greater when Nitrates were used."

Official figures are—

"If we assign to Nitrate Nitrogen a value of 100, then the relative availability of the four materials stands as follows:

Nitrate of Soda	100.0
Ammonium Sulfate	76.1
Dried Blood	62.0
Manure	52.4

This research was published in "Soil Science," April, 1918.

VALUABLE BOOKS FREE

Numerous books have been written on the value of Nitrate of Soda in agriculture. These books deal with questions on which progressive farmers cannot afford to form incorrect opinions.

If you are farming to make money you owe it to yourself to send for the free books which pertain to your crop. If you want to know what farmers have done both in America and Europe, who grow the same crops as you do, these books will tell you. If you have any doubt on how valuable Nitrate of Soda would be to your particular crop, you should get all the available information you possibly can on the subject.

These booklets are free — write for them, addressing

CHILEAN NITRATE COMMITTEE

Why Europe Makes Bigger Crops Than the United States

Average Production of European Crops is as follows:		Average Production of American Crops is as Follows:	
Wheat	33 bushels per acre	Wheat	14 bushels per acre
Oats	45 " "	Oats	40 " "
Potatoes	199.84 " "	Potatoes	97.15 " "
Cotton in Egypt	400 pounds "	Cotton	185 pounds "

Europe uses a Home-Mixed Nitrate Fertilizer containing 8 per cent of Phosphoric Acid and 4½ per cent of Nitrate Nitrogen.

America uses a Fertilizer containing 8 per cent of Phosphoric Acid and 2 per cent of Nitrogen which is mostly not readily available.

The difference in yields is largely due to larger amount of Nitrate Nitrogen used in Europe per acre as **Nitrate of Soda.** Our small American acre yields are due to failure to appreciate this necessity.

Write for "What Chilean Nitrate Has Done In California."

CHILEAN NITRATE COMMITTEE, Box 248, Berkeley, Cal.

Here and There in the Fruit Business

[Written for Pacific Rural Press.]

Spraying Is General.

We noticed scores of growers at work with their spray outfits in the Santa Clara Valley last week and many orchards where both spraying and pruning had been completed and the brush piled. They are well along with their work, having taken advantage of the fine open weather that has given opportunity for orchard operations. Crude oil and other emulsions appeared to be most in evidence. Many of the almond men are waiting for the swelling of their buds to give their trees a dose of lime-sulphur and others are taking no chances of rain at this season and are giving a clean-up spray now. Some of these will repeat with lime-sulphur before the buds open.

Marketing Begins at Home.

"Every man has to provide first for those who are dependent upon him," said a large grower recently who is also at the head of one of our large co-operative concerns. "I consider that every ranch should raise as much as possible of what is consumed in the house—no matter who the major portion of the ranch is devoted to. It should produce all the milk, butter, eggs, poultry, pig, meat, fruit and vegetables consumed at home anyway. Our forefathers who came over in the Mayflower had no markets, yet they produced sufficient for their own needs and traded for the balance. We can do the same and market our balance."

The Emperors Return

Good profits, as is shown in the case of George McKinlay in the Kings river thermal district (Fresno county), whose 15-acre vineyard of Emperors, it is reported, brought him $12,500, with 2700 crates yet to be paid for. These grapes were shipped late in November. One-half of the McKinlay vineyard is 12 years old and the rest only up to four years old. From the same district it is reported that B. L. Stones received approximately $500 an acre on his late Emperors (seven acres). These are now supposed to be the only kind of Emperors we want to handle as being less trouble and more profitable than the European variety.

Record Price for Pears.

Seven dollars and twenty-five cents for 34 boxes of Bartlett pears grown by George H. Weyman, near Placerville, is probably the highest price ever obtained in any market for California pears. They were shipped by the Earl Fruit Company and sold in New York October 4. The shipments of Bartlett pears from El Dorado county to the above market alone amounted to 71,180 boxes during the season and brought an average of $3.28 or a net price to the grower f. o. b. Placerville of about $2.25. This is said to have netted the growers $80 a ton over all expenses of packing, etc.

A Portable Grafting Wax Heater.

A convenient heater for grafting wax and asphalt tree paint is used by A. J. Lewis, working for Rodgers Bros. of Pajaro Valley. The top of a blackleaf 40 can about five inches square and eight inches deep was cut off and a tray three inches deep made to fit loosely into it. Five inches of the front was cut out and grooves made at the sides to slip a piece of tin in to regulate draft. A lamp with a half-inch wick is set inside under the wax tray to keep the material melted. A sheet iron strap makes a handle for the outfit.

Crude Oil Kept Too Long.

During the recent cold snap some growers in the Pomona Valley, where much orchard heating was done, found that their fuel oil, which had been stored for several years, had depreciated in its burning quality and a special train of 20 cars was sent from El Segundo to make up the deficiency. The cost of fuel for heating an orange orchard is said to be about $20 a day—using 100 pots to the acre. At the citrus experiment station the thermometer registered as low as 23 degrees on New Year's, it is reported.

Tulare and Fresno County Citrus.

There is a good crop of Valencia oranges in most sections here, which have been well safeguarded during the late nippy weather. Horticultural Commissioner Fred P. Roullard of Fresno county reports the conditions in the foothills east of Fresno are good. At Avocado, neither citrus nor avocado trees had been touched by frost. Some lemons in the lower spots in the valley were slightly nipped. The Lindsay district is reported safe, also the Orosi district. The navels have, of course, been already harvested.

An Excellent Suggestion.

A successful fruit grower remarked to the writer on New Year's day: "I would like to see the results of plowing under a good heavy dressing of alfalfa or bean straw in the orchard and the ground left rough all winter—instead of the cover-crop. I could then plow any time after the middle of February or at least keep the top stirred. Then if we could measure the moisture content at various depths and compare it with untreated strips we could arrive at valuable conclusions."

Another Country Heard From!

A request has come to State Horticultural Commissioner Hecke from the Smithsonian Institution at Washington that he furnish Brazil with copies of our California horticultural statutes. Senor Adolph Hempel of Sao Paula, Brazil, prefers this request for our complete horticultural guide. Practically all foreign fruit-raising countries are now modelling their horticultural commissions on the California plan.

Miscellaneous Bugs.

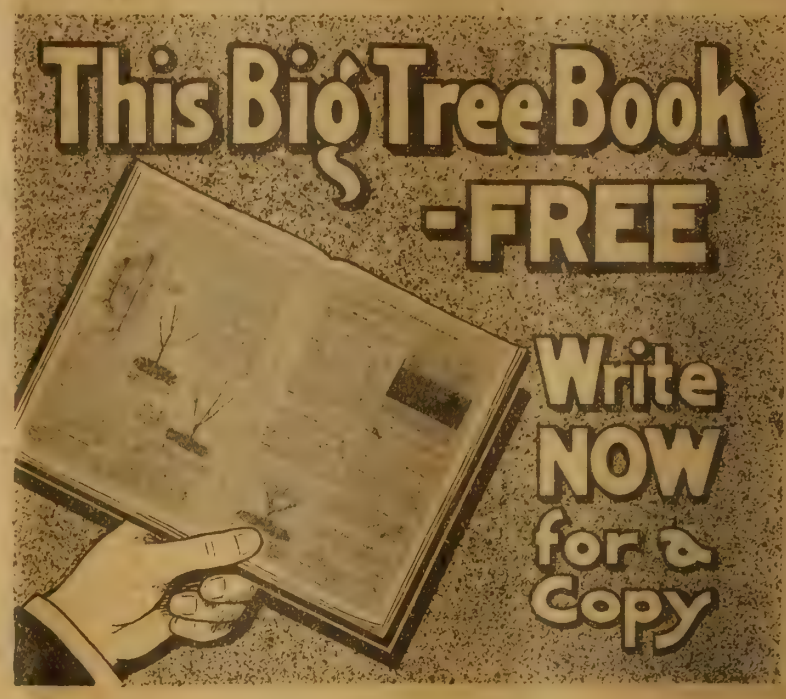
Here is a list of estimated loss to the United States for one year (1916) from the Bureau of Entomology, U. S. Department of Agriculture: Insect-borne diseases of man, $150,000,000; damage to domestic animals, $100,000,000; natural forests and forest products, $150,000,000; fruits, $141,264,300; products in storage, $150,000,000; other crops, $963,595,000. Spraying time is on.

We Are Not the Only Ones!

They've got it "over there," too. Read this: "I hear that many middle-aged farmers have decided to give up—they can't stand the interference by busybodies, the increase of taxation, the labor and other troubles with which agriculture is afflicted."—Yorkshire paper. Cheer up, Yorkshire, the worst is yet to come!

A Prolific Walnut Tree.

The best walnut production story we have heard during the past season is told by Frank T. Swett of Martinez. On a ranch that he formerly owned near Oakdale is a fourteen-year-old English walnut tree that in normal years produces about $25 worth of nuts. But in 1918 the crop on that single tree sold for $85.



THIS practical planters' guide lists and describes the best proven varieties of all fruit-bearing trees, vines, ornamentals and roses.

It gives a lot of other information which, if followed, will keep you from making unnecessary and costly mistakes.

When you buy trees you want them to grow; you want them to bear; you want them true to name.

Fancher Creek trees are grown from selected buds and properly cared for. Trees are very vigorous and well rooted.

Fancher Creek Nurseries

407 Holland Bldg. Fresno, Calif.

Cuts Like A Knife

The keen blades of the "ACME" Weeder literally cut the weeds below the surface of the soil. And they leave behind a ripple of fine loose earth as a dust mulch. The





"Acme" Foot Lift Weeder

can be set to cut at any depth desired. A lever operated by the foot raises the blades for transportation or to clear them of trash. The end-pieces of the frame are bent so as to protect the trees from injury. "No orchard man can afford to be without one", say hundreds of successful orchardists.

Write today for FREE book, "The 'ACME' Way to Crops That Pay" and latest prices. Also ask for circular about "ACME" Disc Harrows.

DUANE H. NASH INC. 651 Elm St., Millington, N. J.

Giant Winter Rhubarb

Now Best Time to Plant

Should return from $1,000 to $1,500 per acre first year. If interested in Rhubarb or Berries, write J. B. WAGNER, Specialist, Pasadena, California.

TREES

PEACH APRICOT ALMOND
PLUM PRUNE PEAR
APPLE CHERRY OLIVE
FIG ORANGE Lemon, Etc

More Than a Million High Class Fruit Trees per Year to California Planters

KIRKMAN NURSERIES

Established 1888
Incorporated - $100,000

Fresno, California

CROP Production

Is controlled by the kind and quantity of plant food furnished the tree or plant.

It is not enough to merely fertilize. It is important that the tree be fed material giving maximum results under California conditions

These materials are furnished in

Hauser's Organic FERTILIZERS

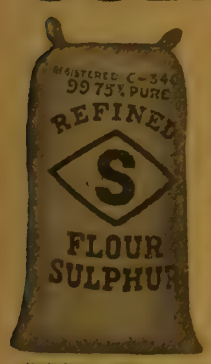
Correct Fertilizer for California conditions.

Send for Fertilizer Booklet Tells you why.

Hauser Packing Co.

Los Angeles, Cal.

SULPHUR



It has been proven and so recommended by the University of California that if you sulphur your grape vines and orchards 6 times they will not be affected by MILDEW or RED SPIDERS.

ANCHOR Brand Velvet Flowers of Sulphur, also EAGLE Brand, Fleur de Soufre, packed in double sacks, are the fluffiest and PUREST sulphurs that money can buy; the best for vineyards; the best for bleaching purposes, LEAVING NO ASH.

Try our new brand of VENTILATED Sublimed Sulphur, 100 per cent pure, for making Paste —(Atomic Sulphur) and for Dusting.

For Lime Sulphur Solution, use our DIAMOND S Brand Refined Flour Sulphur. We can furnish you this sulphur at such low price that it will pay you to mix your own solution.

To create additional available plant food, drill into the soil 100 to 400 pounds per acre of our Diamond "S" Brand Powdered Sulphur.

It has been proven that sulphur has increased various crops up to 350 per cent.

SAN FRANCISCO SULPHUR CO.

524 California St., San Francisco, Cal.

We are equipped to make immediate shipment Send for illustrated booklet, price list and samples and please state for what purpose you use the sulphur, quantity *needed* and date of shipment preferred. Tel. Kearny 871.

CALIVADA

Sheep Manure Steer

From highest nitrogenous feed.
Decomposed and concentrated by age in their own liquids, containing the highest percentages of Nitogen, Phosphoric Acid, Soluble Potash, and readily available Humus
Shipped commercial dry. Cars average 22 to 24 tons. Saves four-fifths labor in application Thousands of tons now being shipped to citrus and deciduous growers in California
Write for samples, prices and particulars today to insure prompt deliveries

CALIVADA FERTILIZER COMPANY,
423 Citizens National Bank Building
Phones (65643)
Los Angeles, California.

FROST INDICATIONS ON CITRUS FRUITS.

Frosted fruit cannot always be recognized from its external appearance, according to Dr. H. J. Webber, director of the citrus experiment station at Riverside, whose report we summarize. When the injury has been severe, however, the skin of oranges, lemons and grapefruit become spotted, which is apparent a few days after the freeze. Frozen oranges and lemons in sunny places on the tree become pale in color and sometimes flat on the exposed side. The first internal indication of frost damage is the formation of white spots on the membranes between the segments and can be found a few days after freezing.

Cut an orange in two transversely and if frozen it often shows a pale area part way between the center of the fruit and the skin and the pulp of frozen lemons is more opaque than in sound fruit. If the foliage is damaged there is sure to be some fruit injury. If mature foliage shows damage, most of the fruit has been rendered worthless. Tender new growth may be frozen without ruining the crop. The entire crop can be frozen without any foliage damage being apparent. If none of the fruit is spotted, there may be injury, but there will be plenty of good, marketable fruit in the grove. If the spotting of northside oranges is general, most of the fruit will show deterioration within three months. The spotted fruit is worthless. If fruit in all parts of the tree is spotted, the crop is unmarketable. Frozen fruit does not recover.

SHORT FRUIT COURSES IN SANTA CLARA VALLEY.

The University of California will hold a short course for Santa Clara Valley fruit growers from January 27 to February 1, inclusive, in the Odd Fellows' Hall at Cupertino and in adjacent orchards. The chief subjects during the course will be: spraying, pruning, control of insect pests and plant diseases, together with irrigation and soil management. Actual demonstrations will be given in the orchards. Ways and means of rejuvenating old fruit trees will be a feature of them. A detailed schedule, showing when and where each lecture and demonstration will be given, can be secured by addressing a card to the Division of Agricultural Extension, University of California, Berkeley.

HORTICULTURAL JOTTINGS.

Several hundred acres have been planted to figs in the Oakdale district this season and several hundred acres more will be set out around Riverbank.

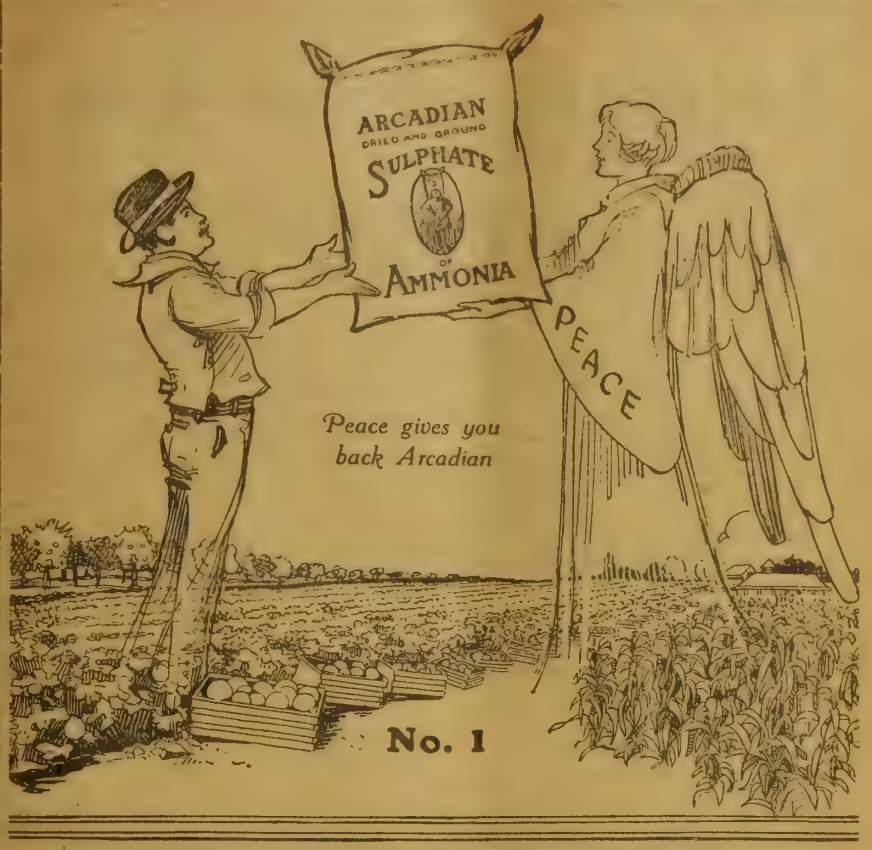
Wells Fargo sent out 163,491 packages of fruit from Newcastle alone during 1918, including those sent to local markets and small lots to Eastern markets.

Loss to the citrus crop through frost has reduced the crop 15 per cent on estimate, according to the California Fruit Growers' Exchange. Packing has been resumed.

Pomona Valley will be shipping about 200 carloads of oranges a week for awhile to Eastern and mid-West points. It was estimated that shipments from this section would aggregate $6,000,000.

W. J. Fulgham of Visalia, president of the Tulare County Stock Raisers' Association, and a leading fruit grower, has been chosen director in the California Prune and Apricot Growers' Association, vice T. J. Macauley, resigned, who has retired from active growing.

In order to check up against shipments of frozen fruit, George H. Hecke, State Commissioner of Horticulture, has obtained the co-operation of Dr. Carl Alberg, Chief of the U. S. Bureau of Chemistry at Washington, D. C., to whom car numbers and other information of shipments can be made. By the time the fruit reaches the East a test will show whether it is frozen and if so the shipper bears the loss.



TOP DRESSING TALKS

Early in the war we announced that Arcadian Sulphate of Ammonia had been conscripted for the manufacture of munitions. But now the war is over and with an honorable discharge from war duty, it is again available for use as a nitrogenous fertilizer.

The leading agricultural authorities and the successful growers of California have about come to the conclusion that nearly all soils and nearly all crops will benefit by an application of a readily available nitrogenous fertilizer. Indeed, the question is not whether or not to do it, but what to use and how.

There are half a dozen reasons why Sulphate of Ammonia is the best form of nitrogen to use. We will take them up in later talks.

Use Arcadian Sulphate of Ammonia As a Top-Dressing

Arcadian Sulphate of Ammonia is the well-known standard article that has done you good service in your mixed fertilizers for years past, specially kiln-dried and ground to put it in splendid mechanical condition. Ammonia 25¼ per cent. Made in U. S. A.

Write to

The Barrett Company

AGRICULTURAL DEPARTMENT

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for the name of the nearest dealer or for directions for applying Arcadian Sulphate of Ammonia.

Valley Seed Co.

1919 Seed Catalog Is FREE Send for it

TELLS HOW, WHEN AND WHAT TO PLANT

WE PAY THE FREIGHT

Seed Potatoes

Fancy hand-picked stock, which we offer as follows, delivered at your railroad station, for prompt orders:
Early Rose...$3.50 per 100 lbs.
Am. Wonder..$3.50 per 100 lbs.
Garnet Chili..$4.00 per 100 lbs.
Gold Coin....$4.00 per 100 lbs.
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On orders for ten bags and up, 25c per 100 lbs. off above prices.

Alfalfa Seed

When buying Alfalfa Seed from us, you are getting positively the cleanest stock obtainable. Our Seed Cleaning Plant is the best equipped in the West, enabling us to make seed absolutely clean.

ALL KINDS OF RELIABLE

Spraying Materials

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MR. PLANTER:

The coming season promises to be the most favorable in many years for orchard planting. With such a season and

FIRST CLASS TREES

a successful start for a profitable orchard is assured. WE GUARANTEE OUR STOCK—BETTER CANNOT BE HAD ANYWHERE AT ANY PRICE.

OUR SPECIALTIES:

FRENCH PRUNES on all roots, grown from carefully selected bearing trees, unsurpassed for size and quantity of fruit.

PEAK'S CLING PEACH, in great demand by canners; ripens between Tuscan and Phillips and is fully equal to those old stand-bys in quality and productiveness.

KNOBEL APRICOT, an improved Blenheim; larger fruit and a heavier, more dependable bearer.

JAPANESE PERSIMMONS "Made in America." These home-grown trees live as readily as other fruit trees and are true to name; of the imported trees the few which live are usually untrue.

A FULL LINE

of all that is best in Fruit, Nut and Ornamental Trees, Vines and Plants; and our prices are very low as compared with other commodities. Write for our Price List; free.

CROW'S NURSERIES, = GILROY, CAL.

Your Soil Needs Amboy GYPSUM

FREE BOOK — GYPSUM FACTS

Tells how, when and what gypsum to apply for increasing crop yield. Gypsum should be used freely on citrus and alfalfa land.

Consolidated Pac. Cement-Plaster Co., 613 San Fernando Bldg., Los Angeles

Selling Adobe at the Price of Hay

[Written for Pacific Rural Press by R. E. Hodges.]

Forty-seven bales of hay sold to the Point Lobos stables of San Francisco were opened on a clean floor and the hay forked loose into clean piles. The dirt shaken out of the hay was weighed. The record shows that one bale contained 87 pounds of dirt. In the 47 bales, 2485 pounds of dirt had been bought at the price of hay—country real estate at city prices! Over 52 pounds of dirt had been weighed and sold in each bale of hay. This is part of a report made by City Sealer of Weights and Measures L. J. Dolan to State Superintendent of Weights and Measures Charles G. Johnson.

The California Polytechnic School of San Luis Obispo bought 90 tons of hay on which complaint was made to Mr. Johnson. He sent an inspector to look it over. The inspector sent in 63 pounds of dirt, which he took out of one bale. He weighed eight other bales totaling 2025 pounds, of which he found 538½ pounds. More than a quarter of it was dirt. The original seller made a personal inspection at the scale and found 90 pounds of dirt in another bale weighing 289 pounds.

IS A LAW NEEDED?

Mr. Johnson spent a large part of his time day and evening for a month previous to the 1917 session of the Legislature studying the hay adulteration laws of the seventeen States which were already ahead of California in this respect. He framed a law with special respect to California conditions. The legislator who introduced the bill was thoroughly ridiculed along with the Superintendent of Weights and Measures. The bill failed to pass because honest farmers did not take the trouble to counteract the ridicule. A bill needed tremendously by honest hay producers failed to become law because those whom it would have benefited most were too busy at other things to support the people in the Legislature who were making their fight.

The writer remembers objections made by some hay farmers at that time. The one that stands out most prominently was that in a season or on soils where the clods could not be worked to a fine seedbed a large proportion of clods could not be excluded from the hay without too much cost. While this seemed convincing to the unfortunate producer of cloddy seedbeds, the writer thought he could see that the market for hay of the best and cleanest quality would be injured if the purchaser had to discount it on the chance that it might contain 30 to 90 pounds of the farmer's best adobe. Moreover, the State Superintendent of Weights and Measures, who was to administer the law, had authority to establish reasonable "tolerances" to allow for such unfavorable conditions, but to exclude deliberate dishonesty. The opposition came from two counties, and the rest of the State slept. Most of the opposition came from two or three self-appointed representatives of foreign farmers, the latter of whom had been led to fear outrageous injury.

Such a law as would give confidence to hay buyers that they are getting nothing but hay would certainly make them willing to pay more, and it would save transportation charges, besides the trouble which feeders have to take in separating the dirt. Standardization in the fresh fruit industry has worked miracles at the market end in favor of the honest producers. The hay laws in other States have worked to equivalent advantage.

So far as the writer can learn, no such law will be proposed at this session, unless a considerable number of hay producers signify their willingness to support the legislators who would introduce and push it until it finally becomes law. If our readers want such a law as will cover the ground indicated, placing the burden on hay balers, drop a card to the Pacific Rural Press and our representative at Sacramento will see that it gets to the place where it will do the most good—provided that a considerable number write such cards or letters.

WHAT THE BILL PROVIDED.

The bill which failed in 1917 provided that people baling hay intended for sale must use accurate scales and make a record in duplicate showing the name and address of the owner of the hay, the number of the setting, the kind of hay, and if alfalfa the number of the cutting and also whether baled from bunch or stack, and the actual weight of each bale, with special provisions for broken bales and those of fewer charges than the rest. The record would also have included the total number of bales in the setting and the total weight of all bales in the setting. It was to be signed by the person in charge of the press and one copy given to the person in charge of the hay. The proposed law made it a misdemeanor to conceal anything in the hay for the purpose of increasing the weight. Farmers in times past have paid outrageously for the baling of hay on which false weights were marked by means of "sticks." Some of them winked at this extra cost and sold the hay on the bogus weights, disclaiming responsibility; but that did not improve the markets. Now send along your cards against or in favor of such a law and do it quick. The time for action will soon be past!

Sulphuric Acid Farming

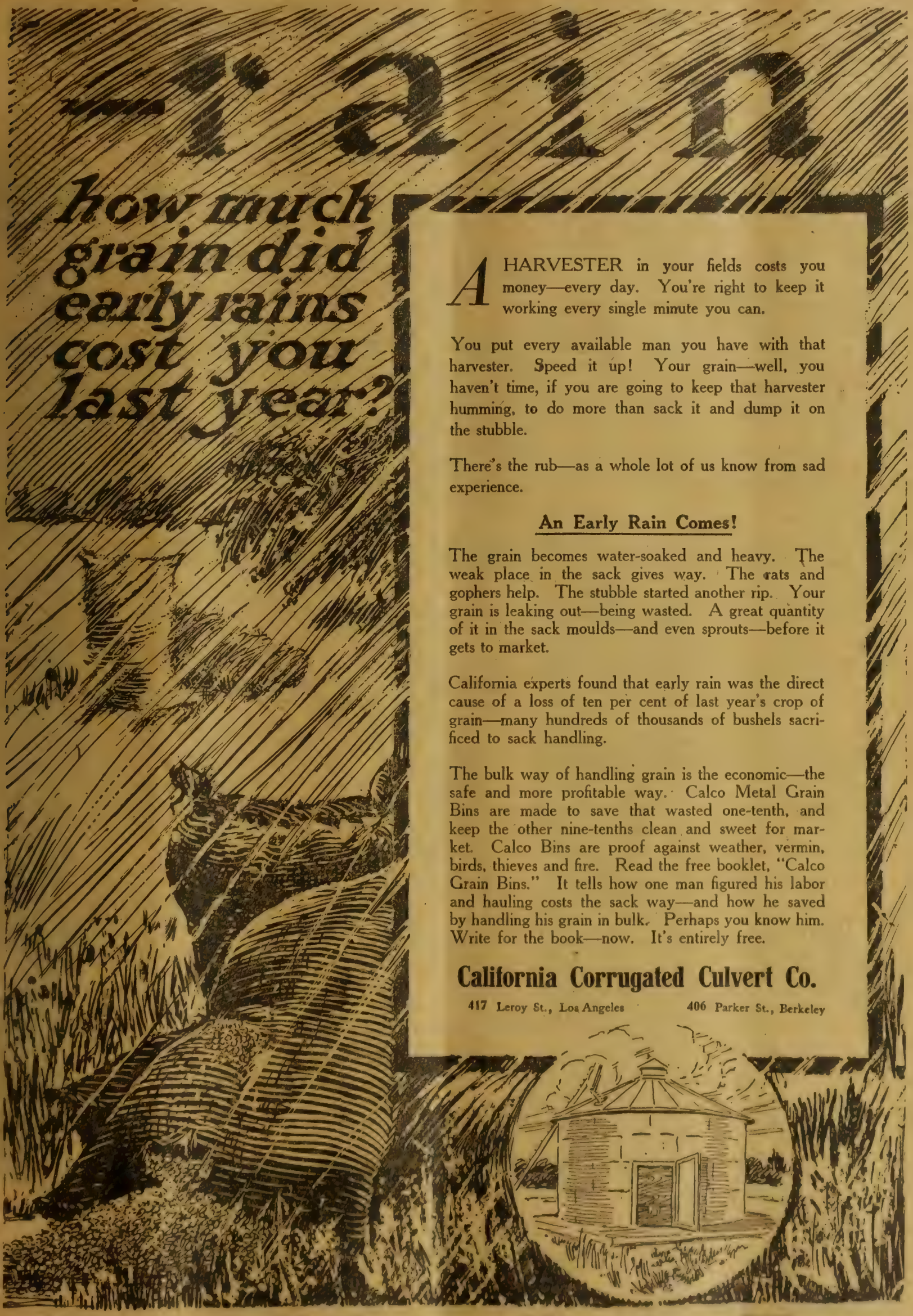
To the Editor: In a recent issue of the Pacific Rural Press you had an article on the amount of damage oak root fungus does to fruit trees planted where oak trees have grown. I have heard that oil of vitriol will rot the oak stumps enough over winter so they can be fairly easily removed in the spring. Would it be advisable to use that method where trees have already been planted, or where we intend to plant more trees this winter?

NO FARMING FOR AMATEURS.

Your paper certainly becomes more valuable the longer one takes it. But it also shows that the amateur has very little chance to get anywhere at farming with limited capital. "Back to the land" is not for the city people with only a few hundred dollars to start with. We have learned that lesson now, after we have already spent too much to give up, so we must make the best of it. What with wild rabbits, wild birds, oak root fungus, poor soil and what not, the outlook seems anything but encouraging. There are more things to learn about farming than one can learn from real estate agents.

One ought to read a farm paper a year or two before buying land, for then one would know something about it and could decide whether one could afford such a thing as farming, even on a very small scale —Mrs. H. C. K., Sonoma.

[Sulphuric acid (oil of vitriol) will have no appreciable effect in reducing the stump if used in quantity reasonably practical to apply. If it did cause the absolute disappearance of the stump, it would not cure the trouble, which hinges in the very outmost decaying root of the oak. Besides, the presence of the acid in the soil would kill everything else which reached roots to it. Your application of acid to the subject of misguidance of amateur farmers should be more effective. We cannot quite say that no one should ever try to farm without knowledge and capital or credit enough to allow that knowledge to come through, because there is occasionally some genius who makes the race in spite of such handicaps. Generally, however, invitations to inexperienced and uncapitalized people to go to farming lead them into disappointment and loss.—Editor.]



A HARVESTER in your fields costs you money—every day. You're right to keep it working every single minute you can.

You put every available man you have with that harvester. Speed it up! Your grain—well, you haven't time, if you are going to keep that harvester humming, to do more than sack it and dump it on the stubble.

There's the rub—as a whole lot of us know from sad experience.

An Early Rain Comes!

The grain becomes water-soaked and heavy. The weak place in the sack gives way. The rats and gophers help. The stubble started another rip. Your grain is leaking out—being wasted. A great quantity of it in the sack moulds—and even sprouts—before it gets to market.

California experts found that early rain was the direct cause of a loss of ten per cent of last year's crop of grain—many hundreds of thousands of bushels sacrificed to sack handling.

The bulk way of handling grain is the economic—the safe and more profitable way. Calco Metal Grain Bins are made to save that wasted one-tenth, and keep the other nine-tenths clean and sweet for market. Calco Bins are proof against weather, vermin, birds, thieves and fire. Read the free booklet, "Calco Grain Bins." It tells how one man figured his labor and hauling costs the sack way—and how he saved by handling his grain in bulk. Perhaps you know him. Write for the book—now. It's entirely free.

California Corrugated Culvert Co.

417 Leroy St., Los Angeles 406 Parker St., Berkeley

CALCO Metal Grain Bin

Fruit Standardization to Be Strengthened

[By Our Special Sacramento Correspondent.]

Honest standard packing of fresh fruit for shipment to the Eastern markets has proved so valuable to the entire industry in the past four years, as well as before the present law became effective, that steps can probably be taken now that could not at previous sessions of the Legislature. Some such steps are included in a bill prepared by the State Horticultural Commission's office for submission to a general conference of fruit and vegetable growers and shippers, to be held in Sacramento, January 17 and 18, for the purpose of getting their opinions on the changes proposed from the present law.

CHANGES FROM PRESENT LAW.

One of the most important changes as incorporated in the bill makes it cover intra-state shipments as well as those to outside markets. Another makes it cover vegetables as well as fruits, but not apples. Another specifies the dimensions of standard containers which must be used after January 1, 1920, unless the words "irregular container" shall be marked on the ones used. Important changes from present containers would be effected in the case of berries, which would have to be in vertical-sided boxes of one pint or one quart capacity, and grapes, which must be in kegs or drums of 2923 cubic inches or in crates with only one cleat eleven-sixteenths inch square. Varying capacities of grape packages have long caused much irritation. Two small lug boxes are standardized. Apricots and plums would have to be packed in straight-sided baskets instead of those sloping to the bottom, as at present. This would permit use of uniform-sized fruit in top and bottom layers, would make packing much easier, and would make small fruit sell as such.

ORANGE AND GRAPE MATURITY.

Oranges are considered "mature" if substantially colored on the tree or if they pass the 8 to 1 test and have 40 per cent yellow or orange color. Green-colored oranges have been frequently found testing more than eight parts of sugar to one of acid, while in some districts and seasons an orange will not test 8 to 1 until it is past shipping condition and fully colored. Shipments to foreign countries other than Canada need not comply.

Grape maturity has been left as before—17 per cent sugar, as shown by the Balling scale, for all varieties except Emperor, Gros Coleman, and Cornichon, which must test at least 16.

Permissible variations in size of fruits in any one package is not left open to anybody's construction as before, but is definitely set by maximum variations in diameter. Fruit containers, but not sub-containers, must be marked with the name of the responsible party who caused the fruit or vegetables to be packed, the place of packing and of any repacking and name of repackers, the name of the variety, if known, or the words "unknown variety," the minimum net weight or the number of fruits within four of the true number, except that in the case of pears and peaches the number of fruits within four must be stated with no alternative.

MATURITY AND UNIFORMITY.

All fruits and vegetables offered for sale in packed or bulk containers must be mature but not overripe, well colored for the variety and locality, practically uniform in size and quality, practically free from insect and fungous pests, rots, bruises, frost injury, sunburn, or other serious defects (which means not over 10 per cent total defects nor over 3 per cent of any one defect), and when packed in layers there shall be approximately the same number in each layer.

OTHER FEATURES.

Grades for any fruits and vegetables (not including apples) may be established by the State Horticultural Commissioner after suitable hearings and approval of interested parties.

The law will not apply to fruits and vegetables surely sold for the making of by-products. Minor ambiguities and weaknesses in the old law are avoided. Enforcement would be by County Horticultural Commissioners and inspectors, about as at present, and the State Horticultural Commissioner could appoint inspectors in counties where there are no commissioners, collecting the cost from the counties where they work.

WHY NOT MATURE OUR WINTER APPLES?

Probably under our new system of standardization and inspection the time will come when we shall evolve a system of maturing apples before placing them on the market. How many Newtown Pippins and White Worcester Pearmains reach the consumer in perfect condition for eating? Ripening is delayed in cold storage more or less and the fruit goes on the markets little riper than when it was picked.

A. W. Tate, Jr., of Watsonville (Correlitos district) says he never picked his Arkansas Black Twigs until the latter part of November, when they were well sugared but firm and matured—a nice color and very desirable for the holiday trade. He says the King is always picked too early—before it has the color or size it ought to have. The reason the apples are picked early is because they have a tendency to drop. In the Watsonville district this drop could be well afforded, as canners and dryers pay good prices for sound windfalls. If they were allowed to get their natural color on the tree, they would bring more money and be better worth eating.

CITRUS TREES San Marino Violet Garden

Wholesale and Retail 200,000 Orange, Lemon, and Grapefruit Trees one and two years old. Trees Planted and Guaranteed on Contract.

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500 % Increase

Thoroughness is of utmost importance in citrus spraying. The habits of such troublesome pests as white fly, purple scale, rust mite and red spider render their control difficult. Natural agencies, such as predacious insects and fungi, cannot be relied upon. Fruit-fog, the scientifically atomized super-spray, reaches all of these pests, no matter where located on leaf, fruit or twig. It makes the brightest fruit and highest grades—just the kind that brings big profits. Increases of 500 and 1000 per cent are quite common in Fruit-fogged orchards.

HAYES FRUIT-FOG SPRAYERS

Fruit-fog Sprayers are the highest type of spraying apparatus. The high pressure maintained and the scientific Hayes nozzle are absolutely essential to produce Fruit-fog. Each Fruit-fog outfit is built to highest mechanical standards of finest material. Each is tested to 500 lbs. pressure and guaranteed to maintain 300 lbs. working pressure at full rated capacity.



Ask Mr. Favor,

Mr. E. H. Favor, head of our Horticultural Department, is a nationally famous authority on fruit growing and spraying. For many years he was editor of one of our leading fruit papers and was actively associated with two State experiment stations in scientific work.

Mr. Favor's experience is at the command of any fruit grower in America. If you have any orchard problem that perplexes you, just "Ask Mr. Favor." He will write you personally.

Equipped With Fairbanks-Morse Engine

A uniform, dependable power plant is necessary to efficient power service. Hayes Fruit-fog outfits are equipped with the famous "Z" Engine, made by Fairbanks, Morse & Co. This power plant was selected by our experts after every desirable make on the market was carefully tested.

Nation-Wide Service

Over 30 years' pump experience is behind Hayes spraying apparatus. Fairbanks-Morse is a nationally accepted guaranty of quality and economy.

This combination offers you not only the world's best spraying equipment, but a national service that is of utmost importance.

We maintain stocks and parts for sprayers and engines in 24 cities. No matter where you are, expert service is only a few hours from you. This is a feature of utmost importance.

New Spraying Manual. Mr. E. H. Favor, our scientific horticulturist, has just completed a new manual of spraying. This guide is a real text book, clearly and concisely written—a veritable encyclopedia on spraying. It is finely printed and durably bound. The published price is $1.00. Yet we will mail you a copy if you send us the coupon with 25c, stamps or coin.

Hayes Pump & Planter Co. Dept. E, Galva, Illinois.

Fairbanks, Morse & Co.: Los Angeles, Cal.; Portland, Ore.; Seattle, Wash.; Spokane, Wash.; San Francisco, Cal.





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I am enclosing 25 cents, P
send copy of big Spraying
ual and complete catalog.

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SPECIAL PURPOSE ALFALFA BEST

There are more disappointments and partial failures caused by planting strains of alfalfa unsuited to the soil and moisture conditions of the land than from all other causes.

This Illustrated Booklet



is a dictionary of facts about alfalfa. It will tell you which kind of alfalfa is best adapted to your particular soil and moisture conditions.

Write for it today, together with our latest price list on new crop seed.

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Top Dress with Nitrate of Soda

Warning!

Those who neglect the orchard now will suffer later. Now is the time to make your plans to *Fumigate, Irrigate* and

Fertilize with Nitrate of Soda

Place orders now for next Spring's supply of *Chilean* Nitrate of Soda. We will tell you how and when to use. Drop us a postal stating the crop you wish to fertilize.

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P. O. Box 248 Berkeley, Calif.

PEARS?

Sure—the best that ever grew—and on Blight Resistant roots ONLY. Our mountain soil produces roots that every planter pronounces perfect. Apples, too—fine ones.

Loma Rica Nursery

PEAR SPECIALISTS

A. WISKER, Manager

Grass Valley, California

WHAT THE LEGISLATURE IS DOING TO FARMERS.

(Continued from page 69.)

the appropriations to the State Agricultural Society, and they are not very bountiful. He prints a book of California crop statistics every year, but it is mostly second-hand stuff. It was proposed to get some really good, original statistics on California's agricultural production with the $20,000 asked for at this session.

AGRICULTURAL INSTRUCTION TO PEOPLE.

For the purpose of carrying the latest and best proved agricultural knowledge to farmers of California by means of lectures, demonstrations, etc., $104,856 is appropriated by a bill introduced by Senator M. B. Harris of Fresno. This will be used by the University of California in co-operation with the United States. It thus makes an equal sum available for the same work to be paid by the United States under the Smith-Lever act. No time limit is mentioned in the bill.

UNIVERSITY $200,000 A YEAR EXTRA.

In addition to all other sums of money or funds provided for the support and maintenance of the University of California, and commencing next July 1, $400,000 is automatically appropriated for each future biennial period, if a bill presented by Senator A. H. Breed of Piedmont, Alameda county, goes into effect. This amends the standing law, by which the University must get a renewed appropriation every year.

RAILROAD COMMISSION AND PRODUCE MERCHANTS.

Here is a bill with a big tooth in it if passed as introduced by Senator W. R. Sharkey of Martinez. Every producer, manufacturer, or dealer in any fruit, vegetable, grain, meat, or other article or product fit for human consumption, or coal, wood or other fuel, drugs or medicinal preparations, articles of wearing apparel or other necessities of life, shall be subject to the jurisdiction, control, and regulation of the State Railroad Commission in respect to the auditing and inspection of all books, records, and accounts and the enforcing of the orders of the commission in the same manner as any public utility. This would give the Railroad Commission the right to examine the accounts of produce merchants and commission men, as well as those of every farmer and dealer in farm products to the same extent that it can examine the books of public utilities. But since the bill starts and ends with sections making it a misdemeanor to sell such products at more than a reasonable price during epidemics or disasters, it may be guessed that this is the extent to which the above described control is given to the Railroad Commission over producers and dealers in these products. The bill was referred to the Judiciary Committee.

1917 APPLE STILL SOUND.

To the Editor: You will remember the Beaconsfield seedling apples I sent you last spring—a brilliant red apple. I am now sending you two specimens of the vintage of 1917, picked early in October of that year. Until July, 1918, they were in a box sitting in an open shed. Needing the box, I dumped them out in the garden in the shade of some locust sprouts, and they have been there ever since until a month ago. They were picked at about the stage apples are ordinarily picked for storing, but they are the most durable I ever saw.—Albert F. Etter, Ettersburg.

[Mr. Etter described this Beaconsfield apple in the Pacific Rural Press of May 18, 1918, and sent us specimens of the previous years' crop, as he says. The apples which he now sends are a year and a quarter from the date of picking and are, as he says, a remarkable demonstration of durability. They are small and light and less shriveled than one would expect, but are free from decay. Even where bitten by a snail or something of that sort while lying under the locusts, the wound has healed without decay of the tissue. We did not think much of Beaconsfield's quality when we tested it in May, 1918, and it is, of course, no better now, but its durability may be a factor of some use in breeding for higher quality.—Editor.]

Almond and Pear Trees

Choice, well-grown Almonds on Bitter Almond Root. We can furnish the following varieties:

Texas
Drake Seedling
Nonpareil
Peerless

Splendid BARTLETT PEAR STOCK on Japanese and French Pear root.

Prices on Request.

James Mills Orchards Corp.
HAMILTON CITY, CALIF.

BIG SEED COMPANY IS DISTRIBUTING NEW CATALOG

Aggeler & Musser Seed Company of Los Angeles Issue 26th Annual Book

The Aggeler & Musser Seed Company, the large Seed House of Western America, is distributing broadcast their 1919 Big Annual, which is claimed to be the most complete and finest yet issued.

Among the many new features incorporated is a department on "More and Better Potatoes." Important data is gevin on Home, School, Field and Demonstration Garden Work. Data concerning correct tools and implements to use for best results. Marketing notes on each subject, telling how and where to market. Hints on poultry, spraying, fertilizing and the use of insecticides. It is in reality several books in one, for it includes the important "Garden Manual." 1000 questions are answered and valuable information on all varieties of plants is given.

The Aggeler & Musser Seed Company have opened a large store right in the center of shopping district, 620 South Spring street, Los Angeles, a great convenience to rural customers. A special Call Department has been installed to accommodate customers in town for a short time on business. Orders left on arriving are ready when called for. The big Mail Order Department and General Offices are all situated at the new store, while the general milling, cleaning and warehousing will continue at the big warehouse, Sixth and Alameda. The new catalog explains fully all the new departments and why our service has been improved 100 per cent. Sent free, postpaid, anywhere. Write for copy at once.

Cultivate triple acreage with Planet Jr. tools

Your country needs all the food you can raise. Increase your production. Raise more than ever, by using Planet Jr. tools. They enable you to cultivate three times the acreage possible with ordinary tools, because you can do the work so easily, quickly and thoroughly.

Planet Jrs. are fully guaranteed and will last a life-time.

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No. 12 Planet Jr. Double and Single Wheel-Hoe has hoes that are wonderful weed killers. The Plows open furrows, cover them and hill growing crops. The Cultivator Teeth work deep or shallow. The Leaf Lifters save much time in late work when plants are large or leaves too low for ordinary work. Crops are straddled till 20 inches high, then the tool works between rows with one or two wheels.

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72-page Catalog, free!

Illustrates Planet Jrs. doing actual farm and garden work, and describes over 55 different tools, including Seeders, Wheel-Hoes, Horse-Hoes, Harrows, Orchard-, Beet- and Pivot-Wheel Riding Cultivators. Write postal for it today!

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These are the big paying lines of the future—skilled men are always in demand—in the after war adjustment only the trained man will be wanted—start now to learn a trade—cut out this ad—send for catalog today—What do you want to be?

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The Largest and Best Equipped Automobile, Tractor and Engineering School on the Pacific Coast—42 Instructors—Over 2000 students annually.

SEED POTATOES

We specialize in selected SEED POTATOES: Certified White Rose, American Wonders, British Queens, Burbanks, Garnet Chilis, and other varieties. Also fancy, recleaned Alfalfa Seed. Write for prices.

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Mechanical Power on the Farm

Users of tractors, engines, pumping plants, motor trucks, automobiles, electric motors, and other mechanical farm power are invited to make this department an exchange of their experiences and troubles.

CHOPS PRUNINGS—SAVES FERTILITY.

To the Editor: I noticed an article in the Pacific Rural Press last August, "Engine Chops Grape Prunings." I have a brush-cutting machine that chops prune brush or any kind of prunings up to three inches in diameter. I rake the brush with a horse rake, put one end of the rakeful on the feeder, and the feeder pulls the entire rakeful into the cutting knife. It cuts the brush to 2¼-inch lengths. I have cut 140 acres of prunes, walnut, and apricot brush with it and have ground the knife only once. I send you pictures of the machine.—J. W. Richman, Gilroy.

[The pictures show the machine mounted on a wagon with upper and lower draper feeders set at an angle to each other for the purpose of compressing the brush. Drapers have rows of teeth set crosswise. They force the brush over a fixed knife where it is chopped. A revolving knife is fixed across the space between the rims of what appear to be flywheels of an engine. The flywheels weigh 630 pounds. Such a machine ought to save a lot of the fertility taken out of soil by roots, but the choppings will not rot for a year or two unless the ground is kept wet. Their presence would benefit a heavy soil anyway.—Ed.]

TRACTOR SHORT COURSE AT CITRUS EXPERIMENT STATION.

A short course in the management of gasoline tractors will be held at the Citrus Experiment Station, Riverside, Cal., February 24 to March 1, 1919. War-time conditions have placed upon the farmer not only the burden of producing foodstuffs for our own people, but a surplus must be also provided to be shipped abroad. To produce more it has been necessary to change our methods of farming and today we find the tractor doing its part in this campaign for increased production.

To train tractor operators the University of California plans to give this course in tractor management, duplicating the course given for several years at the University Farm, Davis, and also given at Riverside last year, when over two hundred students were enrolled. Several of the leading makes of tractors will be available for demonstrations and practice work. A registration fee of $1 constitutes the only charge for the course. Anyone may register. Applications should be sent to the Dean, Citrus Experiment Station, Riverside, Cal.

EFFICIENT BEAN CUTTER AND PILER.

A machine which handles bean cutting and piling with least labor and least loss of shattered beans is one used by Chris Fanoe of Monterey county. A rake like a hay rake is attached behind the vine cutter so it brings the vines along when cut and before they have a chance to dry out. The rake is dumped by a foot lever. Shattering, according to Mr. Fanoe, is greatly increased when pods dry out after having been wet if they were bruised during the vine cutting. His vine cutter avoids bruising because the blades are about six feet long and angle backward at a less abrupt angle than many do. This also avoids much of the dragging and mixing with dirt which often accumulates among vines and beans harvested when the ground is moist.

MANURE CLOGGED PLOWS.

At a small tractor plowing demonstration we attended not so long ago, the gang plows were continually getting filled up under the beams with coarse manure, which caused a lot of bum plowing because the tractor operators hated to stop. There is no doubt as to the value of that manure, but the way it was spread made even the coulter and jointer plows unable to turn it under. The extra labor and time of man and team required to pitch that manure from wagons should be added to the time lost by the tractor outfits and drivers in plowing; and the sum of these losses should be compared with the interest on investment and cost of repairs for a manure spreader. That should be enough to send the farmer to town in a flying machine to buy a manure spreader, for which he would be able to pay out of the extra crops that come from breaking up manure into small available pieces; and the extra labor saved in spreading and plowing would enrich the bank account.

ENGINE SAVES LONG HAULS.

The 2-horsepower gas engine that furnishes power for a couple of milking machine units on the dairy of A. B. Spooner & Sons in San Luis

Turn Cutlery Steel Into Your Fields!

Do It With Clark "CUTAWAY" DISK HARROWS

That's what the disks are made of—a special cutlery steel—forged edge (cut out or solid)—so sharp and sturdy that mother earth crumbles into tiny particles just as you want her to.

Pulverize the soil well. Get it in the best condition to give the world bigger and better crops. Our Allies are depending on them.



WRITE FOR THIS BOOK

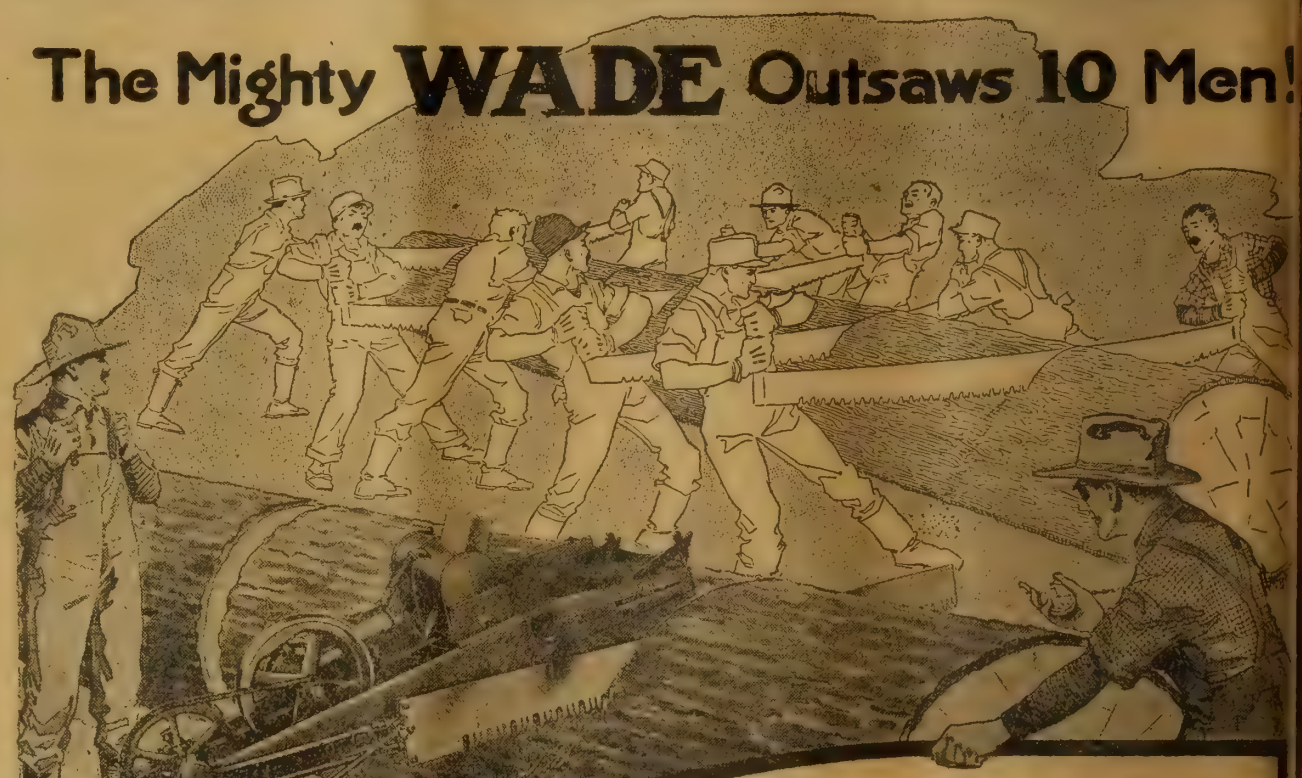
It's a valuable one to have; tells what you need to know about "The Soil and Its Tillage." With it, we will gladly send our complete Implement Catalog and names of your nearest dealers in CLARK "CUTAWAY" Implements.

The Cutaway Harrow Company
609 Main Street, Higganum, Connecticut
Maker of the original CLARK Disk Harrows and Plows.

E. P. BOSBYSHELL CO.
Dealer in Farm Implements, Vehicles and Road Grading Machinery
125-127 N. Los Angeles Street

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Clark's Harrows
Los Angeles, Cal

The Mighty WADE Outsaws 10 Men!



A money-maker and hard work saver for land clearers and wood-cutting contractors. One man can move it from cut to cut. Simple and reliable. Hundreds in use all over the United States—in the woods of the Pacific Northwest, California, Minnesota, Arkansas, New York. When not in use for wood cutting the 4-H.-P. motor will run feed mills, feed cutters, pumps, etc.

Read What These Owners of WADE DRAG SAWS Say:

"One afternoon my brother-in-law and I took my WADE into the woods and sawed three hard maple trees into 16-inch blocks, the trees averaging about two and one-half feet at the stump. He expected it would take me from eight to ten hours to do the job, but it was all done in three hours.—F. W. Hiller, Vernon, N. Y.

I cut thirteen and one-half ricks of cottonwood in six hours.—J. W. Stratton, Atkins, Ark.

One gallon of gasoline will cut six to ten cords of wood; it depends on the kind of timber you cut.—W. D. Thomas, Bull Run, Or.

My WADE saw paid for itself six times over.—F. W. Taylor, Swisshome, Or.

I am making $250 a month with my WADE.—F. A. Storts, Orville, Cal.

Thirty-six inches in diameter, yellow birch, is the largest I have cut and I cut down to six inches.—P. L. Cole, West Duluth, Minn.

I cut down to eight inches in diameter.—F. T. Swank, Park Falls, Wis.

America must burn more wood for fuel. One Wade will do 10 men's work at one-tenth the cost. Write for free book, "How Dan Ross Cuts 40 Cords a Day." Full details and special price.

R. M. WADE & CO. SINCE 1865

349 Hawthorne Ave., - Portland, Oregon

Wade Booklets Free

R. M. Wade & Co.,
349 Hawthorne Ave., Portland, Ore.

Without obligation, send me Booklets, full details and special price on Wade Drag Saw.

NAME .....

ADDRESS .....

A 53 YEAR REPUTATION BACKS THE WADE

Obispo county runs a line shaft from which the separator and a churn are operated. Even in the dry weather of last fall they were churning about 100 pounds of butter per week. This enabled them to feed skim milk and buttermilk to hogs. Both products of the dairy (butter and pork) were more easily hauled the long distance to market than the cream could have been, and they required not nearly so many trips.

MOTOR TRUCK CARRIES EGGS.

A motor truck beat the cars in several ways in a case recently reported. A 3000-pound truck, the property of the U. S. postoffice, was loaded with 1000 day-old chicks and 18,000 eggs. It left town at 6 a. m. and delivered its load twelve hours later. Four chicks were dead and nine eggs broken. On the same day 85 cases (about 36,000 eggs) were shipped by rail from the same town to the same consignee. He had to send a wagon to the depot to get them, not the same day but the next day, and he found about 1000 eggs smashed.

SPREADING PULLEYS CHANGE SPEED.

For changing the speed of a slow-running belt-driven machine while it is running, the method used on a seed cleaner recently observed is effective and convenient. The drive and driven pulleys were each made of two beveled plates which could be separated or drawn together while running. The belt or chain running between the beveled plates as in a groove was of blocks whose sides were beveled to fit the plates of the pulleys. Separating the plates of either pulley had the effect of making it smaller, while drawing the plates of the other one together made it larger and took up the chain-belt slack.

HITCH IN FRONT OF CENTER OF PLOW.

A tractor-plow manufacturer said that 90 per cent of his troubles were due to improper hitches, especially on small tractors. The tractor representative usually wants the plow hitched so the tractor will run on firm footing. With big tractors and a center hitch this works, but with small tractors the plows must in this case be hitched to pull diagonally. This puts excessive strain on the hitch and on the plow. It is advisable generally to hitch in line with the center of the plow if possible, even where it puts considerable side draft on the tractor.

LONG HITCH FOR GANG IMPLEMENTS.

Where a tractor is to pull a gang of several seeders, harrows, or other implements, they should be hitched at a distance from the tractor. If hitched close, they will wobble on uneven ground and make irregular work. The long hitch will require striking out a land at the ends of the field on which to turn. This will be seeded or worked down later.

CRANK SHAFT LOOSE WHEN COLD.

After a crank shaft is put in place ready to run, take a bar and see that it is loose, says Hal Thone of the Holt Co. The crank shaft expands when heated and gets both longer and bigger around. If it is put in tight when cold, it will either stick or burn out the bearings quickly when it warms up.

POWER NOTES.

Think not of how much a horse eats, but of how much more the ground would produce when farmed by tractor.

Caterpillar plowing costs $2 per acre on peat land but $2.50 per acre on the higher lands containing more soil, according to J. D. Happy of San Joaquin county. Peat does not wear away the plows nor does it turn so hard.

"From published advertising, it would appear that there are 123 manufacturers of tractors on record, making approximately 192 different styles and capacities," said W. A. Miller of the International Harvester Co. at an engineers' meeting on October 3.

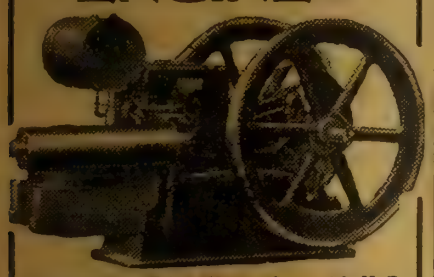
The aviator's wife was taking her first trip with her husband in an airplane. "Wait a minute, George," she said. "I am afraid we will have to go down again."

"What's wrong?" asked her husband.

"I believe I dropped one of the pearl buttons from my jacket. I can see it glistening on the ground."

"Keep your seat, my dear," said the aviator, "that's Lake Erie."—From the Broadside.

WITTE IRRIGATING ENGINES



Kerosene-Distillate 2 to 30 H.P.

Pump your water with a WITTE. All you need is a centrifugal and my Special Model Kerosene-Distillate Engine. I can lay your engine down at least cost. Save the middleman's profit—Get your engine NOW, while prices are favorable. Have reliable power for all your work. Made in standard sizes—2, 3, 4, 6, 8, 12, 16, 22, and 30 H.P. Battery or magneto equipment. I am in a position to offer you the best prices and make Quick Shipment. 90-Day Trial—5-Year Signed Guarantee. Largest exclusive engine factory in the world selling direct to user. Terms, cash or payments as arranged for. Suit yourself as to terms. Dont make a deal until you have investigated my offer.—Ed. H. Witte, Pres.

WITTE ENGINE WORKS
2861 Oakland Ave., Kansas City, Mo.
2861 Empire Bldg., Pittsburg, Pa.

GRIND FEED - USING YOUR AUTO AS A STATIONARY ENGINE



YOUR Automobile will furnish cheap and efficient power for grinding feed, sawing wood, filling silo, shredding corn and all other work a 14 H. P. Gas Engine can do.

Our Equipment Fits:
Ford Overland Hudson
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Simple to connect---does not harm your car. Get one NOW---hundreds in use---Satisfaction guaranteed---only . . $35.00

LAWRENCE AUTO POWER EQUIPMENT

Write for Circular.

409 Minnesota St. ST. PAUL, MINN.
LAWRENCE AUTO POWER CO.

THE BEST RUBBER BELT EVER MADE
TEST SPECIAL

SYMMES & MEANS
AGRICULTURAL ENGINEERS
Agricultural Investigation, Drainage, Legal Engineering and Water Right Reports. Alkali and Marsh Land Reclamation. Appraisal of Irrigation Systems. Management and Development of Lands. Ranches and Irrigation Projects. Soil Surveys.
58 SUTTER ST., SAN FRANCISCO

We Manufacture Levelers for Any Power From 6 Horses to a 75 H. P. Tractor

A Schmeiser Leveler
of the "Giant" Type
WILL WORK WONDERS ON YOUR FARM



Moving immense amounts of dirt daily, and working on ground too tough for horses and Fresnos to tackle, SCHMEISER POWER LAND LEVELERS are now being used with utmost success by a great many ranchers, large and small—also by contractors—saving their owners time, labor and money.

WE SEND THEM ON THREE DAYS' TRIAL.

So extremely simple, a child could operate one, as a simple twist of the wrist raises and lowers the bucket or holds it stationary, as the case may require.

YOU SHOULD
send for our latest catalog, J-600, which is full of interesting information on Labor Saving Devices and machines for moving the earth.

Schmeiser Manufacturing Co.
12 Mechanic Street DAVIS, CAL.

Manufacturers of
Sure Pop Almond Huller and Separator, 3 sizes; McGarvin Fruit and Olive Graders, any size; Schandoney & Harrington Equalizing Hitches, any size; Diamond Special Harrows, Baker Clips, Clevises; and Schmeiser Portable Automatic Hay Derricks. We sell the Martin Ditcher and Grader.



GIVE YOUR K-W MAGNETO the Care it has Earned NOW

It is only human nature not to pay much attention to any piece of machinery as long as it runs all right. Like thousands of others your tractor operator may have neglected to give your K-W Magneto the attention its faithful service deserved during the past year. But don't allow it to be run another year under these same conditions.

Our interest and responsibility in your K-W Magneto never ceases. We so carefully build each K-W Magneto that it will give years of efficient, reliable service if given ordinary care. But we don't stop there. We feel it our duty to show you how to keep it in A-1 shape by telling you what *to do* and what to avoid.

What To Do
Just follow the few simple instructions found in your K-W instruction book, and you can put your magneto in A-1 shape yourself. If you have lost your instruction book we will send one free on request.

What Not To Do
Don't tear down your magneto or allow any ordinary mechanic or garage man to do so either. If your magneto needs repairing—if it has become damaged, or put out of adjustment through the carelessness of some farm hand, send it to the nearest K-W "Licensed" Service Station.

A Factory Repair Promptly
In selecting these Service Stations we have chosen only such concerns as have the necessary equipment, a complete stock of repair parts, and a crew of expert mechanics who "know" magnetos, and can give you a "factory" repair promptly.

Don't Delay a Minute
Tractor owners everywhere are having their tractors overhauled now. In having yours put in shape for the spring plowing and the year of hard work ahead of it, don't overlook your magneto. Test it now and if it needs repairing, write us at once for the name of the K-W "Licensed" Service Station nearest you. Give your K-W Magneto the care a year of faithful service has earned.

THE K-W IGNITION Co
2889 Chester Ave. CLEVELAND OHIO, U.S.A.

K-W HIGH TENSION MAGNETOS FIRE ANY KIND OF FUEL K-W

State Budget Board Recommendations

[By Our Special Sacramento Correspondent.]

A saving of $2,540,268 from the appropriations of the 1917 session of the Legislature is recommended by the Budget Board for appropriations by the 1919 session. The Budget Board consists of the State Board of Control and the State Controller. It recommends a total of $24,751,605 to be appropriated for the next two years. It and the Committee on Efficiency recently appointed by Governor Stephens feel this will carry on the enterprises of the State Government unimpaired and without reducing the quality or quantity of food furnished to the 20,000 inmates of State hospitals and prisons. This is in addition to the "fixed charges," which do not this year require legislative appropriation. These "fixed charges" brought the 1917 total expenses for the two years ending June 30, 1919, to $47,907,234.43. Total recommendations are $47,580,153.60 for the two years ending June 30, 1921.

GENERAL APPROPRIATIONS.

The budget for the general appropriation bill is allowed a net increase of $1,374,705, totaling $19,863,813 to cover the expenses of the legislative, judicial, administrative, and executive departments of the government. Increases are recommended as follows: $103,710 for new courts, $9,010 for additional expenses of the Supreme Court, $29,000 for salaries of Superior Court judges, $120,900 for military purposes, $143,392 for education, 66,480 for agriculture and horticulture, $272,100 for aid to veterans, army nurses, and orphans, $1,474,447 for the care and feeding of our insane and feeble-minded population, and $245,600 for support of correctional schools. The gross increase in the general appropriation bill is $2,464,639. Items of decrease make the net increase $1,374,705 as mentioned. Decreases are recommended as follows: $750,000 from the emergency fund, $55,200 from miscellaneous expenditures, $32,500 from prison expenses, $284,674 from the general executive and administrative departments. This is the first time there has ever been a decrease in the last item.

SCHOOLS, HIGHWAYS, ETC.

Fixed charges, including schools and the University, interest and principal payments on bonded indebtedness, and reimbursements to counties aggregated $20,586,388.76 for the biennial period beginning 1917. Statutory requirements will increase this by $2,242,159.37 in 1919. The increase is mainly for education. The statutory allowance for the State University fund in 1917 was $2,365,222.41 and the recommendations are for $2,707,943.13 in 1919. High schools received in 1917 for the two years $1,913,000. This is likely to be increased $327,795. Elementary schools received in 1917 $10,482,580. There is set aside for them in 1919 an increase of $899,920. These estimates of increases for schools are assuming emergency action by the Legislature to prevent losses to schools because of the epidemic. For interest and principal on highways and buildings bonds $3,807,270 is allotted, an increase of $611,410. Reimbursements to cities and counties for principal and interest on bonded indebtedness for 1917 was $1,447,626.41. There is estimated for 1919 $1,530,000, an increase of $82,373.59. Reimbursements to counties because of loss of railroad revenue are eliminated, saving $261,802, and miscellaneous items are decreased by $27,817.94 in the present budget.

SPECIAL APPROPRIATIONS.

"Special appropriations" are made the goat for most of the net decrease proposed for the next two years' expenses. In 1917 they amounted to $8,802,765.66. The Budget Board recommends a total for special appropriations of $4,887,[illegible] a decrease of $3,914,973.13. The war emergency appropriation of more than $1,000,000 in 1917 is not included in future expenses, but the flexibility it gave seems to the board to justify the appropriation of $300,000 for "unreported needs." Items for special appropriations relating to agriculture appear in the table below. See separate articles for items.

SPECIAL AGRICULTURAL APPROPRIATIONS.

	Appropriated 1917	Requested 1919	Recommended 1919
University agricultural activities	$375,459	$579,856	$569,315
State Agricultural Society	323,660	379,700	95,000
State Horticultural Commission	11,000	.....	.....
State Market Commission, salaries	49,720	.....	.....
Flood control, Sacramento, San Joaquin	500,000	1,000,000	500,000

GET A STATE CERTIFICATE OF WEIGHT.

[Written for Pacific Rural Press.]

"Millions of tons of this State's products have been weighed on scales which recorded anything but the right basis for settlement between buyer and seller. The issuance of a weight certificate is just as important as the issuance of a bank check. The amount of the check depends on the accuracy of the weight records. No man is entitled to greater weight than the actual weight of the commodity sold," says State Sealer of Weights and Measures Charles G. Johnson.

But look. "California has entirely overcome all the tendency of Eastern market men to consider California weights and measures otherwise than accurate. The public weighmaster's certificate is today a document of great importance in the commercial world. It is today accepted throughout the State and the United States as being the accurate record at the time the commodity was weighed. Its use has developed commercial confidence and removed suspicion, irritation, carelessness, and many other evils."

The Public Weighmaster Act, which became law in 1915, is responsible for the change, and as such, believes Mr. Johnson, is one of the most important on the statute books.

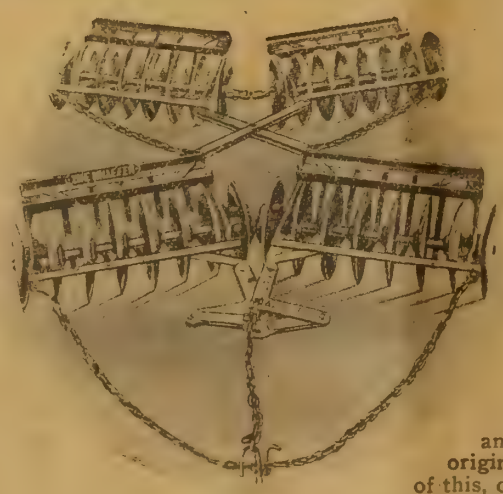
Eleven hundred and seventy-nine persons have qualified as public weighmasters in California, the scales, etc., used by them have been given special attention by the Department of Weights and Measures. They must comply with specifications and must test accurately within the prescribed tolerance. Special reports to the department keep officials familiar with the types and condition of the apparatus and help in adjustment of complaints. Antiquated types have been replaced by installations which insure accuracy. All wagon and auto truck scales are today installed on concrete instead of timber, and in every case possible the pit is of concrete.

PUBLIC SALES AT ALL TOWNS.

There are still hundreds of shipping points, according to Mr. Johnson, which have no wagon scales. Producers are obliged to accept weights as found at destination after shrinkage due to evaporation, waste, and thievery. Every such place ought to have a public scale, and it is proposed that either the State or interested merchants install one, charging a fee that will cover the pay of a weighmaster.



The KILLEFER AUTOMATIC Double-Disc Harrow





Automatically Straightened

The small cut shows the Automatic Double-Disc Harrow, automatically straightened. To accomplish this, the tractor is backed up until the hook on the draw chains can be placed in the hole on the front end of the adjusting swivel; then, by going ahead about 18 inches, the disc is drawn straight. To set for working position again, pull out the hook and go ahead. This can all be done by the driver from the seat of most tractors.

Without A Doubt

this is the most important development made in the manufacture of farm tools to date. This is the only Automatic Double-Disc Harrow on the market. It was designed and built in our own shops, completely; we are, therefore, the originators and have it fully covered by patents. In the development of this, our latest triumph in Disc Harrows, we have not only maintained the great strength and durability as originally designed, but have added two additional most valuable features, namely, our Automatic Shifting Device; controlled by the operator from the seat of his tractor, and a greater flexibility, so desirable in a tractor Disc Harrow, but not found in other makes.

This Harrow is built in all sizes from 5 to 12 feet, inclusive.

The Killefer Manufacturing Co.

2209-21 Santa Fe Ave. Box 156, Arcade P. O. Los Angeles, Cal. "Killefer Quality"

Locust Leaves as a Range Forage

[Written for Pacific Rural Press by Albert E. Etter, Ettersburg, Humboldt Co.]

Supplementing my article published in the Pacific Rural Press of June 8, 1918, in which I gave my experience in using the foliage of the common black or yellow locust (Robina pseudocucia) as a forage for cattle, sheep and goats, I now have two important observations to make bearing on the subject.

The first of these is that severe pruning of locust trees in June, July, August and September do not devitalize the tree more than winter pruning. Indeed, the pruning, instead of devitalizing the tree, actually increased the amount of foliage the following season 50 to 100 per cent.

The second observation is that the foliage on pruned locust trees remains in good feeding condition about a month later than on trees of natural growth. These two facts make the prospective outlook for using this beautiful tree for forage purposes fully 100 per cent better.

While I have secured very decisive results in actual feeding experiments with locust leaves and seed pods, both green and dried as hay, the clinching argument is secured by comparing chemical nutritive values as secured by analysis. The following table, comparing locust leaves with several well-known stock forages in California, is very interesting:

	Water.	Ash.	Protein.	Starch, Sugar, etc.	Crude Fiber.	Fat.
Black Locust Leaves	78.00	1.54	6.71	10.81	2.03	.91
Alfalfa	80.00	1.72	4.94	7.90	4.70	.74
Alfilerla	80.00	1.72	2.83	9.81	4.72	.92
Clover—Red	70.80	2.10	4.40	13.50	8.10	1.10
Barley	79.00	1.80	2.70	8.00	7.90	.60
Corn—Indian	79.30	1.20	1.80	12.20	5.00	.50
Beet—Mangels	90.90	1.10	1.40	5.50	.90	.20
Carrots	88.60	1.00	1.10	7.60	1.30	.40
Thousand Head Kale	85.15	1.76	2.63	8.49	1.46	.51
Turnips	90.50	.80	1.10	6.20	1.20	.20
Spineless Cactus	94.66	1.23	.72	2.71	.59	.09
Potatoes	78.90	1.00	2.10	17.30	.60	.10

The above figures are copied from a table furnished by Prof. M. E. Jaffa of the University of California. A study of these figures for nutritive values, and the tonic properties in increasing appetite and toning up the system, should convince the rancher of the possibilities of the locust as a supplementary feed on the range in the driest months of the year, when a green ration means so much to range stock.

AGRICULTURAL NOTES.

Several hundred acres in Santa Maria Valley, Santa Barbara county, were planted to flowers for seed last season.

The cold weather has reduced the supply of fresh vegetables. A little warm weather and some rain are both needed.

One of the tractor schools fostered by the University of California will be operated at Concord. There will be 40 schools in the State.

The Turlock Merchants and Growers' Association reports the shipment of 475,000 pounds of beans out of Turlock district during the month of December.

Five carloads of Mexican tomatoes en route to the United States are held up on the far side of the Fuerte river because of the collapse of the bridge.

Your threshing machine is made of wood and metal. With winter moisture in the air, the wood has swelled and you will find it profitable to loosen the bolts.

Farmers desiring loans from the Federal Land Bank of Berkeley should make applications at once to the nearest farm loan association, or if this address is unknown, write direct to Berkeley.

Farm extension work carried on by the Government during the war would be made permanent under a bill submitted to Congress by Secretary Houston, who asks for $5,670,000 to defray the Government cost of this activity.

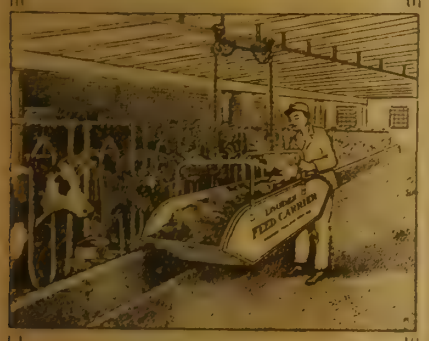
The Farmers' Union Warehouse (Tulare district) furnished farmers 4000 sacks of seed wheat last year. This season they have already sent out 24,000 sacks for seed. This promises a largely increased wheat acreage for that section the coming season.

One million sacks of rice have been handled by the mills up to January 1, according to E. E. Behr, secretary of the California Rice Growers' Association—three times more than at the same time last year. The acreage price paid was $4.24 per hundred pounds.

Wheat will be harvested from 33,000 acres of irrigated wheat land on the Indian lands of Montana and Wyoming next season. This amount has already been seeded. One hundred and sixty-seven thousand acres more will be brought into cultivation this summer, it is expected. No horses are used. All tractors!

About 10 per cent of the total rice milled is cracked rice. Since the change in administration rules affecting wheat flour substitutes, millers have found it impossible to dispose of their cracked rice, which is accumulating and blocking the warehouse room, as well as tying up capital. E. E. Behr, secretary of the California Rice Growers' Association, is going East to try to find a solution of the problem.

QUICK FEEDING—Without The Waste and Labor



Why hitch up a team twice a day to feed the stock, or make innumerable trips with a wheelbarrow?

With a Louden Overhead Feed Carrier you can carry at one trip enough dry feed or ensilage to feed from thirty to forty head of cattle. There's no waste of feed, no wasted effort, and the feeding is done in half the time required by any other method.

We have Louden Feed Carriers in various styles and sizes, at a wide range of prices that puts them within easy reach of every barn owner.

We have a carrier suitable for YOUR barn, and we'll guarantee it to earn its purchase price again and again in its saving of time, labor and feed.

Ask us for Feed Carrier booklet and prices.

Louden's Litter Carrier Outfit

—save labor, time, and money, same as Louden's Feed Carrier. One man with a Louden can clean the barns in half the time that two men would take without it. Think of that! There's economy for you.

Send today for free book on manure uses, and catalog of Louden's Litter Carriers, Sanitary Steel Stanchions, Cow Stanchions, etc., for modern barns.

California Hydraulic Engineering and Supply Co.
68 Fremont St. San Francisco
424 E Third St., Los Angeles

A SEASON'S WORK WITHOUT EXPENSE FOR REPAIR PARTS

BEAN TrackPULL Tractor

Do your work without expense for repair parts for your first season of 90 days. Our Guarantee Bond, issued to the purchaser of each Bean Tractor, is a broad, liberal agreement reflecting our confidence in the BEAN to do your work without unnecessary expense.

34 years of manufacturing integrity is behind this guarantee.

Let us tell you about this new "After-the-War" proposition and about the special orchard and vineyard Bean TrackPULL Tractor.

REDUCTION IN PRICE

In addition to the Guarantee Bond we are now, on account of "After-the-War" conditions, announcing a reduction in price on the Bean Tractor. The new price is guaranteed to June 30, 1919. If the price should be reduced between now and the above date (and this is improbable) the difference in price will be refunded. This means you can buy your Bean Tractor now, knowing that the price is stationary.

SPECIAL TRACTOR

This great little 6 h. p. machine, designed by builders of special orchard and vineyard machinery for 34 years, combines a wealth of experience in the one most effective designed to meet orchard and vineyard needs.



OUR "AFTER-THE-WAR" PROPOSITION

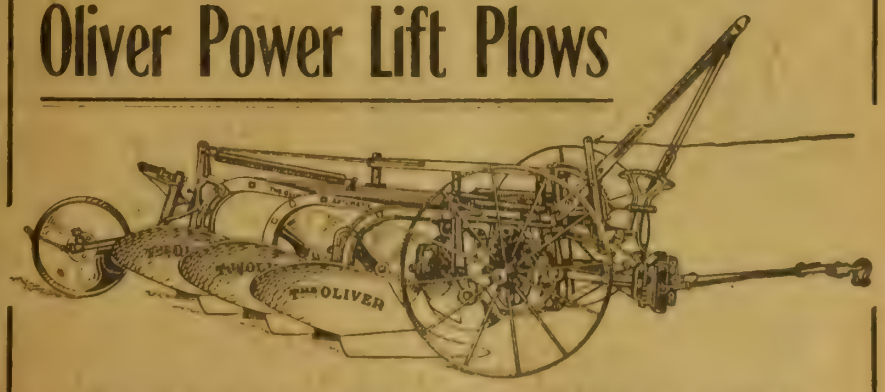
This entire "After-the-War" tractor proposition is backed by a tractor of high efficiency with splendid service plan in operation and is something you can't afford to overlook if you are going to buy a tractor this year. Send the coupon today.



Bean Spray Pump Co.
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Beets Help Tilly Beat the Record

It beats all how Tilly Alcartra insists on holding the top place in the Holstein world. As announced briefly in last week's issue, this wonderful cow, owned by A. W. Morris & Sons Corporation, Woodland, has completed her sixth year under semi-official test with the world's milk record of 33,424.8 pounds of milk, and the excellent butter record of 1322.99 pounds. The latter is not the world's record, but with a total of 2513.46 pounds of butter for two years she breaks the record for two years' butter production, and from two to six years; also she breaks all milk records from one to six years. Her production by years is as follows:

Age.	Butter.	Milk.
2	556.20	14,837.2
3	853.72	21,421.3
5	1,189.04	30,451.4
6	1,190.46	29,826.6
7	1,042.20	26,814.8
9	1,322.99	33,424.8

Some breeders are opposed to long-distance records, claiming that the strain on cows is too great; that it reduces their vitality and also makes them irregular breeders. But Tilly proves that neither of these claims is well founded. By coming back in her sixth year on test and exceeding her best previous record by over 3500 pounds of milk, she shows that test feeding has not weakened her endurance, and by dropping a calf on an average of every 13 months she proves that heavy feeding does not interfere with calving.

Furthermore, some dairymen do not take much interest in high records because they believe that the cows are fed to produce their utmost, irrespective of the cost of the feed, and that similar feeding on a commercial dairy farm would not pay. But a careful analysis shows that, in proportion to production, Tilly consumed much less than does the ordinary cow.

Her bill of fare for the year was made up as follows: Grain—1325 pounds ground barley, 1325 pounds ground oats, 1325 pounds bran, 1165 pounds soy bean meal, 532 pounds cottonseed meal, 200 pounds linseed meal; total, 5872 pounds. Succulent feeds and roughage—21,000 pounds beets, 2550 pounds dried beet pulp, 3000 pounds corn silage, 5000 pounds alfalfa hay. Also, during nine months of the year she was pastured four hours a day.

The amount of grain fed per day averaged 10 to 20 pounds, with an average of 16 pounds. But the remarkable feature of her ration is the amount of beets consumed, especially as compared with the alfalfa and silage. Think of it—an average of nearly 60 pounds per day, in addition to all the other feeds. And during the time of her heaviest production she consumed as high as 80 pounds of beets per day.

There may be a lesson in this for California dairymen who are feeding alfalfa almost exclusively, or alfalfa and silage. In most sections of the State beets can be raised successfully and cheaply. Should less alfalfa be grown and more beets? Should a field be reserved on every dairy farm for raising beets?

Breeding counts for much in heavy production, but it must be supplemented by careful feeding, and when we consider that Tilly's milk for the year sold for over $1,000 it looks as though it would pay dairymen to feed in a measure according to her bill of fare.

CONTESTS FOR SACRAMENTO-YOLO TESTING ASSOCIATION.

[Written for Pacific Rural Press by Ord L. Leachman, Sacramento.]

The Sacramento-Yolo County Cow Testing Association has some great plans for this year's work. Last month, at the election of officers, A. E. Greene of Courtland was elected chairman and R. E. Watson of the Henderson Co., Sacramento, and Guy Foulks of Elk Grove were elected directors. They started the ball rolling by planning a dairy cow competition similar to the State-wide contest last year. They went to the business men of Sacramento for donations and found these men ready and willing to help them. Money, cups, purebred bulls and boars and other things were offered as prizes.

Of course, the main idea of the association, which is one of the many branches of the farm bureau, is to help the dairyman with the low-testing herd. He needs to learn the value of a purebred sire and needs help in culling out the boarder cows. And as over 50 per cent of the dairy herds of Sacramento county are headed by grade bulls, there is plenty of work for the association to do. However, the contests that have been arranged and the prizes that have been offered have quickened the members, and it is certain that by the end of the year the number of purebred bulls in use will be greatly increased. The association had 1000 cows signed up last year and 750 more to start testing this month, with a large number to come in during the next two months.

In the contest there will be classes for grade herds of 1 to 20 cows; herds of 21 to 50 cows; herds of over 50 cows; highest yearly record for cow under five years; highest yearly record for cow over five years; highest monthly record for group of 5 cows in a grade herd; best herd—cup to be won three times for permanent ownership. Also, there will be a special prize for the best Jersey herd, and probably other prizes will be offered later on.

This association has already done excellent work. During December 24 cows made more than 45 pounds of butterfat and two grade Holsteins in the herd of A. E. Greene of Courtland made more than 100 pounds of fat for the month. The Greene herd also made the highest average for the month with 47.7 pounds per cow in a herd of 15 head.

The association's affairs are in excellent shape and the membership is increasing rapidly.

His Calves Are Now Coming



King Korndyke Pontiac 20th.

and they are certainly beauties. They not only inherit his type—extraordinary length, depth and splendid vigor—but also the wonderful production breeding that is behind him. Their dams also contribute great producing blood. Most of them are daughters of our senior herd sire, Prince Riverside Walker.

It is not too early to begin to figure with us on one of the young sons of King Korndyke Pontiac 20th for your herd.

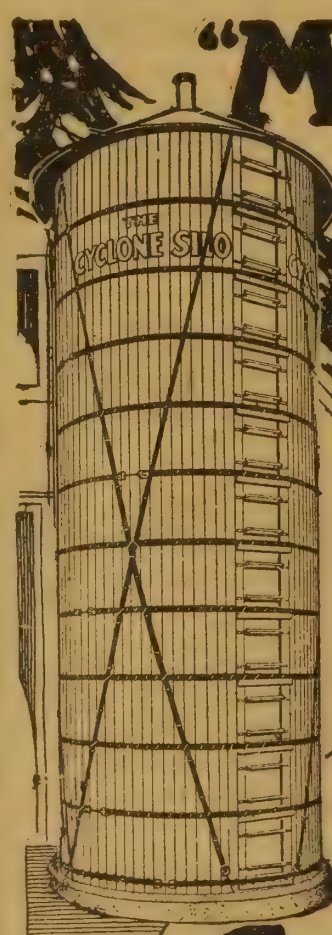
Come and see them or write for description, pedigrees and prices.

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Double Your Profits in 1919 With a "Cyclone!"

Whether feeding for beef or mutton, or dairying, a "Cyclone" silo will double your 1919 profits! "Cyclone" is a **permanent** silo. It will be standing many years after ordinary silos have gone to pieces.

Silo Feed Book FREE

Henry North's Silo Feed Book—50 pages of facts on silos and silage, such as cost of silage, silage vs. pasture, silage for sheep men, silage for beef cattle, crops for silage, etc. We will send you a copy FREE while they last.

We'll also send details of our Early Buyer's Discount, Prices, etc., on "Cyclone" Silos.

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Flush Cows After Calving

Protect your herd against Contagious Abortion and Barrenness.

Barrenness or Sterility, like Abortion, Retention of After-birth and Premature Birth, is nearly always caused by infection of the reproductive organs by the germs of Contagious Abortion. Unless this infection is promptly overcome by the use of a powerful but safe antiseptic, it may permanently affect the reproductive organs so that the cow will continually fail to stick.

Every time a cow drops a calf—whether alive or dead—by premature birth or aborting, whether the after-birth is retained or not, her reproductive organs should be flushed out, because that is where the infection is developing.

B-K, the powerful non-poisonous antiseptic, is scientifically correct for this work. Used as a douche for the uterus, it quickly rings the after-birth, dissolves the slimy albuminous matter, kills the germs, stops discharges and controls the infection. B-K does not cause straining, but is soothing and heals the tissues.

Send for "evidence" and free Bulletin No. 2 "Contagious Abortion." If your dealer does not have B-K send us his name

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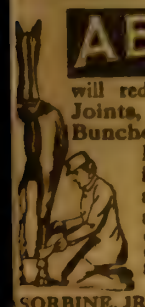
Butter Making in Holland

Butter making is the chief business of the Holland Dairymen, the originators of the Holstein Friesian breed of cattle. Upwards of forty million pounds of butter per year is exported from that little country, which is more per cow, and more per acre, than does any other country export.

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will reduce inflamed, swollen Joints, Sprains, Bruises, Soft Bunches; Heals Boils, Poll Evil, Quittor, Fistula and infected sores quickly as it is a positive antiseptic and germicide. Pleasant to use; does not blister or remove the hair, and you can work the horse. $2.50 per bottle, delivered.
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POLLED JERSEY CATTLE

Breeders' names, sale dates, Spillman's "Inheritance of the Polled Character in Cattle," and other information of

CHAS. S. HATFIELD, Secy.
Route 4, Box 51 Springfield, Ohio

THE PROFITS FROM A PORTABLE MOTOR.

(Continued from first page.)

USES FOR SILAGE CUTTER.

The third power outlet was at one end of the dairy barn—right near the silos. For a time the portable motor was used to run the milking machine, but this was discontinued because the motor was too large and made the power bill too great. Also it was found inconvenient to move the motor to this position twice a day, and it often interfered with the work of chopping hay or grinding grain.

But the motor was used to chop the corn for silage and to fill the silos, and also to make silage of the first cutting of alfalfa, if it was rained upon or contained so much foxtail that the cows would not eat it as dry hay.

CORN FODDER SHOULD BE SHREDDED.

Experiments carried on by the Ohio Experiment Station showed that one acre of corn fed in the form of silage will produce from 35 to 50 per cent more milk than one acre fed as dry fodder, and it will be seen from this that a silo will quickly pay for itself.

However, even on farms where there are no silos, it is poor policy to feed corn fodder or stover whole. The waste is too great, as when dry fodder is fed a great deal of the coarser part is left uneaten. This loss can be almost entirely overcome by shredding the fodder. The cows will relish it more and will clean it up much better.

SAVE THE STRAW AND CHOP IT.

When alfalfa, with its high protein value, is fed stock it is possible to add one-fourth or one-third straw without reducing the flow of milk, and on the average diversified ranch it should be planned so that every ton of straw not needed for bedding or other good uses should pass through the cattle.

The value of straw, also, can be greatly increased by chopping it, as much less is wasted.

USING THE MOTOR TO HOIST HAY.

On another ranch where the hay was stored in a barn, but not chopped, a motor was used to run the hoist. This hoist was bolted to one end of the platform which carried the motor. The belt pulley was replaced by a sprocket, and the hoist was driven by a chain.

The particular advantage of this method was that one man could set the fork and also operate the hoist without getting off the wagon. The motor, of course, ran constantly. He was provided with two long ropes, which were connected with the controlling device on the hoist, and pulling one rope, threw the hoist in gear, thus causing the rope to wind on the drum and the forkful of hay to be carried to the mow. Pulling the other rope threw the hoist out of gear, and left the drum free to unwind when the fork was pulled back to the load.

MANY OTHER MOTOR USES.

I have mentioned only a few of the many uses to which a motor can be put. It will be found a time and money saver for running a separator, a churn, a washing machine, a saw, a grain elevator or a shearing machine. In fact, new uses are being found for it almost every day, and the faithful little motor is becoming an almost indispensable factor in modern farming.

MEASURED IN MONEY.

There is probably twice the money in farming that most farmers are making, and the use of a motor will prove one way of increasing the profits. It won't cost you much. In fact, you'll be greatly surprised when you find how cheaply work can be done with its use. You'll be surprised, too, when you try out the motor, to find that it can be used to good advantage in so many different ways. You'll find that the little try of today becomes the big triumph of tomorrow.

Count that day lost whose low descending sun sets not upon a lot of work by the motor done.



JERSEY PROFITS

A JERSEY will produce a big net profit from even high-priced feed. A Jersey is nature's dairy masterpiece. Beautiful, hardy and productive to the highest degree. In these days of high cost of feed and care, the Jersey is an essential, because her economic production makes her a profitable investment. Economy demands that the scrubs must go. Write to Jersey Breeders for pedigrees and prices, and ask us for the important and valuable information we have gathered for the benefit of farmers who want their cows to keep them, rather than just to keep cows.

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Get one of my Jersey bulls to increase the production of your herd. They are rich in the blood of the great cow,

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Choice young bulls of King's Valet Blood, backed by Records.

Call at the ranch and make selection.

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Herd headed by **Altama Interest, Grand Champion 1918 State Fair.** Awarded two other championships and 10 firsts, including Aged Herd, Breeders' Young Herd, and get of sire. Young bulls for sale from dams and granddams in Register of Merit.

GUY H. MILLER, MODESTO, CAL.

LEONARD FARM JERSEYS,

Bulls for sale from Register of Merit cows. Write for information.

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Young bull calves for sale. Fine individuals with Register of Merit backing.

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REGISTERED JERSEY CATTLE
DUROC JERSEY HOGS

Look up my winnings at the fairs. Stock for sale at reasonable prices.

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A Great Record Made by this

GUERNSEY

This four-year-old Guernsey cow boasts a yearly production record of 16,203.90 lbs. of milk and 855.70 lbs. of butter fat. She has been kept in the pink of health. HEALTH pays big in any cow.

Increase Your Milk Income—Sure

Every cow you own that is less than 100% healthy is losing money for you. And the fact is that 80% of all dairy cows are below a proper health standard.

The vital organs of cows are just as liable to become diseased and sluggish as those of human beings. They need the same kind of treatment—medicinal assistance. Don't make the mistake of overfeeding to bolster up a sluggish system.

KOW-KURE has met with such great popularity among dairymen because it acts directly on the digestive and genital organs, toning them up, making them function properly, and enabling them to throw off disease.

Such ailments as Retained Afterbirth, Barrenness, Abortion, Scouring, Lost Appetite, Bunches and similar troubles, respond quickly to the strengthening influence of KOW-KURE upon the entire system. The result is an almost immediate increase of milk production.

Your druggist or feed dealer sells KOW-KURE, in 60c. and $1.20 packages. Send for our valuable free book,
"The Home Cow Doctor"
It tells how to treat all the most common cow diseases and gives much valuable general information

DAIRY ASSOCIATION CO.
Lyndonville, Vt.



Livestock and Dairy Notes

Livestock breeders all over the State are invited to send on postal cards, notes regarding their sales, State and County Fair intentions, new stock, etc.

The Dairy.

A. W. Morris & Sons Corporation, Woodland, has sold a son of King Morco Alcartra to Guy Foulkes of Galt, for a herd header.

The California Hereford breeders have decided to hold their annual spring sale either the day before or the day after the Shorthorn sale.

Hillcrest Stock Farm, Davis, recently sold a carload of Shorthorn bulls to Lewis Pierce of Suisun; also a carload was shipped to Wellington, Nevada.

A heifer calf was dropped last week at the Jane Garden farm whose three nearest dams' records averaged 29,800 lbs. of milk in one year. The dam, Camella Hartog, has a yearly record of 27,000 lbs. milk and over 1100 lbs. butter. The sire is King Morco Alcartra, a son of Tilly Alcartra.

Guy H. Miller of Rancho Venadera, Modesto, reports the sale of the richly bred young bull, Altama of Palomar to C. H. Sturges of Yuma, Ariz. This youngster is sired by the noted bull, Altama Interest, and both his dam and granddam are register of merit cows with yearly records.

The California Shorthorn Breeders' Association has decided to hold its annual spring sale between March 24 and April 14 on a date satisfactory to Fred Reppert of Decatur, Ind., who has been engaged to cry the sale. It has not yet been decided whether the sale will be held at San Francisco or at Davis. In all probability a meeting of the California Cattlemens' Association will be held at the same time.

Swine and Swinemen.

Guy H. Miller of Modesto reports the sale of the fine Duroc boar, Volunteer Heinie, to H. J. Orchard of Elk Grove.

At the recent sale of bred sows held by Lester H. Glover, Grandview, Mo., 14 gilts bred to Liberator averaged $563. This is the world's record for a sale of gilts bred to an untried pig. The top gilt brought $1,010 and this also breaks the record.

Through the Bureau of Animal Industry 5,500,000 hogs were vaccinated against cholera last year and the average loss in cholera infected herds was reduced to 13 per cent. During the last four years the losses from cholera hogs have been reduced from 6,304,300 hogs to 2,952,144. Great work.

Castleview Ranch of Santa Rosa recently sold young Berkshire service boars to J. D. Williams of Bodega, A. McKay of Oris Spring, Bernard D. Moore of Lakeport, and W. E. Brain and C. H. Niestrath of Cazadero. Also bred sows to W. F. Wilson of Sebastopol and Mrs. E. Cridland of Santa Rosa.

December was a good month for P. E. Mitchell, the Poland-China breeder of Atwater. He sold 3 sow pigs to W. H. Osborne, Atwater; 2 to J. S. Rogers, Chowchilla; 1 to Mrs. T. A. K. Mitchell, Atwater, and 1 to G. W. Mitchell, Selma; also a bred gilt and a boar pig to Mr. Moore, Fresno, and a boar pig to F. C. Warkentin.

W. J. Carmichael, now in the swine department of the Government, has been made secretary of the National Swine Growers' Association, to take the place of John T. Stinson. Until a year ago Prof. Carmichael was at the head of the swine husbandry department at the University of Illinois, and by his excellent work there he has gained a national reputation.

R. J. Merrill & Son, Morgan Hill, recently shipped the California Polytechnic School of San Luis Obispo a four-months-old Berkshire boar pig, sired by their boar, Winona Champion 13th, and out of Mayfield Nellie 3rd, she being sired by the State Fair grand champion, Ames Rival 70th. This pig weighed when shipped 172 lbs. He made a gain of 18 lbs. in eight days.

Intending purchasers of Poland-Chinas will be given an unusual opportunity at the sale of Chas. Gatewood & Son of Fresno, January 28. This is not a sale of surplus stock, but a complete dispersal sale, owing to the fact that the junior member of the firm is going into the cattle business in the Central West. On this account King's Big Bone Leader, the grand champion boar at the 1918 State Fair, will be included in the sale.

Chas. Gatewood & Son of Fresno have announced the date January 28th for their first sale of big type Poland-Chinas. Those who have been following the operations of this well-known concern will know what to expect in the quality of the 40 head of bred sows and gilts that will be offered. There will be afforded an opportunity to get females bred to the great boar, King's Big Bone Leader, grand champion at the 1918 State Fair.

Sheep.

E. C. Spear of St. Helena reports that one of the ranges extending back from Yorkville has recently been sold for $65,000 without the sheep.

Professor True of the University Farm advises the use of bells on sheep, so as to let their owners know when they are disturbed. Also, a dog or coyote is often frightened away from sheep when they are provided with bells.

The California Wool Growers' Association will hold its annual meeting at the University Farm, Davis, January 22 and 23. Fred Ellenwood of Red Bluff, president of the association, is attending the National Wool Growers' Convention at Denver and will make a report to the local association at its meeting.

Dr. C. C. Young recently gave an interesting talk on Karakul sheep before the Kerman Farm Bureau. He has brought to his ranch at Kerman a flock of nearly 100 of these sheep, raised in the desert country of Texas with great success. This breed is valued highly on account of the skins, which are used in high-class fur trade.

Joe Levy of Calla Grove Farm, Manteca, having sold his Guernsey cows, will give more attention to his herd of registered Hampshire sheep and expects to enlarge the herd so as to maintain about 200 ewes. Hampshires are becoming very popular in California and Mr. Levy finds it necessary to enlarge his herd to supply the demand.

Sheep surely made good money for A. B. Spooner, Jr., of San Luis Obispo county. In the fall of 1916 he bought 50 ewes from T. S. Glide, Davis, at $8 per head. The following spring he sheared 9½ pounds of wool from each, which brought a high price. Last September he added about 150 head of sheep and lambs and had shipped 800 pounds of wool during the season.

Livestock Miscellaneous.

Dates for the 1919 State Fair have been definitely set. It will be held from August 30 to September 9, inclusive.

A Percheron society has been organized in England and a purchasing commission will be sent to America to buy high-class stock and place it in the hands of British breeders. It is expected that the results will be much better than as though this work were done by private speculators.

United States and British Government horses are being crowded on the market as rapidly as the trade can absorb them, the former being sold at cantonments and the latter at primary markets, both methods involving a heavy sacrifice. During the war the United States Government bought 458,653 horses and mules, of which only 67,948 were shipped abroad.

Fred Hartsook, known to livestock men chiefly because of his interes in Holstein cattle and Poland-Chin hogs, has one of the finest bunche of Toggenburg milch goats in th



Interior of Star equipped barn owned by C. F. Sturhan, Hartford, Conn.

Interior of Star equipped barn owned by H. J. Krebs, Wilmington, Del.

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and let us offer suggestions for equipping your barn with Star Stalls and Stanchions. Let our architectural department show you practical suggestions on building a new barn or remodeling your old one. Also learn about Star Watering Bowls, Double-Lock Litter Carriers, Star-Feed Trucks, Star "Cannon-Ball" Door Hangers, Star Harvester Hay Tools and Star Garage Equipment. Ask for Catalog No. K

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STAR Farm Equipment

11 First Dams, Average 32.84 lbs. DAM: State Record Senior 4 year old

Butter, 7 days.. 35.63 lbs. Milk, 7 days..... 623 lbs.
" 30 days..139.29 lbs. " 30 days.....2883 lbs.

SIRE: King Segis Alcartra Prilly—whose dam has a 30.44-lb. 4-year-old record—"World's Record at time of making" and has a 35-lb. and a 30-lb. daughter.

The 11 first dams of this calf average 32.84 lbs. butter, 7 days—all different cows. He traces three times direct to King of the Pontiacs. He is a perfect individual, very large and perfectly straight; dark in color; born October 29, 1918. His dam is capable of a larger record; made her record at second calving and first time tested, a very persistent milker.
Four first Dams Average 30.55 lbs.—all four are 30-lb. cows. Dam—Granddaughter of both King Pontiac Champion and Admiral Walker Pietertje—who, together, have 16 30-lb. daughters. Her record at 5 years 1 mo.: Butter, 7 days, 30.40 lbs.; butter, 30 days, 123.47 lbs. We consider her the best 40-lb. prospect we have in our herd. This calf, a fine individual—straight top line and exceptionally growthy. Born March 10, 1918.
Sire: King Segis Alcartra Prilly—Grand Champion Bull—California, 1917-1918.
Both the above bulls should head some high-class purebred herd.
Also have for sale: Bull, born January 29, 1918.
Dam's record at two years two months, 26.37 lbs. butter, 7 days.
This calf—a show bull.
One born March 22, 1918: Dam—a 24.86-lb. two-year-old granddaughter of King of the Pontiacs. This calf mostly all white and a fine individual.
His dam—Reserve Grand Champion California State Fair, 1918.
Write for pedigrees and prices.

BRIDGFORD COMPANY, Knightsen, California



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Sell your stock or implements at public auction. I can get big prices for you. Have cried successful sales in all parts of the State. Customers always satisfied. Write for terms and dates.
ORD L. LEACHMAN,
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Two miles out North First Street.

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Old methods of shearing leave too much wool on the sheep. Shear the modern way with a good machine. The Stewart No. 9 Ball bearing Shearing Machine works wonders with flocks up to 300 head. Saves time and money—shears 15 per cent more wool. Does away with second cuts. Soon pays for itself. You can get it by sending $2.00—balance on arrival. Or write for catalog.
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Ben A. Rhoades, Auctioneer
1501-3-5 So. Main St., Los Angeles, Cal.

ountry and recently shattered all revious records by paying $700 for purebred Toggenburg doe. This onderful animal not only has ilked as high as 6 quarts and 4 unces a day, but has kidded four mes and has produced 14 kids. he weighs 150 pounds and is probbly the largest purebred Toggenurg doe in America.

TOCK MEN PLAN FEED INSPECTION BILL.

While livestock men were in San rancisco last week to discuss the arketing situation, a meeting was alled to consider the bill which rof. Lee of the Pure Food Bureau as prepared to be introduced at the esent Legislature. Prof. Lee was he author of the bill that was assed two years ago, but received he Governor's veto. Nearly 40 ates have similar laws. Prof. Lee, ogether with Professors Woll and hompson of the University Farm, as studied all of these laws careully, and has endeavored to frame a ll that will include the best feaures from each.

A few minor changes were sugested by the stockmen present, and he bill as it will go to Senator Rigon and Assemblyman Cummings, to e introduced, will provide for stenling on each bag, or a label or g, which must give the net weight the contents, the name, brand or ade-mark, the name and address of e manufacturer, the minimum per ent of crude protein and fat, the aximum per cent of fiber, and the ame and proportion of each ingreient.

The bill provides for a penalty of ot more than $100 for the first ofense, and not less than $100 for the econd. It does not call for an appropriation, or require the formation of a new department, as the work of enforcing the law will be assumed by the Pure Food Department.

As soon as the proposed law is printed copies will be mailed to all who desire them, and farmers are urged to write their Senators and Assemblymen asking them to work and vote for the passage of the bill.

PUREBREDS ON THE RANGE.

"The value of purebred stock is strikingly brought out by the experiences of two grazing permittees," says Forest Supervisor D. N. Rogers in his annual grazing report to the district Forester at San Francisco. "One man, owning purebred Hereford cattle, sold coming two-year-old steers averaging 1000 pounds in weight for an average price of $80 per head. A second man, owning grub stock, sold two- and three-year-old steers averaging 900 pounds in weight for an average price of $70 per head."

But the feeding of a properly balanced ration during the winter also has its value, particularly when applied to well-bred stock, as is further shown by Supervisor Rogers' grazing report. The following instance is cited:

"W. J. Clinch, a rancher in American Valley, sold a carload of beef, the average weight per steer being 1272, and the average price per head $80.' This beef dressed out 63 per cent. The cattle were two-year-old Hereford and Durham crosses. They were fed six pounds of grain each per five months during the winter, in addition to hay. They were kept entirely upon the Clinch ranch. They would been fed hay for seven or eight days, in addition to pasturage, before weighing.

Good breeding and good feeding—that's the winning combination.

THE VALUE OF STOCK BEETS.

To the Editor: Please tell me how much I can afford to pay for stock beets for feeding purposes.—J. S., Sonoma.

[Answered by Livestock Editor.]

We have inquired of several dairymen and feed dealers, and while one dairyman places the value of stock beets as high as $10 per ton, the general opinion seems to be that from $7 to $8 would be a fair value at this time.

LIVESTOCK DIRECTORY.

Rate in this directory 3c. per word each issue.

SWINE.

Poland-Chinas.

SOW BARGAINS—We are offering some exceptionally nice tried sows, bred and open gilts, at attractive prices. They are all sired by the undefeated and world's grand champion Superba and out of big type sows, which cost me $200 and over. Investigate before buying elsewhere. Rough's Greenfields, Arlington Station, Riverside, Cal.

NOW BOOKING ORDERS for spring pigs, either sex, from my prize-winning, large type Poland-China hogs. Also will book a few orders for bred gilts, February and March farrow, and a few good, serviceable, aged boars. Hale I. Marsh, Modesto, Cal.

McCARTY'S POLANDS—Cholera immune. Big, vigorous boars. The kind Kansas King sires. Price reasonable. "Money back if no like." Alex D. McCarty, 324 Insurance Exchange Building, San Francisco.

REGISTERED POLAND-CHINA bred gilts safe for March and April farrow; bred to "Fresno Sampson," our big Nebraska-bred boar, a hog with size and an easy feeder. Fred Gatewood, Route J, Fresno.

THE BEST IN THE WEST—California Gerstdale and President's Equal are my herd sires. Fall and spring boars now ready to move—each one a corker. Dr. J. A. Crawshaw, Hanford, Cal.

GATEWOOD BRED SOW SALE—On January 28 we will sell forty big type sows and gilts bred to King's Big Bone Leader and Giant Bob. Chas. Gatewood & Son, Route J, Fresno, Cal.

BIG TYPE POLAND-CHINAS—Young serviceable boars and spring weanlings from my best sows and Blucher, an exceptionally good boar. P. E. Mitchell, Atwater Cal.

WEANLING PIGS, both sexes, Gerstdale Jones and Caldwell's Big Bob blood lines. Booking orders for spring. Forest View Ranch, Paradise, Cal.

ELDERSLY FARM—Big type Poland-Chinas with quality. Young stock from the breed's best big type sires for sale at reasonable prices. J. H. Ware, Live Oak, Cal.

OXBONE HERD offers March boars for sale from King's Big Bone Leader, grand champion at State Fair, 1918. Write F. E. Fay, Tipton, Cal.

40 SOWS and daughters of Big Bone Bob and I B A Wonder sows for sale. Price right. N. K. Horan, Lockeford, Cal.

REGISTERED POLAND-CHINA SWINE—Prize winners. Finest stock in the State. $20 up. M. Bassett, Hanford, Cal.

BIG TYPE POLAND-CHINAS—Stock from the best herds of the Middle West. N. Hauck, Alton, Humboldt county, Cal.

20 HEAD of Big Bone Bob, Grand Model and I B A Wonder Stock for sale. J. W. Wakefield, Acampo, Cal.

LAKE SIDE STOCK FARM—Large, smooth and big boned Poland-Chinas. Geo. V. Beckman & Sons, Lodi, Cal.

POLAND-CHINA PIGS WITH RIBBONS. Prices right. Johnnie Glusing, Winton, Cal.

REAOAKS RANCH herd of registered Poland-Chinas. W. J. Hanna, Gilroy.

POLAND-CHINA PIGS — Bernstein, Trewhitt, and Ross blood. B. M. Hargis, Tulare.

Berkshires.

CASTLEVIEW GIANT TYPE BERKSHIRES are the thrifty, typey, quick-growing kind that will make larger profits for you. Prizes and Championship honors are awarded—by the greatest judges in America—only to animals possessing the essential qualities for economical meat production, viz.: heavy bone, good feet, broad strong backs, large hams and easy feeding qualities. Our grand champion herd includes Riverby Princess, grand champion sow of the world; Rookwood Lady 100th, 1917 grand champion of America; Mayfield Laurel 15th, 1917 grand champion of California. Bred sows, bred gilts and fine weaned pigs for sale. **Castleview Ranch Santa Rosa, Cal.**

MONEY-MAKING BERKSHIRES—The pro life, easy-feeding kind that make the highest priced pork from the lowest priced feed. They will increase your profits. Prices reasonable; satisfaction guaranteed. Write for free booklet, describing our world's reserve champion, Star Leader. Anchorage Farm, Orland, Cal.

BERKSHIRES—GUERNSEYS
GRAPE WILD FARMS
A few fall boars left, by Royal Superbus; also a limited number of fall gilts. We have early spring pigs of both sexes, and we are breeding some top gilts for fall farrow. Prices upon application. A. B. Humphrey, Escalon, San Joaquin county, Cal.

$25.00—$35.00—$50.00
BARON DUKE 201ST
Omaha Grand National Champion
BOAR PIGS: 3, 5, and 6 months old, from 650 pound prize-winning sows. We will sell nothing that we wouldn't use ourselves.
SANDERCOCK LAND CO.
906 K St., Sacramento.
In charge of Natomas Land sales.

CROLEY'S BALANCED HOG FEED—The cheapest feed to fatten hogs. Write Geo. H. Croley Co., Inc., Livestock Supplies, 8th and Townsend streets, San Francisco.

MAPLEWOODE RANCH, Calistoga, Cal., offer some fine Berkshire fall and spring pigs of both sexes. Prices consistent with quality and breeding.

BERKSHIRES IN PERRIS — They make money for me. Write for catalogue and prices. F. L. Hall, Perris, Cal.

BERKSHIRES—Sired by Star Leader, the $1,500 boar. Kounias Registered Stock Farm, Modesto.

BERKSHIRES bred at Imperial Stock Farm are the kind that satisfy. Write us or call and be convinced. R. J. Merrill & Son, Morgan Hill, Cal.

FOR REAL GOOD BERKSHIRES write Frank B. Anderson, B. 724W, Sacramento, Cal.

HOPLAND STOCK FARM—Registered Berkshires. Prices on application. Hopland, Cal.

CARRUTHERS FARMS BERKSHIRES—Cholera immune. Live Oak, Cal.

BERKSHIRES—Fair Oaks Ranch, Willits, California.

Chester Whites.

THE "BILLIKEN BRAND" of Chester Whites. The San Francisco fair has been called off, so I am offering some of the stock I had intended showing there. This offering will consist of 3 boars and 8 bred gilts and sows. Still have a few weaned fall pigs, both sexes. Everything cholera immune. C. B. Cunningham, Mills, Cal.

Duroc-Jerseys.

DUROC-JERSEYS AT IRELAND—Home of Cherry Volunteer II. Grand Champion Boar at Riverside. Ireland's Orion Defender and Orion's King of Ireland are excellent sires in service. Booking orders for spring delivery. Ranch at Owensmouth. City office, 1219 Brockman Bldg., Los Angeles.

THE JOHNSON HERD of Duroc-Jerseys—Spring gilts and boars, sons and daughters of Johnson's Defender, the 1917 junior champion, for sale. Weaned boar pigs, $25. Frederick M. Johnson, Napa, Cal.

GREENWOOD DUROCS—Only a few gilts and sows left; bred to Johnson's Defender, Jr., the son of champions. Attractive prices. Order spring weanlings now. H. C. Witherow, Live Oak, Cal.

WE WON MORE MONEY on Durocs at the State Fair than any other exhibitor. Why not buy some of this winning stock? June Acres Stock Farm, Davis, Cal.

DUROC-JERSEYS — Burke's Good Enuff, Golden Model, King's Colonel and Pathfinder blood. Derryfield Farm, National Bank Building, Sacramento.

OPEN GILTS and two extra good service boars, one year old, grandsons of Taxpayer 13th. F. W. Gardiner, Rt. 4, Box 735, Sacramento.

WE ARE CONSIGNING to Tulare sale an Advancer sow bred to Chief Defender. McDowell & Kendall, Lemoore.

A FEW CHOICE BRED GILTS, spring boars and gilts of the best blood lines. H. P. Slocum & Sons, Willows.

HEAVY-BONED DUROCS—A few service boars for sale. Ormondale Co., Route 1, Redwood City, Cal.

WEANLING PIGS for sale, by a son of the grand champion of 1917. Jack Borge, Los Banos.

DUROC-JERSEYS—Weanlings of either sex ready for immediate delivery. H. E. Boudier, Napa.

REGISTERED DUROCS — All from prize-winning stock. W. P. Harkey, Gridley, Cal.

DUROCS—University Wonder and Advancer breeding. McDowell & Kendall, Lemoore.

Hampshires.

MY HAMPSHIRES are money makers. Stock for sale. Buy now. L. A. Denker, Saugus, Cal.

Yorkshires.

LARGE YORKSHIRES—The ideal hog for the progressive farmer. Young stock for sale. A. L. Tubbs Co., Calistoga, Cal.

DAIRY CATTLE.

Holsteins.

A PRICE ON EVERY ANIMAL.
Herd free from tuberculosis. All sales subject to sixty days' retest. Sons of Finderne Soldene Valdessa, whose dam is not only a world record cow in seven-day division, but has two sisters holding world's records for yearly production.
Toyon Farms Association.
679 Mills Building, San Francisco.

FOR SALE—Ten young registered Holstein cows, due to freshen soon; tuberculin tested by the State, bred to Tilly Alcartra bull; also few heifers and bulls. N. E. Mulick, Willows, Cal.

HIGH-CLASS HOLSTEINS—I have for sale some sons of Sir Veeman Korndyke Pontiac from A. R. O. dams. Write for particulars or come see them. R. F. Guerin, Visalia, Cal.

FANCY GRADE HOLSTEIN COWS and heifers from herd testing 100 per cent. Animals qualified for certified dairies. The Lewis Company, San Jose.

THE McCLOUD RIVER LUMBER CO., McCloud, Cal.—High class thoroughbred Holstein bulls for sale. Write for prices and pedigrees.

BREEDERS OF REGISTERED HOLSTEIN cattle and Berkshire pigs. Whittier State School, Whittier, Cal.

PALO ALTO STOCK FARM, Palo Alto, breeders of registered Holsteins. Heifers and service bulls. Reasonable prices.

GLORIETTA STOCK FARM, WOODLAND, CAL.—Registered Holsteins. Special offering of fine heifers and young bulls.

REGISTERED HOLSTEIN BULLS with world's record backing. Kounias' Registered Stock Farm, Modesto.

CREAMCUP HERD — Registered Holsteins. Pontiac bull calves. M. Holdridge, Rt. A, B 437, San Jose, Calif.

F. H. STENZEL, SAN LORENZO, CAL. — Breeder of Registered Holsteins. High test producers.

REGISTERED HOLSTEINS—A. W. Morris & Sons Corp., Importers and Breeders, Wood land, Cal.

REGISTERED HOLSTEINS. Best blood lines of the breed. R. L. Holmes, Modesto, Cal.

SUNNYBROOK RANCH, Willits, Cal.—Registered Holstein Friesian bulls for sale.

GOTSHALL & MAGRUDER — Breeders of registered Holstein Friesians. Ripon, Cal.

BREEDERS OF REGISTERED HOLSTEIN cattle. McAllister & Sons, Chino, Cal.

CHOICE HOLSTEIN bulls for sale. No females. Millbrae Dairy, Millbrae, Cal.

HOLSTEIN BULLS and bull calves from A. R. O. cows. C. A. Miller, Ripon.

REGISTERED HOLSTEIN CATTLE—E. E. Freeman, Route B, Modesto, Cal.

BENGERVELD DE KOL BLOOD. High producers. T. B. King, Visalia.

EL DORADO HERD OF HOLSTEINS — Alex. Whaley, Tulare, Cal.

Jerseys.

FOR SALE—Young registered Jersey bull. Sire, Valet's Peter of L. Dam, Rebekah's Foxy Girl. O. J. Ames, Oakdale, Cal.

SUNSHINE FARM JERSEYS—Tuberculin tested. Production counts. E. E. Greenough, Merced.

REGISTERED JERSEYS—Young bulls and bull calves. T. B. Purvine, Petaluma, Cal.

YOUNG BULLS from Register of Merit cows. W. G. Gurnett, Orland, Cal.

Guernseys.

EDGEMOOR FARM GUERNSEYS — First in the show ring and in official records. Few animals of either sex for sale. Edgemoor Farm, Santee, Cal.

HIDDEN VALLEY FARM offers for sale 2 young Guernsey bulls, ready for service, out of high record advanced register dams. A. J. Welch, proprietor, Redwood City.

CLAREMONT GUERNSEYS—Young bulls of serviceable age from A. R. dams. L. D. Smith, 333 Vicente Road, Berkeley.

PALO ALTO STOCK FARM, Palo Alto—Breeders of registered Guernseys; both sexes; prices reasonable.

Ayrshires.

NORABEL FARM AYRSHIRES—Purebred young stock for sale at reasonable prices. Le Baron Estate Company, Valley Ford, Cal.

AYRSHIRES—Registered; all ages. E. B. McFarland, 412 Claus Spreckels Building, San Francisco.

MILKING SHORTHORNS.

BREEDERS OF REGISTERED SHORTHORNS—Milk strain; choice young stock for sale. John Lynch Ranch, Box 321, Petaluma.

INNISFAIL DAIRY SHORTHORNS—Registered young bulls for sale. Alexander & Kellogg, Suisun, Cal.

BEEF CATTLE.

AM A SPECIALIST in registered beef cattle and familiar with the best herds in the country. If you need Shorthorns or Herefords, make use of my experience, save money and be satisfied. R. M. Dunlap, Hotel Land, Sacramento.

ALAMO HERD REGISTERED HEREFORDS (founded by Governor Sparks). Herd and range bulls. Reasonable prices. W. D. Duke, Likely, Modoc county, Cal.

REGISTERED MILK AND BEEF SHORTHORNS, bulls and heifers for sale; catalogue free. Thomas Harrison, Santa Rosa Stock Farm, Santa Rosa, Cal.

REGISTERED YEARLING SHORTHORN Bulls—Heavy-boned, thick-meated Scotch and Scotch-topped breeding. Ormondale Co., Route 1, Redwood City, Cal.

RANCHO SAN JULIAN SHORTHORNS—Purebred range bulls, unregistered, for sale. Estate Thos. B. Dibblee, Santa Barbara or Lompoc, Cal. John Troup, Supt.

THE NEVADA HEREFORD RANCH, Jno. H. Cazier & Son Co., props., Wells, Nevada. Registered Hereford cattle. Breeding stock for sale.

REG. SHORTHORNS—Calves and yearlings for sale, both sexes, reds and roans. Choice Goods breeding. Fair Oaks Ranch, Willits, Cal.

JACK LONDON RANCH—Breeders of prize-winning beef Shorthorns. Glen Ellen, Cal. Eliza Shepard, Supt.

HOPLAND STOCK FARM—Registered Shorthorns. Prices on application. Hopland, Cal.

REGISTERED HEREFORDS—H. H. Gable, Diamond G Ranch, Esparto, Cal.

SIMON NEWMAN CO., breeders of Registered Herefords, Newman, Cal.

GEORGE CALLAHAN, Breeder of registered Herefords, Milton, Cal.

GEORGE WATTERSON—Breeder Registered Herefords, Bishop, Cal.

HEREFORDS—Mission Hereford Farm, Mission San Jose, Cal.

SHORTHORNS — Carruthers Farms, Live Oak, Cal.

SHEEP AND GOATS.

F. A. MECHAM ESTATE, Petaluma, Cal.—Breeders and importers of Shropshire, Rambouillets and American Merinos, both sexes. Also Red Polled cattle. Take electric car at Petaluma or Santa Rosa for Live Oak Ranch.

100 HEAD of fine young ewes for sale. All bred; some with lambs. Address John G. Mee, St. Helena, Cal.

DORSETS AND ROMNEYS — Dorset ram lambs for sale. John E. Marble, South Pasadena, Cal.

BISHOP BROS., SAN RAMON, CAL.—Breeders and importers Shropshires.

KAUPKE BROS., WOODLAND, CAL.—Breeders, importers of Hampshire sheep.

CHAS. KIMBLE—Breeder and importer of Rambouillets. Hanford, Cal.

CALLA GROVE FARM, MANTECA, Cal.—Breeders and importers of Hampshire sheep.

HORSES AND MULES.

FOR SALE—Percheron stallion with pedigree; color grey; weight about ton. Corre spond with J. E. Trosi, Box 277, Sparks, Nevada.

MISCELLANEOUS.

BUTTE CITY RANCH—Shorthorns, Shropshires, Berkshires and Shetland ponies. Write for prices and descriptions before buying. Butte City Ranch, Box P, Butte City, Glenn county, Cal. W. T. Dwyer and W. S. Gulford, owners.

MULE FOOT HOGS, large type, booking orders for spring litters. These are the farmers' easy feeding, profit-producing kind. H. T. Bailey, Box 37, Lodi, California. "The Blue Grass."

CROLEY'S BALANCED DAIRY FEED—The cheap milk producer; and Croley's Calf Meal, the best California calf raiser. Geo. H. Croley Co., Inc., Eighth and Townsend streets, San Francisco, Cal.

FOR SALE—Two Berkshire spring boars; sire Vogue's Champion; dam, Flora Master piece 3d. Alex. M. Wilson, Supt. Swine Dept., Italian Vineyard Co., Guasti, Cal.

WANTED—Yearling Durham bull, registered milk strain. Egbert Veerkamp, Route A, Box 113, Placerville, Cal.

WANTED—Two or three carloads of feeding ewes. Alex. M. Wilson, Supt. Swine Dept., Italian Vineyard Co., Guasti, Cal.

POLLED JERSEY breeders names etc. See advertisement on Jersey page.

Livestock Marketing Situation Discussed

[Written for Pacific Rural Press by R. H. Whitten.]

"Go slow on your hog advice. Because of the present high prices of pork, every farmer has become interested in hog raising, and, mark my word, we will have more hogs in California next fall than we can dispose of. Personally, I have just sold off all of my hogs so that I won't get caught in the slump."

Thus wrote one of our well-meaning subscribers recently, but if he had attended the meeting held at the Food Administration office last Friday he might be singing a different tune by this time. At that meeting were representatives of the livestock commission of the Food Administration, the packers, the different marketing associations, and many individual breeders of dairy and beef cattle, hogs and sheep.

The hog marketing situation was first discussed, and the question of a continued minimum guarantee was considered. The packers maintained that such a guarantee should be no longer necessary, inasmuch as on account of the great scarcity of hogs in California the operation of the fundamental law of supply and demand would cause local prices to go as high as Chicago prices, and perhaps higher.

But the breeders contended that as long as there was a minimum guarantee on the Eastern markets there should be one here also, to establish confidence among the farmers and prevent a tendency to unload, so the packers finally agreed to a minimum for January and February of one cent under the Chicago minimum. That for January at Chicago is 17½c, so it makes the minimum price at California terminals 16½c, which applies to all hogs except throw-outs.

NO OVER-PRODUCTION HERE.

There is no over-supply in this State except in the case of lard. This was caused by the Government restriction on bakers, but that has been removed, so the surplus will gradually be worked off. Also, Mr. Washburn of the Western Meat Company stated that within a few weeks refrigerator boats will be carrying lard and other products to Eastern and foreign markets.

The question of a minimum price after February was brought up, but it was not considered fair to the packers to require this of them, especially as the regulation of the Food Administration may be off by that time. It was explained that the Chicago market is on a fictitious basis, kept there by the purchasing power of the Food Administration. The Government might buy hogs for much less, but it is keeping up the price to help hog raisers. When the Government withdraws its patronage prices in the Middle West will drop probably from 3c to 4c, but conditions are different here on the Coast. There has been little Government purchasing, and practically all hogs slaughtered have been consumed locally. Prof. True of the Livestock Commission stated that there is not a sufficient supply of hogs on the Coast to result in a tumble, even after Government regulation is withdrawn.

Many breeders contended that the 1c differential is not fair to California producers. They said that on account of the high cost of labor and other factors it now costs as much to raise pork here as it does back in the Corn Belt, and that we ought to be paid just as much. They also mentioned that at the Middle West markets hogs are sold on a fill, while here they are not.

The packers defended the difference in price by stating that Eastern hogs are of better quality and dress out about 78 per cent, while local hogs average only about 72 per cent; that the condemnation from tuberculosis is greater out here; and that because the local plants are smaller the operating expenses are greater in proportion to the volume of business done.

SUCCESS OF FARM BUREAU SALES.

Have the farm bureau sales proved successful? That seemed to be one of the most important questions before the meeting, and it was pretty generally agreed that a purely local sale, like the much-talked-of one in Napa county, where only about three carloads of hogs are offered, cannot be made successful because not enough inducement is offered packers to create competition.

But the plan of the California Farm Bureau Marketing Association was pronounced a complete success by its manager, Mr. Filcher, who, by the way, was instructed by his association to extend a vote of thanks to the packers for their co-operation and courteous treatment. Mr. Filcher said that the prices received had always been highly satisfactory except during November, when the packers themselves didn't know where they were at on account of the flu and the erratic prices back East.

This association at present embraces the counties of Tulare, Kings and Kern, with Fresno, Merced and Madera soon to join, and Imperial expected to fall in line soon. It costs a county $500 to join, and a selling commission of 1 per cent is charged. The association will do a business of $150,000 this month, and plans on eventually holding daily sales—each day at a different point. In this way an auctioneer and a sales manager can be kept busy constantly, and the packers can afford to have regular salaried buyers who will do nothing but follow these sales.

Mr. Scott of the Cudahy Packing Company, Los Angeles, said that these auction sales have proved the biggest sort of a thing for the packers, as they are not getting the poor hogs that they had to take before the sales were started. When a farmer takes his hogs to a sale he has an opportunity to compare them with other hogs in both quality and selling price, and he sees the wisdom of finishing them off on grain. So one by one the farmers are educated away from their old methods of feeding hogs until now Mr. Fil-

A Suggestion to Wide Awake

Dairymen

Why not sell a cow or two from the cull end of your herd to the butcher—

And replace with a heifer calf or two of registered HOLSTEIN Stock?

You will never regret it.

Creamcup Herd of Registered Holsteins offer cows, heifers and heifer calves as we are overstocked. Also service bulls and bull calves. Visitors welcome.

M. M. HOLDRIDGE

SAN JOSE, CAL.

R. D. "A," Box 437.

Two miles out North First street.

GATEWOOD'S DISPERSAL SALE

January 28, 1919 at Fresno

of Big

Poland-Chinas



Including KING'S BIG BONE LEADER, grand champion of California, 1918. Fifty bred sows and gilts. Fourteen fall and summer pigs.

Catalog on request.

CHAS. GATEWOOD & SON, Route J, FRESNO



UNEEDA QUEEN MODEL, Grand Champion State Fair, 1918.

Uneeda Glenn County Herd of

Duroc-Jersey Hogs

KEY HERD OF PACIFIC COAST

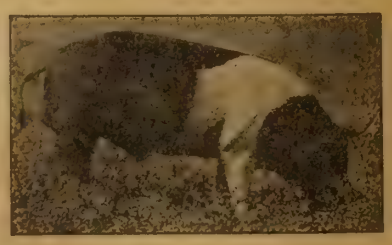
Won at Sacramento:
Grand Champion Sow, Senior Champion Sow, Junior Champion Boar, seven Firsts, 23 other prizes.

PIGS BY NOTED SIRES

High Orion, the world's record-breaking sire, Great Wonder, Grand Champion Iowa; King Orion Cherry, First Prize Indiana and Ohio, and other best boars of the breed. Get some of their pigs. Few bred sows and gilts left.

H. P. SLOCUM & SON

WILLOWS, CAL.



DIRECTOR JUNIOR, Grand Champion.

BOQUET CANYON HERD

HAMPSHIRES

Won Grand Champion on a six-months-old pig—something unusual. Also Reserve Senior Champion Sow, Junior Champion Boar and Reserve Junior Champion Sow.

7 FIRSTS, 6 SECONDS, 4 THIRDS.

We offer choice bred sows and open March gilts that we will breed to any boar in our herd. Also brothers and half-brothers to our Grand Champion boar, Director Junior.

EVERY HOG GUARANTEED TO PLEASE.

L. A. DENKER - Saugus, Cal.

OAK KNOLL FARM

LAKEPORT CALIFORNIA

We have sold all our young boars and are now booking orders for March delivery. Highlander, the $1,000 Grand Champion Boar, heads our herd of

CHESTER WHITES

SAN FRANCISCO OFFICE, 601 BALBOA BLDG.



THE POPLARS RANCH

Registered Hampshire Swine

A limited number of three-months-old weanlings for sale. Am booking orders for future delivery of youngsters by Gen. Tipton. Have a few young boars sired by Duke's Allen, Grand Champion, 1917, Sacramento.

C. J. GILBERT, Lancaster, Cal.

:her says that the hogs marketed through his association are 200 per :ent better than were the hogs mar:eted in that section before the as:ociation began to operate.

So, after all, the hog marketing :ituation isn't so rotten as some people have represented it. It is evi:ent that the right start has been made, and perhaps we simply need to wait until this marketing asso:iation spreads out so as to include all pork-producing sections of the State, or until similar associations are formed in other sections.

CATTLE SITUATION DIFFERENT.

At present there is a difference of 30 to 35 per cent between beef prices at Chicago and those at California terminals. This difference, going as high as 6c per pound, was the subject for a warm discussion.

Mr. Scott said that cow meat seemed to sell about as well as steer beef, and that as there was a spread of about 4c between cows and steers the Cudahy Packing Company was buying cows freely, but was not buying steers any more, and that they lost money on every steer killed this year. Mr. Washburn backed Mr. Scott up by stating that on steers bought at 12c a packer would lose $6 per head.

Mr. Washburn further stated that California is a cheap market for beef—that there is no demand for quality beef. If prime steers were bought at the Chicago price of 19c, the packers could not get over 20c, and so would lose heavily. Even the big hotels and restaurants out here will not pay a premium for choice cuts, while back East the demand for them can hardly be supplied, and at prices about double those secured here on the Coast. Mr. Washburn was of the opinion that until a market is established for the choice cuts cattlemen cannot hope to receive Eastern prices.

The packers mentioned another important factor in keeping prices down, which is that there are several large cattle-raising concerns in the State that have their own slaughtering houses. And even though they kill their cattle, they really sell them on the market. They establish the market, and they make it low so as to sell their stock. This, the packers claim, makes it hard for them, as they have to buy all of their stock.

A representative of the State Cattlemen's Association told of a plan they are considering to take the tops of the different herds every May and June, when there is a surplus here, and ship them to Eastern markets in trainload lots.

RECENT CONDITIONS UNUSUAL.

Mr. Scott was of the opinion that this would not be necessary, and expressed confidence that the situation would soon right itself. He said that the farmers of the State were really to blame for the present deplorable condition. On account of the high price of feed and labor, hundreds of dairymen went out of business. They were anxious to sell, offered their cows at low prices, and as the packers could make good money on them they naturally took them in preference to steers.

But Mr. Scott stated that since the rains started the natural reaction has set in and dairymen are no longer eager to sell out. He said that within a very few weeks all available cows would be cleaned up, and then the demand would naturally drift back to steers again.

The condition of the ranges was also mentioned as having a disastrous effect upon the beef cattle market, and now with good feed in sight it was the opinion that marketing conditions would steadily improve.

Mr. Filcher stated that their hog sales had been so successful that they planned on selling cattle, too, and that this week one carload would be offered at one of the sales to try out the plan. He hoped that it would work well enough so that a cattle department of the marketing association could be formed, and that sales could be conducted in a large way.

Perhaps this will solve the problem, or at least will greatly improve the beef cattle marketing situation. We shall await the results with deep interest.

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Correspondence invited and visitors always welcome.

N. W. THOMPSON, Patterson, Stanislaus County, California

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All sizes standard pipe and wrought iron screw casing. All kinds of fittings. Guaranteed good as new. Write for prices. Weissbaum Pipe Works, 160 Eleventh street, San Francisco.

FOR SALE—Two five-point 14-inch bottom P. & O. engine plows; almost new and in fine condition. Listed now at $550 each. Will sell both gangs for $400 each. J. H. Rowe, Watsonville, Cal. Phone 16R5.

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CLEVELAND TRACTOR; used but little; in best of condition. Also a four-bottom 10-inch P. & O. plow. All for $1,300. W. J. Cooper, 31 Harriet street, San Francisco, Cal.

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DO YOU WANT a good small ranch—37 acres—under irrigation? Plenty of water. Good income property. For sale at a bargain. For particulars address J. B. Kroetch, Willows, Cal.

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100-ACRE Santa Cruz mountain ranch; will rent on basis of cash, shares, partnership or improvements. Box 1370, Pacific Rural Press.

FOR SALE—1630-acre Nevada stock ranch. Good range. Mrs. M. L. Heinz, Chilcoot, Cal.

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YOUR ALFALFA SEED should meet the needs of your soil and moisture conditions. One of the seven different kinds of Green Gold brand seed will yield heaviest and live longest because they are selected for particular conditions. Our illustrated booklet tells you all about each kind. Write for it now. Bomberger Seed Company, Desk B, 725 Tenth street, Modesto, Cal.

BUDDED AVOCADOS—Fuerte, Sharpless, Lyon, Dickinson, Blakeman, Puebla, Spinks, Taft Linda, Rey, Queen, Knight, and others. A fine stock of field-grown trees, $2.50 for one, $2.00 each by the 100. 25c per tree for packing. Newbery-Sherlock, 2202 East Colorado St., Pasadena.

EUREKA WALNUTS are the best grafted on Paradox roots. They resist blight. You are sure to get the real thing by placing your order with us. We graft Eurekas only. Geyer Brothers Walnut Nursery, 214 S. Almasor street, Alhambra, Cal.

BUY ALMOND TREES from an almond specialist. Have a large stock on bitter almond roots. Get my prices before buying. Wholesale price to the trade. W. T. Hohenshell, Le Grand Nursery, Le Grand, Cal.

TREES! TREES!—Eureka and Placentia walnuts on black; a general assortment of high-grade nursery stock. A. R. Marshall's Nurseries, 1212 Ross street, Santa Ana, Cal.

FOR SALE—Almonds: Drakes, Nonpareils and Ne Plus; 12½c, 15c and 17½c each. Arcade Park Nursery, Route 3, Box 195, Sacramento, Cal.

BERRY PLANTS—Blackberries, raspberries, strawberries, currants, and gooseberries. M. J. Moniz, Berry Specialists, Sebastopol, Cal.

OREGON PLUM STRAWBERRIES—Plants $6 thousand, 75c per hundred. J. E. Dunn, Route 3, Sacramento, Cal.

GENUINE FRANQUETTE GRAFTWOOD—3c per ft. Ogden Bolton, Jr., Route 4, Box 447, Santa Rosa, Cal.

OREGON IMPROVED Strawberry Plants, $5 per 1000. K. Lambert, Newark, Cal.

BLACK WALNUT SEEDLINGS, 10c each Z. D. Page, Yountville, Cal.

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No war prices
Cash Nurseries, Sebastopol, Cal.

ASK FOR SNOW'S GRAFTING WAX—In use all over the State. If your grocer does not keep it send to D. A. Snow, Route 1, Box 443, San Jose, Cal.

ASPARAGUS ROOTS—We have many thousand Connovers, Colossal, and Mammoth White roots. Low wholesale prices. Stanislaus Nursery Co., Modesto, Cal.

WALNUT TREES—Placentia and Eureka on black root. La Puenta Walnut Nurseries, Puente, Cal. Phone 103.

WANTED.

WANTED—Manager of 1280-acre grain and hog ranch in Fresno county; must be familiar with tractors and machinery; university man preferred; give experience and reference in first letter; good salary, or salary and percentage to right man. F. W. Phillips, care Johnson & Phillips, Mendota, Cal.

POSITION WANTED as general manager of livestock or alfalfa ranch; university training and wide experience with registered cattle and hogs; prefer large proposition with opportunity to share in results obtained; reference; bond if desired. Address Box 1380, Pacific Rural Press.

Great Work Planned by Cattlemen

[Written for Pacific Rural Press.]

Ninety million dollars is conservatively estimated to be the value of beef cattle in California, and this figure does not include the investment in land and equipment. Probably the total value of cattle, land and equipment amounts to over $350,000,000, and certainly an industry of this magnitude needs an organization back of it to further its interests.

This is an age of organization and co-operation. On every hand, and especially in the accomplishments of the allied nations in the great war, we see the successes wrought out of organization, and the final resultant co-ordination of effort.

This condition has its parallel in the cattle industry of California today. When the stress of war was upon us the food supplies of the country were reviewed. In many cases the question was asked at night, what is your strength? and the answer was at hand in the morning. The bean men, the raisin men, the fruit growers—all of these were organized and made prompt responses. But to whom was the Government forced to turn when it desired information about beef cattle—to the cattlemen? No—to the packers.

It was this state of affairs which prompted Food Administrator Merritt to appeal to L. A. Nares to organize the cattlemen of California. And this is being done. It took war to teach us the needs of peace.

There have been local cattlemen's associations which have performed valuable services for their members, but their real help was small as compared with what could be accomplished through broad co-operation. To whom has the cattleman been able to turn when he has needed help in analyzing his conditions and solving his problems? The Department of Agriculture has helped him in some ways, but the cattleman is human and he desires to deal with an agency made up of men of his own calibre, acquainted with state and national as well as local problems, and taking a personal interest in their solution.

Such an organization is the California Cattlemen's Association—a non-profit co-operative association. The purposes of the association, as set forth in its articles of incorporation, are:

To procure the enactment of legislation beneficial to the cattle industry; to prevent the theft of cattle, aid in prosecution therefor, and offer rewards for the apprehension of criminals; to procure the best possible market for cattle products, and to this end prevent combinations or monopolies; to act as a bureau for the collection and distribution of information concerning prices, sales, shipments, supply and demand of cattle, and other matters of interest; to enlarge the market for cattle products; to promulgate sound and correct principles of breeding, fitting and marketing cattle; to make beneficial traffic agreements; to generally do such things as may at any time be suggested in the interests of the cattle industry.

Thus it is the duty of the officers to secure information as to local, state and national conditions; to have before them precise data as to numbers of cattle and feed conditions in all parts of the State; of the need for pasture in one county and the surplus range in another; the prospective consumption of beef in California and the supply with which to fill it; perceiving a seasonal surplus in one section and noting a deficiency in another; making arrangements to ease a glutted market—suggesting the best class of beef to ship out, and where to ship it; acting as an expert buyer of bulls for association members and, for that matter, buying other commodities needed by cattlemen.

Benefits galore, and they are in precisely the same ratio to the small producer as to the larger one, while the cost is comparatively infinitesimal. Furthermore, the association is a democratic one. The cattleman with 25 head of cattle has the same voice in matters as has the owner of 2500 head. And the directors and officers are themselves cattlemen, representing every section of the State, and elected by popular vote of delegates from the different zones.

The cattle industry has important problems which must be solved, and as this can only be done through co-operation, every cattleman in the State is urged to join the association. Further particulars about it may be obtained from the secretary, D. J. Stollery, Sharon Building, San Francisco. Some of the activities which the association has in hand at present are:

Policies affecting the United States Forest Service and the National Parks.

Enforcement of laws beneficial to the cattle industry.

The hide and brand bill; remedying its deficiencies, and seeing that its functions are directed to the benefit of cattlemen.

Enactment of legislation regarding pure cattle feeds, pure seeds, purebred bulls, revision of fence laws, modification of vehicle act (which prevents moving any cattle by night on public highways).

Promotion of educational facilities tending toward conservation of feed, improved feeding operations, and improved quality in cattle.

Improved marketing facilities. The solution of this difficult situation is one of the most important problems. Already a committee of five cattlemen has been appointed, and zone and county committees also will be created to give serious consideration to this matter. Our isolated situation places us in a vastly different position from cattlemen in closer proximity to the greater centers of distribution.

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Three outstanding under-a-year bulls sired by Sir Type, a son of Cumberlands Type. A few under-a-year heifers of same breeding.
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H. L. & E. H. MURPHY Perkins, Sacramento Co., Cal.

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Poultry Breeders' Directory

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"BEST CHICKS I EVER BOUGHT." "Greatest layers we ever had." Why? Bred 20 years to lay 200-290 eggs yearly. Brown, White, Buff Leghorns; Barred, White Rocks; Reds; Anconas; Minorcas; Orpingtons; ducks, turkeys; clearing customers $5. Valuable circular with proof free. Chicks. Half booked to April. Reasonable. 40,000 egg hatcheries full now. Many repeat orders, monthly yearly. Breeders. Pullets. J. Beeson, Pleasanton, Cal.

THE MISSION HATCHERY.
The utility breeds that pay the best—our White, Brown and Buff Leghorns, R. I. Reds, Barred and White Rocks, Black Minorcas. Our breeding stock is good, selected for laying qualities; chicks hatched right and priced right. If interested in poultry for profit, write for circular, it's free and should interest you. The Mission Hatchery, Box 17, Campbell, Cal.

WHITE LEGHORNS are the most profitable breed of poultry. If you are in the business for profit, you will eventually have them. Early broilers; early layers; early profits; we sell only **White Leghorn Baby Chix** from heavy laying **Hoganized** hens. Safe delivery of full count live chix guaranteed. Prices per 100: February, $15; March, $14; April, $12 50. The Pioneer Hatchery, 408 Sixth Street, Petaluma, Cal.

BABY CHICKS—We specialize this season on money-making White Leghorns—hatching from stock with high records that are unimpeachable. Also Brown Leghorns, Anconas, Minoreas, Rocks, Reds, Orpingtons, and White Wyandottes. Especially interesting circular with price list ready January 1st. B. W. Archibald, Soquel, Santa Cruz Co., Cal.

R. I. RED EGGS for hatching, from the finest stock, with males of the rich, dark velvet color to skin. Absolutely perfect in color. One pen of the finest stock White Rocks, mated to a prize cock from J. G. Boorman. One young Mammoth Bronze turkey tom, seven months, weight 24 lbs. W. S. Carpenter, Oakley, Cal.

PEERLESS WHITE WYANDOTTES—Our 200-egg strain, bred for years for show qualities and high egg production. 50 cockerels, 100 pullets for sale. Trios and mated yards. Eggs for hatching. Catalogue free. J. W. Atkinson, Box B, 130 Willard St., San Jose, Cal.

BABY CHIX R. I. REDS
My specialty. Bred for eggs, size, color. Hens on free range means strong chix. 18c each; 17c in 1000 lots. Denton Poultry Yards, Box 360, Campbell, Cal.

EASTERN BRED Mammoth Bronze Turkeys. Being sure my birds will give the usual satisfaction, I guarantee them to be as I represent. If not return at once C. O. D. R. C. Dodge, Stafford Farm, R. D. 2, Box 129, Bakersfield, Cal.

RHODE ISLAND RED CHIX or eggs from our Hoganized standard and utility breeding combined. Prices no higher than ordinary stock. Buff Orpington eggs or chix from prize winners. Munier Poultry Yards and Hatchery, Cupertino, Cal.

BABY CHICKS—Ready in January. Order early and get the date you want. White and Brown Leghorns, Black Minorcas, R. I. Reds, Barred Rocks. Safe delivery guaranteed. Write for circular. Stubbe Poultry Ranch and Hatchery, Palo Alto, Calif.

MODEL POULTRY FARM—White Leghorn specialists. Our fifteenth year. Baby chix and hatching eggs for sale. Also first-class breeding cockerels. Our prices are right. W. J. Smith, Prop., Corning, Cal.

BRONZE TURKEYS—Young toms and hens for sale; also yearling hens. Order breeding toms now and have them shipped when wanted. Eggs in season. Albert M. Hart, Clements, Cal

PRUSSIAN HILL POULTRY RANCH.
A few more fine Andalusian and Minorca cockerels at $3 each, or two for $5. Eggs for hatching at $2 for 15. Geo. I. Wright, Mokelumne Hill, Cal

BABY CHICKS—Hatched from our own stock in our own hatchery. Hens are of S. C. White Leghorn utility stock, bred for commercial laying. H. A. George, Route 2, Box 9, Petaluma.

BARRED PLYMOUTH ROCKS—Winners at leading shows and wonderful layers. Choice stock for sale. "Nothing better in poultry." Catalog free. Chas. H. Vodden, Box 396, Los Gatos, Cal.

COLUMBIAN POULTRY RANCH, Box 5, Sunnyvale, Cal.—S. C. White Leghorns that have been bred to standard and for egg production for ten years. Chicks $15 per 100. Order now.

BABY CHICKS—Hatched from our S. C. White Leghorns, a result of many years' careful selection and breeding. San Jose Poultry Yards, Fifteenth and Margaret streets, San Jose, Cal

SPRING CHIX—Rocks, Reds, Orpingtons, Minorcas, Brown and White Leghorns; satisfaction and safe delivery guaranteed. Tooner Poultry Ranch, Washington avenue, San Jose.

RHODE ISLAND REDS—Single and rose comb Stock. Hatching eggs from 220-egg record layers. First prize winners in leading California shows. Wm. Larm, 3915 39th avenue, Fruitvale, Cal

MONEY IN RABBITS—We are now paying $6 per pair for all you can raise. Send stamp for particulars. H. E. Gibson Co., Arcadia, California.

ONE PEN—150 S. C. White Leghorn hens, 8 months old, excellent condition; $18 doz.; suitable for hatching purposes. Also, 8 roosters. C. D. Clark, Route 2, Box 85, Vacaville.

BABY CHICKS—Hoganized White Orpingtons, Sicilian Buttercups, Rhode Island Reds; also eggs and all breeding stock for sale. I. S. Woodhams, San Mateo, Cal.

EASTMAN'S BRED-TO-LAY Hoganized and trapnested Barred Plymouth Rocks. January chicks. Eggs. Cockerels. Fairmead Poultry Farm, Fairmead, Cal.

Poultry for Profit

[Written for Pacific Rural Press by Susan Swayzgood, Pomona.]

JANUARY POULTRY POINTERS.

The cold weather prevailing all over the State is keeping egg production down and prices up; but unfortunately the average housekeeper does not associate cause and effect. They merely rail at the producer and accuse him of getting inordinately rich on the general public.

HENS SENSITIVE TO WEATHER CONDITIONS.

The man who furnishes the feed and does the work, however, knows that he makes more money when feed is lower in price and weather conditions such that his flock will produce in quantity about three to one what they will produce in cold weather, no matter how much feed the hens consume. Changes in weather affect chickens almost as much as change of feed or location, and once the weather settles down to a degre of cold beyond what climatic conditions in ordinary winters are the hens go on strike. That is about what has happened now. We are having such severe weather that our hens are not clothed for it and they have stopped egg production to grow themselves more warm feathers.

That is just about what this unusual winter molt meant. When a month or so ago all hens and pullets went into a molt, we blamed the feed and everything else we could think of and all the while Dame Nature was putting one over on us. I observed the different breeds of fowls kept on my place. Hens that molted early are now molting again, but it is not so much a dropping of feathers as it is adding to what they have. Thousands of pin feathers are bristling all over the body, and a few that are through have wonderfully close-fitting feathers; and while this feather-growing was in process there were no eggs forthcoming to pay the feed bills.

EGG PRODUCTION ONLY 40% OF NORMAL.

From information I have gathered the past two months, I conclude that the average flock has not laid 40 per cent this winter, and this only under the best conditions, both in feed and shelter. In some favored spot the egg production may have been a little better; in others again it has been worse, so it is safe to say the average poultryman feeds 100 hens in winter to get 40 eggs. To do this he must feed the whole flock and care for them the best he knows or his egg yield will go much lower than this. If the housekeeper would take these things into consideration, we should hear less of egg boycotts and grumblings at the producer.

IS THE POULTRYMAN DISCOURAGED?

It does not appear so, for they are nearly all laying plans for an increase of their flocks this new year, and if there is anything in numbers surely 1919 is a strong combination to build on. 1919! What a contrast to what 1918 must have been, when the people took every failure of crops, and almost every demonstration of nature, to be the vengeance of an angry God, and of course felt bound to submit to things without trying to find a remedy! Now, in 1919, we have citrus growers burning oil all night long to beat Jack Frost; poultrymen burning oil to make the short winter days into long, sunshiny summer days; and in England they are talking of burying or laying pipes underground that will be steam-heated, to hasten the ripening of crops that are not well adapted to the cool, equable climate.

TIME TO LAY PLANS.

January is not a good month for the farmer to start in with baby chicks, but it is the month for the farmer to lay his plans and prepare for the increase he intends to make.

As a rule, the farmer is not prepared to brood chicks earlier than March, unless he hatches with hens, in which case, providing the hen has a good coop, sheltered from rain, and with three windproof sides, the hatching can go on at any season of the year. Artificial incubating and brooding require more than that, however. The brooder must be maintained at a temperature running from 90 degrees in the first stages to 80 at a later date, and the house must be kept moderately warm or the chicks will chill. The great bulk of farm chicks are incubated and brooded by hens in this State, leaving the properly equipped poultryman to do the incubating with incubators and brooders.

SETTING HENS FOR FIFTY CHICKS.

When the farm hen has been laying fairly well during the winter months, she begins to get broody about February or early March, and the man who will take the time to construct a small hatchery of his own can easily be prepared to hatch out fifty chicks at once; and if he has a good, warm place for the hens two good mothers can take care of fifty chicks; but if the room or coop is cold, subject to drafts, it would pay better to let each hen care for just what she hatched out, and then she would probably lose most of them. This month can be used to look up a nice, warm corner in which to build a small hatchery and brooder. Let there be as much sunshine as possible, with the wind at a minimum, for wind is neither good for egg nor chick.

THE HATCHERY AND BROODER.

Having found your location, make a box 12 feet long, 14 inches high at the front and 10 at the back, about 12 inches deep, and divide eight feet of the length into eight different compartments, leaving the four feet at one end vacant. The roof should project a little both back and front to shed rain, if placed outdoors, and it should be hinged at front, leaving a path behind it for the operator to investigate.

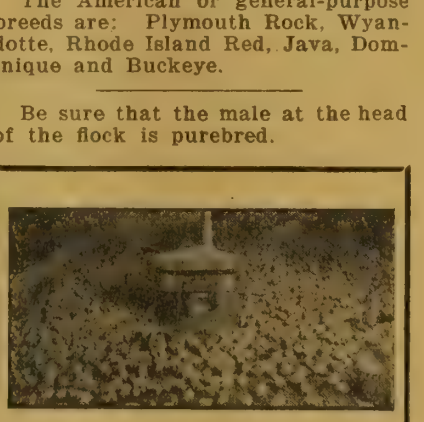
Make a wire partition as high as the box front between the nests, allowing from four to six feet in length, as may seem best. The top wire should be left so that the operator can lift the lower end up to place feed and water for each hen, and if covered from the weather by a board, all the better. Now make your nests in each compartment, putting in plenty of litter and round it up in the shape of a saucer. When you have a hen or two come around to the clucking point, place her in one of these nests with a china egg or two under her, then add the rest as they come around, not waiting too long, of course, or your first hens may get tired. A few tobacco stems mixed with the litter in making the nest will be a protection against lice, but the hen must be dusted before putting on the eggs as a surety, and if the woodwork is painted with some good insecticide so much the better. When your eight nests are filled, giving each hen not more than 15 nor less than 13 eggs, according to size of hen, you should hatch more than 50 good strong, livable chicks. Then give the chicks to the two best and quietest hens in the four-foot compartment, unless you have a better place to put them in, or you want to re-set the nests again. I have hatched 300 chicks in a season with that kind of a hatchery. There is a hen it is—several of them—and they do the work; they hatch good chicks.

COMPARATIVE LOSSES.

But when we come down to the question of loss I am not so sure that the hen is any better than the incubator. Hens have a habit of breaking eggs or of getting tired of their job and going on strike, no matter how well they are treated. Sometimes the blame can be laid at the operator's door, then again at the hen's, but no blame-placing ever sets up "Old Umpty Dumpty"—the eggs are a loss in any case, and the old hen shakes herself and prunes her feathers as unconcerned as though nothing else mattered, and perhaps it does not to her. It's her mission to keep herself clean, and if she is in Southern California while the smudge pots are going she need not be envied.

The American or general-purpose breeds are: Plymouth Rock, Wyandotte, Rhode Island Red, Java, Dominique and Buckeye.

Be sure that the male at the head of the flock is purebred.



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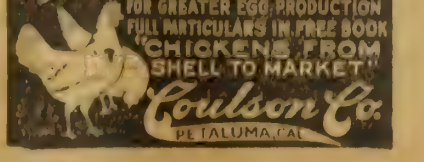
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THE HOME CIRCLE

RHYME OF THE PRAIRIE MARINER.

He came all the way from Kansas,
Did the hero of these stanzas,
Where the land is largely—very
largely—flat,
And his ante-bellum notion
Of a topsy-turvey ocean
Was a puddle you could hide beneath
your hat.

Just before the transport started
And for overseas departed,
He was sure he'd have a safe and
speedy trip.
But to ward off every sickness
He wore socks of extra thickness,
Though he carried nothing heavy on
his hip.

But his pains were unavailing,
For he hung upon the railing
From the moment they were out of
sight of land.
It was not a time for laughter—
And for quite awhile thereafter
He had nothing on his stomach but
his hand.

When he started convalescing
He resumed his daily messing
Without fearing every wavelet's rise
and fall.
But where'er the vessel drifted,
Still the scene was never shifted—
Just a circle full of water—that
was all!

Then he thought of Kansas prairies,
And he groaned in utter anguish and
despair:
"We've been moving every minute,
But there's something phoney in
it—
'Cause the gol-darned boat ain't get-
ting anywhere!"

—A. E. F., France.

THE USE OF ONE GRANDMOTHER

"No, my dear" (grandmother wrung out the dish-towel with the vigor which marked all her actions); "I appreciate your asking me, but my party days are over. You young folk make merry without me."

Grace and Gladys Carter looked at her despairingly, but Grandmother Carter looked like a person accustomed to have her own way, and they turned from her and walked out into the garden.

They had spent the last three months with her, that they might attend the high school, and, having come from a home in which the elders were at least as prominent as the youngsters, they had been as much puzzled as distressed at the prominence of their position in the new home. They had left a grandmother, but she was a very dainty old lady, who wore white lace caps and beads, and whose circle of friends commanded their respect and stirred their admiration. She was their mother's mother. Grandmother Carter, with whom they were to spend the next year, was very different. She seemed to regard them as requiring many luxuries she denied herself, and even waited on them till they were embarrassed. Their own efforts to wait on her had been scoffed into discontinuance. She wanted no footstool, no shawl, no attentions!

"I really can't do it," said Gladys. "Give a party and not have any grown-up to help us carry things off! I don't like the idea at all."

"The others have done it," answered Grace. "At the Graysons' and the Newtons' and the Carrs' the mothers all seemed to be in the kitchen, seeing to things. That's what grandmother will do, I suppose."

"But we'll see to things beforehand," protested Gladys, "and one of us can slip into the kitchen for hot water, and to make cocoa. I want grandmother as hostess."

"I wonder," suggested Grace, "if she has party clothes?"

They ran back to her.

"Grandmother," pleaded Gladys, "please don't think that we want to bother you or ask you to do for us things you don't wish to do, but we've gone to so many parties, and we want to show a little return hospitality."

"To be sure," agreed grandmother, cordially. "I want you to do it, and I'll see to a nice supper for your friends."

Grace sat down at her feet.

"But we need you; we can see to the supper," she said. "O grandmother! Don't you understand? We'd feel so cold and lonely and unsupported without you."

Mrs. Carter looked down at the bright young faces. A pretty pink color rose in her faded cheeks.

"Bless the children," she cried. "I believe they mean it!"

"Why, of course we mean it!" chorused Grace and Gladys. "Why shouldn't we mean it?"

"I thought you were being nice to me," replied the old lady—"trying to make me feel I was still—somebody; and you needn't, my dears. We elders have slipped into our places down here. We are ornamental no longer, but quite useful, when it comes to pies and cakes."

Gladys rose and leaned over her grandmother's chair; Grace knelt up and put her hands into her grandmother's lap.

"It would be quite dull without you," she explained. "We're used to—to props, don't you see?"

"Well, if you want me" (Mrs. Carter spoke thoughtfully), "of course, that's another matter; but I don't see what I can wear!"

"Oh," they spoke together, "let us make over your things, grandmother. You won't know yourself from a Dresden china duchess."

Mrs. Carter laughed, and turned the talk into a culinary discourse, but the girls, as soon as they could, set to work on the traditional black silk which she handed to them.

They paid a visit to the store, and came back armed with lace and lavender ribbons. As they fashioned a cap and fichu, Grace said:

"I wonder how all the grandmothers—there are plenty of them here—all sank into such a state of 'innocuous desuetude'?"

"I don't know," said her sister, thoughtfully. "Too much unselfishness, first, and then—laziness, I shouldn't wonder. Wait till they see ours!"

The girl members of the various families—the Carrs, the Newtons, the Graysons, with some others—opened their eyes when they came to the Carters' party. Grace opened the door; Gladys conducted them to a room where they could deposit their wraps, and then escorted them to the sitting-room, where Mrs. Carter received them. The formula of presentation was always, "Grandmother, may I introduce my friend, Lily Grayson?" and so on; and Grandmother Carter, whose snowy white hair was actually marcelled under her dainty cap, and whose face was pink from excitement, looked, as one of the girls said, "like the picture of a queen!" The party went off very well indeed, and was none the less enjoyable that grandmother's presence kept the revels from degenerating at any time into a romp. Before long, indeed, some of the girls had found plenty to say to her, and she had found plenty to say to them.

"I wish we had a grandmother like that," said Lily Grayson, frankly, to her young hostesses; "but you can't tempt ours out of the kitchen when there's company. She says she's too old."

"I have a scheme," said Grace. "What one grandmother has done, others may be made to do."

The scheme soon developed. The

A NEW RECIPE FOR FRUIT CAKE.

Honey Fruit Cake:—Four cups flour, 3 teaspoons soda, 2 cups honey, 1 cup butter, 6 eggs, 2 teaspoons cinnamon, 2 teaspoons ginger, 3 teaspoons ground cardamon seed, ½ teaspoon cloves, 3 pounds seeded raisins, 4 ounces citron, 1 pound cranberries, 1 pound canned pineapple, 1 pound dried apricots, a pound dried apples.

To prepare the cranberries, pineapple, apricots, and apples, cut the fruit in small pieces—except the cranberries, which should be left whole—and cook each in honey until soft. Remove from the fire and dry in a very slow oven. To any honey left from cooking, add enough more to make the two cups used in mixing the cake. Place the fruit in a large dish and sift over it ½ of the flour, mixing thoroughly. Sift the soda with the remaining flour. Bring the honey and the butter to the boiling point and while still hot, add the spices. When the mixture is cool, add the well-beaten yolks of eggs, then the flour, and lastly the well-beaten whites and the fruit.

The cake should be divided into three or four parts and put into oiled dishes, covered with buttered paper tied closely over the top. Steam for five hours, remove the paper and bake in a slow oven one hour.



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Carters issued invitations for another party, but this time the invitations, addressed to the grandmothers, merely included the girls.

There was a great rush for lace and heliotrope ribbon, and the grandmothers very much enjoyed the party. Only two refused to come.

"Oh, I'm so sorry," said Grace to Lily, when the latter apologized for her defaulting relative. "Why wouldn't she come?"

"I don't know," answered Lily. "I told her I thought that when we girls tried to do something for the elders, the least they could do was to take it all in the spirit in which it was meant—but it was no use."

"I should imagine not," cried Gladys, indignantly. "We'd never have had our grandmother at a party if we hadn't really wanted her—for our benefit. What grandmother wants to be patronized and have her grandchildren 'kind' to her? Next time we'll say, 'No one admitted without a grandmother'!"—Frances Harmer.

THE MODEL SICK-ROOM.

Illness in the home is made much easier for the nurse and more comfortable for the patient if certain small points are remembered. The model sick-room is on the south side of the house, preferably the southwest corner, so that it will get all the sunlight possible. It should be near the bathroom and should not be a connecting room to some other room, for even if the patient has not a contagious disease it is fatiguing to have members of a family in and out. The room should have all superfluous hangings and decorations removed, but should be kept cheerful by fresh flowers or a plant.

A couple of good pictures on the walls and simple white hangings at the windows are not called superfluous, because they keep the familiar air of the room, which is pleasing to one in bed.

A small table within the patient's reach is convenient to hold small articles, but not the medicine bottles—these should be kept out of sight by the nurse, for the aim of good nursing is to keep the patient from dwelling on his ills and to make him feel better than he really is and so through his own mental attitude better his condition. Who would want to get well at the formidable sight of bottles and pills, soiled glassware and spoons?

The bureau should be emptied of all clothes but the patient's, and a comfortable chair provided for the nurse or the patient's use when convalescing. If it is necessary for the nurse to be near at night, a comfortable couch should be installed. Heating arrangements are necessary in inclement weather, but the sun will ordinarily heat the room sufficiently besides having a purifying effect.

The bed best for a patient is his own, for he likes that. It should not face the light, nor catch its reflection in a mirror. It should stand out from the wall, to allow the nurse access to both sides.

The bed clothing should be light and warm. Single blankets are preferable to double ones, because they are easier to handle and the weight over the patient can be regulated more easily. Fresh, cool sheets are most important to a feverish patient and all patients appreciate them. If your stock is running low, use those which have not been soiled but just mussed, by folding them neatly and airing on the clothes line. Morning, afternoon and nightly changes rest the patient. A counterpane is usually too heavy and is removed, but a sheet makes a fine substitute and finishes the bed.

Other points of comfort are to have the top blanket three inches lower than the under one, so that it will avoid bulkiness about the patient's neck. In making the bed avoid letting the bedding touch the floor—hang over a chair to air. Be generous at the top of the bed with the lower sheet and at the bottom with the top sheet, thus avoiding the sheets pulling out.

Change the top sheet first, then the night dress, and then the lower sheet, to get all possible crumbs out of the bed. Use lots of pillows when the patient sits up. Put one at the base of the spine for support, but do not put a large one behind the head, or it will be forced out of a comfortable position. Fill the small of the back with a large pillow and a small soft pillow for the head to rest on. A pillow under the knees will often rest a patient who is tired from a forced reclining position.

The nurse herself must avoid extra steps and heavy lifting. She must have aid if necessary, and ever remember to bend from the knees and keep the back straight.

Jones—Mr. Skinner, I want to get a divorce.

Mr. Skinner (lawyer)—Has your wife left you?

Jones—That's just the trouble; she won't leave me.

America is God's last chance to save the world.—Emerson.

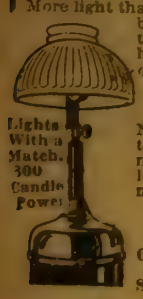
Extravagance costs blood, the blood of heroes.—Lloyd George.

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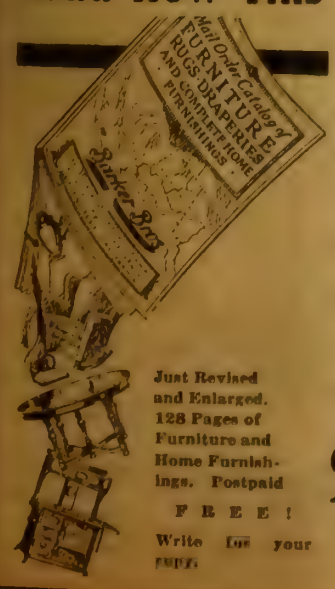
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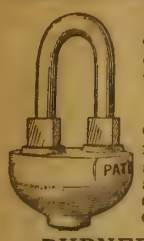
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THE MARKET REPORTS

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SAN FRANCISCO

San Francisco, Jan. 15, 1919.

WHEAT.

The following prices were announced by the Federal Grain Corporation last year and are still in effect. They are figured f. o. b. San Francisco, Los Angeles, Seattle, Tacoma and Portland and guarantee the grower a minimum of $2 f. o. b. shipping point:

Per bushel—	
No. 1 hard	$2.20
No. 2	2.17
No. 3	2.13
No. 1 soft	2.18
No. 2	2.15
No. 3	2.11
Club or Sonora, No. 1	2.16
do, No. 2	2.13
do, No. 3	2.09
Recleaned for seed, per ctl.—	
California Bluestem	$4.15@4.25
Early Baart	4.15@4.25

BARLEY.

It was expected that the Government intended to take a large amount of barley from this State, which added to the strength of barley towards the end of last week. Later this was learned to be an error, or at least premature, and barley weakened. However, the advance in the price of mill run in feedstuffs and the general strength of the wheat market gave enough strength to the barley market to sustain last week's quotations.

Choice feed, per ctl	$2.22½@2.25

OATS.

Oats are weaker on lack of demand. Black for seed is without any demand, and the red for seed has not the usual demand of this time of the year. Lower quotations are made on all descriptions.

Red feed, per ctl	$2.30@2.50
Red for seed	2.75@3.00
Black for seed	Nominal
Recleaned Red or Black for seed	3.15@3.20

CORN.

While the corn market shows no signs of life, some small lots of California corn were sold during the week, the last reported sale being at $2.85.

California	$2.85
Egyptian, choice	$2.75@3.00
Milo	2.70@2.75

HAY.

Receipts of hay for the past week were 890 tons, compared with nearly the same amount the previous week. Only a small portion of the arrivals was damaged alfalfa, and it looks as if this has been about cleaned up. Should present indications of rain blow over and cold weather continue it will doubtless stimulate the demand for hay. Already a demand from the interior has sprung up and quite a few cars of hay are moving in that direction. Export demand is on the increase and considerable hay may move out before March.

Wheat, No. 1	$22.00@24.00
do, No. 2	16.00@20.00
Choice tame oat	21.00@23.50
Wild oat	16.00@18.00
Barley	16.00@18.00
Alfalfa	18.00@22.00
Stock	14.00@17.00
Barley straw	.50@ .80

FEEDSTUFFS.

Mill run has been advanced from $2 to $3 and all wheat products are very strong. Oilcake meal also showed an advance. On the other hand, rolled oats are weaker in conformity with the whole grain price.

New alfalfa meal, per ton	$35.00@36.00
Coconut cake or meal	45.00@47.00
Whole yellow corn	73.00@75.00
Cracked corn	76.00@78.00
Linseed Oilcake Meal	78.00@80.00
Rolled barley	47.00@49.00
Rolled oats	55.00@56.00
Mill run	40.00@43.00
Bran	36.00@38.00
Fish meal, per 100 lbs	4.80@ 5.00

POTATOES, ONIONS, ETC.

There was no change in prices of potatoes or onions this week. The market is quiet, with little movement of stocks and an undercurrent of weakness. The entire vegetable market is quiet, with little demand for any description. Beans and lettuce are quoted at lower figures, but otherwise last week's prices stand unchanged.

String beans	25c
Lima beans	12½@15c
Carrots, per sack	$1.00@1.25
Rhubarb, San Jose, per box	1.00@1.50
Pumpkins	1.00@1.25
Cucumbers, hothouse, box of 30	2.50@3.00
Los Angeles, lugs	3.00
Eggplant, per lb	Nominal
Lettuce, per crate	$2.75@3.00
Celery, crate	5.00@6.00
Tomatoes, Southern, per crate	1.00@2.00
Potatoes—	
Fancy whites	1.90@2.15
Choice	1.75@2.00
Sweets, per sack	3.50@4.00
Onions, Warehouse Stock—	
Yellows	1.10@1.35
Australian Browns	1.10@1.35
Garlic, new	25@35c
Green corn, Alameda, per sack	None
Okra, per box	None

BEANS.

The market for beans continues weak, and no demand for any description developed during the week. Bayos, cranberries and small whites are quoted at lower prices and some sales were made at these new quotations. But the market as a whole is very slow.

Bayos, per ctl	$7.10@7.30
Blackeyes	5.50@5.75
Cranberry beans	7.50@7.60
Limas (south, recleaned)	$10.25
Pinks	$6.65@6.75
Mexican Reds	$6.75@7.00
Tepary beans	4.50@5.00
Garbanzos	9.25@9.40
Large whites	8.10@8.25
Small whites	8.75@8.90

POULTRY.

Very few turkeys, dressed or alive, are coming into this market, and quotations are nominally unchanged. The poultry market as a whole is much weaker, with no special demand for any description, excepting broilers, which are somewhat stronger on small receipts. Hens and roosters are selling four cents below the prices of last week and probably the bulk of the roosters sold below 36 cents, which was Wednesday's price.

Turkeys, live, young spring, lb	35@40c
do, old	33c
do, dressed	40@42c
Broilers, 1½ to 2 lbs	45c
do, 1¼ lbs	45@48c
do, ¾ to 1¼ lbs	45@50c
Fryers	40c
Hens, extra, per lb., colored	36@38c
do, Leghorn	36@38c
Smooth young roosters, per lb. (3 lbs. and over)	36c
Old roosters, colored, per lb	21@23c
Geese, young, per lb	32@34c
do, old, per lb	30c
Squabs, per lb	60c
Ducks	33@35c
do, old	30@33c
Belgian hares	20@22c
Jack rabbits	$3.50@4.00

BUTTER.

The San Francisco Dairy Exchange held no session on Monday of this week out of respect to the memory of Bernard Sherry, one of the members who died recently. Up to Tuesday butter continued firm, but Wednesday's session it dropped 2½ cents, responding to the weakness developed in the Eastern markets. In the case of these markets it is reported that their weakness is due to a very light demand and on apparent general reduction in the amount of consumption. Prices given below are exchange quotationes less commission.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extra	62	62	62	..	62½	60
Prime firsts			Nominal			
Firsts			Nominal			

EGGS.

Eggs dropped 9½ cents for extras on the exchange on Tuesday of this week, and in passing below the 60 cent mark, where the commission increases from 6 per cent to 8 per cent, made a loss of 10 cents a dozen to the producer. Instead of rallying on Wednesday, as many expected, notwithstanding the recognized weakness of the market, extras dropped half a cent more. The drop in extra pullets was even greater, as shown in the table of fluctuations given below. The commission charged in the exchange for handling eggs is 6 per cent when the price is above 60 cents and 8 per cent when it goes below 60 cents. The general opinion is that eggs are going lower, as all the Eastern markets are down and shipments are much heavier to this city than for a long time past.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	63	63½	62½	..	52½	52
Extra 1sts	81 Nom.	—	—	—	—	—
Firsts			Nominal			
Extra pullets	60½	62	62	..	50	48

CHEESE.

The cheese market continues steady with little activity. Arrivals are not heavy, but they just about meet the demand which has developed at present prices. Some of the dealers are predicting lower prices for cheese if the weakness in butter continues to the extent that butter quotations are lowered by any considerable amount.

Fancy California flats, per lb	30c
Firsts	29c
Oregon triplets, fancy	36½c
Oregon Y. A. fancy	38c
Monterey cheese	23@26c

FRESH FRUITS.

The apple market continues steady at unchanged prices. Local commission men say the demand is just about normal for this time of the year. The public seems satisfied to buy at present figures, and dealers are apparently satisfied with the prices obtained. Persimmons were a little more plentiful in some houses during the week, but this is said to be a temporary spurt, as the season for this fruit is about over.

California apples	$1.00@2.00
Northwest apples	$ 2.00@3.25
Winter pears	$2.00@3.00
Persimmons	1.00@1.50

CITRUS FRUIT.

Lemons are weaker on the local market and all grades are lowered in price 50 cents. The recent freeze in the State has had no apparent effect on the price of oranges, which remain steady at last week's quotations. Otherwise the citrus market is unchanged. The demand continues steady, but buying hardly up to previous levels at this season of the year.

Oranges, navels	$3.00@5.00
Mandarins	1.50@1.75
Tangerines	2.50@3.00
Lemons, fancy	4.00@4.50
do, choice	3.50@4.00
do, standard	3.00@3.50
California limes	1.50
Grapefruit, new	2.25@2.75

HONEY.

There were no changes in the honey situation.

DRIED FRUITS.

The market for dried apples was very strong this week, and the dealers are paying the growers as high as 14½ cents. The buying season is rapidly drawing to a close, and it is said very little stock is being found in the growers' hands. Otherwise the market in general is unchanged.

RICE.

Paddy rice, 1918 crop	$4.32
Clear No. 1, 1918 crop, at mill	7.00

HIDES.

The hide trade is still under the control of the War Industries Board. With the return of peace conditions, however, the hide market will doubtless return to private channels. Dealers are anticipating a decline in values.

Wet salted—Native steers and cows, 18@18½c; No. 1 buffs, 17½c; bulls, 14½c. No. 1 center branded hides in all grades 2c less than base price, and No. 2 center brand 3c less. Wet salt kip, 18½@20c; calf, 30½@31½c.

Wet salted horse—No. 1 large, $4.00@5.00; do, medium, $3.00@3.50; do, small, $1.00@2.50; do, colts, 50c@$1.00.

LOS ANGELES

Los Angeles, Jan. 14, 1919.

BUTTER.

There was more in the past week, but the increased supply was met by an increased demand and the market closed Monday a cent higher. Receipts for the week, 303,700 pounds, against 253,300 pounds the same week last year. There was also 12,204 pounds withdrawn from cold storage during the week, leaving the holdings now only 76,821 pounds, against 104,476 pounds this time last year. The San Francisco market declined during the week under a slight increase in the production in the northern part of the state. Chicago also lost during the week several cents. These recessessions failed, however, to influence the market here, local influences controlling. There was quite an advance in the home consumption and nearby towns since the first of the year, and this with the want of stocks caused distributors to bid prices up a cent Monday in hopes of turning increased shipments this way.

We quote—

California fresh extra creamery	65c
do, prime first	63c
do, first	61c
Same time last year—	
California fresh extra	51c
do, prime first	49c
do, first	48c

Daily quotations—

1919—	Tu.	Wed.	Thu.	Fri.	Sat.	Mon.
Extra	64	64	64	64	64	65
1918—						
Extra	50	50	50	50	51	51

EGGS.

There was a further picking up in the receipts the past week, and the consumptive demand was only fair. Hence a sharp break in the market since our last review. Receipts by rail for the week were 4135 cases against 5755 cases the same week last year. There were withdrawn from cold storage during the week 1797 cases, leaving now on hand only 2213 cases, and they were held on contract. But the fact that the supply of storage eggs has been exhausted failed to influence the market in the face of a steady increase in the supply of fresh ranch eggs. While the market is 5c lower, than a week ago, at the same time it closes our review week 3c higher on extras and 7c and 6c higher on case count and pullets than this time last year. A decline of 8c in San Francisco during the week and 6c and 7c in New York also had its influence. The receipts in the East have been good for this time of year, the weather not being severe enough to interfere with the supply and the time of year is at hand when Southern shipments to New York begin to pick up. Hence the disposition of the trade here to force a lower market.

Daily quotations—

1919—	Tu.	Wed.	Thu.	Fri.	Sat.	Mon.
Extra	66	64	62	60	60½	62
Case count	64	60	60	60	60	61
Pullets	64	62	60	60	60	60
1918—						
Extra	53	53	53	54	54	58
Case count	50	50	50	50	50	54
Pullets	50	50	50	50	50	54

POULTRY.

A steady market and fair demand was had the past week. Receipts were light and altogether local. The demand, while not especially active, yet was still equal to the supply.

The following prices were agreed upon last Friday, January 10, and hold good until the coming Friday:

Broilers, 1@1¼ lbs	40c
Broilers, 1¼@1¾ lbs	42c
Fryers, 2@3 lbs	33c
Roasters (soft bone), 3 lbs. and up	30c
Stags and old roosters, per lb	20c
Hens	30@31c
Turkeys	32@35c
Ducks	30@32c
Geese	28c

VEGETABLES.

Offerings were only fair and a good demand was had for all good fresh stuff. Cabbage is higher and is selling better than for some weeks. Cauliflower also met with a good demand both from shippers and the home trade. Market higher. Celery is also selling well and the best is bringing more money. Potatoes steady and firm. Not so many coming in and the demand is holding up very well. Onions are higher and selling better. Good to choice Australian Brown onions meeting with a good demand at $1.50@1.65 per cwt. Lumpocks also brought a little more money. White globe scarce and high. Sweet potatoes selling fairly well at old prices. Squash and pumpkins slow sale but steady.

We quote from growers:

Peas, per lb	10@15c
Bell peppers, per lb	10@15c
Chile peppers, per lb	10@15c
Potatoes, northern, per cwt	$2.25@2.50
do, Idaho Russets, per cwt	2.20@2.25
Sweet potatoes, per cwt	2.25@2.75
Garlic, per lb	32c
Onions—	
Australian Brown, per cwt	1.50@1.65
White Globe, per cwt	7.00
Cabbage, per 100 lbs	40@ .45
Celery, local, per crate	4.00@5.00
Celery, northern, per crate	6.00@6.50
Cauliflower, standard crate	1.75@2.00
Hubbard squash, per cwt	$1.00
Banana squash, per cwt	1.00
Pumpkins, per cwt	.75

FRUITS.

The deciduous fruit market has narrowed itself down to apples. They continue to sell well and in a number of instances were a little higher the past week. Receipts are falling off, while the demand holds up very well. Oranges as yet selling slow, as buyers are afraid of getting frosted fruit, and this helps the apple market.

We quote from growers:

Apples—	
King Davids, Northwest pack	$2.75@3.00
Black Twigs, Northwest pack	3.00
Baldwins, 4-tier	2.50
White Pearmains, 4-tier	2.00@2.25
Yellow Newtown Pippins, 4-tier	1.75@2.00
Bellefleur, 4½-tier	1.60@1.75
do, 3½-tier	1.85@2.00
Bellefleur, 4½-tier	1.75@1.80
Jonathans, Northwestern pack	3.00@3.25
Winesap, loose, per lb	6@6½c
Roman beauties, Northwestern, per peck	3.00@3.25

WALNUTS.

Only culls are now coming in from the country. They are meeting with a good demand at 14@15c a pound. The association is about through with its marketing, only a few cars being left back, which it is holding in reserve. Hence we drop quotations.

BEANS.

There was nothing doing the past week. Eastern buyers continue to hold out of the market and home buyers were disposed to watch and wait. Limas are lower. Other varieties are unchanged but weak.

We quote from growers—

Limas, per cwt.	$9.50
Large white, per cwt.	8.00
Small white, per cwt.	8.00
Pink, per cwt.	6.50
Tepary, per cwt.	4.00
Blackeyes, per cwt.	4.50

HAY.

Not so much is coming in, and with the falling off in the receipts the demand picked up a little and the tone of the market was stronger all round. Indeed, Northern brought a little more money. Horse hay in sympathy with alfalfa also showed more strength and there was some little moving.

We quote f. o. b. Los Angeles:

Barley hay, per ton	$22.00@23.00
Oat hay, per ton	23.00@25.00
Alfalfa, northern, per ton	20.00@21.00
Alfalfa, local, per ton	21.00@23.00
Straw, per ton	9.00@10.00

COTTON.

A more active but lower market was had the past week. Our review week opened with Liverpool a good buyer and at last week's closing prices. This brought good selling by the South and the market became unsettled. When bottom prices were reached each day, moderate buying would set in and the next day with free offerings prices would break again. This was kept up throughout. With the opening of the current week a more settled, but decidedly lower market was had. The goods trade announcing a general cut in prices started selling again on Monday, both in the South and New York, and Liverpool only a fair buyer. Monday, January in New York closed at 27.75c and May 24.71c. In New Orleans January closed at 26.06c and May at 24.60c.

Special Citrus Market Report

Los Angeles, Jan. 13, 1919.

Although too early to determine the extent of the frost damage, growers and shippers are figuring the total loss will not run over 15 per cent. Federal inspectors have been watching the fruit shipped from houses before the packing ceased, and are noting the car number and destination where suspicion of frost damage exists. There were estimated to be 500 cars of navels in packing houses, and 1000 cars on the track throughout the country when picking stopped, so there is no possibility of a shortage of California navels in the Eastern markets. Jobbers who apprehended a shortage bought up reserve supplies, and as a result the markets have shown an easier tone. They will regain strength, however, when the "free-from-frost" navel shipping is resumed. F. o. b. quotations on California navels has ruled about $4.50. Although inquiry has dropped off in the last three days.

The milder weather which has succeeded the low temperatures of the past few weeks will enable growers and shippers to determine the extent of the damage occasioned by the nipping frosts. A rigid culling out of frozen fruit is under way. The use of the "water separator" is said to be effective for this purpose. It is believed that, after all allowances are made for frost damage, the crop this season will much surpass that of last.

A survey of the lemon damage will not be possible for weeks. Practically the entire crop was saved where adequate smudging was carried on. A speculative demand has taken a good deal of the supply out and on track unsold. The available foreign stock offered in competition in Eastern markets is small. The delivered prices on California lemons range from $3.50 to $4.50.

Shipments of oranges this season to date total from all sections 5,531 boxes, as contrasted with 4,255 last season at the same date; lemons 1,481 cars this season, 651 cars last.

Special Livestock Market Report

San Francisco, Jan. 15, 1919.

CATTLE—Cattle are not very plentiful, and there is some difficulty in securing supplies to meet demand. Odd lots are eagerly bought up, and slaughterers are looking beyond the State's boundaries for their requirements.

Steers—
No. 1, weighing 950@1100 lbs..$12¾@13c
do, weighing 1200@1400 lbs.....13@13¼c
do, second quality.....11½@12c
do, thin.....9@10c

Cows and heifers—
No. 1.....9@9½c
do, second quality.....8@8½c
do, common to thin.....6@6½c

Bulls and stags—
Good.....6½@7½c
Fair.....5½@6½c
Thin.....4½@5c

Calves—
Lightweight.....11@11½c
Medium.....10½@10¾c
Heavy.....8½@9c

SHEEP—Sheep and lambs are steady, though the available supply of both appears limited. Quotations stand.

Lambs.....14c
Yearlings.....12½c
Sheep, wethers.....11½@12c
do, ewes.....9½@9¾c

HOGS—Hogs are still coming in in satisfactory supply and of fair quality. The market, however, shows a little weakness, and prices have sagged a fraction of a cent.

Hogs—
Hard, grain-fed, 100@150 lbs.....16c
do, do, 150@250 lbs.....16½c
do, do, 250@300 lbs.....16c
do, do, 300@400 lbs.....15½c

Los Angeles, Jan. 14, 1919.

CATTLE—A firm market continues under the scarcity of good cattle. While plenty of poor and medium cattle are to be had, fleshy and fat cattle are really scarce, and killers have to bid up well to get what they needed.

Per cwt. f. o. b. Los Angeles—
Beef steers, 1000@1100 lbs.....11@13c
Prime cows and heifers.....$9.50@10.50
Good cows and heifers.....8.00@9.50
Canners, per cwt.....6.50@7.00
Calves, per cwt.....8.50@10.00

HOGS—There is no quotable change in this market from a week ago, but the tone of the market is weak. Receipts fair and quality of the arrivals good. The Eastern markets are slowly working lower and February is expected to bring lower prices.

Per cwt. f. o. b. Los Angeles—
Heavy, averaging 275@350 lbs..$14.00@15.00
Mixed, 225@275 lbs.....15.00@16.00
Light, 175@225 lbs.....16.00@16.50
Rough docked 20 lbs., piggy sows 40 lbs., and stags 40 per cent.

SHEEP—While prices remain unchanged from a week ago the tendency of the market is upward. No nearby sheep and lambs are to be had. Killers still have to reach out to get what they want and really fat sheep and lambs are being held firmer by feeders.

Per cwt. f. o. b. Los Angeles—
Prime wethers.....$9.00@10.00
Prime ewes.....8.50@9.50
Yearlings.....9.50@10.50
Lambs.....14.00@15.00

Portland, Jan. 13, 1919.

CATTLE—Steady; receipts, 1,553. Steers, prime, $13@14; good to choice, $11.50@12.50; medium to good, $10.50@11.50; fair to medium, $9.50@10.50; common to fair, $8.00@9.00; cows and heifers, choice, $10.00@11.00; medium to good, $8.50@9.50; fair to medium, $3.50@5.00; common, $3.50@5.00; bulls, $6.50@8.50; calves, $9.00@13.50; stockers and feeders, $7.00@9.00.

HOGS—Lower; receipts, 4,804. Prime mixed, $16.75@17.00; medium mixed, $16.50@$16.75; rough heavies, $15.00@16.00; pigs, $14.00@15.25; bulk, $16.50.

SHEEP—Steady; receipts, 1,846. Prime lambs, $12.00@13.00; fair to medium, $9.00@11.00; yearlings, $10.00@11.50; wethers, $9.00@10.00; ewes, $6.00@8.00.

Comparative Prices of Dressed Meats

WHOLESALE MEAT PRICES, JANUARY 8, 1919.

BEEF, FRESH.

STEERS—	San Francisco	Los Angeles	Boston	New York
Choice	$.....	$.....	$28.00@28.50	$.....
Good	19.00@20.00	20.00@21.00	26.00@28.00	26.50@28.00
Medium	18.00@19.00	18.50@19.50	23.00@24.00	23.00@26.00
Common	17.00@18.00	17.50@18.00	20.00@22.00	21.00@23.00
COWS—				
Good	16.00@18.00	17.50@18.50	20.00@22.00	22.00@23.50
Medium	15.00@16.00	17.00@17.50	18.00@19.00	20.00@21.00
Common	13.00@15.00	15.00@16.00	16.50@17.50	17.00@19.00
BULLS—				
Good	.....	15.00@.....	15.00@15.50	16.00@17.00
Medium	12.00@13.00	14.00@14.50	14.00@15.00	15.00@16.00
Common	11.00@12.00	13.50@14.00	13.50@14.00	14.00@15.00

FRESH LAMB AND MUTTON.

LAMBS—	San Francisco	Los Angeles	Boston	New York
Choice	$26.00@27.00	$26.00@27.00	$30.00@31.00	$33.00@35.00
Good	24.00@25.00	25.00@26.00	30.00@.....	30.00@32.00
Medium	21.00@23.00	24.00@25.00	29.00@30.00	28.00@30.00
Common	20.00@21.00	23.00@24.00	26.00@27.00	.....
YEARLINGS—				
Good	19.00@20.00	23.50@24.00	.....	26.00@28.00
Medium	17.00@19.00	23.00@23.50	.....	24.00@26.00
Common	.....	.....	.....	.....
MUTTON—				
Good	19.00@20.00	16.50@17.00	17.00@18.00	20.00@22.00
Medium	15.00@18.00	15.00@16.00	16.00@17.00	19.00@20.00
Common	12.00@15.00	14.00@14.50	14.00@15.00	18.00@19.00

Livestock Prices Going Up

The December issue of the Monthly Crop Report, published by the U. S. Department of Agriculture, shows that in California the prices of all livestock products except mutton were higher on November 15, 1918, than on the same date in 1917. The figures are as follows:

	1918	1917
Hogs	$15.60	$14.20
Beef cattle	9.10	8.20
Veal calves	10.40	8.70
Sheep	11.50	11.70
Lambs	13.00	13.20
Wool	.49	.48
Milk cows	81.00	78.40

The prices of nearly all soil crops showed similar increases.

GETTING vs. KEEPING SUBSCRIBERS

In these days of keen competition there is a lively scramble to get new subscribers, but it seems to us that the greatest effort should be made in endeavoring to keep them. That has been our policy, and it seems to be binding our subscribers to us as with hoops of steel.

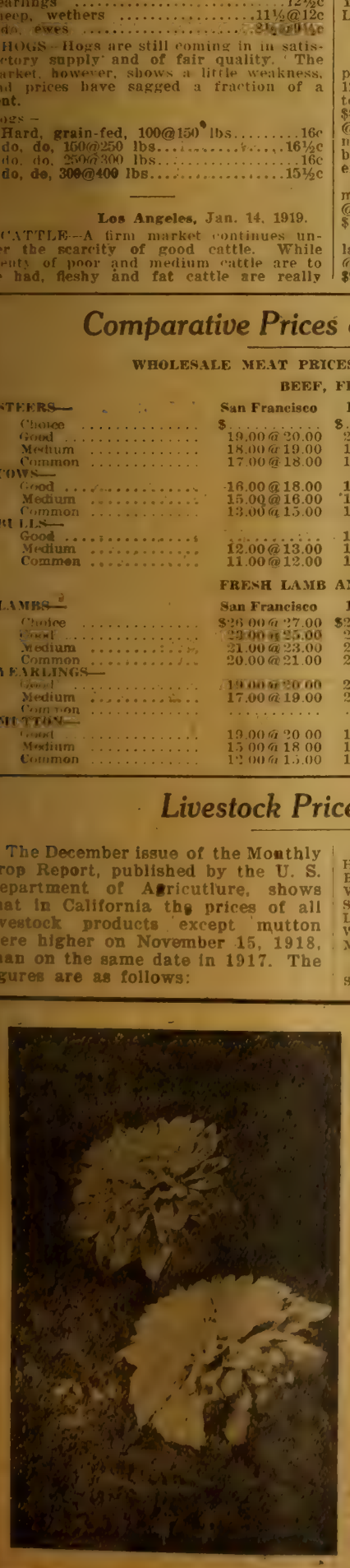
For instance, one subscriber, who does not care to have his name mentioned, wrote us after his return from the Liberty Fair: "I was glad to notice that your subscription men were conspicuous by their absence. I went there to be entertained and instructed, but was pestered by solicitors offering cheap premiums to get subscriptions. I was so disgusted that I decided to take your paper alone hereafter. It answers every purpose anyway, and I really don't need any other."

And, speaking of comparisons, here's another pretty good one from Fred R. Smith of Bishop: "I read nearly all farm papers published from Australia to Canada, but no other gives as much and as accurate news and information as yours. I have received help that has been worth a great deal to me. Every farmer in the West ought to take the paper."

Sure he ought to. He needs to keep posted on what is going on in the agricultural world, and right now the paper will prove especially valuable to him, for in this issue we start a new department telling about what is going on at Sacramento. Many bills of great importance to farmers will be introduced at this session of the State Legislature, and Mr. Hodges will keep our readers fully posted on "what's doing." Don't miss a single issue.

RICE IMPORTS JUMPED.

Rice exports from the United States are given by the U. S. Bureau of Commerce as 18,223,000 pounds in 1914, 75,449,000 pounds in 1915, 120,695,000 pounds in 1916, 181,372,000 pounds in 1917, and 196,363,000 pounds in 1918. Imports of rice and rice flour for the corresponding years were 290,195,000, 277,191,000, 264,324,000, 216,049,000, and 456,058,000 pounds.



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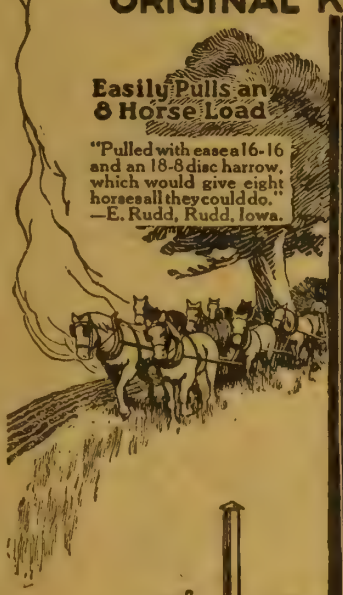
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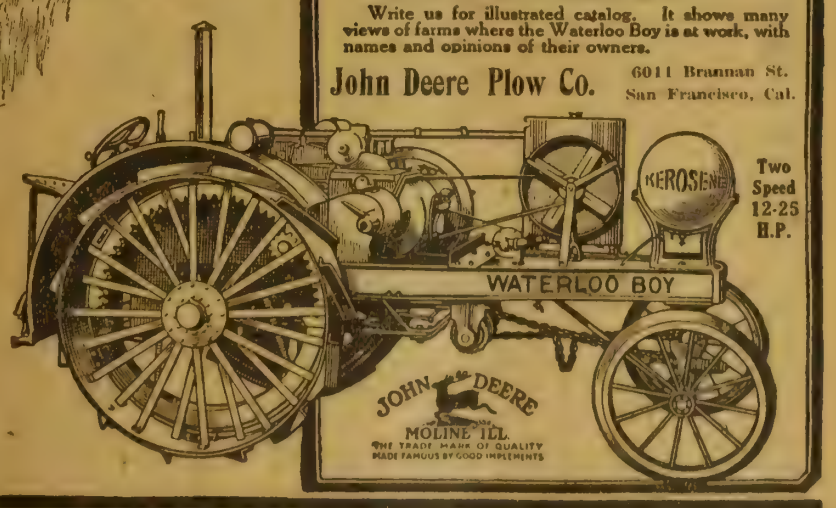
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Willys-Overland Inc., Toledo, Ohio

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Vol. XCVII—No. 4 THE PACIFIC RURAL PRESS Forty-ninth Year

SAN FRANCISCO JANUARY 25, 1919 LOS ANGELES

Modern Methods of Marketing Fresh Fruits

Written for Pacific Rural Press by John J. Fox

IT SEEMS a long cry from "wheat, wool and wine" to California's present stage of horticultural production. In point of years, those that have elapsed since fruit growing was first established here on a commercial scale are very few—as great industries go. But what has been actually accomplished in building up orchards and vineyards to their present magnitude is nothing short of stupendous. Look over the figures in the last issue of the Pacific Rural Press for 1918 and it will be seen that the acreage planted to fruit and vines in California is likely to be very close to the million mark next year. And what is as wonderful as the growing of these hundreds of thousands of acres of fruit, grapes and nuts is the marketing and distribution of their products. It is only fair to the big fruit packers to acknowledge the big things they have accomplished in this respect. In fifty years we have jumped from the itinerant fruit peddler and his wagon or pack mule to the easy manipulation and scientific distribution of fruits worth probably a quarter of a billion dollars when packed for market—possibly in excess of that!

How It Started.

For many years after the completion of the first transcontinental line in 1869 a comparatively small amount of fruit was carried from producer to consumer by rail, and this in only small lots. In the early "70's" fruit began to be shipped irregularly by Wells Fargo Express. Refrigeration at this time was not thought of, transportation was high, packing had not yet become an art, and much damage in transit resulted. These were the beginnings of our "Eastern shipments."

Much of the fruit lost in these early ventures had been bought and paid for by dealers and theirs was the loss. The only way they could come out even was to cut the price they paid to the grower for other fruit—which they did. Most of the dealers, however, dealt on a commission basis, in which case the losses were borne by the growers. A few of the larger growers were their own shippers and it was gradually noticed that these were the growers who were financially successful.

As the markets extended and enlarged, it became apparent that only dealers and very large producers who had fruit enough of their own to ship in carload lots would do the selling in any but local markets, unless the smaller growers combined so as to do business in a wholesale way.

And so combinations of growers came about. Producers' associations, co-operative and mutual companies and small local pools were gradually formed on various plans—some incorporated under State law and based on share capitalization, but more neither incorporated nor capitalized. The freight cars used in the early 80's provided for a circulation of air only through the stacked-up tiers of fruit, with the result that much fruit deteriorated in transit, which gave rise to the claim by Eastern receivers "Arrived in bad order." This claim was used frequently and shippers had no check to know whether the claim was legitimate or not, and California growers learned to know the significance of "red ink."

The local California dealers and shippers were also undoubtedly "trimmed" by the questionable tactics of some of the Eastern dealers, and their buying prices were dropped to the lowest possible limits. During the summer of 1885 local dealers were paying but 25c a box for wrapped peaches in 22-pound boxes for Eastern shipment!

Dissatisfaction among growers was general. Much discussion finally resulted in a conviction that a practical State-wide working organization of the growers was the only solution of the problem. A State convention was called and a temporary organization effected which resulted in the "California Fruit Union." Every orchardist in the State was invited to take one share for every acre of his bearing orchard. Hundreds of growers subscribed for shares and a great Chicago firm of fruit handlers was chosen as the Eastern representative of the California Fruit Union. This was a good stroke of business for the great Chicago firm, which thus secured a first-class California connection practically without effort. The California Fruit Union lived a declining life during two seasons and then died—a failure because those elected to the direction and management of affairs did not consider the interest of the growers (who were members) as being of the first importance.



The Fruit Building on J Street, Sacramento, where many of the large fruit marketing concerns of California are centered.

It was about 1885 that the new refrigerator cars first came into existence and other firms with large capital and refrigerator car connections soon entered the field, and for ten or fifteen years the California fruit grower was squeezed. Unless he was able and shrewd enough to connect himself with a local company strong enough to demand refrigerator rebates—an iniquitous system of privilege and exclusion now happily obsolete under the law, but a millstone around the neck of the small grower for many years.

(Continued on page 106.)

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EDITORIALS

THE WETS WIN—IN THE SKY!

DURING the week preceding this Tuesday writing the barometrical "high" has loosened its hold upon the interior plateaux whence it had for nearly a month dispensed dry winds and killing frosts, which brought some agricultural distress to California valleys and foothills. When the "high" cast off its moorings on the plateaux it took its place in the generally eastward course of storms in our latitude, surmounted the Rocky Mountains and figured no more in California affairs. In this general course this "high" had driven its wedge from the Arctic southward, made its stand resolutely over the inter-mountain States until the constant pressure from the Pacific Ocean overcame its meteorological morale and sent it flying eastward—just as Foch's constant pressure sent the Huns flying eastward to the Rhine. We have seen this thing happen so many times during the last forty-odd years that we have come to look upon the third week in January as about the time when even the driest and coldest holiday season gives way to warmth and wetness. Of course, in wet years, when nearly every week brings rains, there is no such contrast between wet and dry, though general cold and warmth do change places at about that date, even in wet years. It is not at all strange, then, that the dry cold of two to four weeks ago should give place to the wet warmth of last week. It can be counted upon to usually do so at this time of the month of January and it does not matter whether the sun is a lion or a leopard and whether the planets are con- or dis-joined. The only important question is how much rain will come after the January corner is passed. Perhaps no prophet will ever make this clearer than experience already has, which is that the chances are twenty to one that there will be enough to make good crops.

NOT FREE LAND FOR VETERANS.

OF COURSE, there may be propositions afloat which we have not heard of or they may be launched later, but the plans which are now current in Washington and in Sacramento are not to give land to anybody nor to pay them for taking it, as current headlines and comments in some of the common newspapers give impression. These humanitarian plans to place veterans who desire it upon land made ready for cropping and to lend them money to outfit themselves for farming are all projected upon the provision that no one gets land for nothing nor is given money to do farming with. The value of the land, the cost of making it ready and the money to be loaned for a start are all to be repaid to the general government or the state if either finally determines to take up and endow the plan. The essence of the plan is the chance to earn the land and to fit the man and the land so that such earning is reasonably sure. Grants of land for real or fancied service to the State have prehistoric precedents and are recorded on all pages of history. When lands were many and men were few, this was probably the only way to start civilization and development, but in this advanced state of both there are many social and economic reasons why the wisdom of the operation may be doubted. Some claim that there should be no individual ownership of land either by gift or purchase, but we do not care to discuss that proposition. It seems to be enough for present purposes to insist that the State should not give land to individuals or corporations, because it is better for the State to have a citizenship which has earned things and not had things wished onto it. Beyond this fundamental consideration in State policy there is another more superficial and more prevalent claim, which is that the Government should not give land and endowment to assisted farmers whose products will compete with products of land and capital which other men have earned. This claim seems to have reason in it, although when you come to argue it and to seek for basic facts it may appear that relatively few farmers really earned the land and capital they are owning—that they themselves inherited it or married it or sharked it or gambled into it and can hardly consistently object to other men being in some way endowed for farming. Therefore, it seems unreasonable for most farmers to object to competition with veterans who really earn their farms and we have heard of no scheme to furnish them farms on any other basis. Those inclined to object on this ground should think it over a little more.

CAN A MAN EARN A FARM?

SOME land-owners object to splitting up large idle lands for soldiers' and sailors' farms on the ground that they will have to pay taxes to bear the cost of installing such a new competing force to enter the produce markets. Such an attitude may be due to two conditions: first, such objectors do not know that all such money must be paid back by the government-farm buyers; or, second, they do not believe they ever will be able to pay the money back. The first objection is met by the fact of the earning-requirement which we have just stated. The second objection can only be reasonably held by a man who has failed to earn a farm by the produce thereof, for a man who has really succeeded in paying for land by the proceeds of his work upon it knows already that it can be done. If you could round up a hundred men who had failed to earn farms, only a very few would admit that there was anything wrong in the effort or in themselves. Nearly all would claim that the land was not good; that it was priced too high; that the interest rate was exorbitant or the terms too short, and most of them would be right in one or all of these allegations—although in many cases there might be discovered contributory ignorance, negligence, personal extravagance, laziness or something of that sort. As we understand the several propositions which have been advanced for national or state provision of farms to be earned, all of them prescribe these conditions:

On the part of the farm: close appraisement of value according to producing capacity; all improvements, implements, agencies and supplies at cost by wholesale co-operative buying and cash payments; all interest at government rates; all terms long and amortizing; co-operative selling of products urged upon producers.

On the part of the man: systematic instruction and advice furnished; negligence admonished; extravagance discouraged and laziness reduced to a minimum by the spirit of the community and the examples of strenuousness which will be spurs in the sides of others disposed to be laggard.

Thus the plan of farms fit to be earned and capable of being earned, opens its own ways to come through—like a track-laying tractor.

ARE BONDS BONDAGE?

THE American agricultural mind has always been credited with being full of hatred for bonding propositions. How far this imputed antipathy has been overcome by the patriotic fervor which farmers have manifested in the buying of Liberty Bonds we do not know, but it is altogether probable that the generous alacrity with which the farmer and his wife have filled the safe deposit space behind the farm-kitchen clock with Uncle Sam's financial valentines may be taken as evidence that a more reasonable attitude toward well-secured bonds is coming to prevail in the agricultural mind. The facts are that the legal requirements which now regulate the issuance of bonds go far to insure their ample value-foundation and the trade in bonds is as a rule conducted by most painstaking and humanitarian traders, who are even more anxious to furnish their customers good bonds than the most honest tailor is to cover the back of his best customer with an all-wool garment or the most honest grocer to fill the tummy of his best customer with breakfast cereals which contain no mill-sweepings. Of course, we do not mean to say that all bonds are good or that Diogenes would allow the gleam of his electric torch to linger an instant on the brazen cheeks of some bond peddlers, but it is a fact that bonds are as a rule much better than they once were and the honest trade in them is a beneficence to the throng of small investors who wish to secure for the use of their savings such reasonable interest as is consistent with the security of enterprises which serve the public well.

Another fact which should mellow the agricultural mind on the subject of bonds is the demonstration that the Federal Farm Loan system is rendering great service to the agriculture of the country by its loans on farms, which amounted to one hundred and fifty millions of dollars at the close of 1918, at 5 and 5½ per cent interest, and that this service to farming seems capable of almost indefinite extension because farm loan bonds are readily saleable to investors, though they yield them only the low, government rates of interest.

On the basis of service to general industry and to agriculture, it seems to us that the imputed hatred of bonds in the agricultural mind, if it really exists, should be revised. And we are prompted to this suggestion by the fact that these projected national and state undertakings to establish qualified young men and women on farms, to win out in the ownership of them, are largely based upon bond issues and not upon appropriations which sit heavily on the chests of taxpayers. All the nation and the state do is to lend their credit and good will toward a plan of development which pays its own traveling expenses and bestows the fruits of its attainment upon the whole population. If the farmers of this generation still fear that the issuance of such bonds is bondage, let them buy the whole issue of bonds themselves. In this way they can catch the last red cent of profit there can be in the scheme for anybody!

IS IT BONDING THE EAST FOR THE WEST?

DECLARATIONS of opposition to the projected plans for the multiplication of farms and increased settlement of idle lands by home-earning veterans and others have come so far from the very conservative farm associations of the northeast corner of the country. It is perhaps natural that such opposition should be thus domiciled. There has been for half a century a fear in that district that their local markets would be swamped by more cheaply produced food products from the West, and this fear lingers, although there has developed an opportunity for higher class perishable products in the immense local markets which is transforming near-by production and affords its own protection against competition from very great distance. Still the elderly Eastern farmers who dominate the national associations have never forgotten the fears of their childhood and their joints are now too stiff for the more intensive farming which their situation invites. Besides these elderly people like to shave notes for their neighbors at the highest rates possible under their usury laws or they like to send their money west and get more interest still and thus levy tribute upon cheap western production at its origin. They are naturally not altogether in sympathy with government lending or bonding, which they think might make their own crops lower priced and which actually do cut off their chance to collect in the west interest rates which would be usurious in their own States.

We are not impeaching these attitudes. They are rational and geographicaly unavoidable perhaps. We are merely repudiating their right to dictate national policies because they do not represent the greater interests of the country as a whole: they are in contravention of the interests of the great South and the great West, which are for development and settlement so far as these can be secured with economy to the established

taxpayer and with a square deal for the newcomer. Such development, wisely administered, makes for lightened taxation, for it either increases the total assessed value of the property on which taxes are to be laid or it gives more of the joys of living for the same amount of tax payment, as the voters themselves decide. And it is, of course, not true that the East bonds itself or the West: the East collects most of the interest on the bonds because of the immense surplus capital it has for investment, but it pays only its share of the bonds and its payments are only a fraction of its collections because most development bonds are at home in the West.

* * *

THE CURE FOR BONDS IS MORE BONDS.

THIS may seem a startling proposition and as we are not a professor of finance we do not know whether it is a universal truth or only a narrow fact. The reader may take it as he gets it. And yet we have a suspicion that it is a pretty wide principle. Certainly the Fourth Liberty Loan made all its predecessors worth having, for the kaiser might have torn up the first three if the fourth had not got him. From the way refunding propositions often send punk bonds to par we imagine we have hit upon a truth which gets somewhere in high finance. But we have no idea of floating around in such a cloud: we had rather wander around on the earth and we surely do some of that. Since California bonded herself for thirty-three millions to build highways and the counties have added thereto, we have glided along a good deal on these smooth ribbons of concrete and have met so many tourists with joys and so many farmers with jags (of produce) that we would have turned aside until the procession had passed—save that we could see no end to it. And we have done this not alone near the towns but in the open country, where only a habitation now and then came within eye-shot. And we have said to ourselves: What a pity that all these millions of bonds' worth of highways should be kept busy shooting people through California while their highest duty should be to keep people in California for good and all! So we have thought further: if it is such a blessing to build such roads by a system which escaped distressing knowledge of when or how they were being paid for, would it not be a great scheme to subdivide the stretches of idle land so that these smooth roads would run through vistas of productive fields and rural homes, paid for by continuous application of knowledge and energy without distress of high interest rates and quickly maturing mortgages? And thus we came to the thought that possibly the distemper which was engendered in some careful people by the millions of bonds for highways might be relieved by more bonds which would bring people and products to the desolation through which these highways now run—in some districts from one horizon to another. And the chief reason for our faith in the curative power of the bonds we have in mind is, of course, because such bonds are not to be paid for by the public, but by the lands which get good men and women to show them how. It would be individual prosperity justifying the public enterprise and generosity which created it.

QUERIES AND REPLIES

By the Editor.

Inquirer Must Give Full Name and Address.

High-Value Crops for Small Farms.

To the Editor: We like the Pacific Rural Press, but you forget the small farmer. We have no show in the associations. You and Mr. Hoover are all the time urging us to grow more, but when we have grown big crops of beans, corn or barley we can't sell for enough to pay cost of growing. At present prices of field crops many men are leaving their little ranches to work for wages. Why urge men to raise sheep when there is no market for wool, or grow crops to sell for less than cost? Why not give us a square deal?—W. D. C., Stevinson.

What you say is very important. We have been kicking about unfairness to farmers all through the late unpleasantness. It was chiefly due to the fact that all kinds of men but farmers were chosen by the Government to tell farmers what they ought to do! We surely made as much outcry as we could against that fundamental error. But while we protested against that it was surely our duty to urge the growing of food by those who could see their way through even at some risk of loss and it saved the world. We never urged small farmers to go in for coarse crops. A small farmer must produce something intensive in either the plant or animal line, to make a living—something which enables him to turn all his time into money either in growing or fitting for market, and it must pay fair wages for all his time—or else he must sell part of his time to others. Economic laws require every healthy man to put in six good days' work in a week. He cannot reasonably lie in the shade or revel in the pleasures of a pedro palace and expect a small acreage of a coarse, close-margin crop to support his family. He must work all the time, either on his own place or elsewhere, to be thrifty and get ahead. Most of the current proclamations about making a living by common farming on a few acres are nonsense or worse.

Next to the choice of intensive crops which will pay for all his time, the great safety for the small farmers is the associations. You are mistaken in saying that they have no show in the associations. They really have no show without them. If a great association does not arrange to take care of the small producers, it is not worth living and it will not live long, for competition with small farmers will kill it. As for sheep on small farms, the wool is only a by-product. The sheep itself is the main thing and if you cannot sell the sheep you can eat it.

Doping Stumps to Kill.

To the Editor: We have a lot of cottonwood trees that we want to cut down, leaving the stumps in the ground. If we bored holes in the stumps and filled them in with saltpeter, would this treatment kill the stumps and roots? Also, is this the time of year to make such a treatment?—B. P. M., Atwater.

Killing stumps by putting chemicals in holes bored in the central wood is, we believe, a fake prescription which everyone has heard tell of and no one has done. But we believe that stumps can be killed by several plant-killing substances if they are applied not to the central wood but so as to come into contact with the active tissue just under the bark. Some time ago we recorded the experience of A. L. Wisker of Grass Valley, who kills stumps by boring three one-inch auger holes around the edge of the stump, just inside the bark, placing in the hole a tablespoonful of cyanide of potassium and saltpeter (half and half) and plugging the hole. Cyanide is a fearful poison and must be handled carefully. We should expect to do the same with arsenic or bluestone.

As for the time of the year, we would theoretically expect to do best by applying the chemicals during the growing rather than during the dormant season and would fell the trees and dope the stumps in midsummer, just after the terminal buds have formed on the season's growth. Downward sap movement is most active at that time and we should expect the poison to reach farthest, but we have no idea that any poison would chase the roots far, nor prevent suckering all over the ranch as some members of the poplar family delight to do. Such roots will have to be grubbed out, even if you do succeed in killing the stump.

Fruit Trees on Gravelly Loam.

To the Editor: I have land which was planted to pear trees a few years ago, but they do not do well and I plan to replace the poor trees with prunes. Would it be better to plant either the Sugar or Imperial variety, in preference to the French prunes, as the latter usually grows small fruit? The soil on which the prunes are to be planted is gravelly loam, situated on the western bench of the Russian river. Is this soil adapted to prune growing, and which variety?—Reader, Ukiah.

Gravelly loam is often a dangerous soil for fruit trees because it is apt to dry out too much in late summer and fall, even in localities of large rainfall, unless one is ready with irrigation. The failure of the pears is attributable to the fact that pears require a rather heavy and retentive soil. On such soil as you describe there is little use of planting prunes on Myrobalan root, which is commonly used for them. It is not adapted to loose, gravelly soil. It is possible that Sugars and Imperials might succeed if grown on almond roots, which are best suited to such soil, but unless there can be surety that there will be moisture enough during the final stages of their growth, it will be idle to expect large prunes of any kind when the trees get to full bearing.

GOOD POSITION STILL OPEN

Now that our boys are returning from battle-front and camp, positions will be harder to get and salaries will be lower. But there is one line of work which offers just as good opportunities as ever, and that is in our subscription department.

We need a few more men to present the paper to those who are not already subscribers, and to take care of our renewals. Lack of experience is no barrier, but an automobile is necessary.

Straight salary, permanent work, with advancement. Tell us about yourself and ask for our proposition. It will interest you if you are a live wire.

Broom Corn and Popcorn.

To the Editor: I have five acres that have been in alfalfa for several years and I would consider rich land. I would like to know the tonnage I might reasonably expect from broom corn if I break up the land and plant in May. What tonnage if planted popcorn? Is there always a market for same? Is it subject to the earworm as sweet corn is? What kind is best to plant? Could cornmeal be made from it?—H. L. F., Los Molinos.

On such land you might get 750 pounds of cleaned brush per acre of broom corn—if you know how to get it. One should never start in on broom corn without knowing how to get the brush in marketable shape. It requires knowledge and a lot of work. Popcorn will catch the earworm if it hangs out silk while the moth is doing business. Popcorn is another crop which one should not go in for without knowing a good deal about growing it and whether the corn which he grows is sure to "pop" well, and if so he should have a contract with a buyer before he plants much. White Rice is the most popular kind and it is possible to get a ton to the acre. Popcorn can be ground for stock, but there would be no show to get the cost out of the crop in meal, for the cornmeal makers would not touch it.

Onions Going to Seed.

To the Editor: In this valley, where it gets hotter'n Billy Sunday, would onions shoot to seed in June if seed is sown in January?—F. L., Tehama.

We cannot tell whether you wish them to go to seed or whether you are afraid they will. The facts are these: Good onion seed will give you seedlings which, if kept growing normally by proper soil moisture, will mature and make dry onions without shooting a seed stem. If the seed is poor or if the bulbs get dry and then find moisture later, they will be likely to go to seed. But you cannot wisely take advantage of that infirmity, for such seed would be worse than worthless because it would be likely to produce scallions or would produce bulbs which would be shooting seed stems instead of making good, full-sized dry onions, as they ought to do. Good onion seed comes the second year from well-matured bulbs which are held over for the next season's growth.

Planting Out Asparagus.

To the Editor: When shall I re-set asparagus roots? If re-set this year, will there be any shoots to cut this spring? How far apart should the plants be put?—M. B., Modesto.

On warm, interior loam re-set at once, if the land is reasonably moist or can be made so: otherwise as soon as possible. It is almost time for the activity of the roots to begin. For home garden, which we presume is your reference, plant the roots 18 inches apart in rows two feet apart—several inches below the surface, of course. Nothing should be cut this year and not too much next year, if you desire strong, enduring plants.

California Weather Record

The following rainfall and temperature record is furnished the Pacific Rural Press by the United States Department of Agriculture Weather Bureau at San Francisco for the week ending at 5 p. m., January 21, 1919

Stations—	Rainfall Data: Past Week	Seasonal To Date	Normal To Date	Temperature Data: Highest	Lowest
Eureka	5.69	19.63	22.08	62	44
Red Bluff	1.88	17.27	12.72	56	42
Sacramento	1.62	9.22	9.45	58	42
San Francisco	2.24	13.30	11.04	62	46
San Jose	.92	11.02	8.01	66	38
Fresno	.36	4.29	4.71	66	40
San Luis Obispo	1.31	8.90	9.11	72	40
Los Angeles	.08	4.14	6.94	76	46
San Diego	.02	4.22	4.58	66	46
Winnemucca	.08	3.99	3.67	54	20
Reno	.26	4.19	5.20	58	24
Tonopah	....	....	4.25	..	..

Dairymen Must Become More Efficient

Written for Pacific Rural Press by Ed. H. Webster, San Francisco

I CONTEND that greater efficiency at home is what is really needed to increase the California dairyman's profits, and to see whether or not I am right let us do a little figuring.

First of all we will consider the records of five herds in one community and see what the yearly average production of butterfat per cow was. Here are the figures:

1	35 cows	199.5 lbs.
2	35 cows	175.1 lbs.
3	14 cows	174.8 lbs.
4	35 cows	174.4 lbs.
5	13 cows	172.4 lbs.

The price of butterfat for the past twelve months has averaged pretty close to 56 cents. The average yearly production of these five herds was 182.6 pounds, which at 56 cents was worth $102.25. In 1915 the average price of butterfat was about 28 cents, or just one-half the 1918 price. So the income from these same cows on the basis of the 1915 price would have been only $51.13 for the entire year.

During December the price of butterfat was around 70 cents. If these herds could, by some artificial means, be placed in an environment which would make it possible to sell their product for a whole year at 70 cents, they would bring their owner $127.82 each. At $1 per pound they would bring $182.60. Be sure to keep these figures in mind, for they will be referred to again.

Now, in the same community with the five herds already mentioned were ten others with production records as follows:

1	5 cows	496.3 lbs.
2	28 cows	453.3 lbs.
3	35 cows	433.2 lbs.
4	1 cow	400.5 lbs.
5	17 cows	372.4 lbs.
6	3 cows	359.4 lbs.
7	11 cows	356.8 lbs.
8	24 cows	355.1 lbs.
9	2 cows	353.9 lbs.
10	20 cows	350.8 lbs.

The yearly average for these ten herds was 400 pounds of butterfat per cow. At 56 cents per pound the average income is $224. At the 1915 price it would have been $112. At December's price it would be $280. At $1 per pound it would be $400.

Tabulating the statements of these two groups of herds in parallel columns for better study, we find the average yearly returns per cow as follows:

Value per lb.	First group.	Second group.
1915 price 28c	$ 51.13	$112.00
1918 price 56c	102.25	224.00
At 70c	127.82	280.00
At $1.00	182.60	400.00

DAIRYMEN GET MOST OF RETAIL PRICE.

Right here I want to impress upon you a very significant fact, which is that, according to statistics compiled by the U. S. Department of Agriculture and independently by the Department of Commerce, the producer gets from 70 to 75 per cent of the retail value of butter. Get that fact! Many dairymen have complained about the small returns they get, yet no other product of the farm brings to the producer so large a return on the consumer's price.

In practically all other branches of farm production where it was found necessary to organize the industry in order to get anything like a fair return, the producer received only from 10 to 20 per cent of the consumer's dollar. And even now, where these industries have been organized, the producer gets less than 50 per cent of the consumer's money.

Another important fact I want to bring out is that even before these industries were organized the individual producers were highly efficient—nearly 100 per cent so from the standpoint of possible production. So the chief efforts of the associations have been in correcting market abnormalities, and in this they have been very successful.

AVERAGE PRODUCTION TOO LOW.

Now, it is said that the average yearly production per cow in this State is about 180 pounds of butterfat—practically the same as in the five herds first cited. That being the case, the dairy farmer is less than 50 per cent efficient, for the slogan, "a pound of butterfat a day keeps the sheriff away," is an apt one, and in order to return a satisfactory profit every herd should average 360 pounds of fat per cow. The farmer whose cows are producing only 180 pounds when they ought to be producing 360 pounds is himself on a low plane in the industry he represents.

On the other hand, this product—butterfat—is manufactured and sold to the consumer on a basis of 100 per cent efficiency, when compared with any other product of the farm, no matter whether the industry is organized or unorganized.

COMPARISON WITH FRUIT INDUSTRY.

Here, then, are the two situations, taking any organized fruit industry in California and comparing it with the unorganized dairy industry:

Fruit industry practically 100 per cent efficient in production; dairy industry less than 50 per cent efficient in production.

Fruit industry less than 20 per cent efficient in marketing before organization, and less than 50 per cent efficient after organization.

Dairy industry 100 per cent efficient in marketing, without organization.



To increase profits, increase production. The dairyman who has a well-bred herd like this is not complaining about small profits. He has solved the problem himself.

These percentages are used for the purpose of comparison. In reality it matters not whether the fruit growers were 100 per cent efficient or only 75 per cent, or whether the dairy producers were 50 per cent efficient or only 40 per cent. The part that does matter is that the fruit growers were many times more efficient than are the dairy farmers of California, taking each as a class, and the marketing of dairy products today, without organization, is many times more efficient than is the marketing of fruit even under the best associated efforts.

The fruit men, efficient and competent in the care of their own orchards, had a raw deal to meet in marketing, and they got together and met it squarely—just as good business men should. The dairymen, on a much lower relative plane of efficiency in the handling of their herds, have a highly efficient marketing system that gives them more of the consumer's dollar than the farmers of any other industry can get.

MARKETING PROBLEM NOT SERIOUS.

Consequently—get this fact—the dairymen have no great marketing problem to meet. Their big problem is right at home, where they are less than 50 per cent efficient, as shown by State statistics.

If the business of manufacturing and marketing dairy products is nearly 100 per cent efficient as now operated, why in the name of common sense should it be turned over to a group of men who have demonstrated their lack of ability by conducting their own farms, over which they are complete masters, on a basis of low efficiency? In other words, a 100 per cent man can take a 20 per cent business and bring it up to a 50 per cent standard, but can a 50 per cent man take a 100 per cent business and do anything with it except to reduce its efficiency to the plane on which he stands?

The consuming public is entitled to some consideration. An organized dairy industry could do very little toward making its members additional profit from the 27 cents that the consumer has to pay for bringing 100 cents of butter to him. The butterfat must be hauled from the farm to the factory; it must be made into butter; it must be shipped to the distributer; it must be sold to the retailer and then to the consumer.

There is no process known that will eliminate any of these steps from the farm to the consumer. Suppose that a cent or two a pound could be saved—and the chances are just as great that it would be lost. The two cents per pound on the 180 pounds of butterfat produced by the average California cow is only $3.60. And the farmer who is losing money on this 180-pound cow would not get rich from this extra $3.60 per cow per year, especially with an even break that he might lose the $3.60 instead of making it.

ORGANIZATION CANNOT RAISE PRICES.

Can the producer raise the price to the consumer through organization? No! Most emphatically, no! The price of butter is, except within narrow limits, a world-made price. The law of supply and demand cannot be set aside. Temporarily this law may be deviated from, but it always acts in the end and brings the product to a normal price.

To make the 180-pound cow profitable, butterfat would have to go to $1 per pound. A limited few may get this by producing market milk under board of health regulations (and at a much greater producing cost), but unless all other foods advance, butterfat for buttermaking will not and can not be raised to $1 per pound. There is a limit beyond which the price of butter cannot be maintained, for when that limit is reached the consuming public begins to use substitutes, the demand for butter lessens, and the price drops back.

MUST HAVE GREATER EFFICIENCY.

If, then, by organization there is little chance to save in the travel of butterfat from the farm to the consumer, and nothing can be done toward any further advance in price, what is the dairyman to do? He must get out of the 50 per cent efficient class and into the 100 per cent class. If an organization can be formed to help him do that, let's get behind it and boost it for all it is worth. But let's not allow the organization to try to run a 100 per cent efficient business until it is composed of 100 per cent men.

It is the 50 per cent efficient men who are clamoring for better marketing conditions. Take the ten herds that averaged 400 pounds of butterfat in a year. They have 100 per cent men back of them. These men know that their present marketing system is a 100 per cent system, and, being 100 per cent men, they have no desire to tamper with it.

The 400-pound cow at last year's prices earned $224 and made a handsome profit for her owner. At present prices her earning capacity for butterfat alone is $280 per year. With the extra care and expense necessary to produce milk for a city like Los Angeles, she has a present earning capacity of $400 per year. If it cost $100 extra, which it doesn't, to produce milk for Los Angeles, she would still return $300, while her weak 180-pound sister would return only about $80 to cover feed, labor and all other expenses. It "can't be did" under ordinary conditions. The first cow would make a net profit of about $150, but the second would be carried at a loss of about $70.

There is no process of reasoning which will justify an artificial stimulus being applied to that 180-pound cow to make her earn a profit. The consumer can not stand it and will not. It is up to every dairyman to decide for himself whether he will stay in the 50 per cent class or get into the 100 per cent class.

There are many good dairymen in California, and these progressive men are working up to as near the 100 per cent class as they can get. They know where their troubles are; they know that they alone can correct them, and they are taking the necessary steps. But there are many other dairymen who are in the 50 per cent class, as attested by the fact that the average production is only about 180 pounds per cow. Shall these men set the standard for efficiency in the State?

BETTER PRODUCING COWS NECESSARY.

This article may seem a harsh criticism of the dairymen of California, but let each one classify himself as follows: The man who has a herd that averages 180 pounds or less can put himself down as 50 per cent efficient or less. As his herd shows returns above this he can justly say that he is better than a 50 per cent dairyman and can fix his own position between 50 and 100 per cent. If he is constantly improving his herd so that each year the average production per cow is greater than before, he can put himself in the progressive class and can consider himself a 100 per cent dairyman, no matter what the exact production may be. When he gets into that class he will be able to tell whether or not the manufacturing and distributing system is 100 per cent efficient. He will find that it is, and he will not make any attempt to upset it.

It is usually the 50 per cent man, who has not made good in the things he controls, who wants to run something else besides his own business. In the dairy industry the man of this class will find his Great Opportunity in developing more efficiency in his herd and turning a losing business into one of profit and pleasure. He should eliminate poor cows, poor bulls, and poor methods.

Mr. Webster was formerly chief of the Dairy Division of the U. S. Department of Agriculture. He is now interested in the California Central Creameries, and probably is the best posted man in California on the local dairy situation. He discusses this important matter from a new angle.

AGE OF COW AFFECTS MILK TEST

It is commonly believed that the test of a cow's milk increases in fat as she grows older. Some recent studies indicate that there is no correlation. In all, 104 records made by 86 cows were studied, the cows ranging in age from 18 months to 14 years. The fat varied from 3.25 to 7 per cent.

Don't Double-Cross the 'Cot!

Thirtieth of the Editor's Series of Historical and Analytical Sketches of California Agriculture

THIS writer has always been a little soft on the apricot. He has always enjoyed thinking of the almost exclusive Californianism of it—refusing commercial greatness anywhere on this continent except in California; also the almost exclusive Americanism of it—refusing to lend itself largely to such types of enterprise as Europeans could offer it, even in the Mediterranean countries, where climatic conditions met its requirements. For it refused to be commercially great on the basis of Spanish culture and British bottling. In such guise or in production under glass or on garden walls, its restriction to aristocratic atmosphere dwarfed its commercial attainment, for it scorned to be merely the plaything of the rich, as it was when Roman imperialists made it captive during their many invasions of Asia Minor. For milleniums thus the apricot endured autocratic domination, until it found, in California, sky and air suited to its natural requirements and enterprise of man fitted to develop its capacity for world-service and enable it to reach a product-valuation for which it had waited these thousands of years. The visible measure of this attainment was a European shipment from California of three and one-half million dollars' valuation of dried apricots and possibly another million's worth of canned apricots in the year 1913—the last year before the world exploded. Thus the apricot, through its California achievement, was assuming its world stride and its commercial name was becoming Americana instead of the old Armeniaca of the botanists.

HOW THE APRICOT WON ITS WAR.

Of course, the apricot did not win the war, for it was largely excluded from war-winning forces. Either because army food-providers did not know its wholesomeness or because its aggressive acid drew too heavily upon scant sugar to meet ordinary standards of palatability, the dried apricot was left to shift for itself while practically all other dried fruits were admitted to a subsidized patriotism. The Government issued no orders for our apricot millions to fall into the menu of the allies—either military or civilian. But the fruit made its own way on its merits and though the exports of 1917 fell to only about one-seventh of those of 1913 and though in the effort to win at home it was handicapped by the sugar-limitation in this country, still apricot products of 1918 (canned, dried and shipped fresh) were greater than in any other previous year and all stocks will be swept clean for the crop of the present year. It is true, of course, that prices were only fair and less than their proper relation to the figures paid for the other cured fruits preferred by the Government's buyers and price-fixers. It is true also that the increased cost of labor and supplies of all kinds required to cure and pack apricots, made them less profitable than other fruits and even practically unprofitable in some instances. Still, in spite of these facts, it seems to us that the apricot has won a great victory for itself during the last four years. Practically excluded by the war from the great interior countries of Europe, where its greatest markets had been developed; excluded now and then by embargoes from other European nations; excluded from other ports of the world by the submarine paralysis of ocean freighting; forced to make its way unaided by official favor in the markets of this country, where it had never been sufficiently popularized because it sold so easily in Europe, the California apricot came through the war with what seems to us a great victory for itself and a great preparation for its future.

GREAT FUTURE OF THE CALIFORNIA APRICOT.

We are told that the interest in planting apricot trees this year is less than in planting some other fruits. It is possible that the glamour of Government price-fixing and vast purchases of such other fruits may have impressed the planters' minds very deeply. If so, we doubt the wisdom of it. We doubt if it is good policy for all planters to increase acreage of any crop which is at present selling extra well. It is wiser that there should be more diversified planting, not of untried fruits, of course, but of those which are known to suit particular soils and situations and for which increased demand may be reasonably expected on the basis of good forecast of selling quality, as shown by significant demonstration of commercial acceptability. It is always better business to plant a coming crop than a going one, and it is quite clear to see that much of the victory which some of our fruits won in the war will be swept off the peace table. On the other hand, the apricot, never having advanced to points inviting reaction, with its qualities popularized in this country and new demand developed and with the promise to quickly regain the central European demand from which the war displaced it, will advance in relative profitability because it has little reaction to survive and because the reduced cost of production will make its steadily maintained market value yield a larger margin to the producer. Nor is that all. California's exclusiveness of production and freedom from competition will reassert themselves and make much larger output safe. Direct shipments by sea from this port through the canal to Europe will be re-established, cheapened and vastly increased. Direct shipments by sea to northern Pacific countries will notably increase and the anti-scorbutic acid of the apricot will be a recognized factor in the new life which will come to the upper Asiatic countries as their democratic development due to the war will open the way for all lines of industrial enterprises which their natural resources invite. In Canada and Alaska, too, there will be new development through the new spirit of development and adventure which the war has engendered. These developments in enterprise and population will, of course, increase the demand for all California's preserved fruit products and for some durable fresh fruits as well, but we look for more than its relative share in this demand for the preserved apricot first, because of its special gifts of wholesomeness for residents of cold countries; second, because we shall divide that trade with no competitors in the northern hemisphere.

THE APRICOT NOT EASY BUT SAFE.

Of course, the apricot is not easy. It ripens too quickly to suit a lazy man and too simultaneously to suit a nervous man. It requires a man of action and good, cool planning to keep pace with it. But it is not all difficult. It comes first of the great cured fruits: work with it is light and pleasant and can be more easily done by women and children than with any other fruit which goes through curing processes, and at a time which women and children can be most easily secured for orchard work. The product is stored before the rush of peaches, prunes and raisins begins in August and it never encounters the risk of September rains. It will usually furnish ready money to handle the later fruits.

But, of course, the apricot is not altogether safe because it has to run the gauntlet of spring frosts and therefore its area is more restricted than that of most other deciduous fruits. This fact, however, adds to the security of those who plant apricots in proper situations, while at the same time it warns others against planting at all.

There are a lot of knots about apricot planting: not too far north in our coast regions: not too low in our interior valleys, both small and great: not too high in our foothills everywhere: not too far away from settlements whence a quick and ample labor supply can be economically drawn as the work requires: not by a grower who does not love an apricot tree and gain from its beauty and grateful prolificacity inspiration to treat it well in pruning, cultivation and protection: not by man or woman who does not fully believe that a well-ripened apricot with a dash of cream would have surely saved our first parents from their recalcitrance with apples.

The Prune and Apricot Growers' Association has copyrighted the "Sunsweet" trademark in sixteen foreign countries. They are preparing for foreign trade as soon as relations are re-established and embargos lifted.

MR. PLANTER:

The coming season promises to be the most favorable in many years for orchard planting. With such a season and

FIRST CLASS TREES

a successful start for a profitable orchard is assured. WE GUARANTEE OUR STOCK—BETTER CANNOT BE HAD ANYWHERE AT ANY PRICE.

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FRENCH PRUNES on all roots, grown from carefully selected bearing trees, unsurpassed for size and quantity of fruit.

PEAK'S CLING PEACH, in great demand by canners; ripens between Tuscan and Phillips and is fully equal to those old stand-bys in quality and productiveness.

KNOBEL APRICOT, an improved Blenheim; larger fruit and a heavier, more dependable bearer.

JAPANESE PERSIMMONS "Made in America." These home-grown trees live as readily as other fruit trees and are true to name; of the imported trees the few which live are usually untrue.

A FULL LINE

of all that is best in Fruit, Nut and Ornamental Trees, Vines and Plants; and our prices are very low as compared with other commodities. Write for our Price List; free.

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Absolutely Reliable Nursery Stock

is what the practical planter wants. He cannot afford to take chances, but must have trees that are free from all disease, are well rooted, and propagated only from bearing trees. Our stock is grown in San Benito county, in a climate which permits a thorough ripening of wood, and in a soil which encourages a fine root system. We have our own bearing orchards of over 60 acres from which to select buds, and test varieties. Our nurseries were first started in Napa county in 1878.

Almonds, Apricots, Prunes, Pears still in good supply..

Also Remember

That nothing adds more to the value of a piece of land than suitable planting of

Ornamental Shrubs and Trees

of which we have an immense stock. Landscape gardeners and the owners of country homes should make a note of this.

Leonard Coates Nursery Company

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THE only pruner made that cuts from both sides of the limb and does not bruise the bark. Made in all styles and sizes. All shears delivered free to your door. Write for circular and prices.

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Giant Winter Rhubarb

Now Best Time to Plant

Should return from $1,000 to $1,500 per acre first year. If interested in Rhubarb or Berries, write J. B. WAGNER, Specialist, Pasadena, California.

The Farmers' Interests in the State Legislature

Written for Pacific Rural Press by H. E. Hodges

State Budgets Closely Followed.

Recommendations of the State Budget Board are generally closely followed by the Legislature. It is only when new and urgent reasons for additional appropriations arise after the budget board has made its report that extra money is likely to be voted by the Legislature. Thus in effect the fate of bills carrying appropriations is settled before the Legislature meets; and that by a small committee which can hardly be expected to know the full relative importance of details in the various interests of the State.

Nevertheless, a State Government without a budget board would probably go farther from proportionate distribution of money with relation to importance of the activities for which money is appropriated.

University Farm Buildings.

A bill introduced by Senator W. E. Duncan of Oroville provides $25,000 for construction of buildings at University Farm, according to the recommendation of the budget board.

Aid for County Fairs.

To encourage the holding of county and district fairs, $50,000 a year is proposed in a bill introduced by Senator H. W. Slater of Santa Rosa. This is to be apportioned by the Board of Control to counties in sums not exceeding what each county puts up for the same purpose.

Estray Animals and Fences.

If your land is substantially fenced and you find estray domestic animals on it, you may charge the owner all costs of taking up and keeping them, as provided in an amendment introduced by Senator L. M. King of Redlands to the estray act of 1901. A substantial fence is declared to be one of "three tightly stretched barbed wires securely fastened to posts of reasonable strength, firmly set in the ground not more than one rod apart, one of which wires shall be at least four feet above ground." A proviso adds that any other kind of a fence is legally "substantial" if it will turn cattle as well.

To Regulate Imitation Milk.

All mixtures of skim milk and oils or fats to be sold as substitutes for milk, or condensed milk, or any other mixtures marketed for the same purpose, must be "of a separate and distinct character not resembling milk or condensed or evaporated milk," and must be colored or containing ingredients which make it look unlike, whole cow's milk or condensed milk, if the bill for this purpose introduced by Senator L. L. Dennett of Modesto becomes law. Cases or boxes of legal imitation milk must be so labeled in large letters; and the name of the manufacturer, location of the factory, the name and actual percentages of the various ingredients used shall be printed on a label to be inserted within the case. Each can, bottle, or other container must also be labeled "imitation milk" in the most prominent letters. Such imitation milk must be made of skim milk containing at least 3 per cent of edible fats or oils. Condensed imitation milk is the above condensed so it contains not less than 7.8 per cent of edible fats or oils. Hotels and all other places where table board is furnished must, if they use imitation milk, tell the consumer verbally and put before him the printed statement mentioned above. No imitation milk shall be used in charitable or penal institutions assisted by the State. All manufacturers or dealers in imitation milk must have licenses obtained from the State Dairy Bureau. Manufacturers' licenses will cost $100, wholesale dealers' or importers' licenses $50, and retail licenses $15. Where imitation milk is used in food products, as in boarding houses, the license fee is $10. Licenses must be conspicuously displayed. Fines or imprisonment await violators of the act. The State Dairy Bureau will enforce it where local boards of health do not.

Weeds on Roads and Railroads.

Many a farmer believes that laws preventing introduction or growth of weeds on farm land may be unjust so long as weeds are allowed to seed along roads and railroads. Noxious weeds and those which may become a fire menace growing along country roads may be declared a public nuisance by the county supervisors, as provided in a bill introduced by Senator L. M. King of Redlands. After such weeds are declared a nuisance, the county road commissioner shall post at least three notices not over 100 feet apart in front of the property where such weeds exist. The notice declares that the weeds must be removed within ten days or the county authorities will do it and the cost will become a lien on the property. This lien is to be collected by the tax collector in the same manner as taxes and subject to the same penalties.

Assemblyman J. Leonard Rose of Newark, Alameda county, has introduced a bill declaring that all grass, weeds, and "similar" vegetation on railroad rights of way, which may become a fire menace when dry, are public nuisances and must be removed. If not removed, the person, firm or corporation is guilty of a misdemeanor.

University Salaries.

For salaries of University workers, $74,725 per year is appropriated, in addition to all other appropriations, in a bill introduced by Senator A. H. Breed of Alameda county. This corresponds to the budget board's recommendation for a special appropriation for the next two years. The bill is written so it will not be necessary to introduce a new bill for this purpose at future Legislatures.

State License for Auctioneers.

Farmers and others who desire to get an auctioneer from outside their own counties for the purpose of getting the one they deem best suited to cry the sale, will find it easier and perhaps cheaper to get such an auctioneer, if the bill introduced by Assemblyman Miss Esto B. Broughton of Modesto shall carry. This bill provides that any auctioneer may apply to the Secretary of State for a license to operate in any county of the State. The fee is to be $50 per year, and the auctioneer puts up a $5,000 bond. Local auctioneers who operate in only one or two counties may take out county licenses as heretofore.

Under present conditions many counties require no license at all. Many others will not issue a license to anyone who has not resided in that county for a year. In at least one city, not only a county but also a city license, must be taken out and separate bonds filed. Some auctioneers have cried sales in various parts of the State without the licenses legally required. Anyone may stop such a sale, though this is seldom done. Eastern auctioneers are brought to California without either getting licenses or being disturbed at the sale. At present an auctioneer must legally go to the county seat, file a bond, and get a license before he can cry any sale there. The provision requiring long residence in a county is evaded by getting a resident to secure such a license and "assisting" him in the sale. Much extra expense, time, and bother would be saved by a State license.

State to Buy Irrigation Coupons.

Of several bills affecting irrigation projects, to be fostered by Senator L. L. Dennett and Assemblyman Miss Esto B. Broughton, both of Modesto, the first to be introduced is that of the Senator to enable the State to invest in bonds of irrigation, flood control, and reclamation districts. A million dollars is appropriated with which the State Controller is to buy "matured coupons either for interest or for principal" of bonds of such districts which are legal investments for "public funds." If any district fails to repay the Controller on demand, and such unpaid coupons equal 15 per cent of the amount due that year, the State Irrigation Board or the State Flood Control Board or other board shall assume control over the district until such repayment is made, along with repayment of the expenses of administration.

Gasoline 60 Degrees Gravity.

Gasoline must have a specific gravity of 60 degrees B. or more at a temperature of 60 degrees F. before it can be sold, and all gasoline for sale must be labeled "gasoline" along with its gravity test, on penalty of fine, imprisonment, and destruction of the gasoline. This is the intent of a bill introduced by Assemblyman Samuel Knight of Redlands. The State Superintendent of Weights and Measures is to enforce this law. One defect in this may be that gravity does not indicate purity or uniformity, though it is better than no test at all.

To Kill State Market Commission.

Sharp and efficient as a guillotine are the few words comprising a bill to repeal the State Market Commission Act of 1917, provided the bill becomes law, as hoped by Assemblyman Edwin Baker of Los Angeles, who introduced it.

Viticultural Commission Beheaded.

Fifteen thousand dollars will be saved if the Grape Commission is abolished, as provided in a bill introduced by Senator W. E. Duncan, Jr., of Oroville. The State Budget Board was going to reduce it $10,000, but Senator Duncan aims to stop it altogether.

State to Aid County Highways.

Our paved highways certainly have impressed Californians and Easterners in California. Even with our State highway system far from completion, it seems likely that favorable action will be taken on the plan of Assemblyman W. A. Doran of Marcos, San Diego county, to further extend the system. Whenever any county or city deposits with the State Treasurer money for the paving of roads within the county or within a city, if connecting with a State highway, the State will put up an equal sum up to $250,000 per county for construction and permanent maintenance of paved roads, solely under direction of the State Highway Commission.

California-Nevada Highway.

A State highway following Presser Creek and Truckee River to the Nevada line is sought by Assemblyman Ivan H. Parker of Auburn, who has introduced a bill appropriating $75,000 for the purpose.

Riverside University Farm.

The Riverside Citrus Experiment Station has its hands full in the important work it is doing. But Southern Californians have far greater interests in other lines of farming than they have in citriculture. It is to establish a second "University Farm" to give practical instruction and instructive practice in general agriculture, horticulture, irrigation, dairying, animal industry, etc., at Riverside that Assemblyman Chester M. Kline of San Jacinto would have the Legislature appropriate $150,000 not already in the regular budget report. He would have the University regents buy at least 300 acres of tillable land with water rights, erect suitable but not expensive buildings, plant orchards and vineyards, and buy livestock, machinery, supplies, etc. Labor of students is to be utilized so far as possible in order to give them real practice.

City Man Wants County Fairs.

"Everybody has a finger in the pie." Any money appropriated by the State to support county fairs, land shows, and livestock expositions is to be apportioned to all the counties on the basis of their taxable property, as provided in a bill introduced by Assemblyman W. J. Kenney of San Francisco. If a county does not hold a fair, its supervisors may spend its apportionment at another county fair which offers prizes open to general competition, or it may keep the money for a future fair of its own. A highly commendable feature of the bill is that all of the money is to be spent on premiums for excellence of products shown and not any for races; and no more than $10,000 per year can go to any one county. A hundred and twenty thousand dollars are appropriated for the purpose for the next two years. It was referred to the Committee on Agriculture, where we fear our city friend of county fairs may be doomed to disappointment. However, $10,000 a year of State aid to the San Francisco Livestock Show could be spent in worse ways.

Bone-Dry by Statute.

California is to become bone-dry by statute as well as by war order on June 30, 1919, according to a bill introduced by Assemblyman Frank F. Merriam of Long Beach. The prohibition is as strong as the national constitutional amendment just ratified and the punishment for each offense after the first two is $100 fine and 100 days' imprisonment, with no judicial discretion if the offender is found guilty. The national amendment will become operative next January unless legal technicalities hinder.

Salinas and Arroyo Grande Floods.

Flood waters of the Salinas River and Arroyo Grande Creek are to be curbed if the plan of Senator E. S. Rigdon of San Luis Obispo is carried to its logical conclusion. This bill provides $5,000 for survey and mapping of these rivers and preparation of plans for control of their floods. The State Engineering Department is to do the work.

Limited Hours for Servants.

If you employ your neighbor's daughter to help about the house, you must not permit her to work more than 10 hours in any 24 hours nor more than 60 hours in any one week. That is what will happen if the bill introduced by Assemblywoman Mrs. Grace S. Dorris of Bakersfield becomes law. It provides those hours for all persons employed as domestic or personal servants. Employers who disregard the rule will be subject to fine or imprisonment or both, and the fines will go into the contingent fund of the State Bureau of Labor Statistics, which is to enforce this law.

Better Not Let Animals Stray.

The man who takes up estray animals will receive adequate pay for keeping them, and then a little bit, if the bill introduced by Assemblyman Charles Kasch of Ukiah becomes law. The present pay is 15 cents a day for horse and cattle stock and 5 cents a day for sheep, hogs, etc. The amendment provides $1.50 per day for horse and cattle stock and 50 cents for the rest. It also allows $5 for preparing the notice which is already required to be filed with the County Recorder, and a reasonable cost for publishing it. Apparently Mr. Kasch wants people not to allow their animals to stray, and he wants other people to take them up if they do. It is illegal under the automobile act to allow unattended stock on the highways and it is especially dangerous to do so at night.

Law Against Foul, Weak Seed

[By Our Special Sacramento Correspondent.]

Two seedsmen in California have made it a practice to have the screenings from their seed analyzed to see how much good seed they were wasting. If there were considerable good seed in the screenings, the latter are sold as such. A man paid 75 cents a pound for some seed. He took some of it to the Government seed analyst at Berkeley and found that it germinated only 2 per cent. A fertile valley of several thousand acres in Arizona has been transformed from farm land to desert waste because Johnson grass was introduced with oat seed and made farming and irrigation unprofitable. A man planted ten acres of tomato plants. The cutworms and other pests so reduced the stand that he replanted with stock from other seed. He made $4,000 gross from that ten acres, but surviving plants showed that the first planting had been of varieties untrue to name and unsuited to the market for which they were planted. Two sacks of "recleaned" barley seed were emptied in the southern part of the State and a bottleful of various weed seeds, noxious and otherwise, was found in the bottoms of the sacks. A tract of land in San Luis Obispo county could not be sold for $50 per acre, though less valuable land surrounding it is held around $100. The former is covered with a weed introduced in field seeds.

WHAT THE BILL PROVIDES.

Senator E. S. Rigdon of San Luis Obispo, who has long been working on the measure, who championed a similar bill in 1917, and who has introduced this one in the Senate, expects many changes yet to be made, but he insists that it shall protect the users of agricultural seeds from misrepresentation that would cause them loss. Both he and Assemblyman F. J. Cummings of Ferndale, who will probably introduce the bill in the Assembly, are farmers with farmers' viewpoints. As the bill stood after the conference Saturday afternoon, it embodied substantially the following points:

"Agricultural seeds" include grain, grass, vetch and other field seeds, not including flower or vegetable seeds. The definition of "field seeds" and other terms not specifically defined in the bill is to be left to the State Horticultural Commissioner, who is to enforce the law through the county horticultural commissioners. All agricultural seeds sold for seed purposes must bear a label showing the name of the seller, the kind of seed, its germination test and when the test was made, the percentage of foreign matter, the percentage of weed seeds, and the approximate number of various noxious weed seeds enumerated. Mixtures are to be labeled as such, and shall show the information noted above. It is provided that people may sell seed without such information if the name of the seller appears on a label reading "not clean seed" plainly affixed to the seed containers. Misinformation regarding the seed in respects covered by the act or violation of its provisions are made misdemeanors which are punishable by maximum fines of $500, plus imprisonment, plus liability for damages accruing to the user of seeds so misrepresented. The proposed bill provides $4,000 for laboratory and $10,000 per year for assistants and inspectors' salaries, expenses, etc. Results of the tests and analyses made may be published as the State Horticultural Commissioner shall direct.

NO TRUE-TO-NAME GUARANTY.

Men who have lost a season's work and profits by planting seed of a mislabeled variety or low germination, men who have lost half the value of their land because of weeds, would be glad of a law which enables them to know what they are getting when they buy field seeds. They would gladly pay double or treble the prices for seed if they can know it has in it the makings of a crop.

Similar laws are already working in many other States, but one important point omitted from some of them, including the Rigdon-Cummings bill in California, is the guaranty of trueness to name. Owing to the chance of I. W. W.'s or peeved employees of seed companies mixing stakes, labels, or even seed in the field or bin, the dealers feel unable to take the chance of damage suits for such activities over which they have so little absolute control. The fact that seed are impossible to identify when the containers are changed, apparently precludes the possibility of guaranteeing trueness to name. The only one who could guaratee trueness to name would be the grower or a field inspector, and they could not guarantee it after it left their hands.

"NOT CLEANED" SEED SALABLE.

The provision by which any old seed may be sold under a "not cleaned" label is inserted in the bill to enable neighbors to sell to each other, to enable growers to sell to dealers, and the latter to other dealers, the guaranty being made by the one who sells to the user. It opens the way for unscrupulous dealers in foul seeds to demoralize the markets by offering them cheap. Only after years of education can most seed users be expected to resist the temptation of low prices. Tenants of course are not interested in keeping a farm free from weeds, and leases will have to be drawn so the land owner will provide the seeds if he wants to keep the land clean. The "not cleaned" provision also opens the way for wide distribution of noxious weed seeds due to the ease of going long distances by automobile to get seed from growers. But its insertion seems necessary not only to passage but to the enforcement of the law.

Now let our readers help or fight this law by writing at an early date to the Pacific Rural Press at the Senate postoffice in Sacramento, as noted above.

(Legislature continued on page 110)

Top Dress with Nitrate of Soda

It does not Sour the Soil

Nitrate leaves no mineral acid residue to injure your soil—it keeps the land sweet.

Nitrate of Soda

Top dress 100 lbs. per acre for seeded crops; 200 lbs. cultivated in thoroughly for hoed crops. These light dressings should be evenly spread.

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PEARS
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Be Sure and Send for Our Catalogue

The land around Fresno is particularly well suited to the growing of fruit-bearing trees. Here both tree and fruit attain their highest perfection.

We exercise great care in the selection of our buds and our trees —"From the Roots Up"—can quite properly be called thoroughbreds.

Write to us—let us know just what you are thinking of planting, character of the soil, water, etc. We are always pleased to advise with intending planters.

The demand for trees will be heavy again this year, so we would suggest that you order early.

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Why irrigate, cultivate, fumigate, fertilize, spray, and prune your trees—then lose all by a ruinous frost? The Bolton Orchard Heater

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Drake Seedling
Nonpareil
Peerless

Splendid BARTLETT PEAR STOCK on Japanese and French Pear root.

Prices on Request.

James Mills Orchards Corp.
HAMILTON CITY, CALIF.

The Last Word in Pruning Young Trees

[Written for Pacific Rural Press by John J. Fox.]

THIS IS QUITE A REVELATION to growers and will revolutionize old methods of pruning, at least up to the fourth year. We noticed that all the growers were much impressed with Professor Tuft's demonstrations and reasons for everything.

On January 10 the writer made a trip to the University Farm at Davis to see the demonstrations of pruning on different varieties which have been scientifically carried to successful conclusion up to the first four years of the life of the young tree. Dr. W. L. Howard is in charge of the division of pomology here. The actual work of pruning has been carried out and demonstrated by Professor Warren P. Tufts. Parties of growers are coming in large numbers from all over the State to view these experiments and must feel well repaid for the trip.

The day we were there 15 came in from Contra Costa county with Carl Nichols, the County Agent, and another party, including some professional pruners, from Glenn and Colusa counties.

HEADING THE YOUNG TREE AT PLANTING.

Mr. Tufts explained that in heading the newly planted trees after planting there are two different groups to consider. Those that are whips, like prunes, cherries, etc., and those which come from the nursery with side branches, such as apricots, almonds, etc. The new head can be formed from these side branches very often by selection, endeavoring to leave a space of six to eight inches between each of the three side branches chosen, to avoid making a pocket in the crotch; also to strengthen the weight carrying capacity of the limb without a split. There are two characters of sprouts on the young nursery tree—one yellowish and one reddish in color. The yellowish ones should be saved and the red ones cut off. If the side branch hangs out from the tree too flat to carry a load—i. e., at a right angle to the trunk—it can be cut back to half an inch and the new sprout used. In the experimental apricot orchards they have had no breakages from wind where nursery branches were used to build the tree.

With whips, where no side branches are present, the young tree is cut about 24 inches (knee high). In order to get well-spaced branches, let every bud start that will, then, a month after the trees have started, select the three shoots you want and leave them untouched and pinch all the others back so as to leave a little cluster of leaves at the base. These will not start again, but they serve to nourish as well as protect the trunk from the sun.

HOW DO THE LEAVES AFFORD NOURISHMENT?

Professor Tufts next explains that the nutrition of a plant depends on three main factors, both for growth and for fruit setting. This fact must be always present in the mind of the orchardist in all operations throughout the year. Those factors are: (1) An equable soil moisture throughout the year; (2) an adequate supply of minerals, particularly nitrogen; and (3) carbohydrates, which are taken from the atmosphere and stored in the wood through the foliage. The concentration of this plant food (so to speak) is always increased in value the nearer you get to the tip of the new growth. Therefore, in cutting off half your new growth you eliminate perhaps 75 per cent or more of its productive value, which has to be replaced by new growth before the tree can go on from where it left off growing last season. These two facts explain satisfactorily why a young tree that is pruned "long" is from one-third to one-fourth larger in caliper of trunk and branches than one that has been shortened back in the manner we have been practicing all our lives. We not only remove a larger part of the "starch and sugar factory" (the leaves), but we destroy the balance between root and head, which has to be re-established before the tree can go ahead smoothly again. For plant food stored in the roots has to be used in rebuilding all you have cut off, which stored food would otherwise have been used in extending the root system.

This explains why severe pruning tends to stunt young trees—by destroying the ratio which would otherwise naturally exist between the root and the top and therefore between the three factors mentioned above, viz., moisture, soil minerals and carbohydrates.

WHAT WE ARE WORKING FOR.

Every orchardist wants a tree headed right and then he wants to bring it to fruiting age as soon as possible. When it is big enough it is old enough to begin bearing and a very vigorous tree will rarely set too much fruit when it is very young, as it is still making wood growth.

The larger you can get the branches and trunk—as well as the top—at a given age, the nearer you are to the time of getting your money back. Professor Tufts has demonstrated in his experiments at Davis that this can be done by lighter pruning of all varieties and leaving in all the small wood you can—clear to the ground—barring suckers, of course, which should be nipped early.

Young prune trees, like others, are started with three leaders. At the end of the first season they are tipped back to leave 15 to 24 inches of new wood, according to growth. If one shoot is running away from the others, cut it harder than the others. This stunts it on the principle explained above and balances up the growth. After this a prune tree is allowed to go—no more cutting back at all—only a little thinning out from year to year and bringing the trees into bearing earlier. All small fruiting wood is left on. In the experimental plot, by this means, not one young prune tree has been lost by sunburn and borer, though they have had no protectors—only whitewash. And it gets warm at Davis.

MODIFIED LEADER OR DELAYED OPEN CENTER.

In one apricot experiment we noticed this new system, which looks good, not only for the large bearing area it will afford, but because of the mechanical strength of the structure and facility in getting at all parts of the tree to harvest the fruit. The way this tree is built is to leave one of the three structural branches much longer than the other two, choosing the one you want to "run out" the strongest. This will be useful in windy sections. The tree forms a sort of double-decker and makes at four years old as strong and symmetrical a tree as one could desire. This system should be seen to be appreciated. Personally, the writer would not approve of it for the prune, but



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When you have land to clear, trees to plant, subsoil to be broken or ditches to be blasted, tell your dealer to get for you one of the Giant Farm Powders—Eureka Stumping or Giant Stumping. Don't accept any ordinary dynamite, but insist on genuine Giant Powder, bearing the Giant trade mark on every box.

A postal will bring you our book, "Better Farming with Giant Farm Powders." Its 52 pages are full of short-cuts and labor-saving methods.

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All loans made on an amortization plan whereby the borrower repays the principal gradually with each interest payment.

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TREES
PEACH APRICOT ALMOND
PLUM PRUNE PEAR
APPLE CHERRY OLIVE
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Without fertilizer, crops will decrease and deteriorate in quality.

With more fertilizer, crops will increase and improve in quality.

Bigger and better crops mean bigger profits to you.

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are scientifically manufactured to meet California soil conditions and crop necessities. They are made from animal products that contain the necessary elements to feed your crops.

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SAN FRANCISCO, CAL.

PURE ANIMAL MATTER AMMONIATES

GOLD BEAR FERTILIZERS

FOR CALIFORNIA SOILS

it makes a splendid apricot form and would be also useful for peaches and some of the plums or apples.

SUMMARY OF OBSERVATIONS AT DAVIS.

(1) French Prunes.—Planted in 1917; whips cut back to 24 inch, cut one year and then allowed to go, except thinning superfluous or undesirable growth. All fine fruit wood left clear to the bottom for shade. No sunburn or borer. Trees will come into bearing two or three years earlier than those cut back—and be larger trees.

(2) Muir Peaches.—Trees planted in February, 1912. Not such a satisfactory experiment as some of the others, as two very distinct systems had been used and the trees were three years old before Mr. Tufts came on the scene. The shading out of interior fruit wood by forcing heavy vegetative growth is the chief lesson in Row No. 1. In Rows 3 and 5 summer pruning had been applied in 1916-1917-1918 and there was a good showing of fruit wood. The trees looked like bearing. Professor Tufts says that bud formation begins to take place from August 15 to September 15. The thinning has been done in August to allow circulation of air and light to prevent smothering out of this fruit wood and the development thereon of fruit buds.

(3) Nonpareil Almonds. — Trees planted in 1917 and heads formed from nursery branches where possible. Scaffold branches selected in April and May. Ten trees heavily pruned one year after planting and ten trees moderately pruned, one lot summer pruned and another not summer pruned. This interesting demonstration must be seen. As in other varieties, the lighter the pruning the larger the tree. Heavy thinning in winter is necessary where May pruning has not been done. Where trees have had only light winter pruning and summer pruning too, the framework of the trees is complete at the end of the second season and it has fruit spurs formed. A crop may be expected in 1920.

(4) Four-year-old Apricots and Plums.—On lightly pruned three-year Climax plums 15 to 20 pounds of fruit was produced the third year. These trees were thinned only and have given their second crop (fourth year) of 35 pounds to the tree. Space forbids the description in full of these experiments, which include varying degrees of severity in pruning in both winter and summer.

There are experiments with older trees, 'cots and others further advanced and some mature trees on which the division of pomology is not yet ready to recommend any particular system, as the experiments are not complete.

The pear experimental plot is interesting in that these trees are also allowed to go after the second pruning, being pruned long. On the 15th inst. we attended some demonstrations carried out by Professor Tufts in the Santa Clara Valley. About 60 growers were present at the meeting at Mr. Hasler's orchard at Evergreen and 160 at Lewis & Leets' at Morgan Hill. Also at J. E. Wiesendangers, near Meridian Corners, there were about 120 present and about 80 at Walter & Thompson's, near Los Altos.

GOVERNMENT SELLS NITRATE.

To buy nitrate of soda from the Government, application must be made before February 1 to the Bureau of Markets, San Francisco, as announced by Assistant State Leader of Farm Advisors C. W. Rubel. The War Department has a considerable supply of nitrate in San Francisco which it wants to sell, and this will be available, in addition to any that may be brought to this coast from the Chilean nitrate fields. The price is $81 per ton f. o. b. cars at port. If no cargoes are landed on this coast, the freight across the intervening land would add materially to the cost.

It is too early to state anything definite as to olive planting for the season. Early inquiries point to an increasing demand, stimulated doubtless by the gratifying returns from bearing orchards during the past season. We feel safe in predicting a firm, active future market for olive trees, and for their products.

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We specialize in selected SEED POTATOES: Certified White Rose, American Wonders, British Queens, Burbanks, Garnet Chilis, and other varieties. Also fancy, recleaned Alfalfa Seed. Write for prices.

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Losse Blenheim Apricots

One of the finest 'cots in existence. The fruit grows to a uniformly large size—is of finest flavor and quality—and brings a big price in the market.

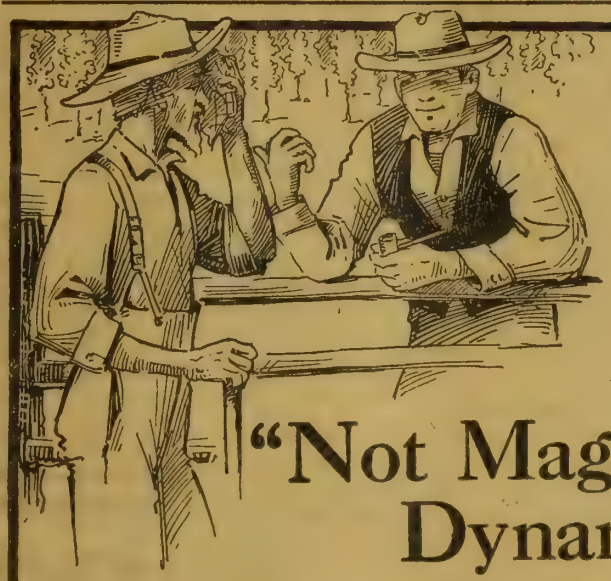
We offer the Genuine Losse Strain—budded from the original Losse orchard.

Write for further information—also our latest price list.

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"Not Magic—Dynamite."

"I *blasted* the holes for my young trees instead of digging 'em by hand. That's the reason that I am all through planting before you're fairly started. Now I shall have time to do a lot more work around my place while you are breaking your back over those spade-dug holes."

"Magic?"

"Sure,—if you want to call it that. It's the 'Yellow Magic' that's packed inside of those little sticks marked

HERCULES DYNAMITE

"And I'll tell you something else, too. Trees that are planted in blasted holes grow better and bear sooner than the ones planted in the old fashioned way. The shock of the explosion loosens the earth all around the hole so that, when the young tree begins to take hold, its roots have a chance to spread and grow."

"When I first started to use dynamite I didn't believe that it *could* make such difference—but I've learned by experience. The trees that I planted last Spring look like two-year-olds today."

"Better send to the Hercules Powder Co. for a copy of their 68 page, illustrated book, 'Progressive Cultivation.' It will tell you how to make more money and save time and backache by using dynamite in your orchard."

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Gentlemen: Please send me a copy of "Progressive Cultivation."

I am interested in dynamite for _____

Name _____

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Modern Methods of Marketing Fresh Fruits

(Continued from first page.)

WITH THEIR BACKS TO THE WALL.

This was the most discouraging, heart-sickening period the fruit grower of California ever knew. Year after year the matter of marketing was discussed at the State Fruit Growers' Conventions and State organization suggested, but the California Fruit Union disappointment was still in mind and acted as a deterrent. But the sight of the large growers—large enough to pack and ship in competition with the dealers—as being the only men financially successful gradually led to the inevitable conclusion that it paid to be on the "selling end" of the game and that it did not pay to be merely a grower. From this conviction followed a number of co-operative associations, which have been successful in marketing California fruits.

THE CALIFORNIA FRUIT EXCHANGE.

At a State Fruit Growers' Convention held at Fresno in 1900 under the State Board of Horticulture the question of "marketing fruit" was again on the program for discussion, as it had been at these conventions of preceding years. A statement was cited of a typical foothill fruit ranch for the preceding year. The total returns for over 20,000 boxes of peaches, pears and plums sold partly for cash and partly on commission (sent to the East) by the same dealer averaged less than 22c per package. At the above meeting such intense interest and deep-seated feeling was displayed that action resulted and a committee was appointed with power to call a meeting early the ensuing year. This meeting took place in Sacramento in January, 1901. About eighty growers, most of them owners of comparatively small orchards, formed the meeting. After earnest deliberation, a set of by-laws was formulated which should govern the proceedings of an organization to be known as

"THE CALIFORNIA FRESH FRUIT EXCHANGE."

And an executive committee was appointed with authorization to organize the exchange, to the end that growers should benefit by all the financial return for their fruit it was possible to secure.

From the old California Fruit Union fiasco the growers had learned that it did not pay to trust their selling business to others. And so care was exercised to insure the growers and their servants carrying out every detail of the business themselves. A purely co-operative, non-capitalized association was first decided upon, but this was subsequently changed to the present form. This is based upon a permissible capitalization of $100,000, each share of $100 value. Provision is made for the distribution of these shares among such fruit growers only as are deemed satisfactory to the members, and by limiting individual stock holdings to 1 per cent of total authorized issue. Holders of shares who desire to sell are obligated to offer them first to the exchange itself. The exchange itself serves as a center of direction and management for local and district organizations of growers on the system of the California Fruit Growers' Exchange (citrus). By an arrangement—exclusive marketing contract—with this organization, its marketing agencies throughout the Eastern States were jointly used to the benefit of both exchanges. And this close affiliation between the two organizations still exists.

STATUS AND ACTIVITIES OF THE EXCHANGE.

The California Fruit Exchange is a co-operative, non-profit marketing agency, representing 38 green fruit associations in 14 counties. It has a membership of 2000 growers, for whom it buys all supplies at the lowest possible cost and it finances them if necessary over harvest time and other hard spots in the road.

The exchange is governed by a board of directors consisting of 11 growers who meet once a month to transact business and who regulate the policy of the exchange throughout the year. It is the only organization owned and operated exclusively by fruit growers that is a State institution. Being a non-profit concern, it refunds to the grower at the end of the season the difference between the cost of operating (inclusive) and the 7 per cent commission which covers all cost of marketing.

About 55 per cent of the fruit is marketed by private sale and the rest at auction, which latter has, of course, a bearing over the whole market.

HOW THEY KEEP TRACK OF MARKETS.

The exchange divides up the United States into five large divisions, with a manager to each division—New York, Boston, Minneapolis, Chicago and Fort Worth—also Seattle—5 brokers and 77 salaried agents. For each of these divisions is divided up into zones, each with its agent, and these zones thrust out from their center to reach every market of consequence within their sphere. The exchange is in daily touch and communication with all these heads and subsidiary agents, and daily informs its members by bulletin mailed to each of the actual prices paid on all green fruits throughout the country, also competitors' prices. Telegrams alone to cover this work cost $17,000 a year—80 to 90 telegrams a day, after being cut to a minimum.

Each car is kept track of from the time it is shipped till it has been signed for.

LOCATION OF HEADQUARTERS.

The exchange occupies the entire sixth floor of the California Fruit Building at Sacramento (shown in cut), its various departments comprising a smooth, easy-running marketing machine. All varieties of statistics on acreage, varieties and production repose in their files. The field department has five men, who visit the various organizations to adjust matters if needed and to advise generally. The claims and traffic department checks up claims, rates, files claims and keeps track of everything in connection with transportation and damage. While in the office, a grower showed the writer a check for $113 refund on a shipment of pears damaged in transit. The purchasing department procures for members all supplies and farm material of whatever nature at a nominal profit. If this department shows a profit, the earning is added to the general refund. In the sales department all business from the Eastern markets is transacted. A private code is used. By their knowledge fruit may be diverted from surfeited markets to those where the demand is good.

The association department keeps records of all its associations. Each association has its own by-laws and is represented at the exchange by a delegate. Besides the associations, each large independent grower, through being a stockholder,

SUPERPHOSPHATE
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is a wonderful fertilizer for ALFALFA
Excellent, also, for Fruit Trees, Vines, etc.
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WRITE FOR PRICES
California Seed Company
151 Market St., San Francisco, Cal.

is also a member of the exchange, but the local associations cover the little fellow. It tries to protect the interests of its members by advising as to Eastern conditions. If bad, it may advise them to dry or sell to canneries. The exchange calls exclusively for deciduous fruit, just as the Southern exchange does for citrus only.

GROWTH OF THE EXCHANGE.

The volume of business achieved this year exceeded that of last year by three millions of dollars! The first year only 200 cars were shipped, but in the 18 years of the life of the California Fruit Exchange the growth has slowly and steadily mounted to 4100 cars handled this year, of a value of seven and a quarter millions of dollars.

We asked George H. Cutter, president of the exchange, the secret of the success of this great co-operative market. His reply was: "Confidence is the foundation of co-operation. The whole structure is based on loyalty and good business—sound business." he said. "Education in the very principles of co-operation is of fundamental importance. Failures may be attributed to the lack of this education in former efforts. Also extended credit is not good business. It is bad management. Lack of capital would be bad, as it is often necessary to assist members with loans to harvest their crops."

FUTURE POSSIBILITIES.

Mr. Cutter said that standardization was eliminating the difference in prices between small associations. A higher grade pack is sought. Better transportation and refrigerating facilities all figure largely in the success of deciduous fruit. One day's delay means that two days' supply must be offered for consumption in one day, and so on. Also, poor transportation means poor refrigeration, and the transportation companies who divide with the growers in the expense of getting their fruit to market get theirs first.

The whole State is not yet co-operating in the fresh fruit marketing. There are probably 15 big shippers in the game as competitors. This year's business went beyond all expectations all along the line, except a few days when mountain pears moved poorly owing to transportation difficulties.

There is no doubt that shipping and marketing green fruit is a most hazardous business, calling for constant vigilance and care on the part of the operators. The successful and profitable distribution of the green fruit crop calls for co-operation and loyalty of the highest order. Thus the man that has a grievance can place it before his association. If it is real, it can be adjusted. To complain to an outsider is ridiculous and weak. Every co-operative association that believes in its principles and every member should adopt the motto of the greatest of all co-operative societies.

ANNUAL MEETING OF PEAR GROWERS' ASSOCIATION.

The regular annual meeting of the California Pear Growers' Association was held in the office of the association, 510 Battery street, San Francisco, January 20. Officers elected were: President, Frank T. Swett; vice-president, P. J. Huth; secretary-treasurer, F. A. Edinger; assistant secretary, A. D. L. Hamilton.

There was received from canneries and disbursed to members for canning pears $390,108.44. There were shipped by members to canneries, also Eastern shipments, local shipments and drying purposes, 61,766,383 pounds. The membership is 325.

Following is a synopsis of the manager's report: Owing to unsatisfactory conditions in the summer of 1917, a few leading pear growers got together and started a campaign for organization, which was completed by June, 1918. By the end of July every ton of members' fruit had been sold at the full association price, with the exception of one district, where, owing to lack of rainfall, the fruit ran small. Prices varied here according to quality, but finally all these pears were placed at an average of $60 for No. 1 and $30 for No. 2 f. o. b. The regular association price, approved by the Government officials, was $70 a ton delivered to the nearest cannery, with San Francisco as a common point. This is the highest price ever obtained for a crop for canning pears.

Many pear growers, some members and some not yet members, had in past years signed long-term contracts for their crops. At a meeting with the canners in the offices of the Food Administration these gentlemen, on a showing of increased costs, voluntarily advanced the price on contract 1918 pears an average of $10 a ton. The total gains to growers, in a very large degree due to the work of the association, were: The raise of $10 a ton on 6000 tons of contract pears, $60,000; in 1918 cannery pears of members sold for $390,108. The same tonnage, if sold at 1917 prices, would have brought only $210,000. Therefore, the gain to growers was $180,108, or a total gain of $240,108.

Had not so many growers insisted on shipping at least 80 per cent of their crop East during August and September, the association could have placed hundreds of tons with the canners at remunerative prices.

Before the war, Great Britain was one of the principal markets for California canned pears. When the embargo on this article is lifted and exports resumed, both growers and British will be pleased. Though only canning pears were handled last year, the association will be in a position to secure for every member the full value of his dried pears as well.



ORCHARD SPRAY

A million dollars worth of damage each year—that's what the pear thrips is capable of doing to the pear, prune, cherry, plum, and other deciduous fruits of California. Because of the minute size of the insect—the rapidity of its spread over large areas and the suddenness of attach in great numbers—the control of this pest has always been a serious problem.

We have conclusive proof, however, that it can be controlled by thoroughly spraying with

Miscible Oil No. 2--for Thrips

This is a high gravity oil—specially prepared for this purpose—where great penetration and quick evaporation are necessary.

Miscible Oil No. 2 is a Universal Brand Spray. That means that it is uniform—that it is made from the best materials—and that its manufacture is supervised by chemists and entomologists who have had both laboratory and field experience.

Miscible Oil No. 2 will kill the pear thrips in the bud better than any other spray—there is no question about it. A delay of a few days in spraying for thrips may cost you hundreds of dollars. Be ready! Order your spray now.

If you will write our entomologist, Paul R. Jones—acknowledged an expert in the control of pear thrips, he will be glad to help you to decide your individual spraying problem. This expert advice is free. Write today.

Insecticide Department

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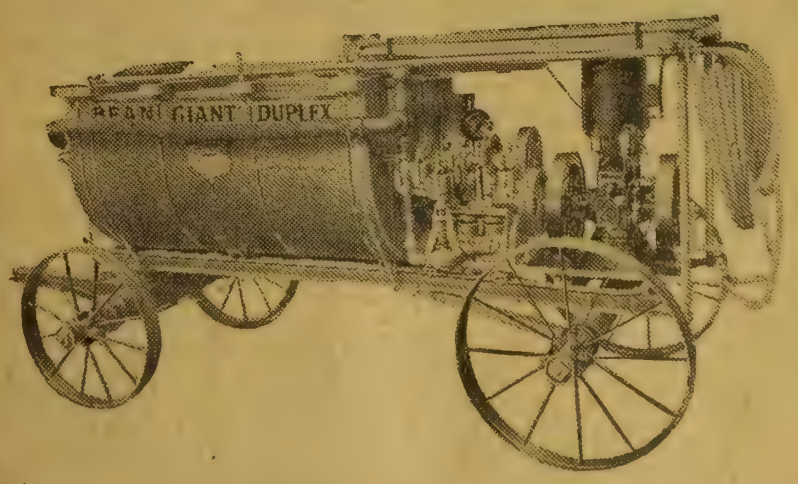
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BEAN POWER SPRAYERS



Why is the Bean the choice of growers all over this state, and throughout the fruit-growing world? Ask any Bean owner, he'll tell you the details about these

10 Big Distinctive Advantages

1. Patented Pressure Regulator, safest, most dependable, and best ever devised.
2. Threadless Ball Valves, which cannot rust, corrode or stick tight.
3. Porcelain-lined Cylinders.
4. Underneath Suction.
5. The Bean Pump, which has no stuffing box.
6. Eccentrics, which are used instead of cranks.
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9. Reliable Novo Engine, sturdy, reliable, without trouble.
10. Bean Re-filler, which fills a big tank in five minutes, or less.

THE BEAN SPRAY GUN makes the largest power sprayer a handy one-man outfit.

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Address office nearest you.
BEAN SPRAY PUMP CO.,
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Gentlemen—Send me your catalog I am interested in
POWER SPRAYERS
HAND PUMPS
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Pruning an Orchard on Business Principles

[Written for Pacific Rural Press.]

Last fall we, with the superintendent, went over the James Mills orchard at Hamilton City. It is a big project, which includes over 1000 acres of fruit. The fruits grown range from oranges and olives to prunes, pears and almonds, and we visited the nursery where all their young tree stock is raised. At the central station our attention was first attracted by the snug, comfortable bungalows that have been erected for the accommodation of the married white help; also the large, clean and commodious quarters and dining-hall provided for the single men. This phase of a large industry is the chief reason that the Mills Orchard Company experienced no difficulty in obtaining and keeping help.

The large orchards, extending on either side of the main road from the big canal, looked very thrifty and well kept. When these extensive acreages of oranges, pears, apricots, etc., all come into bearing it will require a large packing establishment to take care of it all. Amongst young two-year-old prunes was a good crop of milo maize, gyp corn and feterita.

The heads of these are harvested and fed, while the stover is turned under as a cover-crop. We were told that after two years the trees are allowed all the ground and no intercropping is practiced. There are some 5000 acres of farming land in addition to the orchard and herds of purebred swine and dairy cows are kept.

We were told that additional plantings were in project for this season. To take care of the extensive, cultural operations necessary five tractors are kept—two Yubas, two Bests and a Rumely—besides some mules. We noticed an apiary for pollenization of the blossoms in which there looked to be 200 stands of bees, also a honey house. The entire development of this large undertaking in a new district is run on the most strictly business principles as applied to farming. A thousand acres of fruit is "some considerable chore" and we can see where the livestock will, from now on, give rapidly away to fruit as first to be considered.

Choice of Prune Varieties

To the Editor: From time to time I have noticed various discussions relative to the different varieties of prunes, being interested in some variety that would ripen a short time in advance of the French and of a larger variety that would go well with the French, so as to lengthen the harvesting season and thus decrease the number of helpers necessary.

I have noticed the Imperial mentioned as an excellent prune and particularly adapted to upland. In the September 28 number a list of varieties in best demand by the market was given and I noted the Imperial was not mentioned. Of the Sugar, Clairac Mammoth, and Robe de Sargent, which is considered to have the best future, and do any rank with the French for profit?

I would appreciate some information in regard to these varieties and when they ripen.—F. J. W., Canyonville, Oregon.

[The Imperial Epineuse and the Clairac Mammoth are the same prune. I think, of the three varieties you mentioned, the Imperial has the best future, as it ranks nearest with the French in quality of the meat and bears fairly regularly in this State if interplanted with the French—say 6 rows of French to 2 of Imperial. If closely planted in large blocks by itself, the yield usually runs shy. It has a small pit and a thin skin, so needs especial care in the handling and dipping. The Robe de Sargent is a handsome fruit of excellent quality, but is a shy bearer—its only disqualification that I know. The Sugar prune will doubtless be discriminated against by the trade when the prune market is better supplied, because of its large, dark pit. It has to be pruned about like a peach—each year—or the fruit will run too small. It dries away more than the other varieties. If you have any land that does not size up to French to a profitable degree, you might plant the Imperial there and interplant a row or two of Sugars. The Sugar is the first to ripen—is sometimes half off before the other varieties are ready. The others differ, but are not very far apart.—Ed.]

Growing Interest in Fruit Evaporators

[Written for Pacific Rural Press.]

Professor William V. Cruess of the University of California, who has been working on fruit by-products and appliances for a long time, has lately visited the two small Napa county driers which were mentioned in an article in last week's issue of the Pacific Rural Press. In a letter to us of the 31st ult. he says: "I had the pleasure of seeing the driers on the ——— and Haas ranches last week. Mr. Haas' drier impresses me as being the better of the two. I believe he would get much better results with the use of wire screen trays and a larger burner. But, even with all defects considered, his results are remarkable. He saved about $15,000 worth of prunes with a $425 drier—not a bad investment.

"We hope to relate his experiences, together with many others, in a station report, which will appear in five or six months.

"Congratulations on your write-up of fruit products for 1918. It is full of useful information in readable form. I do not wish to appear flattering, but I have heard in many quarters this statement: 'The Pacific Rural Press is improving wonderfully. It always was a good farm paper, but it is better than ever now.'"

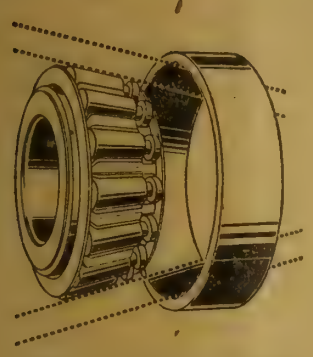
LAND FOR SOLDIERS AND SAILORS

Dr. Elwood Mead, President of the State Land Settlement Board, has returned from Washington, D. C., where he has aided the Department of the Interior in preparing a Federal Land settlement scheme to include the placing of returned soldiers and sailors on the land. Early in the spring the Board will advertise for bids for a new project similar to the one opened at Durham last summer.

Only a slight amendment to the California law, according to Dr. Mead, is necessary to place this State in a position to co-operate with the Government. California will be the first State in the Union to consummate this work, which will not only provide labor for thousands of returned men all over the states, but will increase the resources of the Nation. For the program calls for reclamation schemes on a large scale in many states, at which discharged men would be employed at current rates, a section of which any man might select afterwards under the formulated terms of payment—the Government furnishing some of the money to pay for cost of development.

This would form a lien on the land and be later returned to the Government by easy payments. Under this system the Government does not pay out anything which is not returned, as full payment is made up in 40 years—a sound co-operative system which encourages individual effort.

TIMKEN TAPER



Dotted lines show how the inside of the "cup" of a Timken Bearing is *tapered* to fit over the *tapered* rollers.

Bearings that Stay New in Tractor, Truck and Motor Car

The job of tractor bearings—in wheels and transmission, on the pinion or worm shaft, at the differential or in knuckle heads—is to keep the expensive working parts of the vehicle from wearing out. Bearings can't do this job if they ***wear out themselves,*** or even if they just ***wear loose*** and stay loose. Therefore, they should ***stay*** new — and Timken Tapered Bearings ***do.***

The tapered design enables the bearing to resist not only up-and-down loads, bumps and shocks, but also the heavy ***side or end pressures*** inevitable in tractor service.

Naturally, with this ***doubled power of resistance*** to wear and tear, Timken Bearings stand up where less sturdy bearings would be ground to pieces.

Secondly—If a little wear does occur after thousands of miles, it can be quickly and easily corrected, just by moving the tapered "cone" and rollers a trifle farther into the tapered cup. This simple "take-up for wear" extends the life of the bearings indefinitely.

The following list of tractors equipped with Timken Bearings shows how rapidly tractor owners and builders are appreciating the vital importance of Timken taper.

Acme

Bates All Steel
Bates Steel Mule
Bean
Beltrail

Cleveland
Coleman
Cummunity-Water Ballast
Craig
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Fageol
Farmer Boy
Farquhar
Fordson
Four Drive

Galloway
Gile
Gray

Harrow
Hendy

Hession
Hood

Illinois

Lang
Lanson
Lynn

Maxwell
Moreland

National

Parrett
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Russell

R & P

Square Turn

Topp-Stewart
Tracklayer

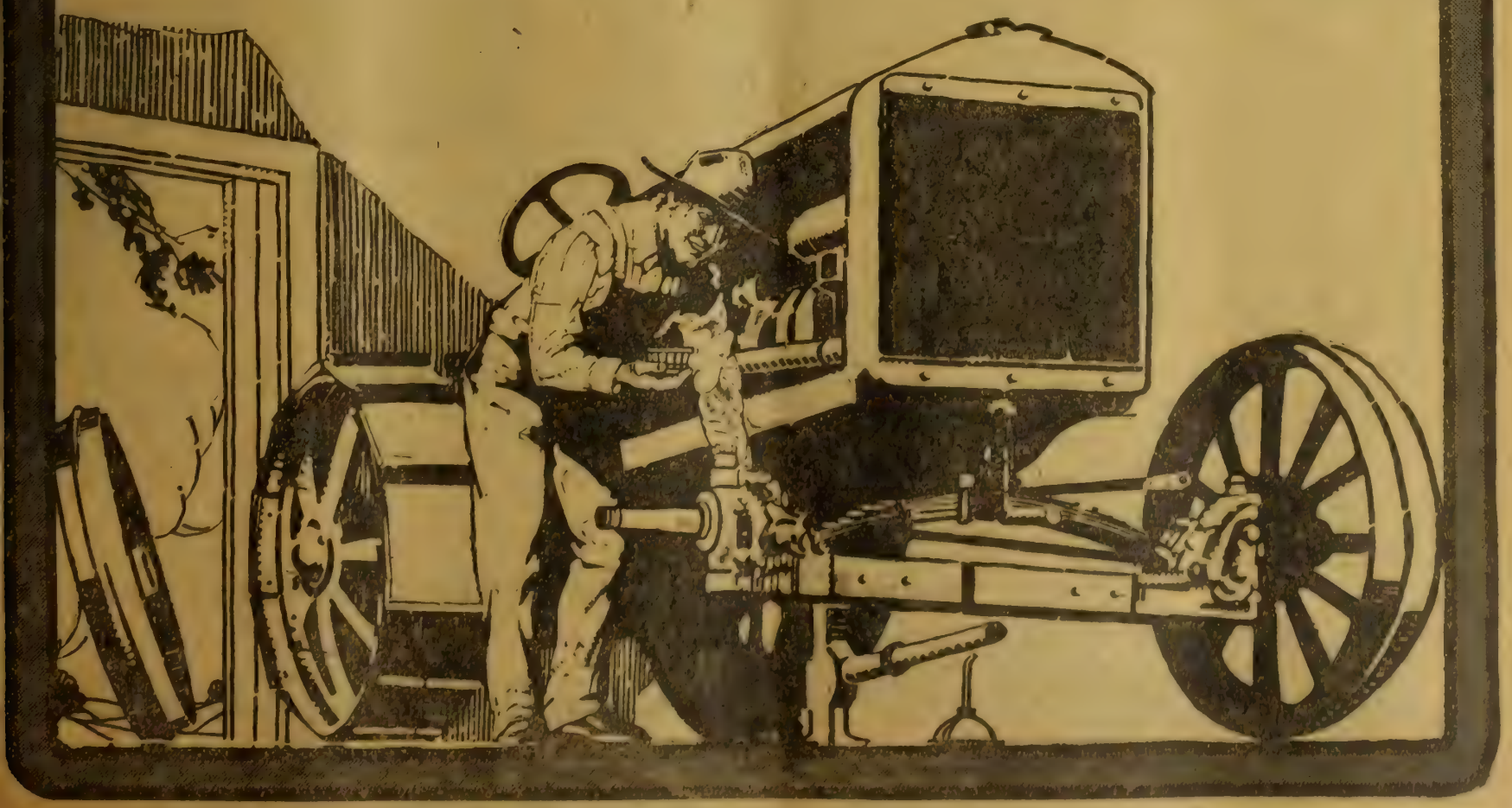
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Write for free booklet D-9, "Timken Bearings for Farm Tractors."

THE TIMKEN ROLLER BEARING COMPANY
Canton, Ohio



Changes in Standardization Bill

[By Our Special Sacramento Correspondent.]

Various changes from the proposal sketched in our issue of January 18 were suggested and made in the fruit and vegetable standardization bill at a large meeting of most representative fruit growers and shippers, including representatives of the California Fruit Distributors, California Fruit Exchange, California Fruit Growers' Exchange, California Vegetable Union, State and County Horticultural Commissioners, and others directly interested. The meeting was held January 17 and 18 in Sacramento. Changes are noted below. No vegetables except tomatoes, onions, sweet potatoes, and potatoes will be affected. A large lug box for vegetables was standardized.

Objectors to any one State Horticultural Commissioner fixing standard packages and grades and grading rules for fruits and vegetables were satisfied by the provision that before such grades could become effective a meeting, advertised at least two weeks in local newspapers in districts where affected fruits or vegetables are grown, would have to be held and endorse the proposed grades. These are only for fruits and vegetables for which standard packages and grades are not provided in the act.

Unpacked lug box shipments were freed from any requirement of uniformity in size. So must the consumer suffer because some growers and shippers want to ship "orchard run" without grading for size. Uniform "quality" and reasonable freedom from defects were retained.

Apricot and plum baskets were changed back to the sloping sides which now prevail, ostensibly because straight-sided baskets would not "nest" for economy of space in shipment to the users; and probably the same reason will prevent use of straight-sided berry baskets.

The size of standard containers of all sorts was referred to a committee to report at another horticultural meeting to be held before the second period of the legislative session opens. Many factors affect the size of containers, a good example of which is the cherry lug box, whose length was reduced to make it pile right in the car with common packed cherry boxes. F. B. McKevitt made the point that such a size would not fit in mixed cars with crates of other fruits and would be a great embarrassment. He pointed out that the packed cherry boxes will soon be only a memory of labor thrown away. Last season the cherry boxes, packing, and delivery to the shipping point in many cases cost $1 per box, which is all that ought to be received for it.

Berry baskets four inches deep inside measurements would be at least four and one-sixteenth inches high and would not fit in the crates standardized. Minimum weights of 25 pounds in the standardized Los Angeles lugs were declared unattainable with Tokay grapes. Probably half of the f. o. b. orders for Tokays the past season were for lug-box shipment, according to Horticultural Commissioner H. H. Ladd of San Joaquin county: and the basket-packed crates shipped East for auction sale or on consignment brought less money than the unpacked lugs, though the packing cost a great deal more. It was another case of labor lost. On this account lug shipments are expected to replace the packed crates, but the lugs are packed in the field as they are picked. This involves less handling and makes them keep better, but does not allow the wilting which now permits grapes to be packed tightly without breaking from their stems and spoiling. Thus enough Tokay grapes cannot be field-packed in the regular lugs to weigh 25 pounds at destination, and the standard minimum weight was reduced to 21 pounds. At the same time, to avoid duplication of telegraphic and clerical expense and to keep the Eastern markets clear as to the amount of fruit in the packages, it was deemed advisable to standardize lugs that would hold 24 pounds the same as crates now do. The committee will report on this point also.

Labeling with the place where fruit and vegetables are packed, desirable as it seemed to everyone who expressed an opinion, was ruled out because of an adverse Supreme Court decision in a similar case.

The cost of administering this law is to be no more than before, except for two traveling State inspectors, who would secure uniformity in enforcement of the law by the 50 horticultural commissioners and their 250 assistants. It is hoped that full discussion by correspondence and meetings will make possible the presentation of a bill that will be acceptable to the greatest number possible.

CALIFORNIA TRACTOR DEMONSTRATION.

Sacramento was chosen as the place for the next demonstration of the California Tractor and Implement Association, at a meeting in San Francisco last Saturday. The committee, headed by Prof. J. B. Davidson, which had investigated the various sites, reported on five fields, two at Sacramento, one at Stockton, one at Modesto and one at Fresno. Five points were considered: First, suitability of the site in the way of soil conditions, topography, acreage, etc.; second, accessibility — railroads, electric lines, highways; third, farm population within drawing distance; fourth, ability of city to care for demonstration and visitors; fifth, co-operation city could give. The committee placed the sites in the following order: Fresno first, Sacramento second, Stockton third, Modesto fourth. In a vote by the association, Sacramento received a majority of all the ballots cast and was declared the unanimous choice.

The site chosen is known as the Del Rio Rancho and is located five miles south of Sacramento—a half mile from the S. P. railroad and one mile from the Central California Electric. It contains 408 acres and is located on the highway.

The date of the demonstration was not definitely set, but will be the latter part of April.

R. M. O'Neill, who is to manage the demonstration, promises to make it the biggest and best ever. Mr. O'Neill was superintendent of construction of the Machinery Building of the Panama-Pacific Exposition and of the Civic Auditorium. He has managed several tractor demonstrations in Southern Californa.

FRESNO COTTON MEETING CALLED.

I beg to say that there will be held, under the auspices of this office, a meeting of cotton men, Saturday, January 25, at Fresno. Sessions will be at 10 a. m. and 1:30 p. m. At 3 p. m. a visit to the cotton gin, which will be in operation, will be made. Robert Hulme, general manager of the California Products Company, Fresno, has advised me that his company is buying cotton, paying around 30c a pound for American staple and around 45c for Egyptian long-staple, according to the grade. The purpose of the meeting is to bring together the information which will be most helpful to producers in their effort to develop the cotton industry in the San Joaquin Valley. All interested in the cotton industry are invited to attend. Please bring to the meeting samples of cotton grown. —Le Roy B. Smith, County Farm Advisor.

BIG SEED COMPANY IS DISTRIBUTING NEW CATALOG

Aggeler & Musser Seed Company of Los Angeles Issue 26th Annual Book

The Aggeler & Musser Seed Company, the large Seed House of Western America, is distributing broadcast their 1919 Big Annual, which is claimed to be the most complete and finest yet issued.

Among the many new features incorporated is a department on "More and Better Potatoes." Important data is gevin on Home, School, Field and Demonstration Garden Work. Data concerning correct tools and implements to use for best results. Marketing notes on each subject, telling how and where to market. Hints on poultry, spraying, fertilizing and the use of insecticides. It is in reality several books in one, for it includes the important "Garden Manual." 1000 questions are answered and valuable information on all varieties of plants is given.

The Aggeler & Musser Seed Company have opened a large store right in the center of shopping district, 620 South Spring street, Los Angeles, a great convenience to rural customers. A special Call Department has been installed to accommodate customers in town for a short time on business. Orders left on arriving are ready when called for. The big Mail Order Department and General Offices are all situated at the new store, while the general milling, cleaning and warehousing will continue at the big warehouse, Sixth and Alameda. The new catalog explains fully all the new departments and why our service has been improved 100 per cent. Sent free, postpaid, anywhere. Write for copy at once.

GET THIS BOOKLET BEFORE PLANTING ALFALFA



Avoid disappointing yields in future years by planting the kind of alfalfa that will yield heaviest and live longest under your particular conditions.

This illustrated booklet shows the growing habits of our different kinds of alfalfa, explains which one does best under your soil and moisture conditions. It will pay you to get a copy before purchasing your seed.

If you are going to plant alfalfa this spring don't fail to write for this booklet and prices on new crop seed, right away.

Bomberger Seed Co.
(Desk A)
725 Tenth St. Modesto, Cal.

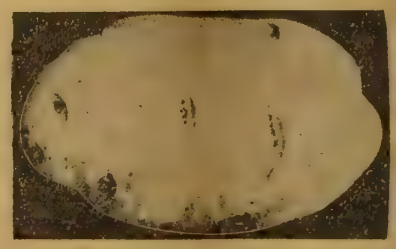
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TELLS HOW, WHEN AND WHAT TO PLANT

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Early Rose. . .$3.50 per 100 lbs.
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On orders for ten bags and up, 25c per 100 lbs. off above prices.

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When buying Alfalfa Seed from us, you are getting positively the cleanest stock obtainable. Our Seed Cleaning Plant is the best equipped in the West, enabling us to make seed absolutely clean.

ALL KINDS OF RELIABLE

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Horticultural Jottings

The month of December of 1918 said to be the coldest one in Neada county for many years.

The prune crop at Banning was l delivered at the packing house ithout any damage from rain.

Don't forget those tree protecors—you can't put them on too arly. Whitewash in February.

The California Walnut Growers' ssociation has this season marketed 2,500 tons for its members to Janary 1.

Paul Masson of San Jose is plantng out 4000 Losse Blenheim apriots on his ranch near Los Gatos his year.

Bangor (Butte county) reports no amage to citrus fruit during the te 10 days' cold snap. Even the vocado seems to have come off scot-ee.

Cover-crops generally will be poor his year for March plowing, unless lenty of mild weather and rains ome very soon. Quite a little plowng has been done in some sections.

Thirty-three acres of raisins, eaches and apricots have been sold t Hardwick for $21,000. H. S. Hampton was the owner and seller nd Corrie Verkuyl of Hanford the uyer.

T. C. Tucker, manager of the alifornia Almond Growers' Exhange, is still in the Eastern States losing up business. The sale of he crop has been almost entirely ompleted.

A Farmers' Institute will be held t Cupertino during the week beinning Monday, January 27. It ill be under the auspices of the niversity of California, in the I. O. . F. Hall.

There is plenty of time for rain et. We remember in 1904 rain tarted about January 14 and we ad "soft" weather till the first eek in April, when many men got caught" on their plowing.

Last year the United States is aid to have imported over 5000 tons f figs, 400 tons of raisins and bout 12,000 tons of almonds. Exorts of raisins was about twice the ormal export of pre-war times.

Carl Nichols, Farm Advisor of ontra Costa county, has recomended beekeeping in his county. onditions in the Antioch, Oakley, rentwood and Byron sections are aid to be favorable for the keeping f bees.

J. J. Cowan has been appointed istrict agent for the Pacific Fruit xpress and will be in charge of he territories around San Francisco ay, the Northwestern Pacific Raiload and the Coast Line to Santa arbara.

F. S. Dirion, squirrel inspector of ontra Costa county, with his two ssistants, have mixed and put out 861 pounds of poisoned barley durng the past month, as well as using 12 gallons of carbon bisulphide. his is a good start for the year.

From a late report in Newcastle e learn that probably no year has nown so many record prices for reen fruit as the one just cometed Levi Late Cling peaches ipped by the Penryn Fruit Comany reached about $800 a car above revious records.

California is estimated to have oduced one hundred carloads of oney this year, which represents he greater part of all the honey nsumed in the United States. Orardists are now extending inquirs about bees and increasing numrs may be kept.

We have had several inquiries reently from orchardists who want to now about renting bees during the ossom season. The usual price id is about $1 a stand, owner of ees delivering them and taking em away again for this. One and to every 25 trees.

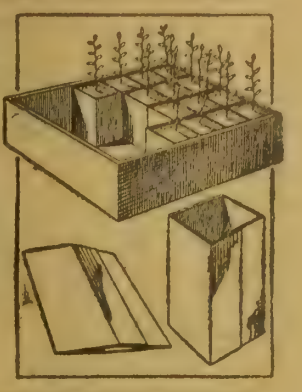
A meeting of walnut growers is eported at T. H. Lambert's farm El Monte, January 13, attended by farm advisors and representatives from the Horticultural Commission and the Walnut Growers' Association. Cultural methods, etc., were discussed and pruning of walnuts demonstrated.

At an arranged conference with the finance committee of the board of regents of the State University on January 10, the deciduous fruit and nut producers' committee was assured that the regents would favor an increase of the appropriation in the University budget for deciduous fruit experiment work from $50,000 to $150,000. The board was unanimous in its support of the measure. The next move of the growers will be to get the co-operation of the State Board of Control in the passage of a bill by the State Legislature appropriating the amount asked.

PERFORATED TREE PROTECTORS



that will keep squirrels, rabbits, and gophers from barking your trees and give perfect protection from the hot sun, sand storms, raking bark in cultivation, etc. We make a number of kinds of wraps, among these are the **YUCCA, which has the fastening wire entirely around it.** Tell us your pest and we will tell you what kind to use.



COLLAPSIBLE PLANTING POTS

These pots are bottomless. This allows you to plant pot and plant, never disturbing your plant nor stopping its growth in transplanting a single hour. For starting early vegetables, such as tomatoes, cabbage, egg plant, cauliflower, cucumbers, cantaloupes, and squash. Also for propagating rose cuttings, geraniums, eucalyptus, or olive cuttings. It is the most practical pot on the market today for propagating work. Write us for samples of either pots or protectors. Tell us which you are interested in.

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You May Need that Extra Power for Those Hills and Hard Spots



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3. ECONOMY—25% more power with less weight. Patented E-B Transmission saves power and weight. E-B Kerosene motor gets all the energy from every ounce of fuel used.

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THE EMERSON BRANTINGHAM E-B LINE FARM MACHINERY

E-B 102 Tractor Plow Turns More Acres Better with the Same Fuel

When you hitch an E-B Power Lift Tractor Plow behind your tractor you get faster plowing, better soil conditions and kerosene saving.

Easy to handle and easy to pull. Fewest repairs and adjustments Land side pressure carried on rear furrow wheel and E-B Quick Detachable Shares make furrows turn with less kerosene cost. Sharp Share plowing readily done when shares are so quickly applied and removed. Sharp Shares keep channels of moisture circulation open — better soil conditions. Ask your E-B dealer for complete facts.

EMERSON-BRANTINGHAM IMPLEMENT CO., Inc.
Established 1852 ROCKFORD, ILL.
BROCK & SKIDMORE, Distributors, BERKELEY, CAL.
The Most Complete Line of Farm Machinery Manufactured



Twice the Spread In the Same Time—With Less Work

Put the same amount of fertilizer in an E-B Spreader and it will cover one half more ground than if spread by hand—can be done cheaper, quicker and better.

Better pulverizing. Water tight bottom saves all the fertilizing elements. Spreads wider than the wheels. Passes through a six-foot door.

To make fertilizer give biggest crop results for least time expended, use the E-B Spreader behind the E-B 12-20 Model AA Tractor.

The Spreader best adapted for tractor use on the market

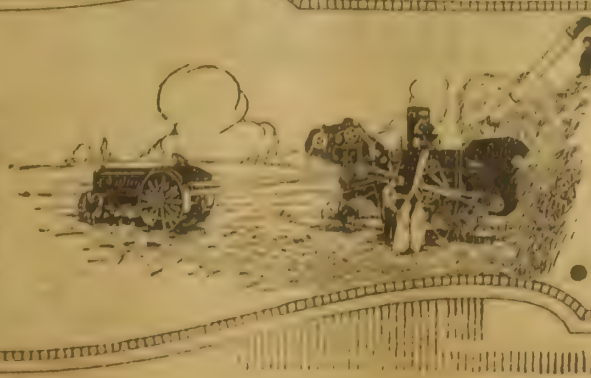
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E-B Geiser Thresher Makes You Your Own Thresherman

The present day tendency toward independent threshing is met by the E-B Geiser Thresher.

With a tractor engine of 12 horse power the Geiser driven by you and two or three other men can do your own threshing and that of several neighbors.

With the Geiser Thresher you can start your threshing when the grain is ready. You can get through with less work and inconvenience. You get all the grain well cleaned. Light running keeps fuel cost at a low point—and best of all—it makes you independent.



Bills of Interest to Farmers

[By Our Special Sacramento Correspondent.]

TO CONTROL CALAVERAS FLOODS.

An engineering survey of the watershed and storage site of the Calaveras river is ordered in a bill introduced by Senator Frank S. Boggs of Stockton, January 9, for the purpose of controlling its flood waters. The State Engineering Department is allowed $15,000 for the work, which is to include an estimate of the cost. It was referred to the Committee on Drainage, Swamp, and Overflowed Lands.

TWENTY-ONE DOLLARS PER SCHOOL CHILD.

The State Controller will transfer to the school fund such sums semi-annually as will be equivalent to $21 per annum for each pupil in average daily attendance in elementary schools during the preceding school year, as provided in a bill introduced January 9 by Senator W. R. Sharkey of Martinez. This is in addition to the funds provided by the constitution and any other sources for the elementary schools. To Committee on Education.

MUST NOT WASTE ARTESIAN WATER.

Uncapped artesian wells and the wasting of water from any artesian well are declared public nuisances in a bill introduced by Assemblyman Walter Eden of Santa Ana. Each day's waste constitutes a separate offense. Persons who maintain such uncapped wells or permit such waste are punishable by fines ranging between $25 and $500, or by six months' imprisonment, or both, and such nuisances shall be abated by due process of law. A previous act with the same intent is repealed. An artesian well is defined as one in which "water rises by natural forces above the zone of saturation in which it occurs." Wastes are defined as (1) permitting artesian water "to run into any river, creek, or other water course, channel, or any bay, reservoir or pond, unless for use thereafter for the beneficial purpose of irrigation or for municipal or domestic use." (A later provision makes some ambiguity by apparently attempting to restrict the water to be so stored for irrigating alfalfa to two-fifths of a miner's inch per acre perpetual flow for the year, and for other irrigation only one-fifth of a miner's inch.) (2) Allowing water to run onto roads unless for irrigation. (3) Allowing artesian water "to reach any substratum before coming to the surface of the ground. (4) Using artesian water for irrigation when over 5 per cent of such water escapes from the land to be irrigated. Referred to Committee on Conservation.

CITRUS EXPERIMENT STATION, $40,000.

Forty thousand dollars for additional support of the Citrus Experiment Station at Riverside during the two years ending June 30, 1921, is appropriated in a bill introduced January 9 by Senator S. C. Evans of Riverside. To Committee on Finance.

TO PROTECT FARMERS FROM RABBITS.

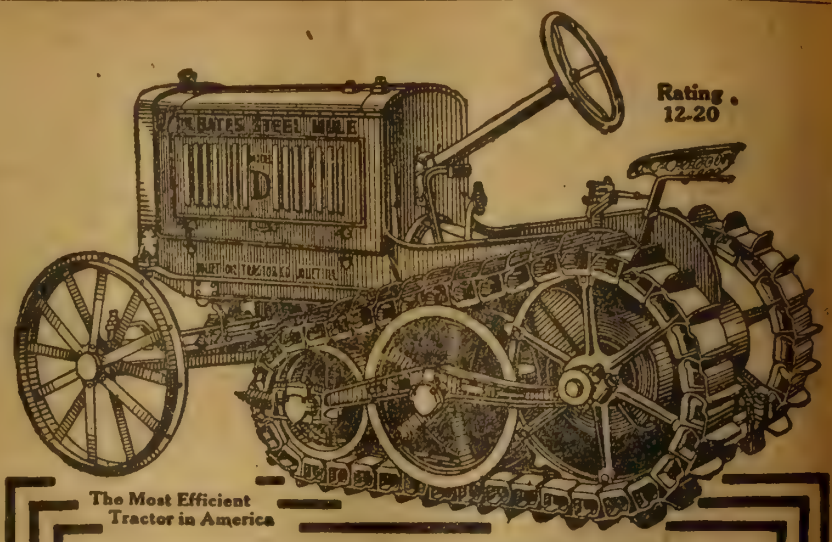
That rabbits are predatory animals highly injurious to food and feed crops is the reason for a bill introduced in the Legislature by Assemblyman W. A. Doran of San Diego county. His bill of two years ago, taking the protection of the fish and game laws away from the rabbits in his fish and game district, was passed by the Legislature and "pocket" vetoed by the Governor. Last summer, to save war food crops such as beans and wheat, the Game Commissioner announced that protection to rabbits had been suspended temporarily and urged hunters to kill all the rabbits possible while the lid was off. Mr. Doran's bill recognizes farmers' rights to protection of their crops as well in peace as in war. Too bad the bill doesn't include other parts of the State where it is needed badly.

PROPOSED SEED CERTIFICATION.

Seed potato certification by the State to encourage production of disease-free seed true to name has fallen into disuse because of faulty finance provisions in the potato certification law passed a few years ago. This season only one or two growers asked to have their seed potatoes certified. To bring back potato certification and to open the way for certification of other agricultural and vegetable seeds in California, a measure is being considered by the State Horticultural Commissioner's office providing that this officer may establish and enforce rules under which certificates will be issued to growers. This certificate is to show the variety, purity, viability, freedom from insect pests and diseases, and the amount of seed which can be sold thereunder. All certified seed must be appropriately labeled. Growers are to pay the costs of inspection and the Commissioner shall publish a list of such growers. Misbranding seeds or changing the certificate are made misdemeanors.

FOR DECIDUOUS FRUIT EXPERIMENTS.

To use existing orchards for controlled deciduous fruit experiments by the University of California in co-operation with the orchard owners is the purpose of Senators Herbert C. Jones and Frank H. Benson, both of San Jose. They are working on a bill which would appropriate enough to permit extensive experiments in many parts of the State. It may be called a modification of the county experiment station idea, as there would probably be a number of local headquarters for the investigators. Problems to be attacked are control of oak root fungus, persuading Moorpark apricots, Wickson plums, etc., not to be so shy about bearing, prevent fall blooming, work out the most effective and economical irrigation and pruning methods, etc.



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LONG FIELD EXPERIENCE

has made the Bates Steel Mule crawlers a big success. It has brought the knowledge to build durable crawlers that practically double the usefulness of the tractor. These crawlers allow the tractor to pull much bigger loads and at the same time use much less fuel than if it were a wheel-driven type.

Six years of field experience with thousands of crawler tractors have taught the correct design for a three-plow tractor and what materials are necessary for giving long-life to the crawlers. Other knowledge equally valuable has come through this experience. We will gladly show you how you can benefit by the results of Steel Mule development.

If you are one of the few who have not inspected the Model "D" BATES STEEL MULE we have on our floor —be sure and do so at once.

THE ONLY CRAWLER TRACTOR ADAPTED TO BEET CULTIVATION WITHOUT MAKING CHANGES.

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CROP Production

Is controlled by the kind and quantity of plant food furnished the tree or plant.

It is not enough to merely fertilize. It is important that the tree be fed material giving maximum results under California conditions

These materials are furnished in

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Correct Fertilizer for California conditions.
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American Horizontal Pump. Can also be furnished direct-connected to motor or engine.



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—have easy flowlines, split casings, so that interior of pump is readily accessible, improved hydraulic thrust balance, minimum of wearing parts, and many other advantages. A type and size for every pumping requirement.

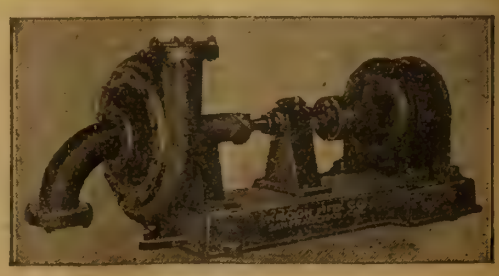
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It illustrates and describes the entire line of American Centrifugal Pumps and gives valuable information for the irrigator.

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IRRIGATING PUMPS

AWARDED PANAMA PACIFIC INTERNATIONAL EXPOSITION GOLD MEDAL AWARD GIVEN HIGHEST AWARD GIVEN



Single Stage Motor Driven Pump

KROGH PUMPS absolutely hydraulically and automatically water balanced. No end thrust whatsoever.
Also DEEP WELL TURBINE PUMPS for bored wells 10 inch diameter and up
Write for Bulletins
KROGH PUMP & MACHINERY CO. 149 Beale St., San Francisco, Cal.
Branch Sales Office at LOS ANGELES

Agricultural Notes

It is stated that there are 385,000 tons of barley available at the present time.

A manual of cotton growing in Fresno county will probably be issued this spring by the Farm Bureau.

Eastern markets are absorbing all available supplies of celery and lettuce, for which they are paying stiff prices.

It is expected that 200,000 acres will be planted to rice this season. Last year it was 140,000 acres and seven years ago the total acreage was 16,000.

Over $70,000 has been loaned to farmers of the Wasco-Pond Federal Farm Loan Association, according to Myron A. Rice, acting Farm Advisor. The movement is growing.

Prices on last week's produce markets in New York, Chicago and other Eastern points were: Celery, $9 to $12 per 100 pounds; cabbage, $3 to $4; onions, $2.75 to $3, and potatoes, $3.50 to $4.

Lucius Powers of Centerville recently purchased a 40-acre tract adjoining his own. The land was purchased one day and on the next day two tractors and four teams had prepared the land and planted it to grain.

It is reported from Willows that a crew of five men who spent eight days re-threshing three piles of rice straw on a ranch near Norman obtained $1,200 worth of grain, one-fourth of which went to the owner of the straw.

The Fresno Cotton Growers' Conference has been postponed on account of influenza. Farm Advisor Le Roy B. Smith believes a co-operative marketing association will help the growers. More than 100 farmers in this section grew cotton last year.

The second largest rice mill in the world is that of the California State Rice Milling Company, built less than a year ago at Sacramento. Its capacity is 6000 bags a day. It is said this capacity is to be doubled next year in view of the contemplated increased acreage in rice.

On the great grain farm in Montana and Wyoming, on Indian lands organized last spring by Thomas D. Campbell, large tractors only are used. Fifty-two of these machines are now the property of the corporation. The plowing record for last summer was more than an acre a minute for the working time. One day 1880 acres were plowed.

The Board of Supervisors of Modoc county has provided a revolving fund of $2,500 for systematic control of the ground squirrel under the law administered by the Horticultural Commissioner. The poisoned grain prepared by this official will be sold to the farmers at cost and the money thus received used to keep up the supply.

Forty-eight thousand acres of wheat and barley are being put in south of Tulare, between Earlimart and Delano, by F. T. Billings and I. W. Creech. They are now plowing and seeding at the rate of 125 acres every 24 hours, using several tractor outfits day and night. Four thousand one hundred and sixty acres are already sown to wheat.

The U. S. Government, following last year's experiment, has again imported large quantities of nitrate of soda, and will sell it to the farmers at a figure considerably below the prevailing market prices. It will be sold only in carload lots and will cost in the neighborhood of $83 a ton. No dealers will be supplied, but a number of farmers may cooperate and purchase a carload.

The Japanese Agricultural Association of California is giving a series of lectures throughout the State for the instruction of Japanese farmers by Japanese experts. Two of the subjects are "Co-operation with Americans in Strengthening Growers' Organization and Standardizing Products and Prices" and "Farm Management and Sanitation." We noticed quite a number of Japanese young men among the students at Davis.



International Tillage Brings Bigger Yields and Better Grades

MANY are the uses, and great is the value of a good disk harrow. More than any other farm tool, its proper use takes the gamble out of crop raising. The perfect seed bed that causes quick, strong germination of the seed, rapid growth of the plant, and even maturing of the crop, cannot be made without a disk harrow. A good one costs so little, and plays such an important part in determining the yield and value of your crops, that its purchase deserves really serious consideration.

Knowing the character and condition of your soil as you do, you will know whether to buy a two or three-lever harrow, a tandem, or one of our new leverless tractor disks, but, whichever style is best for your work, you will find a high-grade, up-to-date harrow of that style in the International line, and of a size, suitable to your power equipment. We have sold disk harrows for years, but never was the line so complete, or of such high quality, as the line we offer for 1919. The local dealer will explain the value of the many features we have not space to mention here.

Other useful implements in this line, each built for its own special work, are open end, closed end, and flexible peg-tooth harrows, spring-tooth harrows with single and double end teeth, and one-horse cultivators with every kind of tooth and shovel equipment. These, too, can be seen at the local dealer's place of business, or we will send catalogues on request.

Glance over the list of machines in this advertisement and write us for full particulars about any in which you may be interested.

The Full Line of International Harvester Quality Machines

Grain Harvesting Machines

Binders Push Binders
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Belt Machines

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Hay Presses Stone Burr Mills
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Cream Separators

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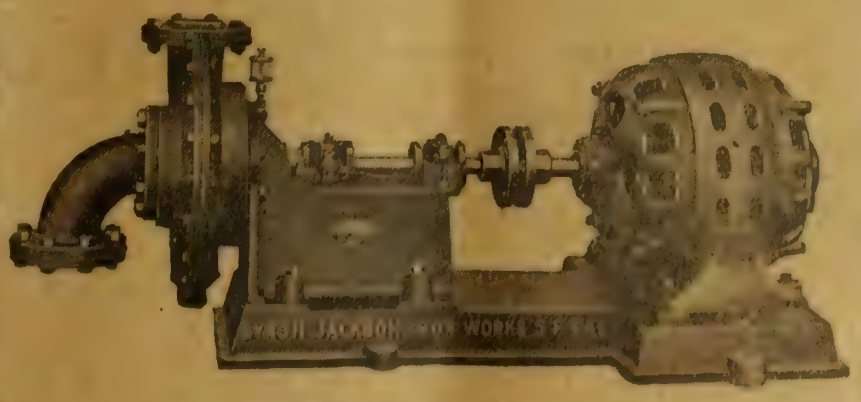
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Is your soil producing the maximum?

"BYRON JACKSON" PUMPS are built to meet every condition of "supply and demand" on your ranch.



Write us your conditions.
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THE BEST RUBBER BELT EVER MADE
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The Oliver Typewriter Co.
379 Oliver Typewriter Bldg.
Chicago, Ill.

Prophesies Good Prices for 1920 Wheat

[Written for Pacific Rural Press by Norman F. D'Evelyn.]

From a strictly California standpoint the fact should be stressed that the millers have been compelled to import annually 10,000,000 bushels of wheat to close the gap between local production and consumption, paying as high as 64c. per hundred freight on Kansas wheat, down to 36 cents on wheat from Oregon. Until production measures up at least to the consumption of the mills of this state, California wheat-growers will be in a particularly enviable position.

Grain growers throughout the country are looking ahead with some concern to the probable price they will receive for the 1920 crop of wheat. The continuance of the 1918 schedule of guaranteed prices by Presidential proclamation to cover the 1919 crop was the big factor, of course, in the sowing of a monster wheat acreage this season. At first thought, one would be inclined to believe that thereafter there will be a material shrinkage in the price of wheat. This idea is undoubtedly prevalent.

REASONS FOR OPTIMISTIC OUTLOOK.

However, just the contrary opinion is held by George R. McLeod, head of the Agricultural Department of the Sperry Flour Company at Stockton, and the reasons for his belief that wheat prices will continue at a comparatively high level at least for some years to come appear to be logical enough.

The world's biggest producer of wheat is Russia, where in 1915 the yield was 749,862,000 bushels. Between 1911 and 1913 the Russian Empire had an average acreage of 72,800,000 and an average yield of 727,133,000 bushels, representing 19.1 per cent of the world's production. Chaotic conditions in that vast country indicate that it will scarcely be a factor in the world's wheat market in the near future. Not only has production been seriously interfered with, but the essential element of transportation has been reduced to a state of demoralization.

RUSSIA TEMPORARILY DOWN AND OUT.

The bulk of the crop is grown in southern Russia and most of the exports are made through the Black Sea. Nearly one-fifth of the average harvest is exported. It would seem that Russia for some time to come will be forced into the position of being an importer instead of an exporter of wheat.

UNITED STATES RANKS SECOND AS WHEAT PRODUCER.

Following the United States, which in the period of 1911-1913 was credited with 18.5 per cent of the world's yield of wheat—making it a close second to the Russian Empire—appears India with an output of 369,612,000 bushels, 59,565,000 bushels of this being exported. No substantial changes in conditions of agriculture have been brought about by the war there.

FRANCE A LARGE GROWER AND LARGE CONSUMER.

In Europe, France ranks next to Russia in acreage and production of wheat, but nevertheless its consumption is so large that it is an importer even in normal times. The northern departments of France, so badly devastated during the war, furnish a very important part of the country's wheat output. The average annual production between 1911 and 1913 was 324,137,000 bushels; in 1915 it dropped to 222,775,000 bushels.

GREAT BRITAIN A LARGE IMPORTER.

Conditions in Great Britain were very carefully surveyed last fall by William C. Edgar, editor of the Northwestern Miller, who reached the conclusion that for the year 1918-1919 it will be necessary to import 113,000,000 bushels of wheat and 29,000,000 bushels of flour, or in terms of wheat, a total of 244,000,000 bushels. He ascribed much of the industrial unrest in the United Kingdom to the inferior quality and insufficient quantity of bread eaten, the poor quality being due to the requirement of an 80 per cent extraction of wheat in the manufacture of flour. As he points out, the British, especially the working classes, are a bread-eating people.

CENTRAL EMPIRES BOTH WHEAT IMPORTERS.

Before the war, Austria-Hungary averaged an output of 247,141,000 bushels of wheat and the German Empire 160,237,000, an aggregate of more than 400,000,000 bushels. The former exported 1,034,000 bushels, but imports into Germany overbalanced exports of wheat by 67,400,000 bushels. An intimate knowledge of conditions in the enemy countries at this moment is scarcely necessary to impress one with the conviction that it will not be possible to accomplish an early return to pre-war conditions of agriculture.

ITALY AND SPAIN MUST GET WHEAT FROM OUTSIDE.

Italy has held rank as seventh country in wheat production, but nevertheless increased its yield of 190,840,000 bushels by imports of 58,644,000 bushels, on the average, in the years before the war.

Wheat consumption in Italy has been high per capita. Corresponding data for Spain shows a yield of 123,560,000 bushels, supplemented by imports of 4,295,000 bushels.

CANADA MAY LACK MAN-POWER.

Man power in Canada will not soon reach the strength it had developed before the war, when a yield of 228,933,000 bushels was the normal crop of wheat, of which 110,903,000 bushels were exported. Canada has led all countries both in production and consumption per capita of wheat.

HOW AUSTRALIA RANKS AS A WHEAT-GROWER.

A great deal has been heard about Australian wheat and how its released surplus would glut the markets of the world. Those who have studied the situation, however, believe that the estimates about its effect are largely exaggerated. In the period from 1911-1913 Australian wheat production was 88,961,000 bushels—scarcely more than was grown in little Roumania—only 2.3 per cent of the world's yield. In 1915 the production had fully doubled, amounting to 179,627,000 bushels. Lack of bottoms in which to ship the Australian stocks—the cause of the increase of its surplus—will continue to be a factor for some time to come.

ARGENTINA A VARIABLE QUANTITY.

Turning to Argentina, during the years 1912-1914, the production averaged 155,828,000 bushels, [illegible] ports of wheat and flour a[illegible] to 95,027,000 bushels, that c[illegible] ranking fourth following the Russian Empire, the United States and Canada in wheat and flour exports. Climatic conditions are a factor of grave consideration in Argentina. Hot, dry winds following moist, foggy weather and late frosts in early summer, as well as occasional seasons of severe drouth, confront the grain farmers. These adverse conditions make Argentina a variable quantity in the wheat markets.

In summary, it appears that, with the exception of India, Australia and Argentina, the United States is the only important exporting nation to which the people of the world can turn for their breadstuffs in any steady and substantial volume for the years immediately ahead.

Our own rate of consumption is growing. Before the war it had risen to [illegible].3 bushels per capita per annum, and the response to the appeal of the Government last year—wholehearted and complete as it was—served only to reduce this figure to an even five bushels.

WHEAT GROWERS MAY FACE FUTURE WITH CONFIDENCE.

Last August Secretary of Agriculture D. F. Houston addressed the farmers of the nation, whom he saluted as the patriots on the farms, calling attention to "the increasing and urgent need of our people, our armies, the allied peoples and their armies for large supplies of American wheat" and asking for a liberal sowing for a liberty wheat harvest in 1919.

When the 1918 crop began to come in, early as it was, there was but ten days' supply left in the country. Heavy exports of wheat during the years of the war were possible only because of the large crops of 1912-13-14-15, but the 1916 and 1917 crops were smaller than any since 1911, and besides there was a greater demand for seed wheat and an increased population to be fed.

Altogether, it would seem that the wheat growers can face the next few years, at any rate, with confidence that prices will continue to be attractive.

CANTALOUPE GROWER IN TROUBLE.

To the Editor: Seeing an item in your December 28 issue in Horticultural Jottings in regard to cantaloupes shipped from Ripon, I beg to state there were 84 cars instead of 62 shipped. These cantaloupes were shipped through—name of firm given—and after many threats to bring action against this firm we have, up to the present time, been unable to receive a settlement for the same. I was one of the growers who shipped cantaloupes through this firm.—F. H. H., Ripon.

Thanks for the correction regarding number of cars shipped. We are sorry to hear of this trouble about settlement with your buyers. What is the matter with the Turlock Cantaloupe Association? We believe in co-operation, with its even distribution of responsibilities and benefits. But if you must ship through a private firm why did you not satisfy yourself first of the trustworthiness of the firm with whom you were dealing?

POTATOES PICKING UP.

About 200,000 sacks of potatoes are still to be dug in the San Joaquin Delta, according to a well-posted dealer of Stockton, and there are around 200,000 sacks in the local warehouses. The price to growers for the three weeks since Christmas has been $2 to $2.25 on the banks of the ranches. This is 25c to 50c better than before Christmas, because the Northwestern States have been too cold to handle their stocks, which are pretty well preserved in pits, etc. Potatoes from the Northwest have come less freely to California and also to Southwestern markets which have heretofore bought from California.

Get the ORIGINAL

"An Imitation —be it Ever so Good— is Still an Imitation."



We have found your Spreader to be most satisfactory. The light team, weighing only about 2000, handles it on practically all the farms.
The evenness and strength of the growth after top-dressing with your machine shows it is a tool no farmer can afford to be without if he wants results. J. H. McCLUER.

Two years ago I bought one of your spreaders, last year I got a second one.
A good Manure Spreader is one of the best paying tools a man can have on a farm. We spread lime as well as manure with your "NISCO" Spreaders. Would not think of running my farms without them. A. S. WELCH

I have used your "NISCO" Spreader for five years. Am so well pleased with the work it does, that I would not have any other. Has cost me only 30c for repairs and that was caused by my own neglect. P. I. WORTHINGTON

Original letters on file. Addresses upon request.

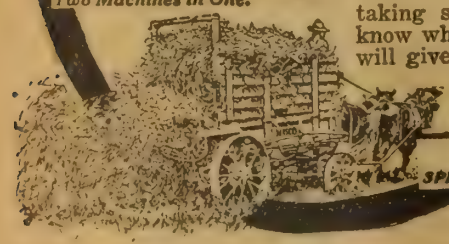
When you invest in a manure spreader you are buying an implement that will be the most profitable machine on your farm, if you profit by the experience of others and choose the machine that has stood the test of time. Buy the original, the machine which revolutionized old-fashioned methods, which has always been the leader in quality, in sales and in improvements. This machine is the

NISCO
The New Idea

Lowdown, light draft. Loads and pulls without undue strain on man or team. Has solid bottom with chain conveyors. Pulverizes thoroughly and spreads evenly. 5 to 7 ft. wide. Spreads from 3 to 15 loads per acre, at your option, by merely shifting a lever. Drives with heavy sprocket chain—no gears.

See the "Nisco" at your dealer's. Don't wait for him to see you as he is probably short of help. Insist on the "Nisco," and don't buy regrets by taking some other machine. If you don't know who sells the "Nisco," write us and we will give you his name.

The "NISCO" One-Man Straw Spreader Attachment—Gives you Two Machines in One.



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SPREADER SPECIALISTS. COLDWATER, OHIO

(10)

-kill squirrels NOW



Don't wait until squirrels, gophers, prairie dogs and other ground pests wax fat on your land. Go for them NOW with Carbon Bisulphide—the quickest, surest and most economical exterminator!

No matter what month it is—Carbon Bisulphide will rid your land of these destructive pests. That's why it is used and recommended by U. S. and State officials for its efficiency and economy.

Easy—cheap—and safe to use! Write today for prices and interesting literature which explains how Carbon Bisulphide, for over 30 years, has been a safeguard of healthy crops and sound profits. Write now!

WHEELER, REYNOLDS & STAUFFER
625 California Street San Francisco, Cal.

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Co-operative *economy* in grain handling

THE CALCO GRAIN LOADING STATION is the connecting link in the progressive bulk handling movement in California. Mills have invested thousands in bulk handling equipment. Harvester manufacturers are supplying bulk handling attachments at a low cost. A storage and shipping elevator at a convenient railroad siding is necessary—the Calco Loading Station meets that need at an unusually low cost per bushel capacity.

A Compact, Efficient Unit

This illustrated unit has a capacity of 25,000 bushels, or the average crop of 1000 acres of grain.

Operating at a speed of 440 feet per minute, its elevator belt has a capacity of 1000 bushels per hour. The grain is dumped from wagons or trucks into a receiving pit, capacity of 316 bushels, elevated to the tower where it is cleaned—all weed seed, cheat and other debris removed—automatically weighed and either turned into a storage bin or loaded directly into cars, through chutes, for shipment in bulk.

This loading station has a concrete base with four bins made of Armco galvanized iron and a tower constructed of corrugated iron—it is strong, fire and vermin-proof. Its four bins will care for 17 standard cars of grain, or the equivalent of 11,750 sacks.

Erected at a Low Cost per Bushel Capacity

This Calco Grain Loading Station is designed for erection at a railroad siding—either by individuals or a co-operative organization of grain growers.

It may be erected for between 28 and 30 cents per bushel of storage capacity. This is about one-half the cost of erecting a unit of similar capacity of concrete.

The Calco Loading Station is equipped with a 7 to 10 h. p. motor and 8 by 5 Minneapolis buckets on 12-inch centers.

It will easily care for the cut of the average combined harvester cutting from 30 to 50 acres per ten-hour day for a continuous period of 250 hours of operation.

The Calco Bins in this unit are 22 feet 1 inch in diameter by 21 feet 5 inches in height.

The illustrated Calco Grain Loading Station may be enlarged in capacity by simply erecting additional Calco Bins. One order is now being planned comprising 12 Calco Bins—giving the unit a storage capacity of 75,000 bushels of bulk grain. Write for details and blue prints of the Calco Grain Loading Station. Our engineers will gladly assist you in every way to adapt this unit to your own particular needs.

California Corrugated Culvert Company

LOS ANGELES
417 Leroy street

BERKELEY
406 Parker street

CALCO GRAIN LOADING STATION

In the Fruit Business

[Written for Pacific Rural Press.]

Another Marketing Association.

The Northern California Counties Association has sent out a questionnaire to every farmer and business man in the northern counties centered at Redding which are said to be rapidly being filled up and returned. From these returns statistics will be compiled and filed and the association will know the acreage of each farm in hay, grain, alfalfa, truck, etc.; the number of head of stock on every ranch, output of fruit and truck, dairy farms, mines, smelters and other industries. From the information compiled the association hopes to develop a co-operative marketing system to enable farmers and stock raisers and others to market their wares most expeditiously and at the best possible prices.

Recognizing Frost-Injured Fruit.

"One means of recognizing frost-injured fruit," says Dr. H. J. Webber of the Citrus Experiment Station at Riverside, "is to pick soon after the freeze a quantity of the fruit it is desired to test and store in a warm, dry place, with the temperature kept continuously at from 80 to 100 degrees F. Sound fruit inereases in specific gravity by the drying out of the skin without much loss from the interior. Frozen fruit, however, rapidly decreases in specific gravity as the interior juices pass through the skin readily and are evaporated. Within from four to six days poor fruit can be recognized by the rapid decrease in specific gravity." See them float.

Southern Sections to Be Helped.

Los Angeles and Santa Paula districts are now raising more fresh fruit than the local market needs and it is expected that more of it will be dried the coming season. The California Peach Growers, Inc., and the California Prune and Apricot Growers are now entering this field. They have assured the southern growers that if enough acreage is signed up down there they will be given drying and packing facilities and their crops sold on the same basis as those of the rest of the State. These two associations are said to be working together in the matter.

Mangling Walnut Bags.

D. B. Mackie, field deputy of the State Commission of Horticulture, recommends passing the field sacks used for walnuts through an electrically heated mangle, so that the great pressure and the heat combined would be sure to kill any walnut worm or other living matter hiding in the sack. C. Thorpe of the California Walnut Growers' Association thinks the mangling method a great improvement over steaming or fumigating, as it leaves the bags in better shape and they can be treated at a cost of about half a cent each.

Wine Grape Growers.

So far as we can gather, most wine grape growers intend at present to hang on to their vines. They think they will be able to sell their grapes next year anyway by shipping. Some are talking of putting in evaporators and drying their grapes for shipment to some hoped-for market. Others again—on suitable ground—are interplanting their vineyards with trees. One sees some men are pruning their vines—as a life-long habit—and trusting in Providence for their future, unable to realize the thing that has been done.

Dried Peach Men Call for Muirs.

"The Muir is the very best peach for drying," says Al Sunderland, secretary of the California Peach Growers' Association. The Muir is the only peach that peels well with the peach-peeling machine (whose patent is controlled by the association). The Muir is the peach that goes into their "practically peeled" brand. Last year numbers of Muirs were also bought by the canners. A heavy planting of this useful peach

Almonds
Apricots
Apples
Cherries
Figs
Olives
Pears
Peaches
Plums
Nectarines
Walnuts



If you want exceptionally fine specimens of Italian Cypress, Irish Juniper and Irish Yew, we can supply them.

Ornam
and Fru

WE HAVE the largest experimental orcha
true to name of any privately owned orch
source that we secure our buds and thu
have probably the most magnificent stoc
enormous stock of coniferous and broad
other nursery. The character of our soil is such th
perfectly. Many purchasers of ornamentals call at
whose long experience enables them to save buyer

Descriptions and illustrations found in our Ca
lection, but actually seeing the stock and talking
experience and who understand and are thoroughl
better. Visitors are always welcome. Our office
than a mile west of Niles. If coming by train, take
from the station and we will send a conveyance.
running between San Jose and Oakland every half

A Bit of History

The California Nursery Company of Niles is probably the oldest nursery in the State, being established in 1865. This nursery has been in active operation at Niles, California, since 1884. It is located on a tract of land comprising 465 acres, the soil being regarded as the cream of Alameda county. Time has established the fact that the late John Rock, who was the guiding spirit of this enterprise from the year of its inception until his death in 1904—having come here from Wayne, Santa Clara county, where he had been conducting the largest nursery in the State for a period of twenty years—acted wisely in selecting this favored spot. That this selection was a wise one has been fully demonstrated, for it is very rare indeed that it is possible for a nursery business to continue in one place for thirty-fi
assortment of fruit and ornamental stocks—prob ably the largest and m

The Apricot

The apricot is a native of Asia Minor and the highe
Central Asia. It is budded on peach, apricot and Myro
The very finest apricots, both in size and quality, are grown
California possesses a monopoly of apricot culture. It seems
indeed that there has not been a greater tendency on the part
the coast counties to plant at least a part of the acreage wh
devoting to prunes on their places, to apricots. It is very ra
apricot crop is a failure in any of these sections. They are n
account of rains because their ripening period occurs at a season
extending from June to August, when no rains occur in Califor



Our 1919 Illustrate
CONTAINS N
The Niles Giant Rhub
as the best --- Stalks t
make a pie --- Shipme

California
P. O. Box
425 Niles,

ntal Trees

d tried varieties of fruit trees try and it is from this reliable the pedigree of our trees. We s to be found anywhere. Our ns is not approached by any "ball" all kinds of evergreens personally consult our experts, equently made by novices.

eatly in making intelligent se- men who have had years of very phase of plant life is much e on the State Highway, less acific to Niles and telephone us tage Company has auto stages ges run directly by our nursery.

If you have land suitable for tree culture you can make it extremely profitable by planting trees. Ornamental Trees will greatly enhance the value of your property. Fruit trees are a continual source of revenue.

ed in growing successfully such an e United States.



Whether the home be a small one or a mansion, there is nothing that will add more to its value than to have the grounds properly laid out to show it off to the best advantage.

We shall be glad to have you take advantage of

Our Landscape Department

We have unequaled facilities for planning and executing landscape effects for the modest home or the large estate, parks, factory and school grounds.

We wish to assure those who entrust their designing to us that we will give our personal attention to their particular problems. Our prices will always be found reasonable, consistent with good work.

We are recognized as specialists in the propagating of ornamentals. Our ornamental stock has largely contributed to the standing of our nursery in America as foremost in varieties and quantities.

For over half a century we have been collecting and developing plants from all over the world. More specimens of our production are to be found surrounding palatial California homes and in public grounds than have come probably from any single source.

Write for Cross-Section Blank

We have prepared a cross-section blank on which detailed directions are given as to the information we must have for the preparation of a sketch. This will be mailed promptly on application without charge.

Almonds

The United States imports annually 9000 tons of almonds. Our annual production is 3000 tons. The only State in which almonds can be grown successfully is in California. In the last few years many new localities have been found adapted to almond culture. The quality of the nuts is exceptionally good, no matter where they are produced in California. It is a self-evident fact that, with our small production and our large importation, no one can make a mistake where conditions are favorable in planting almonds.

atalog Mailed Free on Request

LUABLE INFORMATION

ited by us, stands out pre-eminently inches in diameter --- One stalk will from early spring until December.

sery Co.

ifornia.



Cedrus deodara

Indian Cedar. Thrives to perfection in California. A splendid tree for avenues or single specimens.

is taking place in all the peach growing sections of the San Joaquin Valley this year.

1918 Prunes Have Acquired Merit.

On Christmas day we were talking to an old friend whose digestive apparatus has driven him to dieting. One regular article that appears on his menu is stewed prunes—not only for their "soft, smooth and consistent" "inward" working, but because they are such an appetizing breakfast dish. He said that this year's prunes were, if anything, more piquant in flavor than usual by being not quite so sweet. Also, that a smaller portion than usual was necessary considered as an aperient.

Citrus Fruit Institute.

A citrus fruit institute will be held in San Bernardino in conjunction with the Ninth National Orange Show from February 14 to 23. Dr. H. J. Webber, director of the Citrus Experiment Station at Riverside, is chairman of the convention and arranged the two days' program. This will be important to citrus growers, for it will be the only citrus convention of this winter and leading experts on culture and other problems will lead in discussion.

A Scrap of Paper.

A corporation headed by a Japanese name is defendant in a suit brought by the California Associated Raisin Company, charged with violation of an agreement to deliver their raisins to that institution. It is claimed that 54,000 pounds of raisins was produced by the defendant company upon land on which the "Associated" holds a lien. One thousand and eighty dollars is the award asked for, for breach of contract, plus $100 attorney's fees.

Not All Honey.

The Standard Refining Company of New York is reported to have been penalized by suspension of its business license for four weeks by the Federal Food Board for selling honey diluted with corn syrup without designating the adulteration on its labels. The company has contributed $2,919 to the Red Cross, it is stated—representing the excess price by reason of adulteration.

Examinations Scheduled.

The following dates have been set for examinations for County Horticultural Commissioners: San Bernardino county, at San Bernardino, January 7, 1919; Lassen county, at Susanville, January 29, 1919; Contra Costa county, at Martinez, February 5, 1919; San Luis Obispo county, at San Luis Obispo, February 7, 1919; Mendocino county, at Ukiah, February 14, 1919.

Does Frozen Citrus Fruit Recover?

No cases of the commercial recovery of fruit have been found, says Dr. H. J. Webber, director of the Citrus Experiment Station at Riverside. "Individual fruits have been found which have shown a development of new pulp cells, but this is not general enough to be of commercial importance. Instead of recovering, frozen fruit steadily deteriorates."

The Orange Crop in the South.

Before the cold weather, estimates of the orange crop by counties were as follows, according to the U. S. Bureau at San Francisco: Los Angeles, 4,481,000 boxes; San Bernardino, 3,003,000 boxes; Orange county, 2,956,000 boxes; Riverside county, 1,940,400 boxes; Ventura, 351,120 boxes, and San Diego county, 110,880 boxes.

Interplant for Figs and Olives.

Cotton is said to be a good crop to interplant in young fig and olive orchards. It is planted in April and harvested before Christmas and is said to meet the expenses of the development of the orchard, as the price promises to remain good for several years yet.

Yuba Orchard Co. Incorporated.

The Howard Reed Orchard Company (celebrated for its pear production) has been authorized by the Commissioner of Corporations to sell all of its capital stock, $50,000, divided into 500 shares of a par value of $100 each. The company controls 325 acres along the Feather river in Yuba county.

Mechanical Power on the Farm

Users of tractors, engines, pumping plants, motor trucks, automobiles, electric motors, and other mechanical farm power are invited to make this department an exchange of their experiences and troubles.

LARGE LAND DEVELOPMENT BY PUMPS.

[Written for Pacific Rural Press by R. E. Hodges.]

One of the important land and irrigation development systems of California is that of the Salinas Land Company, in the upper end of Monterey county. Here the river has cut vertical banks 50 feet high, from the west edge of which good sediment-adobe soil mixed with chalky shale 4 to 15 feet deep slopes upward to the hills. This soil has been producing grain since the early days, and is not yet worn out, as evidenced by a 30-sack crop last year on one piece. It has, however, been plowed shallow so long that a plow-sole six inches thick was formed in many places. Part of this was plowed as usual last year and on part of it the plow-sole was ripped up in big chunks. Much increased vigor of the grain was shown right up to the line where the deep plowing stopped.

DEPENDABLE WATER.

The chief reason grain yields on this area of several thousand acres have not always been large is the occasional years of short rainfall. This was considered when the members of the land company were planning to purchase the tract in the fall of 1917. It was seen that intensive development depended on reliable water; and the cheapest way to get that water was found to be by means of sinking wells and pumping, there being an abundance of underground water. Accordingly comprehensive plans were laid and had been carried along satisfactorily when the ranch was visited by the writer last September.

S. L. Shaw, who had been given charge of the water development and irrigation system, could point with pride to a dozen wells producing 100 to 210 inches each, having a water lift of 35 to 100 feet, and the wells being only 150 to 350 feet deep. Water in all of them raised to the level of the river as soon as the large beds of underground gravel were encountered which were deposited by the Salinas River years ago, forming an underground water channel. For the higher ground, three miles of "force pipe line" had been built, and four more miles were planned. The highest point of delivery is 160 feet above water level. Two thousand acres were already under irrigation, construction was under way to irrigate 1200 acres more, and an additional 1200 acres are to be developed, all of which have since been about completed. Cement pipe was made on the ranch, and eight miles of it had been laid and fitted with suitable standpipes, and sixteen miles more have since been added. Layne & Bowler and Byron Jackson multi-stage turbine pumps of 12 to 16 inch sizes are run by electric motors.

Apple trees 12 inches in diameter and pear trees 6 to 8 inches in diameter bearing big crops at ranch headquarters led the promoters to put out last spring experimental orchards consisting of 4500 trees of different varieties. A neighbor in a protected draw, adjoining the property, produces good crops of almonds on old trees, and the young trees set out by the land company are doing exceptionally well.

Over 6000 eucalyptus trees have been set out and 28,000 more are being set out along the streets and State highway to beautify the property and act as wind-breaks. A great crop of beans, both for seed and for market, and of many varieties, were grown last season, most of the seed beans being for Eastern seed dealers. Part of the land was leased to other parties and the rest of it worked by a separate company in which the Salinas Land Company is interested. The irrigated portion is being cut up into farms of 80 to 150 acres, and intensive farming is to be practiced. Thus does the grain empire of California give slowly away to the improvements whereby more people can make a happy living on the same amount of land.

STORAGE BATTERY NOTES.

"I know a storage battery eight years old and in good condition," said Prof. J. B. Davidson at one of the University Farm tractor short courses. Storage batteries ought to last several years, but usually two years is their life on an automobile. The shortness of their average life is because they are run down a great deal. A lead battery cannot stand being run down because lead sulphate accumulates on the plates and becomes fixed there. Edison cells using nickel salts are not injured by standing discharged.

Most of the trouble with storage batteries on tractors and automobiles, according to the Professor, is that they are allowed to remain discharged. Whenever a battery is to be stored, it should be fully charged and then run down very slightly. Then empty the liquid and store.

Short circuiting a storage battery permits it to discharge so fast that it heats and buckles the plates. Remember that a tool laid carelessly across the poles of the battery will short circuit it. Keep them away.

The capacity of a storage battery is indicated in volts and amperes—e. g., 6-60 means that it furnishes 60 amperes one hour at 6 volts. Voltage is the pressure of electricity like that of water in a tank. The amount of electricity flowing out is measured in amperes like the flow of water in a pipe is measured in gallons per minute.

The generator on a car can charge a battery at the rate of one or two amperes, but at garages a battery can be charged over night at the rate of six or more amperes.

ENGINE BURNED OUT.

A farmer bought a tractor and in three days told the dealer his engine was no good. The service man went out to help him and among other things found the oil gauge registering too low. Some oil was brought and poured into the engine. The service man protested against using such poor, thin oil, but the farmer assured him it was good oil. By mistake he filled it too full and some had to be drawn off through the lower stop cock. It was simply dirty water. The oil was thin and full of water. No wonder the engine burned out. It was not lubricated.

Use good oil and buy no other. Poor oil will be the undoing of you and your car and is the delight of the repair man.

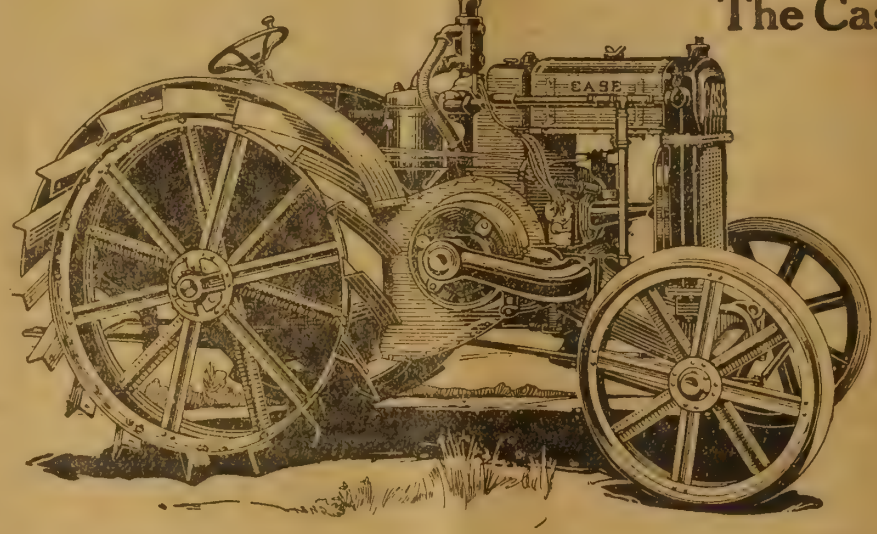
TRAVELING TRACTOR SCHOOLS.

The traveling tractor schools instituted for war training by the State Department of Education in charge of J. C. Beswick are not to be continued after their present schedule is complete. They are being held in connection with high schools, which pay half of the expense, while the other half is paid with money from the Government Smith-Hughes fund. The schools are having tremendous success—108 men and women being enrolled at Elk Grove at this writing, 90 having been enrolled at Patterson, 200 at the Los Angeles Normal School, etc. Only California-made tractors are being supplied by the organization, though dealers in some Eastern makes have supplied machines and assistants at their own expense, with the understanding that groups of students would be assigned to them as to the other machines, giving opportunity for full explanation of the tractors without direct comparison with other makes.

The University Farm Agricultural Engineering Department wanted a long time ago to carry on such a course, but was prevented for lack of funds. If you want such courses in the future, write to your legislators or to the University Regents or to the Pacific Rural Press, who will forward your letters.

Lubricate every part of your automobile. Do not simply think that everything is well oiled, but know no bearings are running dry.

CASE ANNOUNCES
A New 3 or 4 Plow Kerosene Tractor
The Case 15-27



Pulls 3 Plows in Hard Plowing—
4 Plows Under Favorable Conditions

Here is the latest Case Tractor—offered in our 77th year of experience in the production of power-farming machinery and 27th in the production of motor tractors.

No tractor is finer. And we know of no equal.

We feel certain that this Case 15-27 will receive instant recognition among knowing farmers everywhere.

No man can afford to judge tractors of this size—nor decide which is best—until he has studied this Case 15-27.

While rated at 15 horsepower on the drawbar, this Case 15-27 can deliver more than 18 horsepower.

While rated at 27 horsepower on the belt, it can deliver about 33 horsepower.

In fields where plowing is difficult—tough or baked soil, stiff grades, etc.—this tractor pulls 3 plows easily. Where conditions are favorable this tractor can pull 4 plows.

With reasonably good footing this tractor easily delivers a pull of 3,000 pounds at the drawbar. Its reserve power makes it possible to attain 3,600 pounds pull, or over.

Under variable soil and field conditions, the operator may take advantage of the two-speed transmission, using low speed (2¼ miles per hour) for hard pulls, and high speed (3½ miles per hour) for normal draft.

Your field conditions will determine whether you should use 3 or 4 plows, or whether you should pull 3 plows on low or high gear.

A complete illustrated and descriptive catalog of all Case Kerosene Tractors will be sent gladly, upon request.

(834)

J. I. Case Threshing Machine Co., Inc. Founded 1842 1536 Erie St., Racine, Wis., U. S. A.

Case Superiorities

1 Weighs about 5,600 pounds. Low and compact with short wheelbase. Turning radius 13¾ ft. Stays on all fours.

2 Rated 15 horsepower on the drawbar and 27 horsepower on the belt, which is only 80 per cent of its actual capacity.

3 Four-cylinder Case valve-in-head motor. Removable head. Motor is set crosswise on frame, affording use of all spur gears. This conserves power.

4 One-piece cast main frame, forming dustproof housing for rear axle, bull pinion shaft, transmission and the bearings for these parts. Also a base for motor. This construction brings rigidity and prevents disalignment.

5 Belt pulley mounted on the engine crank shaft. No gears used to drive it. Pulley is part of the tractor, not an extra-cost accessory.

6 All traction gears are cut steel, enclosed and running in oil. No bevel gears, chain, worm or friction drive parts.

7 Case Sylphon Thermostat controls cooling system and insures complete combustion of kerosene in the motor. Prevents raw fuel from passing by pistons and diluting oil in the crank case.

8 Case air washer delivers clean air to carburetor. No grit nor dust gets into cylinders to minimize their efficiency and shorten their life.

9 All interior motor parts lubricated by a combination pump and splash system. Speed governor, fan drive and magneto are dustproof and well oiled.

10 Hyatt Roller Bearings throughout. High tension ignition. Kingston carburetor. Radiator with a cast frame. Core, copper fin and tube; non-clogging type.

LESS ELBOW GREASE TO START COLD TRACTOR.

To the Editor: The cranking of a tractor these cold mornings is productive of grievous profanity. Priming the cylinders with gasoline from an oil can is some help, but the starting of a cold motor is often the hardest part of the tractor driver's morning work. Has any of your subscribers invented a contrivance for shutting off the distillate and feeding gasoline to the carbureter while cranking? If so, a description would be a boon to many. If not, the writer will set his brains and the local garage man to work.—M. L. G., Monterey.

M. E. Yantiss of Sacramento, whose business it is to rebuild old tractors, tells of the contrivance often used on tractors with gravity feed of fuel. Set a can of gasoline anywhere convenient and connect it by proper sized pipe and a T joint to the fuel feed, putting a stop cock close to the T in each line. A five-gallon can is frequently used, as it does not require frequent filling. Shut off the distillate, drain the carbureter, and turn on the gasoline. Run the engine until it is warmed up, turn off the gasoline and turn on the distillate. Mr. Yantiss says that if you have a Stuart vacuum feed, drain that and fill it with gasoline. Then start and the tractor will run on the gasoline until it is warmed up enough. Frequently the spark plug points collect moisture over night, which may bridge the gap. This prevents a start until it is dried up. Low tension magnetos are likely to give such a weak, long, stringy spark that the mixture does not ignite quickly enough when cold. The tractor often stops when switched from batteries to such a magneto and the time lost in rush seasons in one morning of delay will cost more than the difference between cost of low and first-class high tension magnetos. The upkeep of batteries and low tension magnetos soon eats up the difference between the cost of such and of high tension magnetos anyway. The spark should be short, fat, and hot.

An aid in saving elbow grease on a cold morning is to lay the spark plugs out and squirt gasoline over their lower ends, lighting it to warm and dry them. Great help is found by setting a hot flatiron against the manifold while you eat breakfast. Do not pour hot water over it unless you are sure the water won't get into the carbureter. In stopping after a day's work, always shut off the distillate and let the engine die down. This burns out all the distillate in the cylinders and leaves it clean and dry, ready for a quick shot the next morning. Shutting off the spark first leaves distillate vapor in the firing chamber. When the engine cools, this vapor condenses onto the spark plugs and elsewhere and does not ignite decently in the morning. To be explosive, the mixture must be vaporized distillate or gasoline and air in the proper proportions.

SPARK PLUG NOTES.

Spark plugs may use mica for the insulation, but most of them use porcelain. If moisture gets between the layers of mica in such a plug "it is all off."

Several years ago a $\frac{1}{16}$-inch gap was considered best in a spark plug. Later $\frac{1}{32}$ has been found better and many plugs now have only $\frac{1}{64}$-inch with high tension ignition. With battery ignition the gap is almost as short. A "feeler" is a set of blades of known thickness to insert between points and get them set accurately.

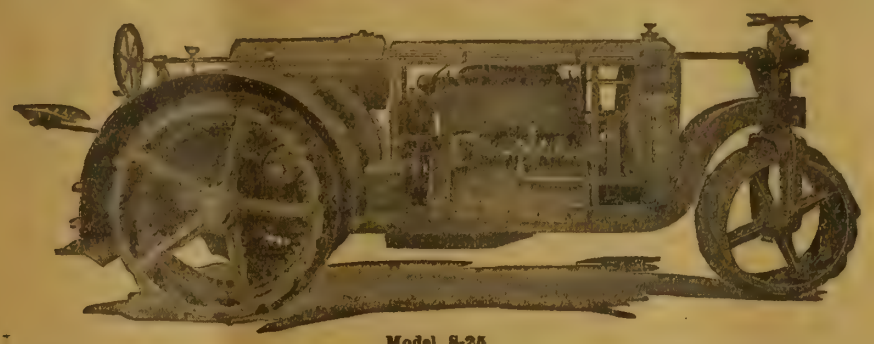
Get a plug you can clean, but if you have to clean it frequently you may know the fuel mixture is wrong. Carbon can be pretty well burned out by using a lean mixture. Automobiles have been run an entire season without cleaning the plugs.

Less trouble should be found with tractor spark plugs than with those on automobiles, because the former are kept hot by a steady heavy load. Soot collects when the engine runs too cool.

Samson

GMC TRACTORS SIEVE-GRIP GMC TRACTORS

Tractor



Model S-25

Efficient tractors are the need of the hour. In the GMC SAMSON SIEVE-GRIP, we have the tractor that meets every requirement. It is a proven product.

The GMC SAMSON SIEVE-GRIP TRACTOR displaces ten horses on the farm and does the work better, cheaper and faster.

Its strength is equal to the most trying demands of the grain farmer. Its low, compact and simple structure makes it a most desirable machine for orchard and vineyard. Its adaptability for countless tasks upon the farm is well established.

The GMC SAMSON SIEVE-GRIP TRACTOR is a demonstrated success in every field of tractor endeavor, made possible by years of careful study and practical experience. It will CUT YOUR COSTS. It will INCREASE YOUR INCOME.

BUY A PROVEN PRODUCT.

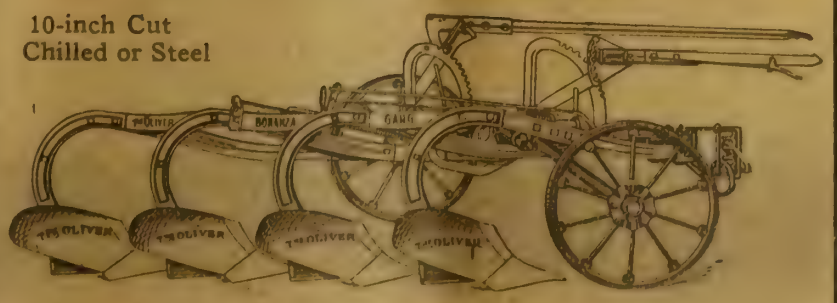
Our illustrated catalogue, Better Farming, is yours for the asking.

Samson Sieve-Grip Tractor Company

DIVISION OF
GENERAL MOTORS CORPORATION Stockton, Cal.

Oliver's Famous Bonanza Gang Plow

10-inch Cut
Chilled or Steel



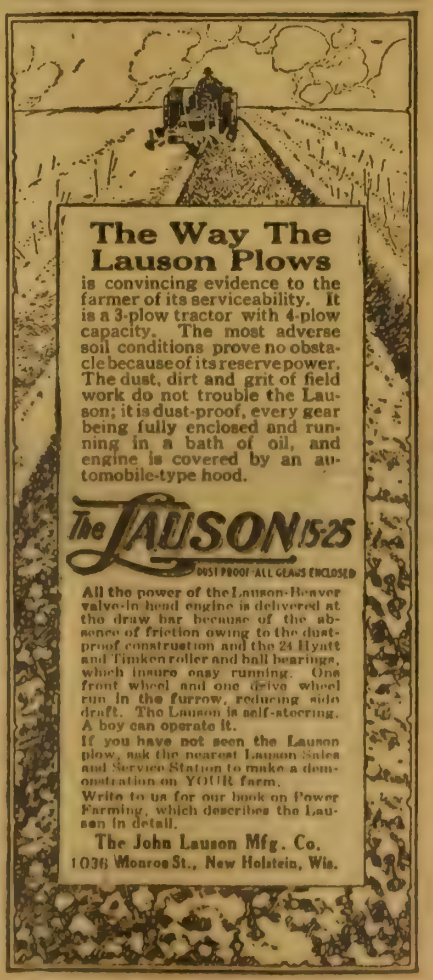
Used singly by light tractors, or in compactly connected groups of three, four and five gangs behind heavy tractors. The Bonanza is in the forefront in popularity and satisfactory work.

It is especially equipped for orchard work with low folding levers. Don't buy until you examine this gang.

Write us for particulars for grouping and hitching Bonanza Gangs in large outfits.

OLIVER CHILLED PLOW WORKS

9 Main Street, San Francisco, Cal.



The Way The Lauson Plows

is convincing evidence to the farmer of its serviceability. It is a 3-plow tractor with 4-plow capacity. The most adverse soil conditions prove no obstacle because of its reserve power. The dust, dirt and grit of field work do not trouble the Lauson; it is dust-proof, every gear being fully enclosed and running in a bath of oil, and engine is covered by an automobile-type hood.

The LAUSON 15-25

DUST PROOF—ALL GEARS ENCLOSED

All the power of the Lauson-Beaver valve-in-head engine is delivered at the draw bar because of the absence of friction owing to the dust-proof construction and the 24 Hyatt and Timken roller and ball bearings, which insure easy running. One front wheel and one drive wheel run in the furrow, reducing side draft. The Lauson is self-steering. A boy can operate it.

If you have not seen the Lauson plow, ask the nearest Lauson Sales and Service Station to make a demonstration on YOUR farm.

Write to us for our book on Power Farming, which describes the Lauson in detail.

The John Lauson Mfg. Co.
1036 Monroe St., New Holstein, Wis.

Likes Our Way of Studying Law

[Written for Pacific Rural Press by A. N. Judd of Watsonville.]

I wish to express my appreciation of your method of "studying law," as described in your issue of January 4. It is certainly a long stride from the old method, which is to wait until the State solons have completed their labors at the Capital and then to roundly berate them for the many errors committed—and I might add crimes, too. Mr. Hodges will have the time of his life watching all the angles of legislation, especially those amendments. There is where the county and municipal officers get busy. They maintain a lobby throughout the session, if interested in amending some law into a shape that will give them more liberties with the people's money or property. There is one thing I have noticed, which is that the average county supervisor, or city trustee, will always try to avoid the following of the strict letter of the law, especially if it delays action. Just as soon as elected, the most of them at least want to make a short cut to the object desired. To have to wait on the whims of the taxpayer that may call upon the public by a majority petition that may necessitate an election in order to legalize an act is a long, tedious way; besides quite often the scheme does not meet with approval of the majority of the voters, and thus many schemes are upset that could be put over if the public was not in on the inside.

HOW THEY BEAT THE KAISER.

Now, this amendment business has gone on and on from year to year until the county supervisors have legislated themselves into a power that even the kaiser would turn a dark blue with envy to acquire. They can appropriate our moneys for doubtful purposes without let or hindrance, without any previous plans or specifications, without any petition or public demand, except perchance when a locality has a chamber of commerce or a merchants' association that can be used to "endorse."

The county officials will make it a point to interview the new Assemblymen and set forth their wants from an increase of salary to an increase of power. I have a case in mind and will tell a little story that will illustrate some points in the body of this letter:

In 1895 the Legislature passed an act providing for the formation of protection districts. This act called for a petition signed by a majority of the land owners in the proposed district. The case in point could never have been consummated if it depended on a majority petition, so an amendment was necessary that cut out the safeguard of an election or a majority petition and only called for petition signed by ten freeholders in the proposed district. This was done in a back office by some of the promoters; a resolution was passed by the supervisors, and work was begun under an almost unanimous protest. The supervisors entered into and upon the premises of the protestants, cut down, burned and otherwise removed valuable timber that was placed there by the owner to protect the banks against erosion, and windbreaks to protect valuable orchards growing along the rivers. Notwithstanding protests from nearly all the 600 owners, the supervisors did not see fit to sue for right of way, but went right on with wholesale destruction. One of the sufferers who lost a 52-acre orchard caused by the destruction of the protecting windbreak brought suit against the board of supervisors and their bondsmen for damages is now pending. The board had a remedy at law in a suit in condemnation, but that would take time, so they bulled it through.

Now, these same supervisors, I understand through the press, desire some more amendments giving them more power yet, preventing injured property owners from bringing suit for any damages that "the board" may cause. Will they get it? The farmer can't spend the time at this season of the year to watch his interests at Sacramento against the intrigues of his own county officials. The best lawyers can't keep up with those amendments. If Mr. Hodges can put the leak in some of their schemes, or can turn legislation back so the people will not lose their government when they elect officers to only represent them, compelling them to act only under majority instruction—in fact, get back to a simple, old-fashioned democracy again—the people will rise up and call him blessed.

ANOTHER NEW SEED CATALOGUE.

We are in receipt of the twenty-sixth annual seed catalogue of the Aggeler & Musser Seed Company of Los Angeles, which contains in its 112 pages a very complete list of flower and vegetable seeds, berries, bulbs, grasses, corn and field seed, insecticides, fertilizers, poultry supplies and appliances, garden tools, spray outfits, nursery requisites, as well as much useful information on agricultural literature and formulæ.

PLOWING.

[Written for Pacific Rural Press by Samuel Haigh, San Jose.]

Just after the first rain in 1917, which did not go deep enough to allow of plowing, we sowed some barley on land that had been heavily top-dressed with poultry manure. The seed was sown on the unplowed land and a cultivator run over it and then harrowed once. The next rains started the barley growing, but it appeared such a poor stand that we thought of re-sowing it. Other work preventing it, we let it go. The growth was so heavy and rank that it lodged badly. We got as much from one acre as a neighbor did from three acres which were plowed after the rain had made plowing possible. The dry year did not affect our crop; partly, I think, because the previous summer we ran 600 or 700 head of fowls on it as a feeding lot and made them scratch for it. This kept a dry mulch on top all summer in between the rows of kale that was not irrigated.

The cold weather has reduced the supply of fresh vegetables. A little mild weather and rain are both needed.

TREATMENT FOR GRAIN SMUT.

Formaldehyde treatment for grain smut has been proved to be the best and the least injurious to grain. Thousands of tests have been conducted at 17 different experiment stations. This is from a report recently forwarded by the War Emergency Board of Plant Pathology to Prof. H. P. Barss of the Oregon Agricultural College at Corvallis. The following extracts from the report are of special interest:

"Profound differences in the injury from treatment are found with different seed lots of the same cereal. Seed lots of wheat from the West, where conditions are dry at harvest and the grain is more or less injured in threshing, are particularly susceptible to injury from copper sulphate. As a rule seed lots of wheat that are seriously injured by copper sulphate are no more susceptible to injury from formaldehyde than other seed lots that do not show copper sulphate injury. Oats as a rule are most susceptible to injury by copper sulphate of any cereal, while no other grain suffers less injury from formaldehyde treatment. Barley is the least susceptible to treatment of any of the cereals."

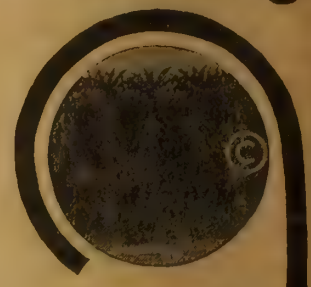
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The Culti-Packer used on such fields just as soon as the soil is dry will tuck the heaved plants back in place and fill the cracks around the roots with moist soil.

The Nebraska Experiment Station found through a period of five years experiments that this spring packing gave an average increase of five and one-tenth (5.1) bushels per acre.

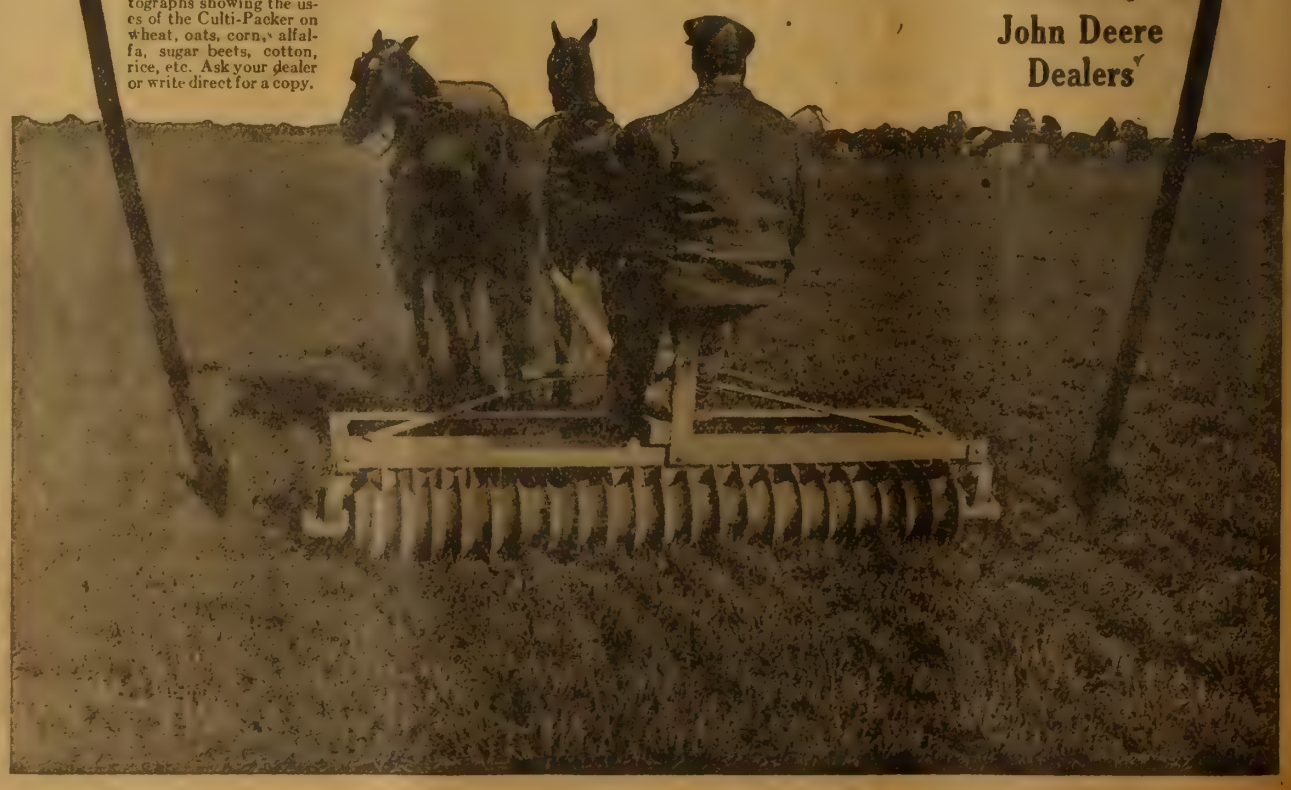
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State Land Settlement $11,260,000!

[By Our Special Sacramento Correspondent.]

Eleven million two hundred and sixty thousand dollars for State land settlement! Who would have thought when the State went into real estate subdivision in 1917 for the purpose of showing what disinterested capital and organized direction could do for colonists in California, that the $260,000 then appropriated would be so admirably used that in two short years the success of its first project would justify the appropriation of that much again and eleven million dollars on top of it! And this in times when everybody is talking of retrenchment in State governmental expenditures.

That a legislative appropriation of $1,260,000 could be put through the Legislature without having been considered by the State Budget Board before the Legislature met might excite some conjecture. But Governor Stephens is insistent now, and the budget board has pointed out an unused $1,000,000 appropriated in 1917 for the State Defense Guards. This may be turned back into the State treasury by repealing the act which appropriated it and will supply the fund now needed for land settlement.

Thus it was that on January 20 Senator A. H. Breed of Alameda county introduced a bill amending the State Land Settlement Act of 1917 in several sections and appropriating the additional $1,260,000 to be used in extension of the same plan. It was Senator Breed above all other legislators who labored for the passage of the original act in 1917, finding much opposition, especially in the Assembly. Now, the success of the Durham project leads the Governor, the Senator, and other friends of State land settlement to believe that this big appropriation will receive easier approval than the smaller original one did. In fact, so confident are they that Senator Breed has this week introduced a resolution submitting to the people at the next general election the proposal for a $10,000,000 bond issue to be used for the same purpose. The legislative appropriation will carry the work until proceeds from bond sales are available. This appropriation, however, is to be returned to the State with 4 per cent interest on used portions within 50 years, as now provided for $250,000 of the original appropriation. Since a maximum of 40 years is allowed for settlers to pay for their allotments, repayment to the State is assured.

AMENDMENTS TO PRESENT LAW.

The first amendment makes prominent as the leading object of the law the provision of employment and homes for California soldiers, sailors, marines, and others who have been connected with Uncle Sam's armed forces in the European or other wars. It does not, however, exclude other people. The second amendment gives the State Land Settlement Board the right of eminent domain in securing suitable areas for subdivision; and it removes all limitations on the amount of land to be acquired for subdivision. Another amendment requires a statement from the State Water Commission showing sufficient water rights. Still another gives the board extra security for cash loans to settlers and permits loans up to $2,000 on the improvements and equipment of farm laborers' allotments. The $400 limit on value of allotments made for farm laborers is raised to $1,000. Before opening an area for settlement, such opening must be advertised once a week for four weeks in a daily paper of general circulation. The law now requires advertising "for thirty days." Areas included in the purchase not fit for farming or townsites may be auctioned. The board may, in offering allotments for sale, co-operate or contract with the U. S. Government. Other minor amendments are made and a new section provides that where settlers fail to comply with any terms of the contract they may lose their contract rights; and the money they have paid is considered as rental. This provision, however, will never be used on settlers who act in good faith, as it is to everybody's advantage to make every settler successful. The personnel of the Land Settlement Board apparently insures this: Prof. Elwood Mead, chairman; former Senator Prescott F. Cogswell, Mortimer Fleishhacker (banker), former U. S. Senator Frank P. Flint of Los Angeles, Judge William H. Langdon.

A community auction, to place local farm implements and livestock where they are most needed in the community, was held January 23 on the E. A. Gammon ranch by the Sacramento County Farm Bureau.

Many sales of ranches worth the full price asked have been prevented by the presence of noxious weeds, according to a State Senator whose county is no worse than most others in the State.

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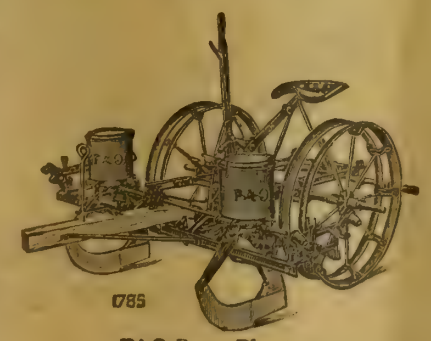
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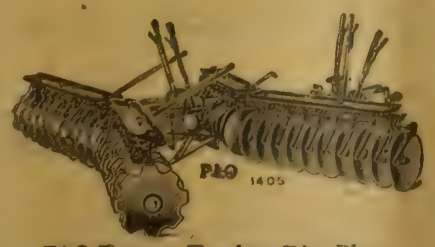
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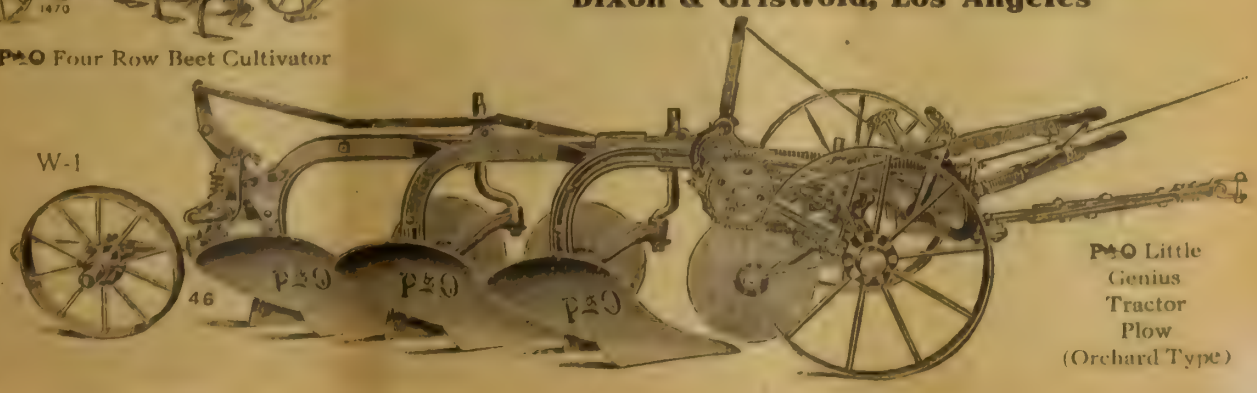
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Healthy Herds from Tuberculin Testing

[Written for Pacific Rural Press.]

An advance copy of the State Veterinarian's biennial report shows effective work done in suppressing hog cholera, anthrax, sheep scabies, blackleg, glanders and other animal diseases, but of particular interest is the result of tuberculin testing under the provisions of the State dairy law, and Dr. J. P. Iverson, the present State Veterinarian, considers that work the most important in his department.

Although the law was not intended to eradicate tuberculosis, as dairymen were privileged to continue selling whole milk from tuberculous cows provided it was pasteurized, still the department, in carrying out the tuberculin testing provisions, has made a great step forward in the control and eradication of the disease.

The State is now divided into nine districts, each in charge of a full-time deputy State veterinarian, who works under instructions from the State Veterinarian. The scope of their work has been broadened so that, besides testing herds for tuberculosis, they can supervise a quarantine and take other measures necessary to control any infectious disease brought to their attention. Also, by their daily intercourse with stockmen, they are able to give advice and assistance, and do other work of an educational nature.

For instance, since it is optional with a dairyman who has tuberculous cows as to whether he removes the reactors or resorts to pasteurization, the department generally recommends that reactors be not slaughtered, but if they have a higher value for breeding or dairy purposes than for beef that they be segregated into known tubercular herds where the products are pasteurized before being sold for human consumption or used for feeding other livestock, and that healthy calves be raised from these herds by removing them at birth and either feeding them pasteurized milk or raising them on tuberculosis-free nurse cows.

The accompanying table gives the general results of testing done since the law became effective, October 1, 1916:

	No. dairies.	Cows tested.	Reactors.	Dairies showing no reactors.	Percentage of reactors.
1st test..	7,975	66,097	8,851	6,296	13.4
2nd test..	1,459	22,860	1,406	1,049	6.1
3rd test..	64	2,074	166	20	8.0
4th test..	3	1,081	26	0	2.4

No serious consideration should be given to the comparatively high percentage of reactors on the third test, as this was because wholesale dairymen who were not obliged to have their herds tested did so and kept the reactors in their herds thereafter. The cost to the State for carrying on the work has so far averaged about 35 cents per head, but it will be much less hereafter, as expenses incurred at the start are no longer necessary.

BEST METHODS OF ERADICATION.

After the first tests were applied and the results known, the advice given to an owner depended upon the number of animals in the herd and the percentage of reactors, as it has been found that in the small herds it is much easier to eradicate tuberculosis by eliminating the reactors than in the large herds, even though the percentage of tuberculosis is lower than in the small herds.

In the human family tubercular infection generally gains a foothold during childhood and infection of adults rarely occurs. But with cattle, adult animals readily contract the disease when kept in contact with tubercular animals. Consequently, dairymen having a high percentage of reactors were not advised to segregate the reactors, but instead to resort to pasteurization, and if a purebred herd, to build up a new tuberculosis-free herd by the raising of healthy calves. Many owners of highly-infected herds followed this advice, but a few dairymen have attempted to remain in the raw milk business and have removed reactors on first, second and even third tests, against the advice of the State Veterinary Department.

On the other hand, dairymen having only a few reactors were advised to remove them immediately, as the chances for eradicating tuberculosis from such herds were very good. And if animals reacting were valuable dairy cows, the owners were advised to sell them to wholesale dairymen as reactors. When this was done the difference between what a cow cost and what she brought as a reactor was small, and in the end the dairyman was repaid in the increased returns due to the premium offered for raw milk. Such dairymen seem eminently satisfied with the operation of the law.

VALUE OF INTRADERMAL TEST.

Data collected by the department in connection with the intradermal test will be of interest to dairymen, especially those who oppose this method of testing. The chief characteristic is a swelling which appears at the point of injection, from a few hours up to a few days, and persists for a considerable length of time. The later the time at which the reaction appears and the longer it persists, the more positive it is that the animal is tubercular.

Owing to the fact that these tests were made at a commercial slaughtering house, chances had to be taken on the length of time the animals would remain in the yards after being injected with tuberculin. The ninety-sixth hour is the best time for making observations, provided only one is made, and it is not surprising that the following results proved inconclusive on animals killed 24 hours after injection.

Killed after injection.	Tested.	Reactors.	Lesions.
24 hours	41	3	0
48 hours	41	6	5
72 hours	86	7	5
96 hours	331	63	51

To account for the animals which reacted and no lesions were found on autopsy, it should be explained that it is possible for an animal to give a positive reaction to the test in the initial stage of the disease, or what is usually called the incubation stage.

Of greatest interest is the fact that out of the 414 head which were negative to the tuberculin test only two were found to be tubercular on slaughter. It is of interest because in eradicating the disease the veterinarian is not worried about the fact that he may occasionally remove an animal from the herd as a reactor in which no lesions will be found, but he is worried because animals having the disease in an advanced form are sometimes left in herds on account of not reacting, and may prove spreaders. The results show that with the intradermal test the chances for this are slight, and it is the opinion of the department that to be absolutely sure that the test failed in the case of the two animals mentioned, at least seven days should have elapsed, as reactions have been noticed as late as the seventh day after the injection.

The results from tuberculin testing are all that could be expected, and show that marked progress is being made in eradicating this scourge of the dairy industry.

SHREDDED FODDER FOR DELTA CATTLE.

Delta soil is generally too soft when wet to keep cattle in winter to feed corn stalks and other pasturage, especially on the pure peat land where cattle go to their knees when it is well soaked. Still, F. F. Lyons fed 500 cattle on the Terminus tract last winter through the February rains and they were not bothered with mud. He had stacked shredded corn fodder on a two-acre "salt grass" patch and fenced the cattle on that. He had no drains, but the sod held them up. By feeding the shredded corn on the field where grown, a great profit was made because the cost of baling, hauling, and shipping was saved.

ROLLED BARLEY DOES NOT DRY COWS.

Dairymen will be greatly interested in the results of a three-year feeding experiment conducted at the University Farm, which shows that rolled barley does not injure cattle or dry cows up prematurely.

A bulletin, written by Prof. F. H. Woll, giving details of the experiment, is ready for publication, but probably will not be ready for distribution until March or April.

Livestock warnings from the Weather Bureau, Department of Agriculture, issued for the benefit of the cattle and sheep interests, have been reported as of great value, particularly during the lambing and shearing seasons. One of these warnings issued in April, 1918, from the San Francisco forecast district center resulted in the protection of over 100,000 new-born lambs and in the postponement of the shearing of great numbers of sheep.

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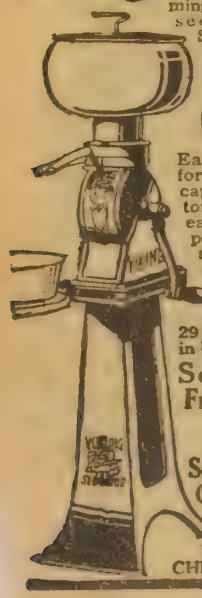


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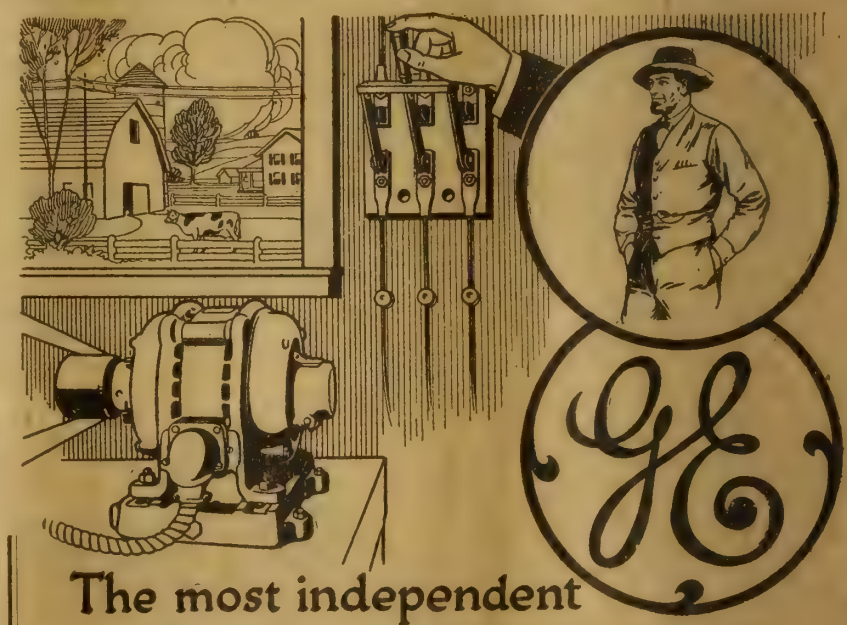
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DAIRY LEGISLATION PROPOSED.

[By Our Special Sacramento Correspondent.]

The Associated Dairymen of California, the State organization which is now showing so much life, is pretty well satisfied with dairy laws as they now stand except for certain details; and the association does not propose to initiate anything in the present Legislature, according to President J. M. Henderson, Jr. Mrs. C. D. Webster of Sacramento, who has been much concerned with dairy legislation the past two sessions of the Legislature, desires the dairy law regarding tuberculin testing and pasteurization to remain as it is, with a few minor changes. Such changes, also desired by S. A. W. Carver of Los Angeles, according to Dr. C. L. Roadhouse of University Farm, include such questions as permitting the standardization of cream, defining culture milk, and allowing a higher bacterial standard on grade B cream. This latter point is also emphasized by C. E. Gray of the California Central Creameries. Mr. Gray is chairman of the legislative committee appointed by the California Creamery Operators' Association at its Visalia meeting.

COUNTY TUBERCULIN TESTING.

The San Joaquin Valley Veterinary Association, according to Dr. Roadhouse, has prepared a bill at the special instance of Dr. J. F. McKenna of Fresno, which would take tuberculin testing under the State dairy law out of the hands of the State Veterinarian and give it to county veterinarians. This bill is in the opposite direction from the tendency of modern legislation to secure uniformity in the enforcement of State-wide laws by centralizing the executive authority. It would open the way to use of various tests under various rules, which might render a certificate of freedom from disease of questionable value in other counties.

OLEOMARGARINE.

The present law reads that "no butter or cheese not made wholly from pure milk or cream shall be used in any of the charitable or penal institutions of the State." This does not legally prevent the use of oleomargarine instead of butter at such institutions. The amount is considerable, for 20,000 persons are fed there. Samuel E. Watson of the California Dairymen's Association is hoping to get a bill through to prevent use of oleo at these institutions.

The oleomargarine law is to be administered by the State Board of Health instead of by the State Dairy Bureau if a bill introduced by Assemblyman N. J. Prendergast of San Francisco should become law. Mr. Prendergast's bill contains strong provisions for the labeling of oleomargarine; but rather ambiguously permits the use of coloring matter in certain kinds of oleo. It permits manufacture of oleo for shipment to other countries and other States in such form as complies with laws of those places. Another new provision is that oleo solid-packed in lots of 10 pounds or more may be sold for baking and industrial purposes, provided they are labeled as such. The bill requires all other oleo to be put up in packages of specified weight. The present law allows sale of oleo in bulk, but provides more securely that the labels shall continue conspicuously posted after part of each lot is sold. The present law prohibits possession of oleo of any kind without a license, except for family consumption; but the bill says nothing about this, nor does it make transportation companies liable for carrying unlicensed oleo, as at present. The bill is referred to the Committee on Manufactures.

URGE BUTTER FOR STATE INSTITUTIONS.

W. B. Hopkins of Petaluma, of the legislative committee of the California Creamery Operators' Association, has furnished us a copy of the resolutions passed by the dairymen of Sonoma and Marin counties and sent to their Senator and Assemblymen, urging that the use of oleomargarine or any substitute for butter or cheese be prohibited in State institutions.

The State Board of Control has ordered all these institutions to use oleomargarine instead of butter, but the dairymen state that their industry is a large one and of increasing importance in the prosperity of the State, and claim that the use of oleomargarine is discouraging to the dairymen and contrary to the usual policy of the State. Also they point out that butter contains certain pathological qualities not to be found in substitutes; that the inclusion of substitutes constitutes a lowering of the standard of diet, and that it is not to the interest of taxpayers to have the standard of diet in State institutions lowered.

They also endorse the proposed measure to regulate the business of producing, buying and selling imitation milk or milk products.

Dairymen in all parts of the State are urged to get together at once and frame similar resolutions to send to their Senators and Assemblymen.

Fred Hartsook of Lankershim has recently sold a foundation herd of 19 Poland China sows and gilts to Dr. N. Newton, Lankershim. Also, a young boar and gilt has been sold to Spencer Thorp of Los Angeles for his ranch at Santa Paula.

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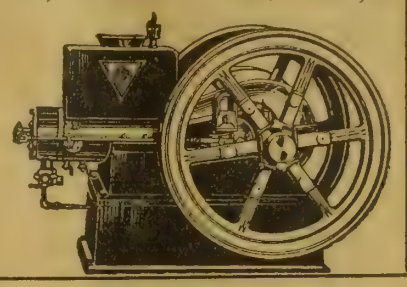
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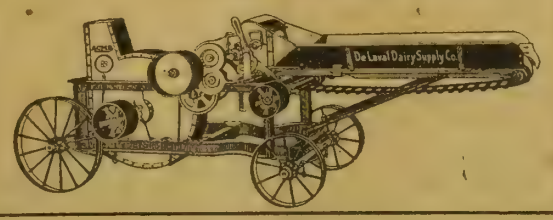
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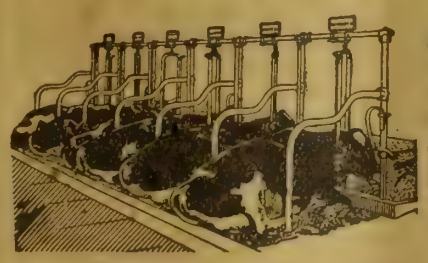
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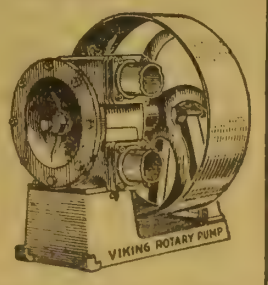
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GLENSIDE ROYAL 408155,
Grand Champion, Sacramento, 1916 1918, and at P. P. I. E.

Feed the Brood Sows Well

[Written for Pacific Rural Press by R. H. Whitten.]

"I am the foundation of the future pork supply," says Mrs. Brood Sow. "All pigs produced are under my care for at least six months—four months before birth, and two months thereafter. Consequently, attention given me is given the next generation as well, and good feeding and care will repay you many fold."

Every spring at farrowing time complaints are made by swine breeders that their sows have trouble farrowing. Pigs come dead, or are weak and soon die, or the sows kill and eat their young. And the question is asked, "What can we do?"

Very little can be done at farrowing time, for it is then too late. The remedy for these troubles must be administered long before the sows are due to farrow. In fact, the time to prevent trouble during spring farrowing is right now.

The best litters are usually farrowed by sows that are rather thin but gaining in flesh at the time of breeding, and that continue to gain until farrowing time. The old idea that a brood sow should be kept thin while pregnant is a back number. True, an over-fat sow will have trouble delivering her pigs, but if she is simply in full flesh and not rolling fat she will have no trouble, and she will be more quiet and less apt to kill her pigs than the thin one that is restless and jumps up every few minutes to look around for something to eat. A thin sow will invariably produce weak, undersized pigs, which will be further stunted after birth by lack of sufficient milk.

A good brood sow will suckle down quite rapidly, and if she is in good



Sows like these, carried to farrowing time in full flesh, but not rolling fat, will have good litters of husky pigs and will be able to suckle them well.

flesh at farrowing time her loss while suckling will be reflected in the rapid growth and thrifty condition of the litter. So it is not only safe but advisable to feed sows well after they are safe with pig, but it should be done with bone and muscle forming foods, as the growing fœtus requires that kind of nourishment to make the best development. A sow carrying a litter of eight to ten pigs, which we expect to have introduced into the world with lots of vitality, needs a ration high in protein and mineral. Fortunately, alfalfa, which nearly every California hog raiser uses, is the best single feed and furnishes the elements most necessary for the unborn pigs.

SHOULD HAVE SOME GRAIN.

But alfalfa alone is not enough—at least after the first eight weeks. The amount of feed a sow needs during the gestation period varies. Of course she must nourish the unborn pigs all the time, but for the first eight weeks after breeding their demands are light because 90 per cent of their weight is developed thereafter. That is, during the first eight weeks of the gestation period the sow must build on the average only 2 pounds of baby pig, but during the last 8 weeks 18 pounds. Consequently, she can get along with much less feed, particularly grain, during the first eight weeks than she needs during the last eight.

ANIMAL FOODS PREVENT PIG EATING.

Mill feeds are too high in price and too hard to get, so barley is the best grain to use. It should be ground or rolled, and either skim milk or tankage should be used with it. The sow craves animal food at this time, and she will produce much better pigs and be less liable to eat them afterwards if she is fed liberally of skim milk or tankage.

For the first eight weeks two pounds of grain a day will usually keep a mature brood sow in good condition, unless she starts in very thin. A young sow still growing will need about a pound more. If she is worth raising, keep her growing.

During the next six weeks a third to a half more grain should be allowed. It is best to regulate the amount according to the way the sow is gaining. A mature sow bred again right after weaning a litter should gain a half pound per day; a young sow still growing should gain a full pound.

EXERCISE MOST IMPORTANT.

Abundant and regular exercise is absolutely necessary for the good of both the sow and the pigs she is carrying. The leading three breeders of the Corn Belt, in talking over the best methods of handling brood sows and the most essential thing in bringing about a good condition for sows to farrow litters of large, husky pigs, were unanimous in stating that exercise is the most important of all. They claimed that it is even more important than feed, and that a poorly fed sow having plenty of exercise will farrow a better litter than a well fed sow that has been allowed to become lazy.

Generally when sows graze on alfalfa pasture they get sufficient exercise, provided their feeding is done at the opposite end of the field from their shelter. But if this is not enough, and they act sluggish and lazy, they should be forced to exercise, either by driving them or by cutting down on their grain fed at the trough and scattering soaked whole grain throughout the field, so that they will have to hunt for each kernel and cover a great deal of ground before they get enough to satisfy them.

If it is necessary to drive them, this should be done quietly, so that they will not become excited; in fact, nothing should ever be done around hogs to excite them, as they are more affected by sudden disturbances than any other farm animals.

A sluggish, lazy sow cannot keep her internal organs in a healthy condition, and cannot farrow a healthy litter of pigs. Consequently, an inflexible rule on every ranch should be that brood sows must have sufficient exercise, either voluntary or forced, to keep them in prime condition. Liberal feeding and abundant exercise are ten times better than light feeding and little exercise.

Mrs. A. Necesal of Geyserville has purchased from the Castleview Ranch of Santa Rosa two beautiful sow pigs out of a daughter of Riverby Princess, grand champion sow of the world. These young Berkshires were sired by Baron Duke 201st, national grand champion boar.

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Our Anchorage Farm Berkshires are money-makers. They are strong in the blood of our world's reserve champion, Star Leader, and have size, type, quality, vigor, and easy-feeding qualities—everything necessary for the ideal profit-producing hog.

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Gilts with good bone, well sprung ribs, strong backs, heavy hams. Right in every way and all ready to go ahead and make money for you.

It's a crime to offer them at $75 each, but we are going to do it to introduce our stock in new localities. They are worth much more.

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Don't put it off, for these gilts will go quickly. Get yours right now and begin to reap a golden harvest. If you want further information, send for free illustrated booklet.

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consisting of Fifty Bred Sows and Gilts bred to King's Big Bone Leader and Giant Dot. A rare opportunity to secure foundation stock of the best.

King's Big Bone Leader will be included. Remember that he was the State Fair Grand Champion, 1918, and is a great sire. He will make a strong showing if fitted again next year.

January 28, 1919, Sale at Fasset Lumber Yard, Fresno, beginning at 12:30 sharp. Catalog on request.

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7 FIRSTS, 6 SECONDS, 4 THIRDS.

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EVERY HOG GUARANTEED TO PLEASE.

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Brood Sows, litters at foot. Sows bred for fall litters. Young Boars and Gilts.

Best families.

Finest individuality and clean-cut markings.

Call or write.



Address F. V. GORDON or F. A. LANGDON, Llano Vista Ranch, Perris, Cal.

Livestock Queries

Dog Laws in California.

To the Editor: What is the law California regarding dogs trespassing where sheep are raised?—F., Modesto.

[Answered by Prof. R. F. Miller, University Farm.]

As far back as 1896, if I am correct, a dog law was passed placing a tax of $3 on males and $5 on females, this amount to be used in paying for damages done by dogs among sheep in the State. However, this law has never been enforced and the California Wool Growers' Association passed a resolution last year to take this matter up at the next meeting of the State Legislature in hopes of passing a suitable dog law and to see that it is properly enforced. I think encouragement should be extended every county, in the meantime, to have an ordinance passed so as to prevent these dog menaces, and the logical procedure seems to be to place a tax on dogs and the revenue from this tax to be used in paying for damages done in this county.

Barbed Wire Cut on Horse.

To the Editor: What can I do for a horse that had his heel cut in a barbed wire fence? The cut itself seems healed, but a bunch grew out at the top of the hoof, which I cut off several days ago. It seemed to be composed of a sort of gristle. It appears to be growing out again and I want to stop this growth.—E. D., Redding.

[Answered by Dr. E. J. Creely, San Francisco.]

Cut the growth entirely off even with the skin. Have a hot smooth-iron ready to sear and stop the spurting blood vessels. Saturate cotton with tincture iron chloride and bandage tightly. The following day paint with Lugol's solution. Apply cotton and bandage daily thereafter. It is advisable to keep the bandage moist with creoline water.

Udder Injured from Nursing.

To the Editor: One of my sows has a hard and swollen teat with pus oozing out. Her pigs have been weaned some time, but I think it must have been caused from the pigs' teeth. I am anxious to overcome the trouble before she farrows again.—A. C. H., Lincoln.

[Answered by Dr. E. J. Creely, San Francisco.]

Your sow has infectious mastitis. Cleanse thoroughly with a hot carbolic acid solution once daily. Do not squeeze the sore gland, but apply the following ointment: Zinc ointment, 2 ounces; lanoline, 2 ounces; gum camphor, pulverized, 2 drachms; belladonna ointment, 2 drachms. Mix thoroughly and anoint affected gland once daily after washing.

Growth on Cow's Eyelid.

To the Editor: I have a cow which was hurt on the lower lid of her eye. Proud flesh developed and it is growing out of the inner side of the lid. What can I do for her?—H. H., Sausalito.

[Answered by Dr. E. J. Creely, San Francisco.]

Wash twice daily with one quart warm water in which has been dissolved a teaspoon of boracic acid, after which thoroughly apply directly to the affected part once daily a 25 per cent solution of argyrol. I am inclined to be suspicious of an eye cancer, especially if there is a bad odor accompanying the discharge.

TULARE DUROC SALE A SUCCESS.

The Tulare county Duroc breeders held their first sale at Tulare, January 15, and it was pronounced a great success. The offering, which consisted of bred sows and gilts, was in the best of condition and the prices received indicate that the hog raisers of the San Joaquin Valley appreciate good stock.

The consignors were R. C. Sturgeon, Tulare; Allen Thompson, Tulare; R. E. Clifford, Strathmore; Henry Cummins, Visalia; J. N. Chinoweth, Visalia; J. L. McDowell, Lemoore, and S. A. Williamson, Visalia. Thirty head were offered and brought an average of $117.50. The top animal, a bred gilt consigned by S. A. Williamson, went to W. J. Higdon of Tulare at $235, and Mr. Higdon also secured a fine Allen Thompson gilt at $167.50.

With the exception of Hewitt Bros. of Van Nuys, who took a good gilt home with them for $120, most of the buyers were local men. However, there were no big buyers, as is generally the case in sales of this kind. Scarcely any buyer took more than three animals and the hogs thus went to a large number of new homes, where they will do good work in advertising both the Duroc hog and the Duroc breeders of Tulare county.

Col. Geo. W. Bell cried the sale. He is a recent arrival from the East and his vast experience in conducting purebred livestock sales, his quick and accurate judgment of individuals, and his ability to quote pedigrees added greatly to the success of the sale.

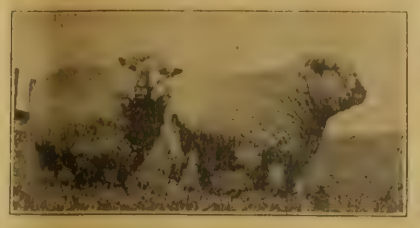
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The boar that was recommended to go East at the death of his sire, Grand Leader 2nd.
The dam of these gilts is Successor's Bernice 6th, 190141, a full sister to Successor's Beulah 208930, the great sow shown by Hood Farm of Lowell, Mass.
These gilts are offered open, and ready to breed for $100.00 each.
GEO. M. YORK
BERKSHIRE BREEDER,
MODESTO, - - CAL.

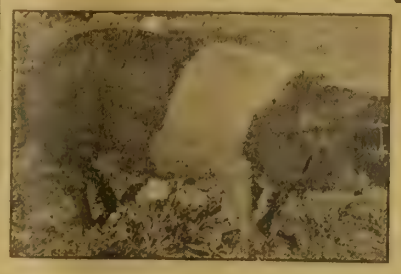
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Registered Hampshire Swine
A limited number of three-months-old weanlings for sale. Am booking orders for future delivery of youngsters by Gen. Tipton. Have a few young boars sired by Duke's Allen, Grand Champion, 1917, Sacramento.
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We have sold all our young boars and are now booking orders for March delivery. Highlander, the $1,000 Grand Champion Boar, heads our herd of
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In Western Canada Grain Growing is a profit maker. Raising Cattle, Sheep and Hogs brings certain success. It's easy to prosper where you can raise 20 to 45 bu. of wheat to the acre and buy on easy terms.
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Livestock and Dairy Notes

Livestock breeders all over the State are invited to send on postal cards, notes regarding their sales, State and County Fair intentions, new stock, etc.

The Dairy.

W. J. Higdon, Tulare, has sold a son of Prince Riverside Walker to Wingard & Bellows of Kern county. This youngster is out of the great producing two-year-old, Madrigal Mooike 2nd.

Dr. E. J. Weldon, the well-known livestock breeder of Sacramento, has associated himself with Fred W. Kiesel as secretary of the Jane Garden Farms. Dr. Weldon expects to dispose of his own herd.

We recently stated that Irene's Cadora, the registered Jersey cow owned by A. A. Jenkins of Tulare had completed a record of 804 pounds of fat, but we should have stated that this was her butter record.

In order to secure a calf of the highest producing blood in the world, Owen Duffy, manager of the Napa State Hospital, had Raphaella Johanna Aaggie bred to King Morco Alcartra, son of Tilly Alcartra, owned by A. W. Morris & Sons, Woodland.

F. M. Helm of the Jersey Farm Dairy Co., Fresno, is planning to erect a milk plant of class A construction. The building will have a frontage of 150 feet and will be one of the largest and most modernly equipped milking plants on the Coast.

The Guernsey cow, Langwater Phyllis, has broken the world's two-year-old Guernsey record by producing 746.23 pounds of butterfat from 13,288.4 pounds of milk, calving at two years and four and one-half months of age. She is owned by F. Lothrop Ames, North Easton, Mass.

The Red River Lumber Co. of Westwood, Lassen county, has purchased a Holstein herd bull from John B. Irwin, Minneapolis. For some time this company has been getting together a herd of Holstein cows. The milk will be used in Westwood, which is the lumber company's town.

The Valley Flower Co-operative Creamery Company of Humboldt county has begun to make extensive improvements on its already large plant, which is located on the island near Ferndale in the center of the rich Eel River Valley. The improvements will include a new building completely equipped with the latest devices for condensing milk.

W. B. Spooner, Jr., San Luis Obispo, has secured one of the most select lots of registered Holsteins ever shipped from Wisconsin, which consisted of about 58 head representing the tops of some of the leading Wisconsin herds. Mr. Spooner, with his father and brother, is farming 9000 acres devoted to dairy cattle, beef cattle, hogs and sheep.

Raphaella Johanna Aaggie, owned by the State Hospital at Napa, will shortly establish a new world's record for milk production on strictly official test. She will not equal the record of Tilly Alcartra, but the latter was on semi-official test. It is expected that she will finish her year with close to 30,600 pounds of milk and about 950 pounds of butter.

The Bridgford Co., Knightsen, reports the following records made by two-year-old heifers with first calf: A daughter of King Pontiac Koenigen made 22.40 pounds butter in 7 days and 90.21 pounds in 30 days. A daughter of King Valdessa made 21.68 pounds butter in 7 days and is being continued for 30 days with excellent prospects. A daughter of Spring Farm Pontiac Cornucopia made 20 pounds in 7 days and 77.53 pounds in 30 days.

Work is beginning on the construction of the plant of the Carpenter cheese factory at Tulare, which will be completed at a cost of $100,000. The company will manufacture cheese, sugar of milk, casein and similar products. Contracts have been closed for furnishing the plant with 30,000 pounds of whole milk daily and the company has agreed to pay for the whole milk 10c per pound above the market price of butterfat.

Representatives of the French Food Purchasing Committee visited the offices of the Holstein-Friesian Association of America to get assistance in purchasing healthy and reliable Holsteins to replenish the depleted herds of Northern France. The commission has been authorized to purchase an initial shipment of 100 cows from three to five years of age.

A. A. Jenkins is doing a rushing business in the sale of registered Jerseys. He recently sold to C. W. Brown of Tulare a young herd header sired by Gertie's Son's Victor, out of Glenwood Clara 2nd, the cow that recently made a yearly official record of 621 pounds of butter. Other sales include bulls to Jacob Sifers, Homer Rush of Tulare and G. H. Eldridge of Porterville; females to H. B. Tout, Sultana, and C. R. Miller, Lindsay.

F. H. Scribner of the Los Angeles County Farm Bureau has issued a challenge to any herd in the United States to make as good a showing as one of 100 cows at the Los Angeles County Farm, which for the month of November averaged 40.25 pounds butterfat. This record is remarkable, considering that only 10 per cent of the cows are purebred, the balance being high-grade Holsteins and 20 per cent of them being heifers with first calf.

The heifer, Spring Farm Pontiac Maid 2nd, owned by the Bridgford Co., Knightsen, has made a new State record for both 7 and 30 days by producing 35.63 pounds of butter from 623 pounds of milk in 7 days and 139.29 pounds butter from 2888.7 pounds of milk in 30 days. This heifer is very highly bred, as her first five dams averaged over 34 pounds and a full sister of her dam has just made a four-year-old record of 31.04 pounds.

Over 900 members, owning about 25,000 cows, are claimed for the Northern California Milk Producers' Association by H. M. Ellis, who says the association is sending milk as far as Marysville, Chico and Colfax. They have just started a factory at Orland with a capacity of 8000 pounds of butter per day. The one at Sacramento has over 5000 pounds per day capacity and will have over 30,000 pounds capacity when the new building is completed.

If an animal is tested often enough with tuberculin she will eventually cease to react, even though she has the disease seriously, says State Veterinarian J. P. Iverson. This fact enables certain dealers in California to buy reactors and sell them as "tested" cattle to unsuspecting dairymen. If the buyers kick, they are told to bring the animals back. If the animals are brought back, they are sold repeatedly until they no longer react to the test.

Gotshall & Magruder, Ripon, report that the Holstein cow, Sir Skylark Hengerveld Pet 2nd, has made an official record of 30.32 pounds of butter from 512.1 pounds of milk, with an average test of 4.737 per cent; also in 14 days she made 51.71 pounds of butter from 986.4 pounds of milk, with an average test of 4.76. This heavy producing and high testing cow is sired by a son of King of the Pontiacs and out of a daughter of Sir Skylark Ormsby Hengerveld.

Beef Cattle.

J. H. Cazier & Sons of Wells, Nevada, have sold a junior Hereford herd bull to the University of Nevada.

F. A. Meacham Estate, Petaluma, reports the following sales during the past month: State Farm, Napa, two bulls; Bael Bros., Clovis, three bulls; C. W. Hovenden, Aetna Mills, two bulls; A. D. Thompson, Elko, Nev., five bulls. This concern reports a heavy demand for Red Polls and states that they are constantly growing more popular in this State.

The Singletary Ranch at Willows is being developed into an up-to-date establishment for the breeding of beef cattle. New barns and silos are being erected and up-to-date equipment is being installed to accommodate 250 head of stock.

Mousel Bros. of Cambridge, Neb., recently made the sensational sale average of $3,845 on their Beau Mischief Herefords. The bull, Superior Domino, topped the sale at $21,000 and a daughter of the top bull, with calf at foot, brought $7.200. Fifty head sold for $192,250.

At the spring sale of the California Shorthorn Breeders, to be held at the University Farm, Davis, the half brother of the world's champion steer of 1916 and the full brother of the world's champion Shorthorn steer of 1918 will be sold. This youngster is the bull calf, California Model, owned by the University Farm. He is sired by Sultan Mayflower and out of the famous cow, Glenbrook's Marvel.

The first attempt to sell beef cattle at Farm Bureau auctions was made at the Corcoran sale, held January 16. Sixteen three-year-old Holstein steers and 10 young Holstein cows were offered. The former brought $12.80 and the latter $9.80. The prices were considered very satisfactory, and undoubtedly the sale of such stock will be a regular feature at Farm Bureau auctions before long.

N. Reynolds of the 7J Ranch at Burney, Shasta county, has returned from a trip to the San Joaquin Valley, where he bought six young registered Red Polled cows, two heifer calves and four bulls from R. R. Cartwright, part of them to go to Lonquist Bros., who run their cattle on the same range with the 7J Ranch. The latter has 11 regis-

64 - HEREFORDS - 64
FOR SALE

30 registered heifers, two years old, bred to our herd bulls, Farris Standard 2nd (425030), Mystic Debonair (592515), Debonair 64th (616840), and due to drop their first calves this spring.

30 registered heifers, 12 to 16 months old—open.
4 good young bulls, now ready for service.
Will sell in lots to suit buyers.
We guarantee everything we sell to be right.

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WELLS, NEVADA.

Horse and Mule Auction

FOR E. A. STELLAR OF THE MERCI RANCH, NINE MILES EAST OF MODESTO, ON FRIDAY, JANUARY 31, 1919.

Mr. Stellar has leased his ranch and we will on the above date sell his entire lot of horses and mules, as follows:

1 Gray mare, weight 1550. Sound, a good brood mare in foal; 10 years old.
1 Sorrel mare, weight 1500. A fine mare, 7 years old.
1 Mare, weight 1500. A show mare in harness and a good work mare; 6 years old.
1 Bay mare, weight 1400. Has been worked. Bred. Weight 1400; 4 years old.
1 Brown horse, weight 1400. Broke; a splendid worker; 4 years old.
1 Light bay horse. A fine colt. Coming 4 years old.
1 Span mares. Bred. Have been hitched. Coming 3 years old.
1 Black mare, weight 1325. Coming 3 years old.
1 Thoroughbred mare. Bred; 9 years old.
1 Sorrel mare. Near leader of 10-horse team; 9 years old.
1 Bay mare, weight 1450. Bred; 9 years old.
1 Horse, weight 1350. Has been hitched; 3 years old.
1 Mare, weight 1400. Has been worked; a fine individual. Bred; 3 years old.
1 Mare, weight 1000. Bred. Will hitch; 4 years old.
1 Mare, weight 900. Bred; 7 years old.
1 Work mare, weight 1550. Bred; 10 years old.
1 Mare, weight 1400. A good worker. Bred; 12 years old.
1 Standard bred driving horse. Splendid road horse; 10 years old.
1 Mare, weight 1450. Bred; 4 years old.
1 Riding mare, weight 1000. Bred.
1 Black mare, weight 1250; a dandy. Coming 3 years old.
1 Shetland stud. Unbroke; 4 years old.
1 Span horse and mare mules, weight 1300 each. Have been worked. Coming 3 years old.
1 Span horse mules, weight 1275 each. Have been worked. Coming 3 years old.
1 Span mules, horse and mare, weight 1050 each. Well work; coming 3 years old.
1 Horse mule, weight 900. Well work. Coming 3 years old.
1 Span mare mules, weight 1050 each. Coming 2 years old.
1 Span mules, mare and horse, weight 975 each. Coming 2 years old.
1 Horse mule, weight 950. Coming 2 years old.
1 Mare mule, weight 850. Coming 2 years old.
10 Head weanling mules. All good ones.
One Kentucky Reg. bred Jack, 7 years old. Grandson of Dr. McCord and Jeral Wood's world champion Jacks. This is one of the best Jacks in the state, and these young mules prove this statement, as they are the best put up lot of mules I have seen in the state.

COL. CY N. CLARK, Modesto; COL. BEN A. RHOADES, Los Angeles, Auctioneers.

E. A. STELLAR, Owner.

C. N. CLARK, Jr., Clerk.

d Red Polled bulls to go on range with its grade herd in the ng.

Swine and Swinemen.

he second Farm Bureau hog sale Cottonwood proved even more suc- iful than the first and the farm- received about 2c per pound more n they were offered by local buy- The best car lots brought 15c.

I. C. Witherow of Live Oak is re- ing stacks of letters from his tomers expressing complete satis- ion with the stock shipped on l orders. He has just received a er from J. A. Gordon of Klamath ls, stating that he is highly ised with the April boar recently ped him.

vidently nation-wide prohibition oing to help the swine industry, it has been reported that the euser-Busch Brewing Association t. Louis will engage in the man- ture of high-grade hams, bacon other packing-house products, probably other breweries will in line.

he annual meeting, election of ers and sale of the Western kshire Congress will be held at University Farm, Davis, Wednes- and Thursday, February 19 and At the meeting several matters great importance will be dis- ed, and at the sale 50 high-class od sows and gilts will be offered. schedule has been arranged by Kern County Farm Bureau so auction sales of hogs will be l at Wasco on the first Saturday avery month, at McFarland on second Saturday and at Bakers- on the third Saturday. Sales also be held at Tehachapi from to time, no fixed dates having set.

LIVESTOCK DIRECTORY.

in this directory 3c. per word each issue.

SWINE.

Berkshires.

STLEVIEW GIANT TYPE BERKSHIRES he thrifty, typey, quick-growing kind that make larger profits for you. Prizes and pionship honors are awarded—by the st judges in America—only to animals sing the essential qualities for economical production, viz.: heavy bone, good feet, strong backs, large hams and easy feed- qualities. Our grand champion herd in- s Riverby Princess, grand champion sow he world: Rookwood Lady 100th, 1917 champion of America; Mayfield Laurel 1917 grand champion of California. Bred bred gilts and fine weaned pigs for sale. eview Ranch Santa Rosa, Cal.

NEY-MAKING BERKSHIRES—The pro- easy-feeding kind that make the highest pork from the lowest priced feed. They increase your profits. Prices reasonable; faction guaranteed. Write for free book- describing our world's reserve champion. Leader. Anchorage Farm, Orland, Cal.

BERKSHIRES—GUERNSEYS
GRAPE WILD FARMS
few fall boars left, by Royal Superbus; a limited number of fall gilts. We have spring pigs of both sexes, and we are ing some top gilts for fall farrow. s upon application. A. B. Humphrey. on, San Joaquin county, Cal.

$25.00—$35.00—$50.00
BARON DUKE 201ST
Omaha Grand National Champion
AR PIGS, 3, 5, and 6 months old, from ound prize-winning sows We will sell ng that we wouldn't use ourselves
SANDERCOCK LAND CO,
906 K St., Sacramento,
In charge of Natomas Land sales.

COLEY'S BALANCED HOG FEED—The best feed to fatten hogs. Write Geo. H. y Co., Inc., Livestock Supplies, 8th and nsend streets, San Francisco

APLEWOODE RANCH, Calistoga, Cal., some fine Berkshire fall and spring pigs oth sexes. Prices consistent with quality breeding

ERKSHIRES bred at Imperial Stock Farm the kind that satisfy. Write us or call be convinced. R. J. Merrill & Son, Mor- Hill, Cal

ERKSHIRES IN PERRIS—They make y for me. Write for catalogue and prices. Hall, Perris, Cal.

ERKSHIRES—Sired by Star Leader, the 00 boar. Kounias Registered Stock Farm, sato.

OR REAL GOOD BERKSHIRES write s B Anderson R. 7?4W. Sacramento, Cal.

HOPLAND STOCK FARM—Registered Berk- shires. Prices on application. Hopland, Cal

CARRUTHERS FARMS BERKSHIRES—Cholera immune. Live Oak, Cal.

BERKSHIRES—Fair Oaks Ranch, Willits, California.

Poland-Chinas.

SOW BARGAINS—We are offering some ex- ceptionally nice tried sows, bred and open gilts, at attractive prices. They are all sired by the undefeated and world's grand champion Su- perba and out of big type sows, which cost me $200 and over. Investigate before buying else- where: Rough's Greenfields, Arlington Station, Riverside, Cal.

NOW BOOKING ORDERS for spring pigs, either sex, from my prize-winning, large type Poland-China hogs. Also will book a few orders for bred gilts, February and March farrow, and a few good, serviceable, aged boars. Hale I. Marsh, Modesto, Cal.

McCARTY'S POLANDS—Cholera immune. Big, vigorous boars. The kind Kansas King sires. Price reasonable. "Money back if no like." Alex D. McCarty, 324 Insurance Ex- change Building, San Francisco.

REGISTERED POLAND-CHINA bred gilts safe for March and April farrow; bred to "Fresno Sampson," our big Nebraska-bred boar, a hog with size and an easy feeder. Fred Gatewood, Route J, Fresno.

THE BEST IN THE WEST—California Gerstdale and President's Equal are my herd sires. Fall and spring boars now ready to move—each one a corker. Dr. J. A. Craw- shaw, Hanford, Cal.

HARTSOOK BIG TYPE POLANDS—A fine lot of young boars. Both bred and open gilts for sale. Toggenburg goats and Holstein bulls ready for service. Fred Hartsook, Lankershim, Cal.

BIG TYPE POLAND-CHINAS—Young ser- viceable boars and spring weanlings from my best sows and Blucher, an exceptionally good boar. P. E. Mitchell, Atwater Cal.

WEANLING PIGS, both sexes, Gerstdale Jones and Caldwell's Big Bob blood lines. Booking orders for spring. Forest View Ranch, Paradise, Cal.

ELDERSLY FARM—Big type Poland-Chinas with quality. Young stock from the breed's best big type sires for sale at reasonable prices. J. H. Ware, Live Oak, Cal.

OXBONE HERD offers March boars for sale from King's Big Bone Leader, grand champion at State Fair, 1918. Write F. E. Fay, Tipton, Cal.

40 SOWS and daughters of Big Bone Bob and I B A Wonder sows for sale. Price right. N. K. Horan, Lockeford, Cal.

REGISTERED POLAND-CHINA SWINE— Prize winners. Finest stock in the State. $20 up. M. Bassett, Hanford, Cal.

BIG TYPE POLAND-CHINAS—Stock from the best herds of the Middle West. N. Hauck, Alton, Humboldt county, Cal.

FOUR GOOD 3½-month boars, "I, B. A. Wonder" breeding, $25 each, or $80 for the lot. J. E. Thomas, Gilroy, Cal.

20 HEAD of Big Bone Bob, Grand Model and I B A Wonder Stock for sale. J. W. Wakefield, Acampo, Cal.

LAKE SIDE STOCK FARM—Large, smooth and big boned Poland-Chinas. Geo. V. Beck- man & Sons, Lodi, Cal.

POLAND-CHINA PIGS WITH RIBBONS. Prices right. Johnnie Glusing, Winton, Cal.

POLAND-CHINA PIGS—Bernstein, Trew- hitt, and Rose blood. B. M. Hargis, Tulare.

REAOAKS RANCH herd of registered Poland-Chinas. W. J. Hanna, Gilroy.

Chester Whites.

THE "BILLIKEN BRAND" of Chester Whites. The San Francisco fair has been called off, so I am offering some of the stock I had intended showing there. This offer- ing will consist of 3 boars and 8 bred gilts and sows. Still have a few weaned fall pigs, both sexes. Everything cholera immune. C. B. Cunningham, Mills, Cal.

Duroc-Jerseys.

DUROC-JERSEYS AT IRELAND—Home of Cherry Volunteer II. Grand Champion Boar at Riverside. Ireland's Orion Defender and Orion's King of Ireland are excellent sires in service. Booking orders for spring delivery. Ranch at Owensmouth. City office, 1219 Brockman Bldg., Los Angeles.

THE JOHNSON HERD of Duroc-Jerseys— Spring gilts and boars, sons and daughters of Johnson's Defender, the 1917 junior champion, for sale. Weaned boar pigs, $25. Frederick M. Johnson, Napa, Cal.

GREENWOOD DUROCS—Only a few gilts and sows left; bred to Johnson's Defender, Jr., the son of champions. Attractive prices. Order spring weanlings now. H. C. Withe- row, Live Oak, Cal.

WE WON MORE MONEY on Durocs at the State Fair than any other exhibitor. Why not buy some of this winning stock? June Acres Stock Farm, Davis, Cal.

DUROC-JERSEYS—Burke's Good Enuff, Golden Model, King's Colonel and Pathfinder blood. Derryfield Farm, National Bank Build- ing, Sacramento.

OPEN GILTS and two extra good service boars, one year old, grandsons of Taxpayer 13th. F. W. Gardiner, Rt. 4, Box 735, Sacra- mento

A FEW CHOICE BRED GILTS, spring boars and gilts of the best blood lines. H. P. Slocum & Sons, Willows.

HEAVY-BONED DUROCS—A few service boars for sale. Ormondale Co., Route 1, Redwood City, Cal.

DUROCS—Defender, Clinton B, and Golden Model strain; the big type. Allen Thompson, Tulare

WEANLING PIGS for sale, by a son of the grand champion of 1917. Jack Borge, Los Banos

DUROC-JERSEYS—Weanlings of either sex ready for immediate delivery. H. E. Boudler, Napa

REGISTERED DUROCS—All from prize- winning stock W P Harkey, Gridley, Cal.

DUROCS—University Wonder and Advancer breeding McDowell & Kendall Lemoore

Yorkshires.

LARGE YORKSHIRES—The ideal hog for the progressive farmer Young stock for sale A. L. Tubbs Co., Calistoga, Cal.

MULE-FOOT HOGS, large type; booking orders for spring litters These are the farmers' easy feeding, profit-producing kind H T Bailey, Box 37, Lodi California "The Blue Gums"

Seventh Semi-Annual Sale

OF

Kings County Poland-China Breeders Association

SATURDAY, FEBRUARY 22nd, 1919

KINGS COUNTY, FAIR GROUNDS
HANFORD, CALIF.

80 = HEAD = 80

BRED SOWS, GILTS and BOARS

To be sold without reserve from the best herds in Kings county.

Consignors.

M. Bassett,	J. A. Crawshaw,	W. S. Hubbard
O. Dimmick,	C. G. DeRaad,	C. A. Vaughn,
H. D. McCune,	W. D. Trewhitt,	W. L. Haag,
J. M. Bernstein,	W. Bernstein,	F. D. Ross.

Auctioneer, COL. BEN A. RHOADES.

For catalog or information write

F. D. ROSS, Secretary, - - - HANFORD, CAL.

DAIRY CATTLE.

Holsteins.

A PRICE ON EVERY ANIMAL.
Herd free from tuberculosis. All sales sub- ject to sixty days' retest. Sons of **Finderne Soldene Valdessa,** whose dam is not only a world record cow in seven-day division, but has two sisters holding world's records for yearly production.
Toyen Farms Association.
679 Mills Building, San Francisco.

HIGH-CLASS HOLSTEINS—I have for sale some sons of Sir Veeman Korndyke Pontiac from A. R. O. dams. Write for particulars or come see them. R. F. Guerin, Visalia, Cal.

FANCY GRADE HOLSTEIN COWS and heifers from herd testing 100 per cent. Ani- mals qualified for certified dairies. The Lewis Company, San Jose.

THE McCLOUD RIVER LUMBER CO., Mc- Cloud, Cal.—High-class thoroughbred Holstein bulls for sale. Write for prices and pedigrees.

BREEDERS OF REGISTERED HOLSTEIN cattle and Berkshire pigs. Whittier State School, Whittier, Cal.

PALO ALTO STOCK FARM, Palo Alto, breeders of registered Holsteins. Heifers and service bulls. Reasonable prices.

GLORIETTA STOCK FARM, WOODLAND, CAL.—Registered Holsteins. Special offering of fine heifers and young bulls.

REGISTERED HOLSTEIN BULLS with world's record backing. Kounias' Registered Stock Farm, Modesto.

CREAMCUP HERD—Registered Holsteins, Pontiac bull calves. M. Holdridge, Rt. A, B. 437, San Jose, Calif.

F. H. STENZEL, SAN LORENZO, CAL.—Breeder of Registered Holsteins. High test producers.

REGISTERED HOLSTEINS—A. W. Morris & Sons Corp., Importers and Breeders, Wood- land, Cal.

REGISTERED HOLSTEINS—Best blood lines of the breed. R. L. Holmes, Modesto, Cal.

SUNNYBROOK RANCH, Willits, Cal.—Registered Holstein-Friesian bulls for sale.

GOTSHALL & MAGRUDER—Breeders of registered Holstein-Friesians. Ripon, Cal.

BREEDERS OF REGISTERED HOLSTEIN cattle McAllister & Sons, Chino, Cal.

CHOICE HOLSTEIN bulls for sale. No females Millbrae Dairy, Millbrae, Cal.

HOLSTEIN BULLS and bull calves from A. R. O. cows. C. A. Miller, Ripon.

REGISTERED HOLSTEIN CATTLE—E. E. Freeman, Route B, Modesto, Cal.

HENGERVELD DE KOL BLOOD. High producers. T. B. King, Visalia.

EL DORADO HERD OF HOLSTEINS—Alex. Whaley, Tulare, Cal.

Jerseys.

FOR SALE—Young registered Jersey bull Sire, Valet's Peter of L. Dam, Rebekah's Foxy Girl O. J. Ames, Oakdale, Cal.

SUNSHINE FARM JERSEYS—Tuberculin tested. Production counts. E. E. Greenough, Merced

YOUNG BULLS from Register of Merit cows W. G. Gurnett, Orland, Cal.

Guernseys.

EDGEMOOR FARM GUERNSEYS—First in the show ring and in official records. Few animals of either sex for sale. Edgemoor Farm, Santee, Cal

HIDDEN VALLEY FARM offers for sale 2 young Guernsey bulls, ready for service, out of high record advanced register dams. A. J Welch proprietor, Redwood City.

CLAREMONT GUERNSEYS—Young bulls of serviceable age from A. R. dams. L. D. Smith, 3333 Vicente Road, Berkeley

PALO ALTO STOCK FARM, Palo Alto—Breeders of registered Guernseys; both sexes; prices reasonable

Ayrshires.

NORABEL FARM AYRSHIRES—Purebred young stock for sale at reasonable prices. Le Baron Estate Company, Valley Ford, Cal

AYRSHIRES—Registered; all ages. E. B McFarland, 412 Claus Spreckels Building, San Francisco

ELKHORN FARM AYRSHIRES—Choice young bulls at reasonable prices. J. H. Meyer 110 Montgomery St., San Francisco, Cal.

MILKING SHORTHORNS.

BREEDERS OF REGISTERED SHORT- horns—Milk strain; choice young stock for sale. John Lynch Ranch, Box 321, Petaluma.

INNISFAIL DAIRY SHORTHORNS—Regis- tered young bulls for sale. Alexander & Kel- logg, Suisun, Cal.

BEEF CATTLE.

AM A SPECIALIST in registered beef cattle and familiar with the best herds in the coun- try. If you need Shorthorns or Herefords, make use of my experience, save money and be satisfied. R. M. Dunlap, Hotel Land, Sacra- mento.

ALAMO HERD REGISTERED HEREFORDS (founded by Governor Sparks). Herd and range bulls. Reasonable prices. W. D. Duke, Likely, Modoc county, Cal.

REGISTERED MILK AND BEEF SHORT- horns, bulls and heifers for sale; catalogue free. Thomas Harrison, Santa Rosa Stock Farm, Santa Rosa, Cal.

REGISTERED YEARLING SHORTHORN Bulls—Heavy-boned, thick-meated Scotch and Scotch-topped breeding. Ormondale Co., Route 1, Redwood City, Cal.

RANCHO SAN JULIAN SHORTHORNS— Purebred range bulls, unregistered, for sale. Estate Thos. B. Dibblee, Santa Barbara or Lompoc, Cal. John Troup, Supt.

THE NEVADA HEREFORD RANCH, Jno. H. Cazier & Son Co., props., Wells, Nevada. Registered Hereford cattle. Breeding stock for sale.

REG. SHORTHORNS—Calves and yearlings for sale, both sexes, reds and roans. Choice Goods breeding. Fair Oaks Ranch, Willits, Cal.

JACK LONDON RANCH—Breeders of prize- winning beef Shorthorns. Glen Ellen, Cal. Eliza Shepard, Supt.

HOPLAND STOCK FARM—Registered Short- horns. Prices on application. Hopland, Cal.

REGISTERED HEREFORDS—H. H. Gable, Diamond G Ranch, Esparto, Cal.

SIMON NEWMAN CO., breeders of Regis- tered Herefords, Newman, Cal.

GEORGE CALLAHAN, Breeder of regis- tered Herefords, Milton, Cal.

GEORGE WATTERSON—Breeder Registered Herefords, Bishop, Cal.

HEREFORDS—Mission Hereford Farm, Mis- sion San Jose, Cal.

SHORTHORNS—Carruthers Farms, Live Oak, Cal.

SHEEP AND GOATS.

F. A. MECHAM ESTATE, Petaluma, Cal.—Breeders and importers of Shropshire, Ram- bouillets and American Merinos, both sexes. Also Red Polled cattle Take electric car at Petaluma or Santa Rosa for Live Oak Ranch.

100 HEAD of fine young ewes for sale All bred; some with lambs. Address John G. Mee, St. Helena, Cal.

DORSETS AND ROMNEYS—Dorset ram lambs for sale. John E. Marble, South Pasa- dena, Cal

BISHOP BROS., SAN RAMON, CAL.—Breeders and importers Shropshires.

KAUPKE BROS., WOODLAND, CAL.—Breeders, importers of Hampshire sheep.

CHAS. KIMBLE—Breeder and importer of Rambouillets, Hanford, Cal.

CALLA GROVE FARM, MANTECA, Cal.—Breeders and importers of Hampshire sheep

HORSES AND MULES.

FOR SALE—Percheron stallion with pedi- gree; color grey; weight about ton Corre- spond with J. E. Trosi, Box 272, Sparks, Ne- vada.

MISCELLANEOUS.

BUTTE CITY RANCH—Shorthorns, Shrop- shires, Berkshires and Shetland ponies. Write for prices and descriptions before buying Butte City Ranch, Box P, Butte City, Glenn county, Cal. W. T. Dwyer and W. S. Guil- ford owners

CROLEY'S BALANCED DAIRY FEED—The cheap milk producer; and Croley's Calf Meal, the best California calf raiser Geo. H. Cro- ley Co., Inc., Eighth and Townsend streets, San Francisco, Cal

MY HAMPSHIRES are money makers Stock for sale. Buy now. L. A. Denker, Saugus, Cal.

MULE FOOT HOGS—Large type H T Bailey, P. O. Box 37 Lodi, California The Blue Gums"

Record Hereford Developed by Youngster

[Written for Pacific Rural Press.]

Yes, and this bull was developed in a section of the country known as the land of razorback hogs, the scrubbiest of scrub cattle, houn' dawgs and pawpaws—the Ozark section of southern Missouri.

Clifford Farmer was a boy who was seized with the ambition for a thorough agricultural training, so he began to study for entrance to the Missouri State University. But his health broke down and he decided that the best way to regain it would be to join his father in the cattle business.

He took a lively interest in the herd of white faces, and in the various problems of feeding, breeding and herd management. Before long he began to feel that he knew a good calf when he saw one, and with this feeling of ability to pick a good one came the desire to own one.

PICKED A WINNER.

So a little over a year ago he went over into Oklahoma with his father and bought the five-months-old bull calf for $750. The calf had never been fed, and weighed only 475 pounds, but Clifford took a liking to it from the start, so he put it on a nurse cow and began giving it regular feeds; also he led it around daily for exercise. During the first five months the calf gained 550 pounds, and when 22 months old he weighed 1710 pounds.

Visitors to the farm were so enthusiastic about this young bull that they induced Clifford to take him to the Missouri State Fair, where he was first senior yearling in a very strong class. Then at the American Royal he duplicated his performance, this time showing against the cream of the land.

Clifford expected to take the bull back home and use him for breeding purposes, but at the last moment he decided to put him in the American Royal Hereford sale, where he sold for $24,000, the highest price ever paid for a bull of that age of any beef breed.

AND SO CLIFFORD MADE GOOD.

The work on the ranch not only proved mighty profitable, but restored Clifford to health. And when the news of the sale reached his mother she broke down and cried, thus proving that the raising of high-class stock lays hold on the hearts of the breeders and their families.

So there we have three advantages of raising registered beef cattle: it is fascinating, it is a healthful occupation, and it pays big returns.

Clifford Farmer is only 19 years old. Haven't we some boys about that age in this State who will catch the inspiration and repeat the trick? Certainly with all of our natural advantages we ought to be able to do as well as any boy can do in the Ozarks.

We Kept the Home Flocks Growing

To increase sheep and wool production in California and to assist farmers in securing small flocks of sheep, a liberty flock drive was started by the Animal Husbandry Department of the College of Agriculture last August, to be carried on for four months.

Farmers were asked to sign pledges of the number of sheep they would keep and to state whether they would get the sheep themselves, or would like to have the farm bureau buy them. If the farm bureau was to buy the sheep, they would be purchased locally, if possible, but if not the College of Agriculture would get them and ship them into the county at cost.

If the latter plan was carried out, the farmers when notified that the sheep were available deposited the required amount of money in the local banks and the sheep were shipped to some central point where the farm advisor and a sheep committee distributed them among the farmers. The regents of the University set aside a special fund of $15,000 to be used in purchasing and distributing sheep. This amount was found insufficient and an additional $10,000 was later added to the fund.

Most of the sheep supplied were secured from range men who discard their older ewes every fall. These ewes varied in age from five to seven years and would not be satisfactory any longer in range bands, but in smaller numbers under farm feed they are serviceable for one or two more seasons, and then can be disposed of for slaughter. The ewes purchased were Merinos or cross-breeds and were bred to good Shropshire or Hampshire rams.

The total number of sheep distributed in this way was 2456 head. In addition to this, Professor R. F. Miller of the University Farm selected for individual parties 1872 head that were not distributed through the farm bureau. In addition to the number of sheep supplied by the University, as a result of the campaign many farmers bought individually and the actual total increase in the number of sheep kept on farms as a result of the liberty flock drive was 47,123, of which 30,038 were placed through farm bureaus. Great work!

Cattle Brands Are Being Catalogued

[Written for Pacific Rural Press.]

A catalogue of some 14,000 cattle brands awarded to that many cattlemen in California by the State Cattle Protection Board is practically ready for the State printer and should be ready for distribution in about 90 days, according to James B. Newsom, who has charge of the office of the board and has compiled the catalogue.

It will be a most comprehensive and convenient booklet of pocket size, containing photographic reproductions of all the brands, arranged in groups according to their main characteristics. With each brand is a note telling to whom it belongs, and the Cattle Protection District in which his cattle range. Besides this convenient arrangement of brands, the catalogue is cross-indexed so that if anyone wants to know what brand is owned by a certain man, he looks up that man's name and finds reference to the page on which the brand appears. Since the State Cattle Protection Board is operating without funds, except the $1.50 annual registration fee, it will be necessary to sell the catalogues at cost.

GET AN ARMOUR CALENDAR.

We see plenty of pictures of show ring animals and those that sell for record-breaking prices, but Armour & Company believe that farmers should have before them pictures of the kind that win the prizes in the shape of good, honest greenbacks to the man who ships his stock to the selling pen.

So they have issued a Breeders' Chart and Calendar of three large sheets lithographed in colors. They show the ideal commercial types of all the different breeds of cattle, hogs and sheep—the kinds for which the packers will pay the most money.

On the reverse sides is a wealth of information—boiled down, practical facts about breeding, feeding, marketing, etc. Every raiser of livestock should have a copy of this calendar, which will be sent free by the publicity department of Armour & Company, Chicago.

Jane Garden Farms, Sacramento, reports the sale to M. H. Whitacre, Dixon, of a son of Prince Gelsche Walker Korndyke, out of a daughter of Prince Gelsche Walker.



Veramont Stock Farm
Taylorsville, Cal.
Purebred HEREFORDS
Patrician 5th and Don Woodford 4th at head of Herd. Fine lot of young bulls for sale, also few cows and heifers.
Address H. M. BARNGROVER, Santa Clara, Cal

CARRUTHERS FARMS
LIVE OAK, CALIFORNIA
Shorthorns and Berkshires
HOME OF THE CHAMPIONS
Ten splendid young Bulls for sale, also several heifers. We have on hand the best lot of young Berkshires we ever raised. Come and see them. Prices reasonable

ORMONDALE SHORTHORNS
Are all heavy boned, and of Scotch and Scotch-topped breeding.
Suited for either the range grower or breeder.
EVERY ANIMAL POSITIVELY GUARANTEED.
Whether you buy or not, visit our ranch, 7 miles from Palo Alto on Woodside Road. We welcome inspection. Prices and pedigrees on application.
SHORTHORN CATTLE
DUROC-JERSEY SWINE
ORMONDALE CO. REDWOOD CITY, CA
R. D. No. 1

The World's Largest Herd of Registered
HEREFORDS
The home of MISS RIALTO 2ND, NEVER defeated Grand Champion. Over 9 breeding cows, representing choicest blood lines. Great Bulls in service. Look up our records at the BIG livestock shows.
THE HEREFORD CORP. OF WYOMING, Box 876, Cheyenne, Wyo.
Wm. Cox, Herdsman. Raymond S. Husted, Vice-Pres., Gen. M.

BRIGHTON FARM SHORTHORNS
One three-year-old bull bred by H. R. Clay.
Three outstanding under-a-year bulls sired by Sir Type, a son of Cumberland Type. A few under-a-year heifers of same breeding.
Also registered Berkshires of both sexes of best breeding.
H. L. & E. H. MURPHY Perkins, Sacramento Co., Cal.



Guard your harness against decay
When the natural oils in your harness dry out, decay sets in. Dust, sweat and moisture attack the leather fiber and cause rot. Eureka Harness Oil takes the place of the natural oil and preserves the leather. Keeps harness strong, flexible and jet black. No animal oil in "Eureka"; rats, mice and other rodents dislike it and won't gnaw harness dressed with
EUREKA HARNESS OIL
MADE BY STANDARD OIL COMPANY (CALIFORNIA)

CHOICE HERD OF
SHORTHORNS
Headed by
"Princely Stamp"
Grand Champion of the West at Denver, 1918, also Liberty Fair at Los Angeles, and imported
"LOTHIAN MARMION"
The Kind You Want.
Will sell any quantity of stock—from a single animal to a carload.
Maxwell-Miller Cattle Co.,
STEAMBOAT SPRINGS, COLO.

NEW HARNESS
is cheaper than second-hand, dollar for dollar of cost. Come in and see what we have to offer you in HERCULES HARNESS and Horse Collars. Our own make, fully guaranteed.
Stallion collars made to order.
W. DAVIS & SONS
California's Pioneer Harness Manufacturers
333 Market St., SAN FRANCISCO, CAL.
Catalogue of Harness, Saddlery, Jumper and Traveling Bags sent free on request.

Red Polled Cattle
15 head fine, purebred bulls and 10 heifers, 8 to 12 months of age. For further information address:
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undreds of trappers send us eir raw furs year after year— HY? Because we treat them irly and squarely, and pay them

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iry testing has suffered since entered the war, but now that boys are coming back it will be wed with vigor under the direc- of E. C. Voorhies of the Uni- ty Farm, who also is back from of Uncle Sam's camps.

THESE PIGS MADE HOGS OF THEMSELVES.

Do purebred hogs pay better than grades for market purposes? This question is not raised so often nowadays, as farmers have been pretty well convinced in the affirmative, but an occasional proof may be of value to some doubting Thomas.

George L. Horine, breeder of registered Duroc-Jersey hogs at Winton, writes us of an experience which shows the consistency and dependability of purebreds. Three sows in Mr. Horine's herd farrowed a total of 31 pigs during May, 1918. Sixteen boars and 12 sows were raised. All of the sows were sold for breeders, but the boars were castrated at eight weeks of age and allowed to range on pasture until they had reached an average age of five and a half months.

They were then weighed and turned into a field from which a crop of blackeye beans and sweet potatoes had been harvested. The pigs averaged 117 pounds each at the time. There were several small ones in the lot, as all barrows from the three litters were included.

Forty-five days later, at an average age of seven months, these pigs averaged a fraction over 218 pounds each, thus making an average gain of 101 pounds per hog. During the last few days 12 sacks of ground barley were fed, the rest of the feed being simply the waste beans and sweet potatoe culls left in the field. It will be seen that the hogs gained at the rate of 2¼ pounds per day each in an open field, which Mr. Horine maintains is going some. He says another month in the pen would probably have turned the lot into 300-pound hogs, but it was thought best to let well enough alone and stop when a good profit had been made.

FEED REQUIRED FOR RAISING HEIFERS.

At the Government experiment farm at Beltsville, Md., experiments were carried on to determine the feed necessary to raise heifer calves during the first year. It was found that the average was 125 pounds of whole milk and 2420 pounds of skim milk; 889.9 pounds of grain; 568.3 pounds of alfalfa hay, and 4411.9 pounds of corn silage. At birth the average weight of the calves was 79 pounds and at one year the weight had increased to an average of 520 pounds. The grain mixture was different from that which would be used in California. It consisted of 375 pounds of corn-and-cob meal, 200 pounds of white bran and 100 pounds of linseed oil meal.

GIVE COLTS THE RIGHT START.

Colts are generally born during cool weather, so they escape the fly evil during the first few weeks, but hundreds of new-born foals die from a germ disease called joint-ill. This is caused by infection through the navel cord, and can easily be avoided if proper precautions are taken.

As soon as possible after birth immerse the navel stump in a cup or goblet with a 1-1000 corrosive sublimate solution, or some other equally reliable disinfectant, and keep it immersed for about ten minutes. Then dust the stump with a desiccating or healing powder, such as equal parts of powdered alum and boric acid, repeating this at half-hour intervals until the cord dries and seals sufficiently so that filth germs cannot enter the body through it. A simple thing to do, but it may mean the saving of your colt's life.

WATCH THE GENTLE BULL.

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Instances are reported every week where a careless man has paid the supreme penalty with his life.

A wise man never leads any bull by a rope or chain. A patent staff, or even a home-made one, is the surest "safety first" precaution.

A bull has no more respect for his owner than ex-kaiser Bill had for the people of Belgium.

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Cows can be made to clean easily without using force.

When cows do not clean properly after calving, it indicates a germ infection which is likely to run through the entire herd and result in Abortion and Barrenness.

The after-birth should be removed at once without force by means of the B-K douche and the cow treated to prevent her becoming an aborter or sterile. Authorities state that while there is no absolute cure for abortion and sterility, nevertheless the infection can be controlled by prompt treatment and the animal saved for successful breeding.

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Poultry for Profit

[Written for Pacific Rural Press by Susan Swaysgood, Ponoma.]

PLAY SAFE IN THE EARLY CHICK GAME.

Incubating and brooding may be said to be well under way at this writing. Not that it is wise for the average poultryman or farmer to have such very early chicks, but because we Californians are such a hopeful class of human beings that we just can't stand to wait around for the calendar to say "fair" or "spring." We take the signs on the calendar with a grain of salt and go ahead.

GO SLOW ON EARLY HATCHING.

But still it does pay to wait, unless we are well prepared to give chicks good shelter and care, until the signs portend something like spring. The hermit of Catalina says "We are to have an early spring." If he has advanced information, early hatching is all right, but most people will hatch anyway in spite of predictions. And for the man or woman with from 500 to 1000 pullets commencing to lay in early fall, just when the hens are considering a change of feather, is like finding a gold mine. How to have these pullets will depend on the shelter and care the chicks are given. Buying or hatching so many chicks matters very little if they are not raised right.

HIGH MORTALITY NOT NECESSARY.

Petalumans used to say if they could raise 50 per cent of chicks hatched they were satisfied. But that is an awful waste—it's awful because it's unnecessary. If chicks are from healthy parents and they are cared for properly, right from the start, such a loss need not be counted. Indeed, 25 per cent loss is not necessary. Even an amateur should raise 85 per cent of chicks hatched, if they go about it right.

The first thing in the successful raising of chicks is to have everything absolutely clean at the start, and to keep it so. I have seen chicks put into a brooder that was reeking in filth from the older chicks that had been just removed. I told the man that if he did not clean out and spray before night he might just as well kill his chicks. Oh, certainly he was going to clean out, but he just had not had time to do it before the chicks came from the hatchery. Anyway, the dirty brooder developed a nice case of diarrhea and he lost in the neighborhood of 60 per cent in two weeks, and I would not have accepted the balance with a gift of $100 if I had to keep them. It pays always to have the brooder and brooder-house clean, not only clean to look at but to smell. A good spray makes the smell fit for chicks better than anything else.

THE PROPER TEMPERATURE.

Then have the heat right and the house well warmed before the chicks come. If the house is warm, it does not matter so much about the brooder being at the proper temperature, because the chicks will want to run around and pick a little, just to try their legs. Have several drinking vessels, according to number of chicks, filled with buttermilk that has had the chill taken off, and sprinkle either good, sharp sand or ground oyster shell over the floor for them to pick at. If the chicks have come from a distance, let them run around and pick as long as they like and serve the buttermilk, but don't give them any other feed that night. If they are from your own incubators and you know just how long they have been hatched, use your own judgment about feeding, but the first meal in any case should be buttermilk and oyster shell. These two will clean the bowels of any bacilli that may have been picked up in incubator or in other ways and fit the chicks for the next morning's breakfast. At night see that every chick is under the hover, then take the temperature and run your hand along over the chicks in order to find out if they are comfortable.

DON'T LET CHICKS GET CHILLED.

Unless your house is guaranteed against cold nights, make the chicks prisoners in the brooders till such times as you can get the house warm, because a chill during these first days of a chick's life means either a funeral or a stunted chick, and one is as bad as the other. Eighty-five degrees is a good temperature for chicks, but in case they have been incubated at a high temperature it is well to brood them, or at least start them, with a little higher temperature and lower it gradually. When the chicks are fed in the morning don't turn them loose to run all over, unless you are prepared to stay with them all the time. First teach them where to go to get warm. A frame about eight inches high, made of light lumber, so that it can be moved back easily, is the best guard. If your brooder is square, have one at each side and let each one have ends that will meet, forming a square.

A SPLENDID CHICK FEED.

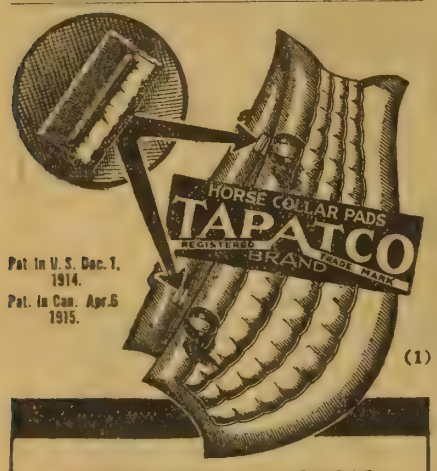
For the breakfast there is nothing better than toasted bread ground in a food chopper. It can be made specially for the chick or it may be old bread left from the table at odd times. In any case it should be baked brown all through and in that way ground and fed. If baked specially, it can be made of one part barley flour, one part corn meal, one part bran, and one part white middlings or white flour. The eggs that were tested out of the incubator can be used in this bread, and if sour milk can be had use baking soda and salt, as if you were making it for the table, and bake as usual, then as wanted cut in slices or split and bake brown again, then grind. This bread is a little chore, but it is great for starting chicks in the way they should go.

CAUTION IN FEEDING OATS.

Rolled oats are good—in fact, any kind of oats are good—but it should be remembered that oats are laxative, and after chicks get a month old they can be used more economically than during the first two weeks. I have fed oats and like them, but in feeding I always offset them with something that counteracts their action on the bowels. Some people say bran is laxative, but if it is it acts so mildly that it need not be feared. In fact, I rather favor good bran; it builds bone and satisfies the chicks without taxing the digestive organs.

WHEN TO BEGIN THE DRY MASH.

About the fifth or sixth day the chicks may be given a dry mash and in addition all the green feed they can eat twice a day. And the day's feed should always end with cracked dry grains. Five days of careful abstemious feeding and regular



Pat. in U. S. Dec. 1, 1914.
Pat. in Can. Apr. 6 1915.

(1)

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Poultry Breeders' Directory

in this directory 3c. per word each issue.

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n Prove their superiority by winning
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specialty. Bred for eggs, size, color.
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n Leghorns, Black Minorcas, R. I. Reds,
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alists. Our fifteenth year. Baby chix
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e Leghorn utility stock, bred for com-
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warmth will make the chicks fit and ready for the feed that will make them grow. But chicks that are fed indiscriminately and crammed during those first days from the shell, and alternately chilled and roasted, are just so much loss. But the biggest success in feeding chicks is to always have them just a little bit hungry. Once they are surfeited, they commence to pick and waste and never seem to get anywhere.

GUARD AGAINST DIARRHEA.

If a water vessel gets upset and wets any of the feed, clean it up and feed to something else, for if it is left in a warm brooder house and fermentation sets in, it will mean diarrhea as sure as you live. Never feed musty or sour feed; it is death to chicks. If they should get a diarrhea, boil a pan of rice in a double boiler, so that every grain stands separate. When cooked pour out on a board or big dish to cool and sprinkle ground cinnamon over it. When it's cool feed it to the chicks and keep plenty of fine charcoal before them.

PEACOCK EGGS WANTED.

To the Editor: Is there any reader of the Pacific Rural Press who knows where to get peacock eggs, and how to take care of these birds? How long does the setting time last? When is the most favorable time to set, etc?—E. A., Kelseyville.

The peacock is so pugnacious that there are not many kept on farms, but if some of our readers will let us know who has them it will help. Clarence Grange of Stagsleap ranch, Yountville, has the only ones I know of, and I do not know whether he would sell eggs. The peafowl do not mate until spring. About April the hens begin to lay and the first litter of eggs is usually five. They should be set under good common hens and not more than three given to a hen. It takes 28 days to hatch the chicks and they require about the same treatment as young turkey poults. Both old and young are very particular about cleanliness. If they are not kept strictly clean, they do not thrive or do well; and they are not fit to breed from until three years old.

LICE ON FOWLS.

To the Editor: Can you tell me how to exterminate lice on fowls and animals, also body lice on man?—J. L. W., Hanford.

Get a box of Carbola, for sale at all feed stores. If this is dusted in the chicken's feathers, in the animal's hair and on man's skin, it will do the work equally on all. Sprinkle freely on the skin and on the clothing, Carbola is a fine, smooth, white powder, and will not harm the skin of man or beast.

BABY CHICKS—Booking orders for spring deliveries. White and Brown Leghorns, Rhode Island Reds, Barred Rocks. E. W. Ohlen, Campbell, Cal.

HIGH GRADE BLACK MINORCA COCKERELS, $5.00 each. Eggs $2.00 per 15. Edward A. Hall, Route 1, Box 39, Watsonville, Cal.

BABY CHICKS (White Leghorns) shipped on approval before remitting. No weak ones charged for. Schellville Hatchery, Schellville, Cal.

FOR SALE—Golden Bronze turkeys. Big boned breeding toms of America's best strain. Eggs in season. M. M. Reiman, Planada, Cal.

DON'T FAIL to order now if you want early chicks from our Hoganized S. C. White Leghorns. Tupman Poultry Farm, Ceres, Cal.

CHICKENS, DUCKS, GEESE, GUINEAS, Pea Fowl, Pigeons. Wm. A. French, 545 W. Park St., Stockton, Cal. Stamps.

CHOICE S. C. B. MINORCAS—Cockerels for sale. Also eggs for hatching. Mrs. J. W. Moore, Exeter, Cal. Box 446.

BUFF ORPINGTONS, BUFF DUCKS, BOURBON RED TURKEYS—The Ferris Ranch, R. 2, B. 144D, Pomona, Cal.

A. C. TAGGART—Prize Anconas exclusively; eggs $2, $3.50, $5 setting. 1620 Fifty-fifth avenue, Oakland.

WHITE HOLLAND turkey toms for sale; choice, fine birds. Earl V. Smith, Loma Vista Ranch, Willows, Cal.

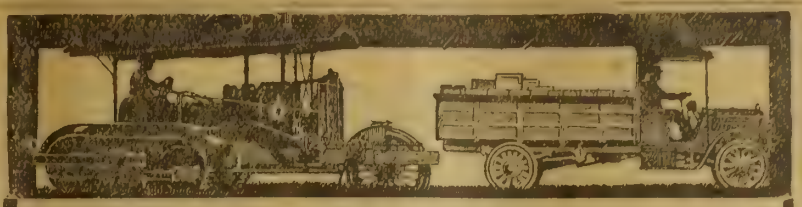
PLACE ORDERS EARLY for chicks with the Madera Hatchery, Madera, Cal.

RABBITS.

MONEY IN RABBITS—We are now paying $6 per pair for all you can raise. Send stamp for particulars. H. E. Gibson Co., Arcadia, California.

RABBITS—Thoroughbred New Zealand Reds, fine size and color; young and old bucks and does; bred does. Baker Rabbitry, Box 521, Dixon.

DR. B. HEARN, VETERINARIAN—Breeder New Zealand and Flemish Giant Rabbits. R. R. 2, Porterville, Cal.



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These are the big paying lines of the future—skilled men are always in demand—in the after war adjustment only the trained man will be wanted—start now to learn a trade—cut out this ad—send for catalog today—What do you want to be?

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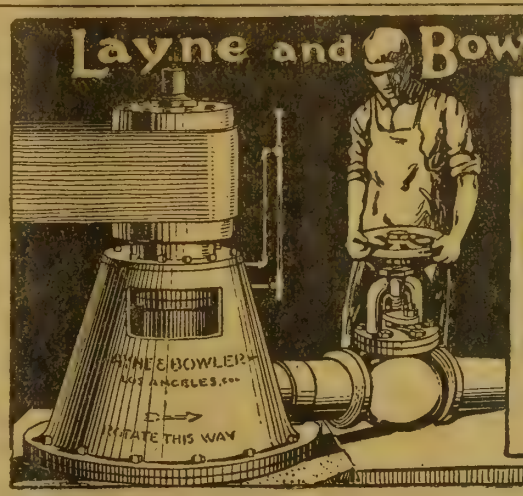
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Heald's Automobile and Engineering School
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Layne and Bowler Pumps



—designed by the foremost pump builders, built by master mechanics.

Ask for Folder No. 25 which gives full information.

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900 Santa Fe Ave.,
Los Angeles.

Make Poultry Pay

One of our subscribers was completely disgusted with poultry raising. Every morning forty of his hens would brag about what they were going to do, but at night he would find that only about eight had laid. The rest had simply lied.

So he bought a copy of our poultry book and in less than two weeks his hens had quit lying and gone to laying. They were shelling out enough extra eggs to pay for the book in less than two days.

California Poultry Practice Tells How

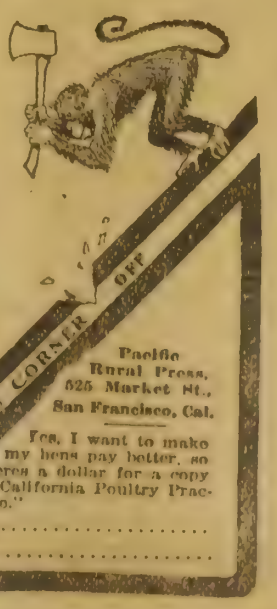
This great book will do as much for you. It was written by a Californian for Californians. The author, Mrs. Susan Swaysgood, after years of successful experience, has succeeded in showing the farmer how to make poultry raising more profitable. She knows what to tell and how to tell it. She deals out hard-headed poultry sense and still has every paragraph full of snap and sparkle.

The book deals with actual conditions—not theories—and covers every phase of the industry. It gives advice about location, buildings, equipment, choice of breeds, best way to begin, how to select stock, etc. There are valuable instructions for incubating, brooding, culling, feeding, breeding for heavy laying, showing, treating diseases, marketing products, etc. You will find everything necessary to insure your success.

Now Is the Time to Start

Never was there a better time to take up poultry raising in earnest. The nation's supply of meat animals is not keeping pace with the increase in population, and the people must turn to poultry raisers for nitrogenous foods. Eggs will be the cheapest concentrates, and table fowls the cheapest meat.

A golden market awaits all poultry products here on the coast, where we don't even produce enough to supply the local demand. As a government expert puts it: "The Pacific Coast offers a wider and more inviting field for future development in poultry raising than any other section of the United States."



Costs Only a Dollar

But play safe. Start right by getting this book and following the methods which have already proved successful. It will cost you only a dollar; you would not sell it for ten.

Pacific Rural Press,
625 Market St.,
San Francisco, Cal.

Yes, I want to make my hens pay better, so heres a dollar for a copy of "California Poultry Practice."

Name.....

Address.....

Send Coupon Today

THE HOME CIRCLE

MILITARISM REBORN.

When she knew him
For the few short weeks
Before he Went Across,
His face was so brown
And his eyes were so bright,
And he was so straight,
And muscular,
And his uniform was so perfect,
With its little gold bars on the shoulders
And the heavily embroidered wings over the heart,
And the shiny puttees—
He was so much the Man
And the Soldier
That she forgot that the War was going to end some day
And she went and married him. . . .

And when the War was over,
He came back
And got out of the Army.

Whereupon it developed
That he had his hair cut round from choice.
And that he liked silk shirts
With broad red and blue stripes
Or purple dots
The size of moth balls,
And that he wore yellow shoes
With bumpy toes,
And bright green hats,
And vivid suits,
And that he had a passion
For Pinocle and Snappy Stories
And cigars with bright bands
Which he never removed,
And that he had a happy way of making himself
More comfortable than anyone else
At social gatherings,
And that he said, "He don't" and "You was"
And "athaletic." . . .

So now
She sits at home
In the house her father pays for,
While Charlie punishes an adding-machine,
And she prays fervently
For More Wars. . . .

—Edward Hope, U. S. N. Air Station, Pensacola, Fla.—New York Evening Sun.

ABOUT ESMERELDA.

Esmerelda was my doll. You never saw such a pretty one—blue eyes, flaxen hair, cheeks like roses, and lips to match. I know she was fond of me. Brother Tom wants to know how I know it. But you cannot tell such things. You only feel them.

Our big dog Dump loved me, too. He used to be jealous of Esmeralda at first, but I taught him to love her and to watch her when I had to go where I could not take her. Mamma says that a doll cannot be taken to church, though I cannot see why, if she had her best things on and kept her eyes open. On Sundays and such particular times I used to leave Esmerelda in Dump's care. I would say, "Watch her, Dump!" And he would sit beside her crib and never allow anyone to touch her.

Once, when we had a new servant, he would not allow her to come into the room where Esmerelda was; and we found her crying outside the door when we came home. She was a stranger to Dump, and he thought that she wanted to steal my beautiful doll. I was never anxious about Esmerelda when I went out, because Dump took as good care of her as I did.

We called him Dump because, when he was a puppy, he used to be so heavy, and, when he jumped, came down with such a noise. "Dump of lead" brother Tom called him at first; but that was too long for every day.

At night he used to be sent to his house to sleep. His house was in the garden. It was a very pretty house. It was painted red, and had a pointed roof, and a mat for him to lie on.

This summer, when grandmamma asked me to come to the country to see her, papa and mamma and Tom went, too. Of course, I intended to take Esmerelda; but Dump was to stay at home, with Bridget, the cook, and Nora, the upstairs girl, to take care of him.

I remember putting Esmerelda's traveling dress on, and her little hat, and I thought I put her in the corner of the carriage seat, with her traveling bag; but, when we had driven on a little way, I put my hand down to feel for her and take her on my lap, so that she could see the places that we passed, but she was not there. We all looked, but she was nowhere in the carriage.

"You did not put her in at all, Kitty," mamma said. "You must have left her on the bed, where you laid her after she was dressed."

"Oh, I brought her out," I said, "and then I went in again to get my parasol."

"She may have been stolen then," said papa. "At all events, we cannot drive back. We should lose the train. Nora will put dolly away safely."

"I will write home about it tomorrow," said mamma.

It seemed to me that they thought very little of it; but, as for me, she was my only child, and I could not enjoy the journey. I cried so much that mamma did not wait until next day to write, but took a postal card from her bag in the station and wrote to Nora there, and paid a boy to put it in the box; and so the very next day came an answer. It was this:

"Dear Madam: Me and Bridget is awful sawry, but the doll is not in the house. We looked careful. All is well, but skeered by Dump. We thought he was mad, but Mr. Butcher says no, only cross. He barks at us if we go to his house, and we set vittuls and water outside, and run away. We daysent go ni him. Yours respectfull, Nora."

"Poor Dump!" said father. "He wanted to come, and he is sulking over it. Well, Kitty, the doll is lost; but you shall have another."

"No," I said, "never! I could not love another doll!"

It was splendid at grandma's, but I could not feel happy. I went to bed early, and lay thinking about poor Esmerelda and all she might be suffering, when all of a sudden an idea came into my head, and I clapped my hands, and jumped up and went downstairs and into the sitting-room.

"Oh, my, my!" cried mamma—"to come downstairs like that!"

"It was too important to wait," I said. "I wanted to relieve everybody's mind. Esmerelda is safe. The reason Dump acts like that is that he has got her out there in his house, taking care of her. I saw him jump into the carriage; and he must have carried her off then, for he went straight to his house. I'm quite happy about her now. She's safer with him than with anyone else but me."

"I believe you are right, Kitty," said mamma.

"I know I am," I said, as I ran upstairs.

I had a lovely time at grandma's, and the moment I got home I ran out to the garden. Dump was in his house; but he came out in a hurry and began to caper for joy.

"Good dog!" said I, patting him. "Now bring Esmerelda to me."

And back he rushed, and out he came, carrying my darling dolly by the waist, just as a cat carries her kittens.—New York Ledger.

A SMALL ECONOMY.

In making curtains for kitchen or bathroom, where they soil rapidly and need much laundering, it will be found to be helpful to make the top heading and the hem just the same width—then the curtains may be turned end for end and distribute the wear from the open windows. With the new hemstitched edges shown on scrim and swiss, there need be no edges turned and that makes it possible to alternate the front and back edges of the curtains as well.

FASHION NOTES.

The feather turban in modified form has appeared. The ostrich or other flat feathers are laid closely and covered with tulle of the same shade.

New spring sailors of rough straw in brown, taupe and tan, as well as black and white, are being shown.

The very newest blouses are made with a panel that in some cases extends almost to the knees, with the effect of a tunic.

The dolman wrap, which became popular this winter, is still shown this spring in much the same styles.

Scarfs of knitted silk or wool or fluffy angora are much seen in bright colorings.

One of the most attractive features of the jersey dresses being shown are the crossed-over narrow belts.

Blouses are shown in all styles—from very plainly tailored ones to elaborately embroidered ones in beads and colored silks.

This is a very good month for household shopping—so many of the necessities of the home are reduced now.

ORANGE MARMALADE.

Take one dozen oranges, four lemons, wash and slice thin, removing any seeds. Put in stone jar, cover with four quarts water, let stand for twenty-four hours. Boil two hours, or until the liquid is reduced one-half. Add eight pounds white sugar and boil about an hour more, or until it jellies. Put in glasses or jam jars and cover with paraffine.

Orange marmalade made by this recipe is much milder than the Scotch marmalade, and is delicious with toast for breakfast or tea.

UNCOOKED CHOCOLATE ICING.

Melt two ounces of ground chocolate in a quarter pint of boiling water; set on stove until well dissolved, then remove and add one half pound pulverized sugar and stir until perfectly smooth.

For mocha chocolate filling, take one cup powdered sugar and mix with three tablespoons ground chocolate. Then take three tablespoons boiling black coffee, poured into two tablespoons butter, stir into above and beat well. Flavor with vanilla.

Love is the great home-maker that makes even the drudgery of housekeeping a pleasure, and home life a foretaste of the bliss of heaven. One cannot get too much love into one's home-making, but easily too little.

MORE LIGHT THAN 20 OIL LAMPS

AT LAST—the light of lights—A beautiful lamp that lights with common matches just like oil lamp, but makes and burns its own gas from common gasoline, giving a brilliant, steady, restful, white light of 300 candle power.

MOST BRILLIANT LIGHT MADE

Brighter than the brightest electricity. More light than 20 oil lamps. Cheapest and best light made. Costs less than one-third of a cent per hour. Safer than the safest oil lamp. The



COLEMAN QUICK-LITE

No wicks to trim—no globes to wash. No dirt, no grease no glare or flicker. Absolutely safe. Fuel can't spill—no danger even if tipped over—will last a lifetime.

Write or office for Catalog 21-R. P.

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Showrooms 324 S. Hill St.
Los Angeles.

MAKE YOUR STOVE A GAS RANGE

HEAT PROBLEM SOLVED

STAR OIL-GAS BURNER makes cheap gas from kerosene. Use in any stove. Users delighted. Saves half fuel. Ten years successful record. Folder 25 free. Agents Coining Money.

STAR HEATING AND LIGHTING CO.
STATION C — LOS ANGELES

-in cans only



Ghirardelli's Ground Chocolate so good—so pure—and so rich nutriment that it deserves nothing less than this quality-sealed can. That's why Ghirardelli's is not sold in bulk, but *in cans only*.

In ½ lb., 1 lb. and 3 lb. cans—at the store where you do your trading.

Say "Gear-ar-delly"

D. GHIRARDELLI CO.
Since 1852 San Francisco

Ghirardelli's
Ground Chocolate

TIRES

BARGAINS STANDARD MAKES

These tires are all new, fresh goods and NOT retreaded or so-called rebuilt tires.

Goods Shipped C. O. D., Express or Parcel Post.

Money Refunded on Goods Returned to Us Intact Within Ten Days.

	Plain Tread Guaranteed	First Non-Skid Guaranteed	Tubes Guaranteed Gray
28x3	$8.75	$11.40	$2.35
30x3	9.85	11.90	2.35
30x3½	12.60	13.95	2.85
32x3½	13.90	16.40	3.00
31x4	18.25	21.40	3.65
32x4	18.55	21.85	3.75
33x4	19.35	22.80	3.85
34x4	19.80	23.30	3.95
34x4½	26.20	29.90	4.80
35x4½	27.00	31.20	4.95
36x4½	27.50	31.70	5.10
35x5	29.90	35.60	6.00
37x5	32.25	37.70	6.20

All other sizes in stock. Write for them or call and see them.

SPECIAL

NON-SKID SECONDS

30x3½ Clincher.....$11.75
33x4 Straight Side.....$18.70
33x4 Straight Side.....$19.25

Prices subject to change without notice.

Automobile Tire Co.

Sixth and Olive Sts.

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H. A. Demarest, Coast Manager.

533 Van Ness avenue, San Francisco.
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The Oldest Automobile Tire Jobbing Concern in the United States and the Largest in the World.

Open Sundays and Evenings.

Replace Your Old-fashioned Plumbing Fixtures

The added convenience of modern plumbing fixtures will more than compensate you for the slight cost involved in replacing them for your present fixtures.

The attractive designs of Pacific Plumbing Fixtures will make you proud of your bathrooms.

Pacific Plumbing Fixtures are guaranteed forever against any defects in workmanship or materials, and although their quality is higher, cost no more than any other reputable brand.

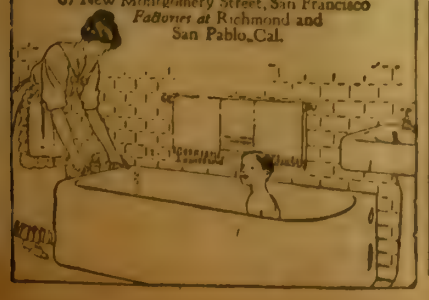
Write for a free copy of The Book of Bathrooms. It is a 56 page book, brim full of ideas.

PACIFIC

PLUMBING FIXTURES

For sale by all plumbers

Main Offices and Show Room
67 New Montgomery Street, San Francisco
Factories at Richmond and San Pablo, Cal.



THE AMERICAN'S CREED.

"I believe in the United States of America as a government of the people, by the people, for the people, whose just powers are derived from the consent of the governed; a democracy in a republic; a sovereign nation of many sovereign states; a perfect Union, one and inseparable; established upon these principles of freedom, equality, justice, and humanity for which American patriots sacrificed their lives and fortunes.

"I therefore believe it is my duty to my country to love it; to support its constitution; to obey its laws; to respect its flag, and to defend it against all enemies."

This creed was written by William Tyler Page of Maryland, and was formally accepted in the name of the United States Government by the Speaker of the House of Representatives April 3, 1918. American children should learn it and be asked to repeat it at school assemblies and patriotic gatherings.

CABBAGE RECIPES.

Scalloped Cabbage.

Chop and cook a small head of cabbage with a couple slices of bacon until tender. When cooked, season, pour off the juice into another vessel and put half the cabbage into a baking dish. Put on a layer of bread crumbs, then a layer of cabbage and another layer of crumbs. To a cupful of the juice add a well-beaten egg, pour over the crumbs, place the slices of bacon on top and bake one-half hour.

Creamed Cabbage.

Cook the cabbage as usual, draining well when done. Make a cream sauce as for other vegetables of melted butter, flour and milk, bring to a boil, season and pour over the cabbage.

Cabbage and Lettuce Salad.

Use the inner part of a cabbage and chop with lettuce very fine. Add a can of pimientos, season with salt and pepper, mix well and serve on a lettuce leaf with mayonnaise dressing.

EARLY SPRING FLOWERS.

For early spring flowers it is time to be getting seeds into the ground. For a ground cover nothing is better than sweet alyssum, and it may be had in white or the new deep lilac color.

Corn flowers, if sown now, will give beautiful, rich, deep blue flowers in abundance for early spring cutting.

Mignonette is another old favorite that will produce flowers within ninety days after sowing.

California poppies in a new, brilliant color will make a wonderfully showy bed.

TEA IN PERFECTION.

To have tea in perfection it is only necessary to follow the four following rules:

1. Let the water be fresh.
2. Let the water boil furiously five minutes before using.
3. Let the water remain on the leaves not less than seven nor more than ten minutes and then be poured off into another heated vessel.
4. Use one teaspoonful of tea for each cup of water and if too strong reduce the quantity.

READING FOR CHILDREN.

The reading of children should be carefully supervised and they should be encouraged to tell about what they read to avoid the habit of reading for amusement only.

To read alone for amusement develops a perpetual condition of dreaming, which eventually destroys all capacity for thought. The development of the mind is dependent upon reading topics that cause one to think.

TEA LEAVES AND FULLER'S EARTH.

After tea is brewed, the moist leaves make one of the best carpet cleaners and brighteners known. Carpets may be cleaned without taking up by sprinkling them with moist tea leaves and sweeping well. The grease spots can be removed with Fuller's earth and a hot iron.

Germain's 1919 catalog now ready

It tells all about how, when and what to plant. Contains valuable information for the rancher, dairyman, fruit grower and florist—as well as the city man who raises a few vegetables and flowers.



Peace Negotiations==



Peace reigns supreme and negotiations are unnecessary in the home that basks in the radiant atmosphere of a glowing "Premier" fire.

It is the oft-repeated performance of a discouraging and thankless task that makes us cross—more wood to make more ashes—remove ashes to make more room for more wood; etc. It's the same with coal, only more dirt, smoke, soot and fumes.

The most common expression used in letters that come into this office is—"We do not understand how we ever got along without a Premier Burner." Is it any wonder? The sudden and entire elimination of accustomed drudgery brings an awakening that is almost rude in its effect, as we all pride ourselves, more or less, in the possession of wisdom and good judgment, yet at times are discovered in a rut.

Will you accept a few suggestions—a little enlightenment, at our hands? It is yours for the asking—we will gladly send Circular "B" and drawing upon request. Just mention size of stove and whether used for heating or cooking.

BURNER GUARANTEED AND PREPAID—$5.00.

COMPLETE ONE-BURNER INSTALLATION—FORWARDING CHARGES COLLECT—$9.85.

PREMIER BURNER COMPANY

246 So Spring St. LOS ANGELES, CAL.

THE RIGHT WAY TO USE SODA.

The tendency is either to use too much soda or else not to distribute it thoroughly. Therefore, allow but one half teaspoonful to each cupful of sour milk and add one fourth to one-half teaspoonful of baking powder. In addition, always sift the soda and baking powder with the flour, instead of putting the soda into sour milk.

ANOTHER TEPARY RECIPE.

For cooking tepary beans, soak 24 hours, drain off, put in fresh water to cook, or else parboil with a little baking soda in water, drain off and put in fresh water to finish cooking. The peculiar flavor is in the skin and is easily extracted. If you have any doubts, try a mess, and don't take my word for it. —Cranky Old Bachelor.

Market Comment

1918 Livestock Values Compared.

Last week we gave on this page figures showing the comparative prices of dressed meats at the two important centers of the West (San Francisco and Los Angeles) and of the East (New York and Boston). This week we present a tabulated comparison of livestock prices. Besides showing the total value and the average value per head at the great central livestock market, Chicago, for 1918, with comparisons for 1917, the table gives the receipts and the average weight on all classes at that market.

	Receipts	Total Value	Average per Head Value	Weight Average
1918				
Cattle	3,789,922	$462,038,180	$121.91	930
Calves	657,767	14,100,162	21.89	144
Hogs	8,614,190	354,776,467	41.18	234
Sheep	4,629,736	57,273,848	12.37	78
Horses	87,820	16,246,700	185.00	...
Totals	17,779,435	$904,715,357		
1917				
Cattle	3,209,427	$322,256,581	$100.40	939
Calves	610,844	11,506,770	18.83	137
Hogs	7,168,852	235,168,804	32.84	213
Sheep	3,595,228	41,827,860	11.63	78
Horses	107,311	19,852,535	185.00	...
Totals	14,691,662	$630,612,550		

1918-19 Citrus Crop 42,000 Cars.

The latest forecast of Southern California's 1918-19 citrus crop, as made by the Riverside Press, is for 31,000 cars of oranges and 7000 cars of lemons. The crop, it says, has been reduced about 10 or 15 per cent by the severe frost which occurred on December 31 and January 1, but the consensus of opinion now is that the damage is much less than was feared. The estimates by localities are:

	Oranges.	Lemons.
	Cars	
Pomona district	4,500	335
Ontario district	3,000	750
Azusa-Glendora district	3,000	200
Riverside district	2,850	300
Redlands district	2,800	...
Orange district	1,900	450
Covina	1,500	...
Anaheim	1,400	20
San Dimas district	1,200	600
Rialto district	1,150	90
Whittier district	1,000	800
Placentia	1,200	20
Highland	1,000	125
Ventura county	800	1,000
San Diego county	225	650
Fullerton	700	40
Duarte-Monrovia	700	...
Corona	400	400
San Fernando	400	400
Alhambra district	500	...
Santa Barbara county	...	500
Moreno	170	...
Hemet	125	20
Other localities	480	300
Total for Southern California	31,000	7,000
Central California	3,200	300
Northern California	250	...
Total for State	34,450	7,300

Raising of Rice Embargo Not Serious.

It is said that, although the embargo on rice has been raised, the Oriental rice cannot hurt our market because freight rates are still prohibitive and no large quantity of this cheaper grown rice can be imported. On the other hand, with the embargo off, California rice mills will be able to ship a quantity of inferior grades of rice to Central and South America, Porto Rico and Europe.

Country Consumes Less Cotton.

A late census report shows cotton, exclusive of linters, consumed during December 472,941 running bales in 1918, compared with 516,498 in 1917, of which 255,128 bales were consumed in cotton-growing States in 1918 and 286,719 in 1917. Linters consumed 10,284 bales in 1918 and 75,449 in 1917. Cotton held in consuming establishments on December 31, 1,751,532 bales in 1918 and 1,576,526 in 1917, and in public storage and at compresses, 4,668,907 bales in 1918 and 3,810,681 in 1917.

Canners Advance Asparagus.

Canners have announced that they will voluntarily increase their contract price for asparagus to $4.25 per 100 pounds—a jump from $3.25. Practically all of last year's pack has been disposed of.

THE MARKET REPORTS

Figures Given Are Independent and Reliable.

Prices Quoted as Paid to Producers.

SAN FRANCISCO

San Francisco, January 22, 1919.

WHEAT.

The following prices were announced by the Federal Grain Corporation last year and are still in effect. They are figured f. o. b. San Francisco, Los Angeles, Seattle, Tacoma and Portland and guarantee the grower a minimum of $2 f. o. b. shipping point:

Per bushel—

No. 1 hard	$2.20
No. 2	2.17
No. 3	2.13
No. 1 soft	2.18
No. 2	2.15
No. 3	2.11
Club or Sonora, No. 1	2.16
do, No. 2	2.13
do, No. 3	2.09
Recleaned for seed, per ctl.—	
California Bluestem	$4.15@4.25
Early Baart	4.15@4.25

BARLEY.

Barley market is strong on account of the firmness with which the grain is held. No reason for the firmness is assigned except that the holders decline to sell for offers below the market. Demand is fair.

Choice feed, per ctl	$2.25@2.27½

OATS.

Oats are weak, with little demand. There is no market for seed, and consumers of feed seem to have all the stock they need.

Red feed, per ctl	$2.30@2.50
Red for seed	2.75@3.00
Black for seed	Nominal
Recleaned Red or Black for seed	3.15@3.20

CORN.

There is considerable damaged Egyptian and Milo on the market, offered from $2 to $2.25, with few buyers. It is not fit for shipping and stock feeders are not anxious to buy.

California	$2.85
Egyptian, choice	$2.75@3.00
Milo	2.70@2.75

HAY.

Receipts of hay for the past week were 1225 tons, compared with 890 tons the preceding week. While this is a considerable increase, it was moved without difficulty. Practically all this hay was from warehouses and in good condition. Considerable choice hay has arrived, and the first to come in sold at higher quotations than given below, but while there was a good demand for this description the price dropped soon to the figures quoted. Some little fancy hay sold at a higher figure. There has been an improvement in interior shipments as well as demand for export. Alfalfa has been in good supply and prices are easier.

Wheat, No. 1	$22.00@24.00
do, No. 2	16.00@20.00
Choice tame oat	21.00@23.50
Wild oat	16.00@18.00
Barley	16.00@18.00
Alfalfa	16.00@20.00
Stock	14.00@17.00
Barley straw	.50@ .80

FEEDSTUFFS.

The rains of Sunday and Monday will have a good effect on the ranges, which were looking in rather poor condition. This will have a bearing on feedstuffs in the near future. Rolled oats are lower this week on account of the general weakness of oats and the promise of early grass on the range. Mill run is also lower. It is reported that the mills will soon return to old standards of bran, middlings and shorts, and probably abandon mill run.

New alfalfa meal, per ton	$35.00@36.00
Coconut cake or meal	45.00@47.00
Whole yellow corn	73.00@75.00
Cracked corn	76.00@78.00
Linseed Oilcake Meal	78.00@80.00
Rolled barley	47.00@49.00
Rolled oats	53.00@54.00
Mill run	38.00@40.00
Bran	36.00@38.00
Fish meal, per 100 lbs	4.80@ 5.00

POTATOES, ONIONS, ETC.

There is no change in the potato market. The market is weak, but last week's prices are maintained. Onions are higher. There are no changes in the vegetable market. Sprouts are becoming plentiful and sell from 8c to 8½c. Strawberry rhubarb is arriving about three times a week and finds a ready market at 8c. Sweet potatoes are weaker, $3.50 being the top price.

String beans	25c
Lima beans	12½@15c
Carrots, per sack	$1.00@1.25
Rhubarb, San Jose, per box	1.00@1.50
do, Strawberry, per lb	8c
Pumpkins	$1.00@1.25
Cucumbers, hothouse, box of 30	2.50@3.00
Los Angeles, lugs	3.00
Eggplant, per lb	20@25c
Lettuce, per crate	$2.75@3.00
Celery, crate	5.00@6.00
Tomatoes, Southern, per crate	2.00@3.00
Sprouts, per lb	8@8½c
Potatoes—	
Fancy whites	$1.90@2.15
Choice	1.75@2.00
Sweets, per sack	3.00@3.50
Onions, Warehouse Stock—	
Yellows	1.65@2.00
Australian Browns	1.95@2.00
Garlic, new	25@35c
Green corn, Alameda, per sack	None
Okra, per box	None

BEANS.

There was no demand this week to sustain the bean market and prices declined all along the line, though in some cases no sales were made and last week's quotations are allowed to stand. Some little demand developed for garbanzos and last week's prices advanced slightly.

Bayos, per ctl	$7.10@7.30
Blackeyes	5.25@5.50
Cranberry beans	7.25@7.50
Limas (south, recleaned)	10.00
Pinks	6.40@6.60
Mexican Reds	6.75@7.00
Tepary beans	4.25@4.50
Garbanzos	9.50@9.75
Large whites	8.10@8.25
Small whites	8.75@8.90

POULTRY.

The tendency of the poultry market is towards weakness. In most cases last week's prices are maintained, but the demand is not up to the mark. There are not many live turkeys arriving and the lack of demand for this description has lowered the price to 34c and 36c for young stock and 30c for old toms. Under small receipts the dressed turkey prices of last week have been maintained.

Turkeys, live, young spring, lb	34@36c
do, old	30c
do, dressed	40@42c
Broilers, 1½ to 2 lbs	45c
do, 1¼ lbs	45@48c
do, ¾ to 1¼ lbs	45@50c
Fryers	40c
Hens, extra, per lb., colored	36@38c
do, Leghorn	36@38c
Smooth young roosters, per lb, (3 lbs. and over)	37@39c
Old roosters, colored, per lb	21@23c
Geese, young, per lb	32@34c
do, old, per lb	30c
Squabs, per lb	60c
Ducks	31@33c
do, old	30c
Belgian hares	20@22c
Jack rabbits	$3.50@4.00

BUTTER.

The downward trend of butter of last week was followed by a decided slump on Monday and Tuesday of this week. The weak condition of the market is contributed to by the milder weather throughout the country and rains in this State, coupled with large receipts. The resumption of work by the marine strikers in New York caused heavy receipts there for a few days and it is reported that a milk strike in New York State is causing much butter to be made from milk generally consumed as "whole milk" and cream. The Chicago market has become more or less demoralized from conditions and today registered further declines in addition to previous breaks in price. New York was 3c lower today, and while San Francisco showed only a half cent decline today, lower prices are looked for on tomorrow's market. With the decline in the price of butter the commission advances. Between 63c and 68c the discount was 5½ per cent. From 58c to 62½c the commission was 6 per cent and at the present range of prices on the exchange, from 54c to 57½c, the discount is 6½ per cent. The following quotations are the exchange prices with these discounts deducted:

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extra	60½	60	60	54	50½	50
Prime first				Nominal		
Firsts				Nominal		

EGGS.

After the radical decline in eggs last week, there was a slight reaction this week, but the close on extras was the same as last week. It is not expected that eggs will go more than four or five cents lower before spring. The quotations are exchange prices with commission deducted:

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	51½	53	53	52½	53½	52
Extra 1sts	81 Nom.		—	—	—	—
Firsts				Nominal		
Extra pullets	49	50½	51	51	51½	50½

CHEESE.

While the Oregon cheese has not been affected as yet by the decline in butter prices, California has been materially affected. Fancy California flats solds 1½c cheaper. First declined a half cent and then holders refused to sell further and the quotations became nominal.

Fancy California flats, per lb	28½c
Firsts	Nominal
Oregon triplets, fancy	36½c
Oregon Y. A. fancy	38c
Monterey cheese	23@26c

FRESH FRUITS.

Apples are somewhat higher and in good demand this week. Pears also are higher. Otherwise there is no change.

California apples	$1.50@2.25
Northwest apples	2.00@3.25
Winter pears	2.00@3.50
Persimmons	1.00@1.50

CITRUS FRUIT.

The citrus fruit market is strong, with somewhat higher prices on several descriptions. Best grapefruit now brings $3. Mandarins and tangerines are selling higher.

Oranges, navels	$3.00@5.00
Mandarins	1.75@2.00
Tangerines	2.75@3.25
Lemons, fancy	4.00@4.50
do, choice	3.50@4.00
do, standard	3.00@3.50
California limes	1.50
Grapefruit, new	2.25@3.00

HONEY.

A better demand for honey is developing and it is reported that a car of light amber was sold and shipped this week. According to report on the street, a grower received 19c for a recent shipment of honey. Local dealers have been willing to offer this price.

DRIED FRUITS.

The removal of Government restrictions regarding dried fruit has made a livelier market, especially in prunes and apricots, practically all of which were long ago out of growers' hands. On account of demand for export jobbing, prices on these descriptions were somewhat advanced.

RICE.

Paddy rice, 1918 crop	$4.32
Clear No. 1, 1918 crop, at mill	7.00

HIDES.

The hide trade is still under the control of the War Industries Board. With the return of peace conditions, however, the hide market will doubtless return to private channels. Dealers are anticipating a decline in values.

Wet salted—Native steers and cows, 18@18½c; No. 1 buffs, 17½c; bulls, 14½c. No. 1 center branded hides in all grades 2c less than base price, and No. 2 center brand 3c less. Wet salt kip, 18½@20c; calf, 30½@31½c.

Wet salted horse—No. 1 large, $4.00@5.00; do, medium, $3.00@3.50; do, small, $1.00@2.50; do, colts, 50c@$1.00.

LOS ANGELES

Los Angeles, January 21, 1919.

BUTTER.

The market the past week worked lower from the start. It is the time of year for prices to break and the decline should have started sooner, but prices were kept up by scarcity and a steady and healthy consumptive demand. Receipts for the week were not heavy, 280,000 pounds against 268,000 pounds the same week last year. The Eastern markets are off 5c to 6c from a week ago, which shut Pacific Coast shipments out of those markets, leaving a more liberal supply for home consumption, and there is now a noticeable increase in the production. San Francisco broke 6c on extras up to Monday and the market here sold down the same time 10c on extras. At the lower range of prices, however, there was a very good movement, the home consumption not only holding up, but Arizona took more or less butter out of this market during the week. There was withdrawn from cold storage during the week 15,324 pounds, reducing the holdings down to 49,560 pounds, but this failed to check the downward course of prices.

We quote—

California fresh extra creamery	55c
do, prime first	53c
do, first	52c
Same time last year—	
California fresh extra	52c
do, prime first	50c
do, first	49c

Daily quotations—

1919—	Tu.	Wed.	Thu.	Fri.	Sat.	Mon.
Extra	65	64	63	63	63	55
1918—						
Extra	51	52	51	52	52	52

EGGS.

Hens are now laying more freely and the receipts the past week were 4885, against 7225 cases the same week last year. The Eastern markets went off again 1½c to 2½c, closing those markets to California eggs, which, with the increased production, caused lower prices here. But the decline brought increased consumption and there was more life in the market on 'change than for some time. There was withdrawn from cold storage during the week 1040 cases, leaving the holdings now only 1173 cases, and they held on contract. The same time last year the holdings were 1203 cases. San Francisco declined up to Monday 5½c on extras and this had a bearish influence upon the market here.

Daily quotations—

1919—	Tu.	Wed.	Thu.	Fri.	Sat.	Mon.
Extra	55	53	55	54	54	57
Case count	54	53	53	53	53	53
Pullets	53	50	52	52	52	52
1918—						
Extra	58	58	58	58	58	58
Case count	54	54	54	54	54	57
Pullets	54	54	54	54	54	54

POULTRY.

The tone of the market was firm. Turkeys were scarce and a little higher. Offerings of hens, broilers and fryers were light and sold well at quotations. There was a good movement in roosters, ducks and geese.

The following prices were agreed upon last Friday, January 17, and hold good until the coming Friday:

Broilers, 1@1¼ lbs	40c
Broilers, 1¼@1¾ lbs	45c
Fryers, 2@3 lbs	33c
Roasters (soft bone), 3 lbs. and up	30c
Stags and old roosters, per lb	20c
Hens	30@31c
Turkeys	33@36c
Ducks	30@32c
Geese	28c

VEGETABLES.

As usual this time of year, the offerings of green stuff the past week was light and the market firm for what little coming in. Green bell peppers scarce. Garlic is scarce and sensationally high. Onions in lighter supply and market firm. Receipts of potatoes were better and the market was a little lower. Sweet potatoes are firm. Celery sharply higher and the best in good demand. Cabbage dull but steady. Cauliflower steady and selling well. Squash and pumpkins continue in good supply, but are slow of sale.

We quote from growers:

Peas, per lb	10@15c
Bell peppers, per lb	10@15c
Chile peppers, per lb	10@15c
Potatoes, northern, per cwt	$2.25@2.40
do, Idaho Russets, per cwt	2.00@2.10
Sweet potatoes, per cwt	2.50@3.00
Garlic, per lb	50c
Onions—	
Australian Brown, Lompoc, per cwt	$2.00@2.25
White Globe, per cwt	7.00
Cabbage, per 100 lbs	.40@ .45
Celery, local, per crate	4.00@5.00
Celery, northern, per crate	7.00@8.00
Cauliflower, standard crate	1.75@2.00

Foreign Beans Not for U. S. Army and Navy

Because of recent sensational charges that the United States government was buying imported beans for the Army and Navy to the exclusion of California beans, the Pacific Rural Press sent a representative to the Food Administration office to ascertain the facts. He was referred to J. T. Brown, who has the management of this department. Mr. Brown gave out these definite statements: "All beans supplied to the American Army and Navy are grown in the United States. Imported beans have been bought for the Allies only on orders from Europe. They enter the United States in bond, and go out again in bond. Many of them were bought on orders from Europe long before the armistice was signed, expecting a shortage after the September rains, and not anticipating such a sudden cessation of hostilities. Michigan got early business by selling on the crest of the market. Private importers are the only men who buy and distribute imported beans in the States, as they have always done. The Government has bought more beans from California growers than from either Michigan or Colorado. The market is now open to growers to sell where they please."

Hubbard squash, per cwt.....$1.00
Banana squash, per cwt..... 1.00
Pumpkins, per cwt..... .75

FRUITS.

No change to note in this market. Apples continue to make up the offerings of deciduous fruits. Receipts were good, but so was the demand, and prices held steady.

We quote from growers:

Apples—
King Davids, Northwest pack..$2.75@3.00
Black Twigs, Northwest pack.....3.00
Baldwins, 4-tier..... 2.50
White Pearmains, 4-tier ..... 2.00@2.25
Yellow Newtown Pippins,
4-tier ..... 2.00@2.25
Bellefleur, 4½-tier ..... 1.75@1.80
do, 3½-tier ..... 1.85@2.00
Jonathans, Northwestern pack. 3.00@3.25
Winesap, loose, per lb.....6@6½c
Roman beauties, Northwestern,
per peck ..... 3.00@3.25

BEANS.

It is the same old story in this market—nothing doing. Eastern buyers are still out of the market, getting supplies nearer home. Some little buying for local consumption only.

We quote from growers—
Limas, per cwt. $9.50
Large white, per cwt..... 8.00
Small white, per cwt. 8.00
Pink, per cwt. 6.50
Tepary, per cwt. 4.00
Blackeyes, per cwt..... 4.50

HAY.

There was more life in the market the past week and a general advance. Prices were advanced $1 to $2 a ton all around, and the week closed firm at the higher prices.

We quote f. o. b. Los Angeles:
Barley hay, per ton.....$23.00@25.00
Oat hay, per ton..... 25.00@28.00
Alfalfa, northern, per ton..... 22.00@23.00
Alfalfa, local, per ton..... 23.00@25.00
Straw, per ton ..... 9.00@10.00

COTTON.

Our review week opened with a firm market and a little better buying. But as Liverpool failed to respond to the stronger market in this country, the market soon weakened and by Saturday, January in New York had sold down to 26.05c and March 24.75c. In New Orleans January closed Saturday at 26.57c and March at 24.85c. Monday, under reports that recent cuts in the price of goods had failed to stimulate demand, caused a sharp break in the cotton market. Manufacturers were holding out of the market and there was little foreign buying. January in New York closed at 25.07c and March 23.30c. In New Orleans January closed at 25.65c and May at 22.30c.

Special Livestock Market Report

San Francisco, January 22, 1919.

CATTLE. Beef cattle continue scarce and buyers must go far afield for supplies, especially for really good steers. Most of the receipts arriving in the local market come from Nevada. Choice calves are exceedingly scarce, and close culling has been done.

Steers—
No 1, weighing 950@1100 lbs..$12¾@13c
do, weighing 1200@1400 lbs...13@13¼c
do, second quality .....11½@12c
do, thin .....9@10c
Cows and heifers—
No. 1.....9@9½c
do, second quality .....8@8½c
do, common to thin.....6@6½c
Bulls and stags—
Good .....6½@7½c
Fair .....5½@6½c
Thin .....4½@5c
Calves—
Lightweight .....11@11½c
Medium .....10½@10¾c
Heavy .....8½@9c

SHEEP—The sheep market is steady. Some heavy lambs of good quality are coming in, mostly from Nevada. Full quotations are obtained.

Lambs 14c
Yearlings 12½c
Sheep, wethers .....11½@12c
do, ewes .....8½@9½c

HOGS Hogs are in fair demand, but are arriving so freely that the market shows weakness. Quotations hold, however. While most of the receipts are of good quality, a proportion of soft hogs are coming in, but are not wanted by packers.

Hogs—
Hard, grain-fed, 100@150 lbs.....16c
do, do, 150@250 lbs.....16½c
do, do, 250@300 lbs.....16c
do do, 300@400 lbs.....15½c

Los Angeles, January 21, 1919.

CATTLE A firm market continues for all good cattle, which are scarce. The Eastern markets are holding up well and this has a sympathetic influence upon the market here. Plenty of medium fleshed cattle are being offered and the market for them is weak.

Per cwt. f. o. b. Los Angeles—
Beef steers, 1000@1100 lbs.....11@13c
Prime cows and heifers.....$9.50@10.50
Good cows and heifers..... 8.00@ 9.50
Canners, per cwt..... 6.50@ 7.00
Calves, per cwt..... 8.50@10.00

HOGS—While the market the past week showed no quotable decline, its tone was weak. Receipts continue to hold up very well and mainly from California.

Per cwt. f. o. b. Los Angeles—
Heavy, averaging 275@350 lbs..$14.00@15.00
Mixed, 225@275 lbs..... 15.00@16.00
Light, 175@225 lbs..... 16.00@16.50

Rough docked 20 lbs., piggy sows 40 lbs., and stags 40 per cent.

SHEEP—Not many good to choice sheep and lambs are being offered and the Eastern markets are firm. Killers are having to bid up full quotations to get what they want. The demand for mutton and lamb, however, at the present high prices is limited.

Per cwt. f. o. b. Los Angeles—
Prime wethers .....$9.00@10.00
Prime ewes ..... 8.50@ 9.50
Yearlings ..... 9.50@10.50
Lambs ..... 14.00@15.00

Portland, January 21, 1919.

CATTLE—Receipts, 185; 75c lower; steers, prime, $12.25@13.25; good to choice, $10.25@11.25; medium to good, $8.75@9.75; fair to good, $7.75@8.75; common to fair, $6.75@7.75; cows and heifers, choice, $8.75@9.75; good to choice, $6.75@7.75

HOGS—Receipts, 196; steady; prime mixed, $16.75@17.00; medium mixed, $16.25@16.50; rough heavies, $15.00@16.00; pigs, $14.00@15.25; bulk, $16.80.

SHEEP—Receipts, none; firm; prime lambs, $13.50@14.25; fair to medium, $10.00@12.00; yearlings, $10.00@11.50; wethers, $9.00@10.00; ewes, $6.00@8.00.

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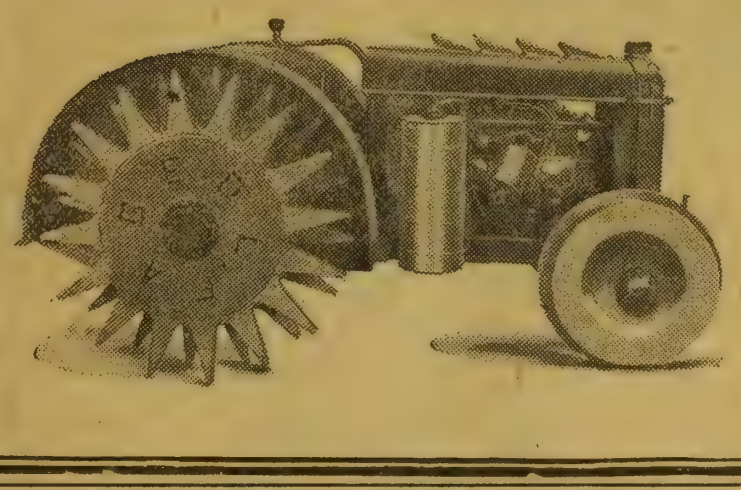
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MADE OF REDWOOD, Hawley's Perforated wooden well casing, the best and cheapest well screen made. Send for descriptive circular. G. M. Hawley, La Mesa, California.

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FOR SALE—Cream separator $40.00 600 lb; new Reliance. Address 1555 4th St., Alameda.

FOR SALE—Two five-point 14-inch bottom P. & O. engine plows; almost new and in fine condition. Listed now at $550 each. Will sell both gangs for $400 each. J. H. Rowe, Watsonville, Cal. Phone 1085.

CO-OPERATION (not operated for profit) reduces living expenses. Particulars and catalogue from Co-operative League, Commercial street, San Francisco.

COUNTRY LANDS.

30 ACRES—Half mile from State highway, three-quarters mile from point where local trains stop, and 3 and a half miles from Arbuckle. This place partially improved. 11 acres 6 year-old almonds, 1 acre 6 year-old fruit, and 5 acres 1-year-old Thompson Seedless. 13 acres to be planted to almonds this spring. Fine location. Will make a dandy home. Write us. Nelson Realty Company, pioneer dealers in almond land, Arbuckle, Calif., the Home of the Almond.

$6000 BUYS HOME-SITE with good income. Five acre tract on State highway one mile south of Gilroy depot 2½ acres prunes 2½ acres cots, 12 years old in full bearing. Good stand alfalfa between trees. Good well, 4-inch centrifugal pump. Income 1918, $1500. Terms half down balance twenty five per cent per year. Interest 6 per cent. J. E. Thomas, Gilroy, Cal.

A GOOD HOME and a paying business. A practical man with experience and 40 acres of land, wants someone with $2000 to take half the land and go into partnership and help develop a poultry and gardening business. One of the best locations of the kind in California. Thos. Hall, Box 398, Orland, Cal.

FOR SALE—40-acre ranch, in good condition, 18½ acres bearing prunes, 5 acres almonds, 5 acres alfalfa, balance in other crops. Cement piping for irrigating. Electric pumping plant; abundance of water. Close to town. Good location. Address, Owner, Box 346, McFarland, Cal.

FOR SALE—The famous Bane Almond orchard at Orland. On account of labor conditions, as well as physical condition, I have concluded to sell my almond orchard, either in subdivisions of 10 acres, or as a whole. For particulars address P. D. Bane, Orland, Glenn Co., California.

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BUDDED AVOCADOS—Fuerte, Sharpless, Lyon, Dickinson, Blakeman, Puebla, Spinks, Taft, Linda, Rey, Queen, Knight, and others. A fine stock of field grown trees, $2.50 for one, $2.00 each by the 100. 25c per tree for packing. Newberry Sherlock, 2202 East Colorado St., Pasadena.

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BERRY PLANTS—Blackberries, raspberries, strawberries, currants, and gooseberries. M. J. Moniz, Berry Specialists, Sebastopol, Cal.

OREGON PLUM STRAWBERRIES—Plants $6 thousand, 75c per hundred. J. E. Dunn, Route 3, Sacramento, Cal.

GENUINE FRANQUETTE GRAFTWOOD—3c. per ft. Ogden Bolton, Jr., Route 4, Box 447, Santa Rosa, Cal

TREES, TREES, TREES.
No war prices.
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ASK FOR SNOW'S GRAFTING WAX—In use all over the State. If your grocer does not keep it, send to D. A. Snow, Route 1, Box 443, San Jose, Cal.

ASPARAGUS ROOTS—We have many thousand Conovers, Colossal, and Mammoth White roots. Low wholesale prices. Stanislaus Nursery Co., Modesto, Cal.

WALNUT TREES—Placentia and Eureka on black root. La Puenta Walnut Nurseries, Puente, Cal. Phone 103.

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WANTED, POSITION AS SUPERINTENDENT—By young man, 27 recently returned from army. College trained. Four years practical experience in management of orchards, hogs and grain. Surveying for, and the laying out and installation of irrigation systems for bare land or orchards a specialty. References. Address H. H., Box 1390, Pacific Rural Press.

A YOUNG MARRIED FARMER (working foreman at present) desires permanent position as caretaker of farm. Have had years experience in general farming, including irrigation; also handy with tools and machinery. Can drive tractor and automobile. Must have house for family to live in. Box 1400, Pacific Rural Press.

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Big stumps! stumps and trees with deep tap roots! any stump that can be pulled with the best inch steel cable!—you *alone* can pull with my "K" Hand Power Stump Puller—*without digging and without the expense of teams and powder.* I guarantee it. I refer you to U. S. Gov. officials. I give highest banking references. If you have stump land, the cheapest way of clearing it is with the

HAND POWER

Stump Puller

Frank Hance, a *one-armed* farmer of Bowie, Md., pulling a double silver maple 3 ft. 8 in. in diameter at the ground, with deep tap roots. This is an easy pull for the "K," as the cable can be hitched high and the leverage is consequently greater.

How the "K" Pulls Biggest Stumps

The "K" works on the leverage principle of the ordinary lifting jack, except that the power is applied on a cog-wheel instead of a standard. 100 lbs. push on the lever develops a 48-ton pull on the stump—all an inch steel cable will hold. One man operates it alone—no teams to pay for—no walking.

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H. Sinclair of the Dept. of the Interior, a U. S. Gov. official, writes: "The stump puller is a wonder."

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Send me full particulars on your special offer and your free booklet on Land Clearing.

Name_____

Address_____

Vol. XCVII—No. 5 THE PACIFIC RURAL PRESS Forty-ninth Year

AN FRANCISCO FEBRUARY 1, 1919 LOS ANGELES

Autocracy of "Old Humus" Broken Up!

Written for Pacific Rural Press by Dr. C. B. Lipman, University of California

HUMUS is not necessary to plant life. I use the word "humus" as the inquirer does, and assuming that he means organic matter. The word has no other value than that of a general term for organic matter and most soil specialists have rejected it altogether. Plants can be grown successfully to maturity without the presence of any organic matter. It must be clearly understood, however, that when plants are so grown in the total absence of organic matter there must, at all times, be present an ample supply of water-soluble minerals of a considerable variety, which are essential to plant growth. The difficulty in practice, therefore, does not consist in the fundamental inability of the plants to grow in the absence of organic matter, since that is not the case, but in the virtual impossibility of maintaining an ample supply of minerals in usable form in any soil without the presence of organic matter at some time or other, preferably at all times.

A READER'S FOURTEEN POINTS (OR LESS).

To the Editor: Can you enlighten me on the following points? First: is humus necessary for plant life? I have seen fruit trees grown on soil brought up from the bottom of a 60 ft. well and thrive just as well as trees on the top soil. Again, wheat is grown on land in Australia where there is no sign of humus and by the addition of about 100 lbs. of acid phosphate per acre good crops are being raised after thirty and more years of continuous cropping.

I propose growing vetch along with oats with the idea that the vetch will bring the necessary nitrates into the soil and thus be able to grow vetch and oats continually without robbing the soil of its available nitrates. I put my phosphates in in the form of a dressing of 200 to 300 lbs. of acid phosphate per acre.

Now I am told by some one who is sure of his facts that a leguminous crop always uses up the nitrates brought into the soil by its bacteria and that the only permanent addition is the humus brought in by the roots. Is this so? I have seen people grow vetch and oats continuously and the dark green of the oats would certainly indicate to my mind that the vetch had added nitrogen to the soil.—W. E. Barker, Fortuna.

The Australian Instance.

The instance which your inquirer gives of wheat grown in Australia on land showing no "signs of humus," where acid phosphate is applied, can be easily accounted for as follows: In the first place, soil which gives no sign of humus (meaning again organic matter) may still contain a considerable quantity of it. In the second place, the acid phosphate which is applied to the land gives the wheat plant the available phosphorus, to say nothing of sulphur and other material which it could not get out of the soil if organic matter were deficient. The clear connection which is to be noted between organic matter and the production of a usable quantity of minerals in soils consists in the idea that the production of carbon dioxide or carbonic acid gas through the destruction of the soil organic matter by bacteria and molds, which goes on in all soils, results in the formation of a weak acid in the soil—carbonic acid—by means of which the minerals are dissolved and made usable. These statements will probably answer your inquirer's question with regard to "humus." I hope the latter term will soon be forgotten by lay as well as by professional men in agriculture.



A leguminous cover-crop serves to give "condition" to the soil—a term all growers understand.

For further emphasis, however, I wish to say again that perfectly good plants, like barley and wheat, for example, can be grown and have been grown to maturity in the total absence of any organic matter. This has been an established fact for many years and has recently been confirmed in experiments at this university.

Other Crops with Legumes.

The second inquiry which is made with reference to the desirability of growing vetch with oats for the purpose of supplying the oats with nitrogen constantly and leaving the soil no poorer in that element than it was at the start, may be answered as follows: There is no question that a combination of vetch and oats, or the combination of a legume and non-legume, has a tendency to maintain the nitrogen content of the soil and perhaps to improve it slightly, besides furnishing the crop with all the necessary nitrogen for its normal production. The practical question, however, does arise as to whether or not it pays to grow a combination of a legume and non-legume, like oats and vetch, with the relatively small profits deriving from such a crop, even though the nitrogen content of the soil is maintained, when a crop carrying a much greater profit can be grown, or might be grown, even though nitrogen has to be purchased as a fertilizer for such crop production. This, of course, is intended to call attention to the possibilities on soils in general. In the vicinity of Fortuna, where your inquirer probably lives and farms, there is no question but what vetch and oats grown under the circumstances mentioned is as profitable a crop as any.

Bacteria Secure Excess Nitrogen.

To answer specifically the question raised by Mr. Barker, I want to say that we have no evidence to prove absolutely that most of the nitrogen which is fixed by the leguminous plant in co-operation with the bacteria on its roots is used up by that plant in its own growth. In fact, it seems, from all the evidence which we have, that the opposite is true—namely, that more nitrogen is fixed by the bacteria than is needed by the legume plant, and that a small part, at least, of that surplus is exuded in soluble form through the nodules into the soil and made available for any non-legume that may be growing on the ground simultaneously with the legume, or merely adds itself to the general store of soil nitrogen.

It is my opinion, therefore, from a long study of this question and through a review of the work of many of the investigators who have studiod this problem, that through the growth of a legume plant on soils (provided the seed is inoculated at the time of planting, or natural inoculation exists), we not only obtain a plant which is richer in nitrogen because of its power to fix nitrogen from the air, but we gradually enrich the soil with respect to that element by direct additions of nitrogen and indirectly add nitrogen through the roots and the nodules which remain behind in the soil after the crop is harvested and which for its own production used a considerable quantity of the nitrogen which was fixed from the air.

All Nitrogen Not from Air.

It must be emphatically added, however, that all the nitrogen which is used by leguminous plants in their growth does not come from the air.

(Continued on page 147)

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EDITORIALS

INIMBIBATION.

"THE cups that cheer" have been dashed on the rock of overwhelming popular adversity, and whether they do or "do not inebriate"—"has nothing to do with the case." The decision that production and use "of anything that can make drunk come" shall depart from the industries and indulgences of this country has been rendered so swiftly and unequivocally that it stands in the public eye as an industrial and social phenomenon—too forceful to question, too wonderful to explain: too irrevocable to regret. The public is thus spared the waste of time over idle discussion and bitter political tumult and forced to live henceforth in a new industrial and sumptuary order, and can do naught but declare with Macbeth:

"If it were done, when 'tis done, then 'twere well
It were done quickly!"

INSTALLATION OF THE NEW ORDER.

BUT although there is nothing now to question in this new order, and while it may be conceded that on the whole it has arrived at the borders of our working and living in a most merciful way, still there is much to be done to help and protect those whose livelihood is endangered or rendered hopeless in work and from investment and effort which they have made in a line of production which California not only permitted but encouraged and promoted for the development of the State and the prosperity of individual producers. As the State, in its devotion to new convictions, has necessarily revoked its allegiance to old convictions and cancelled its promotion of production under those convictions, it should do everything it can to protect citizens who risked their livelihood and property under such misleading. An upright citizen who finds it unavoidable to break a contract is morally bound to do all that he can to reduce the hardship which even his necessity enforced upon the party of the second part. It is our judgment that the State should assume something of this attitude toward those who will be called upon to sacrifice investment and occupation upon which they have relied for a livelihood. It will not do to claim that their occupation has been declared adverse to the public good and illegal and therefore they should undergo hardship. That claim may be tenable as against the State which helped them toward such transgression by exhortation, investigation and public education. In a way the State contracted with certain parties to grow grapes for wine because the State authoritatively and officially believed and declared it good for itself that they should do so. Now that the State has turned from its evil way and repented of its transgression, it should bring forth fruits meet for repentance. It should make reparation so far as practicable and should assume an attitude of consideration and tenderness toward those whom it unconsciously misled and misguided.

SELF-HELP SHOULD BE REASONABLE.

IT IS to be expected that owners of wine-grape vineyards will make strenuous effort to save themselves from unnecessary financial hardship and to recover from their wrecked properties whatever they can to pay their debts and give them a start upon other undertakings in production—but such efforts should be reasonable. If under the terms of existing laws and regulations (or if the latter can be adjusted to the undertaking) the wine grape crop of 1919 can be put into commercial form and disposed of before the universal cloture falls (presumably in the winter of 1920), it seems to us reasonable to try for that. It is to this effort that we believe the second alternative in the following account of a grape growers' meeting at Santa Rosa on January 23 refers:

At a largely attended meeting of the grape growers of Sonoma county it was voted that the action of Theodore Bell in fighting the national prohibition amendment be endorsed and that the grape growers assess themselves to pay him for the work. They agree to pay $2 per ton for a fee provided that Mr. Bell secures an annulment of the law, or $1 if the President makes proclamation of demobilization of the troops before July 1. This will amount to over $100,000 from this county, and Napa county is being asked to do a similar thing.

It is up to the grape growers to decide whether they engage Mr. Bell to expedite President Wilson's order of demobilization or not. That is none of our business. We do not particularly like the line of legal wet-goods he has previously carried, for he never seemed to be at all discriminating as to the alcoholic percentage thereof—but still we believe the effort to save the crop of 1919 is reasonable. It seems to us that if there is a clear legal way to get that crop into an ark before the dry deluge falls, the producers are entitled to save that much from the cataclysm and that Governor Stephens and the California Legislature should be the agency to claim this consideration. We also doubt if the growers should pay any considerable sum of money to obtain their right to realize on this year's crop. If they have any such right, or even privilege, the State itself should secure the exercise of it for them.

AN UNREASONABLE EFFORT.

IT IS our conviction that the first alternative proposition credited to Mr. Bell in the foregoing report of the Santa Rosa meeting is altogether unreasonable and vain and will bring only discredit to the State. The spectacle of the ancient dame striving to roll back the waves of ocean with her broom has qualities of picturesque dignity which save from scorn. California in such like attitude toward national prohibition legislation would be nothing but ridiculous and anyone who fails to recognize this fact lacks a sense of humor. Besides, California cannot afford to pose in the eyes of the country and the world as a "bad loser." The utter hopelessness of the contention alone makes such a pose disgraceful: it is not necessary to consider its moral quality: it is often worse to be laughed at than to be condemned for moral obliquity. California now has throughout the country the fame of being a "good sport" and that tribute implies courage, breadth of view, unsullied confidence in the future, minimization of loss by careless disregard of it as a loss: exaltation of it as a gain toward another phase of higher development. Why should we cry over spilt wine as though we had no greater interest in grapes? Why should we prostrate our State as a demnition damp, disagreeable object, weeping for that which the whole country rejoices to be rid of? Why should we hire lawyers to make us a laughing stock by impeaching the will of the American people—never before declared so overwhelmingly? It is unreasonable and vain.

WE SHOULD HELP THOSE WHO LOSE.

BUT though we believe such should be the attitude of the State toward the sacrifice which it fully joined more than forty other States to make, we also believe the State should do everything it reasonably can to relieve, compensate and quickly restore to profitable industry those who have lost livelihood and outlook. We have no program for such a transaction, but we are sure it should be done. It is up to the Legislature, now in mid-session, to determine how this should be done and how far—both for relieving the distress of citizens and for the good name of the State. It will require the most searching investigation and the closest discrimination to determine what claims are just and true, of course, but all loss-bills which are expertly audited and from which all compensating circumstances and conditions are set off should be paid. In this line the State should not hesitate to provide funds for expert inquiry of real losses to individuals and corporations, more ample than it has recently provided for promotive purposes. We have an idea that we never needed a Commissioner of Viticulture in our State Government so much as we need such a man now. We need no bunch of promoters to roll up figures as such people have sometimes done for campaign and propaganda purposes. We need a real grower of grapes for wine, familiar with the value of grape lands; the cost of establishing such vineyards as will have to be individually valued; the income which such vineyards have yielded during an average of their producing period and their prospect, as indicated by their condition when the prohibition hammer falls. We need such a man who adds to all such technical knowledge the insight and ability of a judge, to protect the State from loot and the citizen from discrimination.

We have an idea also that such a man should assemble and make available all practicable knowledge of what can be profitably done with wine-grape vines or with lands from which they may have to be removed. He should align the several institutional efforts which are being now made or are projected so that the whole field of practicable re-direction of production may be searched into. If the State will do what it reasonably can along the lines of compensation and re-direction, it will keep faith with all; it will help those with enforced losses to recoup themselves; it will restore assessable property to counties which will otherwise suffer financially and lose step in desirable public improvements and it will really hold and deserve the fame as a "good sport" which now seems to be endangered.

HUMUS IS AS HUMUS DOES.

BY THE use of a somewhat disloyal headline on the preceding page, we challenge the reader's attention to the fact that he should understand the up-to-date point of view of the service to plant growth of organic substances which have come to be popularly invoked and given autocratic standing as "humus" and jocularly impersonated as "Old Humus" in familiar discussions. Dr. C. B.

American Farmer Must Be Saved for Service!

Fair Returns to Him Are Security of World Peace.

Paris, France, Jan. 27, 1919.

"The dominating food problem in the United States at this moment is a very much bigger problem than the Chicago packers. It is a problem of the American farmer. If the packers' profit of 2 or 3 per cent on his turnover is too high, it is the duty of Congress to tax it out of him. If the farmers' prices threaten to fall below the level of a fair return, it behooves the country to do some quick, clear thinking. The perplexities arising out of inability to demobilize totally the food situation of the world in the period between the armistice and peace make the farmers' position in the matter of much more immediate concern than the future of the Chicago packers.

"Taking it broadly, before the European war we exported about 5,000,000 tons of food a year. This year we are prepared to export at the rate of from 15,000,000 to 20,000,000 tons. The increase represents the patriotic service of the American farmer, plus the voluntary sacrifice of the average American under the stimulation of the pleas from the allied governments that without an enormous increase in our food supplies their very lives would be menaced.

"We are thus faced with a serious problem with respect to our own great supplies, patriotically accumulated. If any early peace is signed and the markets of Europe are opened freely to trade, there will be a greater demand for food from the new mouths than even this surplus could supply. But in the periods between the armistice and peace we have a very difficult situation."—Herbert Hoover, United States Food Administrator and Director-General of International Relief Organization.

ipman, who is our leading expert in thought and nvestigation in this line of soil science, answers he specific questions submitted by one of our sub-cribers in a way to bring forth quite close dis-nctions and broad considerations clearly to the ind of one who is using organic manures and over-crops for the improvement of his soil in til-ge, productiveness and general profitability. Of ourse, in a practical way one is chiefly urged oward generous treatment of his soil by the hanges which he sees and feels under his eyes nd implements and therefore the synonymy of Old Humus" and "Cover-Crops" is serving a good urpose, but that does not tell the whole story nor oes it tell how, in the modern scientific aspect of hem, things work. If we are not mistaken, Dr. ipman's dissection of the subject will beget eeper interest in the current disposition for soil nprovement through cover-cropping by showing e more obscure relations and operations. It ill give readers something to think of during the ext two months while they are lining a team or osing a tractor through a heavy growth of gumes.

QUERIES AND REPLIES

By the Editor.

Inquirer Must Give Full Name and Address.

Tomatoes Killed by Nematodes?

To the Editor: My tomato vines began to die st summer after they got a large size, and even heavy crop of tomatoes after some had ripened. he stalk seemed to be diseased below the ground if starting to decay. This trouble just picked t plants promiscuously through the patch. The round is sandy, with the water-level in summer about four feet. I did not irrigate. The place d been in alfalfa and chickens for a couple of ears. Early variety was not affected. The plants ere set about eight inches deep. Would this round be good to put in tomatoes again?—A. M., odesto.

The plants were probably killed by microscopic orms, called nematodes. In such cases specimens ould be sent us at once. It is better than trust-g to reminiscence six months later. Another anting on that piece will probably give you ore dead plants next time. If you can use the nd for fibrous-rooted plants like corn, sorghum barley, you may starve out the worms, or keep e land bare, dry and hot next summer and burn em out.

Wire Worms and Melon Seeds.

To the Editor: Last year wire worms ate the eds of my first planting. Is there a solution th which I could give seeds a bath before plant-g that would prevent that happening this year? A. K., Tipton.

No such treatment has ever been demonstrated, far as we know, though often proposed. The st way to escape wire worms is to run away th your vegetables and clean up the infested nd with growing hay or grain, which gets arted while they are eating something else. ur experience indicates that your first planting rved them just before they pupated and the her planting escaped while they were at it: at is, between the broods. If you can get your rliest planting on land not used for melons for me time, you may steal a march on the wire orms, and the later plantings may escape as ey did before.

Nectarine on Almond.

To the Editor: Will top budding nectarine on mond make a good union? I have a couple of ung almonds where I would like to have nec-rines for family use. I put in some buds in 17 and they made a nice growth last year, but lo not know if it will pay to leave them. I put buds on the limbs in the top as near the trunk possible.—S. A., Modesto.

Nectarines have been successfully worked on mond trees from pioneer times to the present. u made a good hit: hang onto it.

Myrobalan Seedlings.

To the Editor: How and when shall I plant robalan plum seed so I can bud this coming ason?—E. G. R., Calistoga.

The seed should have been kept from drying by tting in moist sand and should have been anted as soon as the ground was deeply moist-ed by rain in the fall. If you now have dry d, soak in water for 24 hours and plant out in rows just as you would beans for horse cultivation and if growing conditions are kept favorable you ought to be get seedlings fit for budding next August. You may have to use some irrigation next summer to keep them going and to keep the bark loose.

Wants Book Full of Editorials!

To the Editor: I am not writing to be complimentary, but the pleasure we derive from your editorials prompts me to ask if there is in print or in preparation a book or series of books containing the editorials of the Pacific Rural Press from a long time ago, preferably from the beginning of your editing?—C. J., Inglewood.

We are very grateful for your appreciation. It adds notably to the pleasure of writing the stuff. We must say, however regretfully, that we can see no excuse for trying to embalm the paragraphs. They are almost wholly based upon current events and therefore temporary in significance. We are not brave enough to suggest that you might ever come to not care for them as they are reeled off on the film of things as they come and go—but must reconcile ourselves to the conviction that really you might not care for them at all if you had to consider them in connection with things which had come and gone!

A Pusher for Melons.

To the Editor: I want to plant eight or ten pounds of watermelons and cantaloupes this spring to market in the nearby towns. I am using some manure broadcast on the sandy loam land and would like to use a commercial fertilizer, a little in each hill, to make them grow off quickly. What would you advise?—J. A., Tipton.

You can use about 500 pounds per acre of a complete fertilizer containing, say, superphosphate nuriate of potash and dried blood, or you can use finely ground bone meal. Either of these can be sparingly applied in the hill. For a starter simply about 100 pounds of nitrate of soda can be used to the acre—being careful to scatter it thinly in the soil of the hill so as not to bunch it near the seed. You should plow under your coarse manure soon so as to give it a good chance to decay before planting time.

More and Better-Bred Bacteria.

To the Editor: Is there advantage in adding bacteria for alfalfa in soil where alfalfa has been grown more or less for the past twenty years—and in which the wild bur clover, sweet clover and alfalfa roots all are full of nodules? Is there such a thing as the laboratory bacteria being better or higher bred than the bacteria which is in our soil? Will the alfalfa yield more and live a number of years longer if seed is inoculated before planting?—S. R. M., Chino.

We know no particular reason why all these things might not be true, but we are not aware that any of them have been demonstrated—except perhaps so far as they may support the principle that plenty of a good thing produces quicker and larger results usually than too little. It is possibly cheaper to buy bacteria than to wait for them to grow—just as it may be in breeding hogs.

Replanting for Root Knot.

To the Editor: I am removing an almond tree because badly affected by root knot. Will it be safe for me to plant another tree of the same variety in the same place?—H. J. H., Terra Bella.

It is not exactly safe or secure, but if you wish to keep the plantation straight almond you had better risk it. Dig a large hole, scattering the dirt between rows, as far from other trees as practicable. Gather and burn all roots in the hole—adding dry stuff to make a brisk fire. Break up the baked sides of the hole and fill with fresh dirt from a distance and plant a new tree with unbroken bark on root-crown. The chances are that the tree will not be infested. If you desire to plant in some other fruit, the preparation for it should be the same. We are not aware that any fruit is wholly immune.

Fertilizing for Celery.

To the Editor: Can celery be grown by using commercial fertilizers alone year after year without using some barnyard manure; or would plowing in a crop of green manure be as good as the stable manure?—G., Beaverton, Oregon.

If the land is naturally well suited to the growth of celery, we say yes to the first half of your question. A cover-crop or green manure is not as good as an equal weight of stable manure, but it answers many of the same purposes and is a good substitute. But it is not a good policy to grow the same crop on the land continuously for too long, no matter what you give the soil.

Work That Pays

Here is your opportunity. If you really like the Rural Press and believe that you can convince others of its merits, we can use you in our circulation department, looking after renewals and getting new business.

Permanent work; straight salary. No experience necessary; we teach you the work. No investment, except that you must have an automobile.

Write for particulars and tell us a little about yourself. Don't let this opportunity pass by.

Spread Manure Now.

To the Editor: Would you advise spreading barnyard fertilizer and letting it lie through the winter without disking or plowing it under? Will it deteriorate in value when exposed to weather conditions for any length of time, providing it is spread evenly in the place you want? I have heard that it would, but there is quite a cover-crop of grass on the land and I would like to get the value of both.—J. B. F., Parlier.

Spread whenever the land carries the wagon or spreader well. Spread manure is not injured by the elements. The rains will leach it somewhat, but it goes where you want it. Spread it on your cover-crop. It will make more green stuff to go under and help you to plow it under earlier, which is often a great advantage.

Grafting Over Black Walnuts.

To the Editor: I have two trees on which the English graft died and now I have nice trees of black walnut the same age as the others. Can I take some buds from my grafted trees to graft those two trees? Can I do this work? Will you tell me how, and what time can this be done?—J. B., Modesto.

A black walnut at three years old is easier to graft than a younger tree. Try it next month by the usual top-grafting method, putting in scions at points where you can make amputations an inch or more in diameter—taking particular care in waxing all cuts and cracks and the tip of the scion also. Unless you have some knack at grafting, you had better get the help of an expert neighbor.

Mistletoe on Walnuts.

To the Editor: I have some walnuts growing on bottom land about three years old and I find some twigs of mistletoe growing out on the limbs. There is mistletoe growing on willow trees near by. Can this mistletoe be killed on these trees?—J. H. B., Modesto.

Mistletoe taking to fruit trees is interesting but not unusual. Cut it out, taking a slice of the bark in which it is enrooted. This treatment is the only one we know and must be used on the willows also if you wish to be free from it. But the appearance on fruit trees is so easily checked that we would not clear the willows. We should keep a good supply of it for the usual social uses.

Care of Jerusalem Artichokes.

To the Editor: How shall I care for Jerusalem artichoke tubers after being dug up, and when shall I plant in this part of the State?—G. L., Auburn.

These tubers are not durable in storage, as potatoes are. They should be left in the ground and dug in small quantities for use during short periods. Plant at any time during the rainy season when the ground is not full of cold water.

Keeping Oranges.

To the Editor: How are oranges preserved after being picked from the trees? I have a few trees in my yard. I sell some. I wish to keep some over.—J. T., Healdsburg.

Let them hang on the trees and gather as you wish to use them.

California Weather Record

The following rainfall and temperature record is furnished the Pacific Rural Press by the United States Department of Agriculture Weather Bureau at San Francisco for the week ending at 5 p. m., January 28, 1919.

Stations	Rainfall Data: Past Week	Rainfall Data: Seasonal To Date	Rainfall Data: Normal To Date	Temperature Data: Highest	Temperature Data: Lowest
Eureka	.58	19.44	23.73	64	36
Red Bluff		17.27	13.69	66	36
Sacramento	.02	9.24	10.12	60	34
San Francisco	.11	13.56	12.21	62	44
San Jose		11.02	8.83	66	32
Fresno		4.29	5.02	64	38
San Luis Obispo		8.90	10.01	75	40
Los Angeles		4.14	7.65	78	50
San Diego		4.22	4.95	76	40
Winnemucca		7.99	3.88	56	18
Reno		4.19	5.61	54	22
Tonopah			4.40	59	30

Legislative Matters of Interest to Farmers

[Written for Pacific Rural Press by E. E. Hodges.]

Counties May Share Paving Burdens

Citizens of one county frequently desire an improved highway out through another county which feels unable to improve its own, even though the first-mentioned county should build pavement up to the line. Such a case might be that of Mendocino county, which needs a short cut across Lake county to the Sacramento Valley. The State is being asked to build a highway from Yolo into Lake, but the route proposed by the State Highway Commission from Mendocino to Lake involves a 6 per cent grade. Mendocino people think they would build by another route with an easy grade if the State does not use the latter route, but Lake county does not feel able to carry the pavement from the Mendocino line to a point where it would connect with the Yolo-Lake highway. To enable counties in such situations to get their outlet, Senator M. B. Johnson of Montara, San Mateo county, has introduced a bill empowering the supervisors of one county to permit those of one adjoining to improve, maintain, and control roads lying within the former and connecting both. Control and maintenance may later, by mutual consent, be assumed by the county in which such improved highways lie.

Water Delivery During Appeal.

When a party is ordered by court to deliver water for irrigation or domestic purposes and when an appeal is taken from that order, the party must continue to furnish such water until the appeal is finally decided, as provided in a bill introduced by Senator W. E. Duncan of Oroville.

Water Measured by "Second-Foot."

"The unit of measurement of flowing water shall be a cubic foot of water in a second of time" and such a quantity shall be legally known as a "second-foot," according to a bill introduced by Senator L. L. Dennett of Modesto.

Sanitary Farm Camps Required.

A decent dry place to sleep must be provided at all camps where five or more persons are employed if the bill introduced by Senator L. L. Dennett of Modesto becomes law. Such sleeping places and the grounds around them must be kept clean, free from vermin "and matter of an infectious and contagious nature." Plenty of air without exposure to the wind is required in all bunk houses. Garbage and kitchen washings must be suitably disposed of. Kitchens and dining-rooms must be kept clean. Every camp must have convenient sanitary bathing and toilet facilities. Each such camp must employ one responsible person to help in keeping things clean. The Commission of Immigration and Housing is to have $20,000 with which to administer the act. Violators are guilty of misdemeanor.

Motor Oils Standardized.

Another bill to insure purity, proper labeling and conformity to standards of gasoline and lighter fuel oils as well as lubricating and heavier oils, but omitting kerosene and distillate, has been introduced by Senator Charles W. Lyon of Venice, Los Angeles county. Adulteration or misbranding are pronounced misdemeanors. The State Department of Weights and Measures is to administer the law, using district attorneys for prosecution. Deputies of the State Department of Weights and Measures may have access to any of the oils named for the purpose of taking samples. Such samples are to be analyzed by the chemistry department of the University, and their certificate is prima facie evidence in court. In addition to prosecution, the facts of the case are to be published in a county newspaper, together with the name of the seller. The oils named are to be considered adulterated if gasoline does not test at least 60 degrees B. or if any of them do not conform to the standards of purity, quality, and strength established by the U. S. Bureau of Mines. Condensed oils may be destroyed or correctly branded and sold, the money to go into the county or city treasury.

State's Revenue and Budget.

Revenue for the State's expenses during the two years beginning June 30, 1919, is estimated by the State Budget Board at a total of $47,969,490. Expenditures recommended by the board, including $300,000 for needs unreported when the budget was made up, total $47,580,153.06. The balance between estimated revenues and approved expenditures is $389,336.94, thus allowing $689,336.94 for appropriations not foreseen at that time. Bills already presented in the Legislature provide for appropriations many times that amount, and therefore some bills of great merit will have to be decapitated.

Carmel-Jolon-San Simeon Highway.

A highway from Carmel, Monterey county, to San Simeon, San Luis Obispo county, at a cost to the State of $750,000 is authorized in a bill introduced by Senator E. S. Rigdon of San Luis Obispo. The money shall not become available, however, until the Board of Supervisors of Monterey county shall have authorized the spending of $200,000 and San Luis Obispo Supervisors $100,000 on the same project, which is to be carried out under the direction of the State Department of Engineering. Another bill authorizes a lateral highway from the one authorized above to a point near Jolon in Monterey county. The lateral is to cost the State $150,000 after county or federal government or other parties put up $5,000 for the same purpose.

State Market Commission.

The State Market Commission is again under fire. The original 1915 law, as pointed out by Senator William E. Brown of Los Angeles, who put it through the Senate at that time, provided that the State Market Director should establish State commission markets in various cities. Senator Brown would like to see such markets established. Assemblyman Edwin Baker of Los Angeles has introduced a bill to repeal the 1917 State Market Commission Act. Another bill or resolution denounces the State Market Director for helping organize the producers and blames him at least partly for the rise in costs of living.

For Government Railways.

"The Legislature of California hereby respectfully memoralizes the Congress of the United States to take such action as may be necessary to retain management and control of all railroads in this country for five years," is the gist of a joint resolution introduced by Assemblyman Maurice B. Browne of Sonora. The resolution states that the Legislature favors Government ownership of the railroads and points out the fact that the present Government operation has been for too short a time to demonstrate the advisability or undesirability of Government ownership.

Can U. S. Buy Lower California?

Long has Imperial Valley been



The '49er says= "the genuine GIANT dates back to 1866"

"I remember well when we used black powder for stump blasting and mining. Just after the Civil War the first Giant Powder ever made in the United States was manufactured in a little laboratory in what is now Golden Gate park.

"Out of that beginning has grown The Giant Powder Co., Con., with its chain of great plants and magazine stocks throughout the entire West. And the Giant Farm Powders are being used for stump blasting, boulder blasting, tree planting, etc., by thousands of Western land owners. Giant Powders have always been so popular that some people have thought any ordinary dynamite was Giant Powder, but that is wrong. The only way to get Giant economy and efficiency is to get the genuine Giant Powders made by the originators of the name."

Just tell us "send me your book," and we will mail you our valuable guide to blasting, "Better Farming with Giant Farm Powders."

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STUMPING EUREKA

THE BASIS FOR ORCHARD PERFECTION CROW TREES TRADE MARK

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We can still supply a few thousand each
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IMPERIAL on Myrobalan.
SUGAR on Myro., almond, and apricot.
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A FULL LINE

of all that is best in Fruit, Nut, and Ornamental Trees, Vines and Plants; and our prices are low. Write for our Price List; free.

CROW'S NURSERIES, = GILROY, CAL.

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PEACH APRICOT ALMOND
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More Than a Million High Class Fruit Trees per Year to California Planters

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Established 1888
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Feed the Crops

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Without fertilizer, crops will decrease and deteriorate in quality.

With more fertilizer, crops will increase and improve in quality.

Bigger and better crops mean bigger profits to you.

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are scientifically manufactured to meet California soil conditions and crop necessities. They are made from animal products that contain the necessary elements to feed your crops.

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Western Meat Company

SAN FRANCISCO, CAL.

PURE ANIMAL MATTER AMMONIATES

GOLD BEAR FERTILIZERS

FOR CALIFORNIA SOILS

uneasy because her irrigation water all comes many miles through Mexico. Fortunately Governor Cantu of Lower California has been wise enough to foster cordial relations with the United States, especially with California. A large part of his revenue comes from American farmers in that part of Imperial Valley lying in Mexico. To remove a menace peaceably, the joint resolution was introduced by Assemblyman J. Stanley Brown of El Centro, asking Congress and our representatives in Congress to urge the President to initiate steps for purchase of Lower California and all territory needed to give the United States control of the Colorado river to the gulf.

State Forestry Nursery.

A State nursery under jurisdiction of the State Forester, for the purpose of growing stock to plant along highways, in parks and school grounds, and for experimental planting, is authorized in a bill introduced by Senator Herbert C. Jones of San Jose. The State Forester may also purchase nursery stock and seed to distribute at cost for public planting or reforestation. He is also authorized to purchase or lease not over 25 acres for such a nursery. Forty-eight thousand dollars is asked for use under the act.

Liberty Fair Deficit.

The State is asked to appropriate $75,000 to cover the deficit of the Sixth District Agricultural Association on account of the Los Angeles Liberty Fair. The bill is introduced by Assemblyman A. P. Fleming of Los Angeles. The deficit is due to the extraordinary disturbance caused by influenza.

Directors Issue Irrigation Bonds.

The board of directors of any irrigation district may pay its bonds when they mature by issuing new bonds bearing the same interest and maturing in twenty years or less, as provided in a bill introduced by Assemblywoman E. B. Broughton of Modesto. These refunding bonds may be sold as usual or exchanged for matured bonds. No election need be held if four-fifths of the directors agree.

Surtax on Unused Land.

All unused or unimproved land in California is to be assessed as usual, and then, if the value of such land held by any one person, corporation, etc., exceeds $2,500, a surtax of two cents for each additional five dollars' valuation up to $25,000 is to be added. The surtax from $25,000 to $75,000 valuation is to be one cent per dollar. From $75,000 to $150,000 the surtax will be 1½ cents per dollar; from $150,000 to $225,000 the surtax will be two cents per dollar; from $225,000 to $300,000 surtax is 2½ cents; from $30,000 to $500,000 three cents per dollar; over $500,000 valuation shall take a surtax of five cents per dollar. These are provisions of a bill introduced by Assemblyman E. S. Hurley of Oakland.

Insects for Mealy Bug Control.

A bill introduced by Senator L. M. King of Redlands would appropriate $6,000 to enable the State Horticultural Commissioner to send an expert entomologist to South Africa, Southern Europe and other countries to collect and import to California insects which would help control the three varieties of mealy bug and other citrus scale insects.

Thou Shalt Not Lie.

Anyone who misrepresents anything with a view to selling it is guilty of misdemeanor, as provided in a bill introduced by Assemblyman N. J. Prendergast of San Francisco. A big job is thus proposed to be put on the shoulders of the State Department of Weights and Measures.

Irrigation District Electricity.

Whenever any irrigation district finds that it can use its water power to advantage for development of electric power, its board of directors shall develop such electric power, as provided in a bill introduced by Assemblywoman Miss Esto B Broughton of Modesto. Electric power so

(Concluded on page 154)

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OLIVE TREES THAT GROW

Citrus, Sub-Tropical, Deciduous Fruit and Ornamental Trees and Plants
—Three hundred acres—We grow our own trees.

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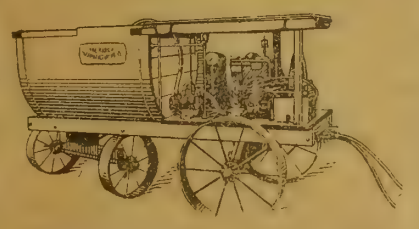
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The Famous Hardie Junior is a real power sprayer. It has sufficient capacity for two lines of hose. It has plenty of power for high pressure effective spraying. It is little in first cost, weight and upkeep. It is big in real value, engine power, pump capacity and ability to do successful spraying. We believe this is the greatest small power sprayer ever manufactured, and placed on the market with phenomenal success in every fruit section in United States and vouched by thousands who own the Famous Hardie Jr., Equipped with 1½ h. p. engine, battery ignition, 150-gallon tank with mechanical agitator, capacity of 4 gallons per minute with a steady working pressure of 200 pounds, and two 25-ft. of the best spray hose, fitted with spray rods and nozzles; 4-inch tire truck with pole or shaft.

All For $300. Delivered anywhere in this State

If truck is not needed, deduct $55.00.

These prices are subject to change without notice. The wise buyer will place his order now.

This low price is made possible by big production.

If you are interested in other types and sizes of the HARDIE POWER SPRAYER, write us for the big spray catalog, and learn why we can offer more spray pump value than any other spray pump manufacturer.

The HARDIE ORCHARD GUN is now $12.00, none better. All guns are guaranteed to satisfy the user, or his money refunded.

The Hardie Spray Hose is the safest hose to buy.

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in deep, well-drained soil succeed well on

Almond Root

—make larger trees, and bear larger fruit.

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of a fine, pedigreed strain is the most reliable variety for coast and interior.

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on peach and almond root, budded from our own selected trees.

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Your Soil Needs Amboy GYPSUM

FREE BOOK — GYPSUM FACTS

Tells how, when and what gypsum to apply for increasing crop yield. Gypsum should be used freely on citrus and alfalfa land.

Consolidated Pac. Cement-Plaster Co., 613 San Fernando Bldg., Los Angeles

Dormant Sprays and Their Application

[Written for Pacific Rural Press by Geo. P. Weldon, Chief Deputy State Commissioner of Horticulture.]

Commercial success in the orchard business is scarcely possible without more or less dormant spraying. Such spraying is necessary because of the presence in practically all deciduous orchards of either scale insects, twig borer, aphis eggs, mite eggs, or fungous diseases.

Of the various kinds of deciduous trees there are none that require more regular spraying than peaches, which are almost always infested more or less with twig borer, curl leaf and blight. Too much must not be expected of dormant sprays; that is, the various kinds of insects and fungous diseases differ so markedly that the same treatment will not always suffice for all of them.

LIME-SULPHUR MOST IMPORTANT DORMANT SPRAY.

There is no other spray which can be used during the dormant season that serves as many valuable purposes as lime-sulphur, the very best all-round contact insecticide spray for dormant season use that we have. As a fungicide it is equally as effective in practically every case as the well-known and extensively used Bordeaux mixture. The latter, having no value as an insecticide, cannot be placed in the same class with lime-sulphur. There are a great many different brands of lime-sulphur on the market, practically all of which are good for dormant use. It is diluted—one part with ten parts of water. Sometimes a fruit grower prefers to manufacture his own lime-sulphur. The process is simple and consists in boiling together lime and sulphur for 45 minutes in a proportion of 20 pounds of lime and 15 pounds of sulphur to 50 gallons of water. Owing to the inconvenience of preparation and the difficulty in securing a uniform mixture at all times, the commercial spray is now used almost entirely. The insect and mite pests and fungous diseases which are controlled effectively by a dormant spray of lime-sulphur are San Jose scale, peach twig borer, brown mite, citrus red spider, peach blight and peach curl leaf.

KILLS LARVAE OF TWIG BORER IN CROTCHES OF PEACH TREES.

The peach twig borer is one of the worst insect pests of the peach. It does its injury by boring into the tender growing tips early in the spring and by eating into the fruit later in the season, causing wormy peaches which are not unlike wormy apples as a result of codling moth attack. The adult insect is a little moth, the larvae of which hibernate in small crotches of peach trees during the winter season. Lime-sulphur penetrates the little cells which contain the larvae, causing the death of practically 100 per cent of the insects in hibernation. There is no other material that has ever been tried in the control of this pest which will give as satisfactory results as lime-sulphur.

KILLS SPORES OF LEAF CURL AND BLIGHT IN PEACHES.

As a fungicide applied in the early spring, lime-sulphur will absolutely control leaf curl; and a double application, one in the fall about November or December and the other at the time before mentioned, will control peach blight.

DESTROYS YOUNG MITES AS THEY HATCH FROM THE EGGS.

There are two species of mites, known commonly as the brown mite and the citrus red spider, which occur generally upon almond, prune, peach, cherry, pear and apricot trees. These pests spend the winter in the egg stage. While lime-sulphur does not actually kill these eggs, it does kill the little mites as they hatch from the eggs. All trees where the little red glassy appearing eggs of either of these mites are found should be treated with lime-sulphur as the buds are swelling in the spring.

OIL SPRAYS FOR DORMANT USE SECOND IN IMPORTANCE ONLY TO LIME-SULPHUR.

The various oil emulsions and miscible oils are exceedingly valuable in the control of such scale insects as black scale, European fruit lecanium, San Jose scale and Italian pear scale. These pests commonly occur on apricots, prunes, peaches, apples, olives, cherries and pears. When they are found to be present a thorough application of either crude oil emulsion, distillate emulsion or miscible oil during the early winter will bring good results. As far as is known, oils have little or no fungicidal value and therefore cannot be used for the control of fungous diseases. They have, however, a stimulating effect upon trees to which they are applied. This may in some cases increase the resistive power of the trees to attack of fungous diseases. While lime-sulphur has been known to control certain species of lecanium scales, it is not as dependable as oil emulsions for this purpose.

BORDEAUX MIXTURE NOT AN INSECTICIDE.

In case of the fungous troubles mentioned—namely, leaf curl and blight—Bordeaux mixture is just as effective as lime-sulphur. It has, however, no insecticidal value and would not, therefore, have any effect upon twig borer or mites. Therefore, the lime-sulphur spray is to be recommended in preference to the Bordeaux mixture for peach orchards, in sections at least where twig borer and mites are apt to occur. As these pests are generally distributed, occurring in practically all peach growing sections of the State, the lime-sulphur is much to be preferred as a general purpose spray for the peach orchard.

False Bottom Berry Boxes Banned

[Written for Pacific Rural Press.]

Henceforth no one may sell berries in California in "false bottom" boxes. The purpose of the false bottom is to make the box appear to contain more fruit than it does. Users of false bottom boxes may claim them necessary for ventilation. Persuasive effort has been put forth by the State Department of Weights and Measures to secure abandonment of such boxes. One growers' association has accepted the suggestion, but another has definitely insisted on using false bottoms, which give their boxes preference in the eyes of unwary purchasers. State Superintendent of Weights and Measures Chas. G. Johnson finally offered to permit such boxes, provided they would have holes or notches cut in the sides below the bottoms to reveal them. This would afford even better ventilation and manufacturers stated that no extra charge would be made for such holes or notches and that the boxes would not be weakened. Nevertheless, the growers' association persisted in its determination. Mr. Johnson declares that whenever such shipments are found they will be held up until satisfactory conformation to the law is secured. Berry shippers know that a day or two delay in transit means loss of many berries.

As a result of the embargo on dried pears the crop has been consumed in America, a newly educated market. Thus the coming year will not only give us the new home market but also the European. A business of nearly $400,000 has been handled this first year of the association without the loss of a cent in bad accounts. There are now 17,000 acres of pears in bearing in the State.

Write a Letter or Postal Card to

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408 Holland Building

Fresno, California

and we will send you a copy of our new 1919 ninety-six page profusely illustrated Catalogue and Practical Planters' Guide combined.

This book tells a lot of interesting, valuable and helpful things about old and new varieties of deciduous and citrus trees, shrubs, evergreens, palms, vines and roses.

A Real Hand Book

of information for the Horticulturist. Totally different from the usual nursery catalogue—chapters on Planting, Pruning, Irrigation and other important details.

It is sent free on request.



Bolton Orchard Heater



You may have escaped loss by frost thus far, but who knows where the loss will occur next? Be protected—the Bolton Heater is

The Cheapest Insurance Against Frost

Burns a long time on one filling of cheap fuel oil. As soon as the danger has passed, put on the cover—the fire is extinguished, and the remaining oil is as good as ever. Economy!

Send For Booklet B-1

Tells you all about frost prevention. Filled with valuable information for the grower.

W. R. AMES COMPANY,
8th and Irwin Streets San Francisco, Calif.

Largest stock of Surface Irrigation Pipe and Pipe Equipment on the Pacific Coast

PIPE

For Every Purpose NEW Threads & Couplings Hot Asphaltum Dipped

New and Used Screw Casing

Fittings and Valves Special Fittings Made to Order

TESTED AND GUARANTEED.

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MAIN AND HOWARD STS. SAN FRANCISCO, CAL.

STANISLAUS GROWN TREES

APRICOTS, ALMONDS, PEACHES, PEARS,
SPECIAL PRICE ON ASPARAGUS.
STANISLAUS NURSERY CO., MODESTO.

Horticultural Jottings

The Wheatland Farm Center has purchased two fire-fighting autos. A. K. Dam has been appointed fire marshal for the district.

The Peach Growers of California have filed with the State Water Commission an application to appropriate one and one-tenth feet of water per second from the middle fork of the Tuolumne river.

The Orange Show will be held, as arranged, at San Bernardino on February 14 to 23. Many districts are contemplating extending their original plans. It is hoped that the Ninth National Orange Show will be the "best ever."

The big kelp-treating plant at Summerland, Santa Barbara county, has ended its work and is dismantling the plant. The fleet of kelp barges and cutters has been placed on the market. The monthly pay roll has amounted to $72,000.

Winter pruning of fruit trees is well along, all the way from Haywards to Morgan Hill. Orchardists have been making the most of the weather for their winter work. We notice better work and smoother cuts being made year by year.

An advertisement in a Milwaukee paper in a special sale at the market bargain counter reads: "Fancy California navel oranges, thin-skinned, sweet and juicy; not delivered—each 35 cents." Thus an average box of navel oranges—large size—would bring about $45!

Orange shipments in the South were resumed on the 14th. In the Riverside section it is believed that 60 to 65 per cent of the crop on the trees is unfrosted and marketable. A careful inspection of shipments is made under the direction of D. D. Sharp, Horticultural Commissioner.

Six vine-pruning demonstrations have been conducted in Sutter county under the auspices of the County Farm Bureau. Prof. Flossfeder of the University of California was in charge, but he was taken sick the second day and the demonstrations were taken over by the Farm Advisor.

The deciduous fruit short course and tractor demonstration, held at Cupertino during the past week, ends on Saturday, February 1. The course was given under the co-operative extension work of the University of California, the U. S. Department of Agriculture and the State Horticultural Commission.

It is likely that before many years the 15,000,000 or more pounds of figs annually imported from Smyrna will be supplanted by the home-grown product, according to the U. S. Department of Agriculture. Our large area, as suitable for fig growing as Asia Minor, is more than extensive enough to produce the amount imported into this country.

A new seedling almond is on exhibition at the San Jose Chamber of Commerce. It is said to have a medium soft shell, is quite large and sweet and has a distinctive flavor. The seedling was grown by J. W. Crider. When our new deciduous fruit experiment station is in being such new varieties can be tried out to see if they are going to be commercially valuable.

The U. S. Department of Agriculture is seeking an expression of opinion from the fruit growers of the Santa Clara Valley as to whether they desire a frost warning station or not. L. R. Cody, Horticultural Commissioner, is making inquiries. The department has a man in the Rogue River Valley, Oregon, also one at Pomona, who is inaugurating a service station for the benefit of citrus men.

The total amount of mortgage loans closed by the Federal Land Banks from the time of their establishment to December 1, 1918, was $147,452,961—numbering 64,357 borrowers. During November 5385 applications were received asking for $17,259,878. During the same period 4826 loans were approved, amounting to $12,309,191. Altogether 162,294 have applied for loans under this system aggregating $406,542,109.

TREES

—with roots such as these

are grown only on our foothill soil and location. Hardy—of selected parentage—well-grown—absolutely reliable—and free from root-knot and diseases common to other localities.

We know we can meet your requirements. Our stock of trees is complete. Submit today a list of your wants for special quotations. Remember, behind each tree is our guarantee.

Those who wait will be disappointed. Write now—right now!

J. E. Bergtholdt
Secy. and Mgr.

Why take chances on your trees when we have made it easy for you? Get the right start. Send for our book "California Fruits"—full of practical, dollar-making information. It is based on 30 years' experience as nurserymen and orchardists, for we operate 1000 acres of orchard of our own. Send for this book today—it's *free!*

SILVA-BERGTHOLDT CO.
BOX H NEWCASTLE, CALIFORNIA

—the foundation of SUCCESS in your fruit growing

ESTABLISHED 1896
REX
KING OF SPRAY MATERIALS

"There is a Rex for every orchard trouble."

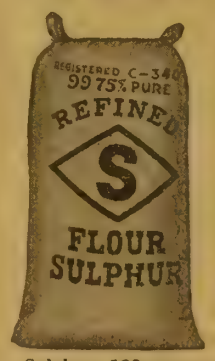
REX SPRAYS are the development of 20 years of Scientific Investigation and Development.

REX LIME AND SULPHUR SOLUTION—THE MOST GENERALLY USED SPRAY—REX ARSENATE OF LEAD, AN ARSENICAL POISON FOR KILLING LEAF EATING INSECTS, CODLIN MOTH, ETC.—REX SUL-PASTE, A PRODUCT OF FINELY DIVIDED SULPHUR FOR THE CONTROL OF SCAB, MILDEW AND OTHER FUNGUS TROUBLES—ALSO RED SPIDER AND OTHER INSECTS. REX BORDEAUX - OILS - SOAPS

California Rex Spray Co.
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REX SPRAYS — The Standard for 20 years

SULPHUR



It has been proven and so recommended by the University of California that if you sulphur your grape vines and orchards 6 times they will not be affected by MILDEW or RED SPIDERS.

ANCHOR Brand Velvet Flowers of Sulphur, also EAGLE Brand, Fleur de Soufre, packed in double sacks, are the fluffiest and PUREST sulphurs that money can buy; the best for vineyards; the best for bleaching purposes, LEAVING NO ASH.

Try our new brand of VENTILATED Sublimed Sulphur, 100 per cent pure, for making Paste—(Atomic Sulphur) and for Dusting.

For Lime Sulphur Solution, use our DIAMOND S Brand Refined Flour Sulphur. We can furnish you this sulphur at such low price that it will pay you to hix your own solution.

To create additional available plant food, drill into the soil 100 to 400 pounds per acre of our Diamond "S" Brand Powdered Sulphur.

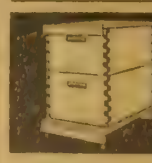
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We are equipped to make immediate shipment. Send for illustrated booklet, price list and samples and please state for what purpose you use the sulphur, quantity needed and date of shipment preferred. Tel. Kearny 871.

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SUPERPHOSPHATE
is a wonderful fertilizer for ALFALFA
Excellent, also, for Fruit Trees, Vines, etc.
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Beekeepers can obtain from the Apiary Department of the Diamond Match Co. the finest quality of Bee-Keepers' Supplies at fair prices.

The Apiary Department, which is in charge of experienced Bee Keepers, is one of the largest of its kind in the United States and maintains a constant experience of product and unsurpassed service.

Write for catalogue and if a beginner for Gathers' Bee Keeping, which will be promptly mailed free.

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Federal Farm Loans

Long Term *Low Rate*

All loans made on an amortization plan whereby the borrower repays the principal gradually with each interest payment.

Over three thousand satisfied borrowers in this district. It will pay you to investigate.

For information apply to the nearest **National Farm Loan Association** or write direct to

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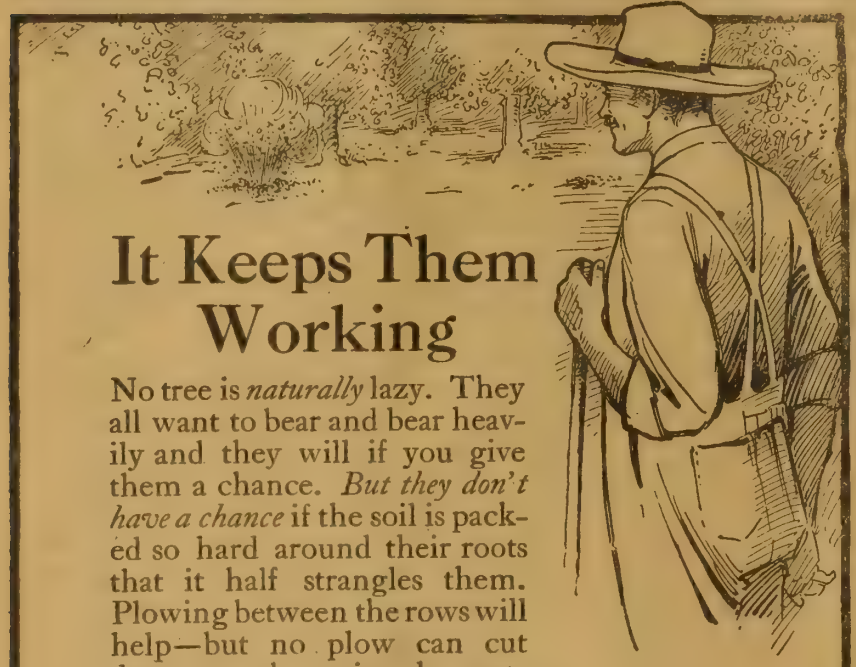
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Cross-Pollination in Pear Growing

[Written for Pacific Rural Press by John J. Fox.]

We have so many inquiries about cross-pollination for increasing production in pears, especially with Winter Nelis and Comice, that the following account of a highly successful pear orchard will be read with interest.

On January 4 the writer visited the orchard of S. V. McCurdy, accompanied by County Horticultural Commissioner Cody, and found Mr. McCurdy superintending a force of pruners. We first inspected an old 40-year-old Winter Nelis orchard, which had formerly been such a shy bearer that part of it was grafted over, and it now has nine rows of Winter Nelis, 22 rows of Glout Morceau, and nine rows of Easter Beurre. The Winter Nelis now make the most money. This orchard averaged nearly 20 boxes of packed pears to the tree last season. The Easter Beurre netted over $1,000 an acre last year. From one three-acres he took 1450 packed boxes of pears—probably a record crop and high prices to pay for former lean years. We asked him about the Glout Morceaus and he told us there was a larger percentage of naturally crooked pears from this variety and a heavier drop is also characteristic.

GOOD ORCHARD MANAGEMENT.

The perennial success of an orchard depends almost entirely on its management. When this is mentioned one's thoughts immediately fly to the soil first and the pruning and spraying afterwards. We noticed in the old orchard, in addition to a good cover-crop of weeds, a heavy application of well-rotted manure. It came from the military camp and cost $4 a ton laid down at the ranch (but not applied). Twenty-five tons to the acre had been put on—a dressing that ought to keep this strong clay loam in condition for at least five years. This heavy dressing was going to be disked in at once, not only that it might be incorporated in the top soil and make it more mellow for working in the spring but to get the mullen and coarser weeds under before they became too woody. The old trees in this orchard are shapely and well pruned and generally as sound as a dollar. It demonstrates what cross-fertilization will do for Winter Nelis, which, by itself, generally runs shy after two or three good crops in the north.

THE YOUNG PEAR ORCHARD.

The young pear orchard adjoins the old one, though the ground seems to be heavier and not so well drained, though we forgot to ask if such was the case. It had had a good application of lime as a top dressing and will doubtless benefit from it in every way. The young orchard contained 19 acres of nine-year-old pears. The evidence of the weight of last year's crop was evident in the amount of baling rope used to support the limbs and still in place. The varieties were Beurre Hardy, Comice, Bosc and Beurre d'Anjou. They are all good shipping pears and market well. Both the Bosc and the Comice color well here.

THE QUINCE ROOT.

This young orchard is all on Hardy on Quince. When Mr. McCurdy first bought this place he had some Bartletts on Quince. One day he noticed one that a horse had bumped against and it had broken off like a carrot at the union. There was no "grain"; it was about like a piece of crystallized iron—no tensile strength at all. He went down the line and pushed over one after the other and found they all broke in exactly the same manner—at the budded union. Three-year-old trees they were—three years gone to blazes. So he dug them out and replanted. He found some Beurre d'Anjou on Quince worked the same way and they broke at two years. Now they are all on Quince, but are double-worked stuff. All these varieties bear regularly. Which seems to be a good indication of the virtues of cross-pollination for pears, especially the Comice.

A YOUNG APPLE ORCHARD.

Before leaving we ought to mention a nine-year-old apple orchard adjoining the young pears. There are nine acres in the piece (nine seems to be Mr. McCurdy's lucky number this year). The varieties are White Astrachan, 600 trees; Skinner seedling, 95 trees; and Alexander, 200 trees. This year he took 4000 boxes of apples from this young orchard and they brought an average of $1.50 a box f. o. b.

Two irrigations are given a year. The water is never over 40 feet from the surface and Mr. McCurdy has his own plant and cement pipe conduits. Electric power is used. With regard to spraying, it is evidently done faithfully and well, for the trees are clean and the fruit was practically free from worms or scab. Because of the returns yielded by this orchard, its owner feels he can well afford to give it back $100 worth of manure to the acre. Which certainly ought to encourage the trees to further effort!

LAKE COUNTY PEAR GROWER WOULD LIKE EXPLANATION.

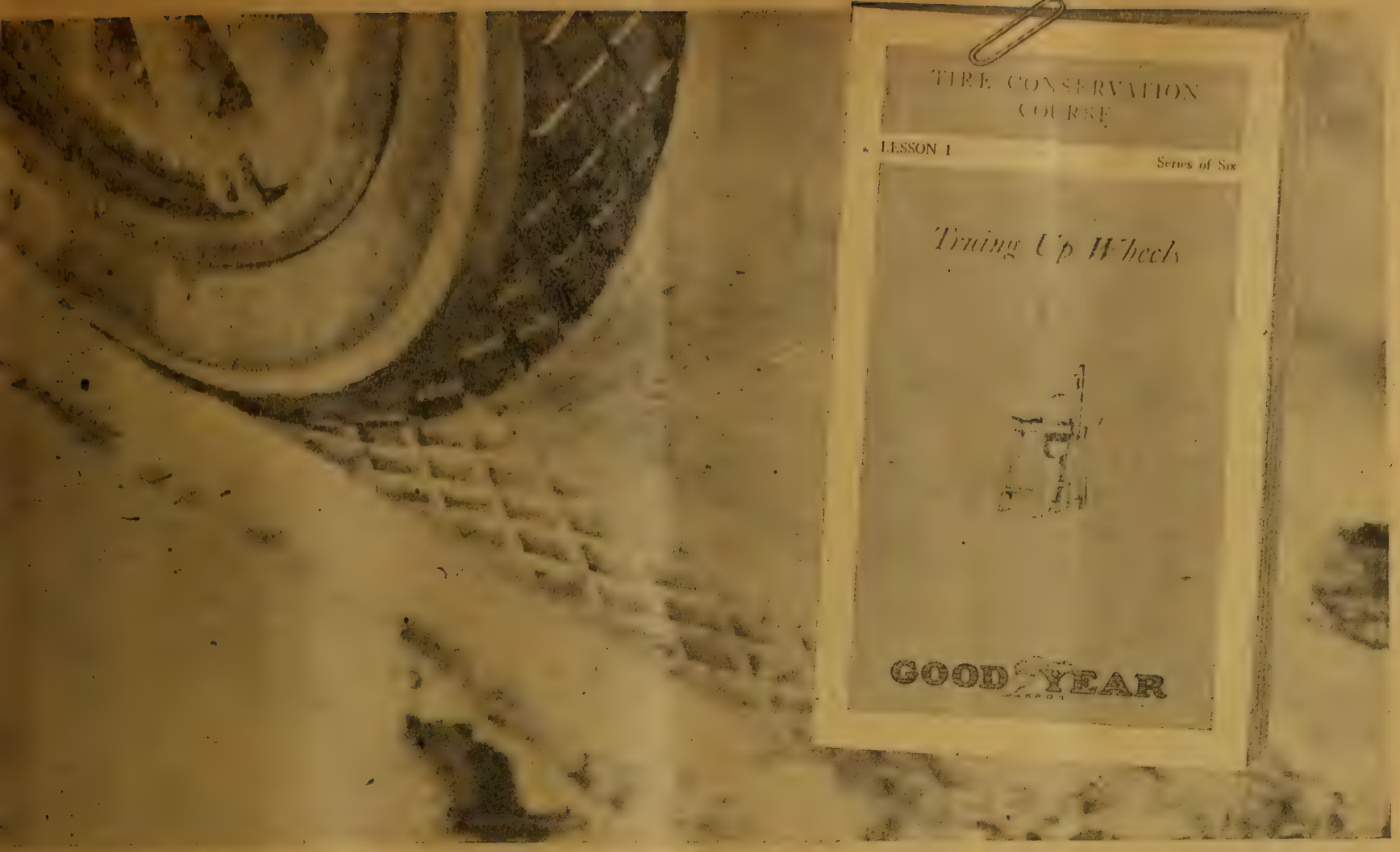
To the Editor: In your issue of December 28, 1918, I read with pride the showing of our State for the past year in our fruit products. I also noted, and have noted before, the high value of Lake county Bartletts, dried, as green fruit, or any way to take them. They are excelled by none. Now, according to John J. Fox's article, dried pears were worth 10c to 11c, with Lake county at 15c. The average price, green, received by growers was $70 per ton. Now, can anyone explain this difference? Lake county producers received far less for their superior article. The highest price I can learn of being paid for A1 green fruit was $45 per ton, and the greater portion of orchard run contracts being $35 or thereabouts. Our transportation cannot justly be credited with all this difference. We are still planting pears, and our trees are looking fine. We have bright prospects for the new crop.—J. M., Lakeport.

[I believe the final prices obtained for dried pears, valley pack, averaged about 12 cents. I do not think Sonoma growers would have got over $50 a ton had not the Pear Growers' Association lent them a hand. As it was, they received $70 a ton delivered in San Francisco county, or to nearest cannery. Many shippers averaged $80 net on shipping stuff exclusive of packing and handling costs. I know some of your people sold in June for $35 to $42 a ton, for I was at Lakeport and Kelseyville and heard it myself. It looks to me as if you—most of you—contracted too early. If sold green to the canneries, you should have received $60 f. o. b., as it probably costs pretty close to $10 to pick and transport to Hopland. Also the prices paid you were in the orchard or unpacked. Why don't you join the California Pear Growers' Association and get top prices?—Editor.]

"Wheat, Wool and Wine"

"Wheat, wool and wine used to be the three great staples of California's productive effort," said R. L. Niemann, manager of the Winters Dried Fruit Company, in a recent conversation. "Now look at what we are turning out. The green fruit shipments alone will outdo in value that of all of California's products of little over fifty years ago, to say nothing of the dried fruits, vegetables, nuts, livestock, dairy produce, and manufactures."

Probably no country in the whole world has made such gigantic strides forward in the past three decades as has our own fascinating and prolific State—California, the Queen of the Earth.



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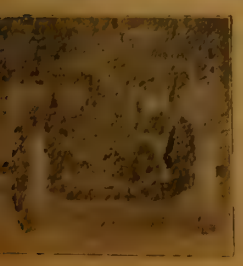
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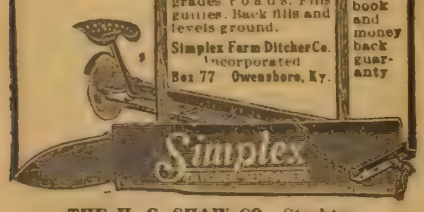
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Here and There in the Fruit Business

[Written for Pacific Rural Press.]

The Weight of a Tree Computed.

It is possible to compute the weight of a fruit tree—both top and root—from the measure of its diameter. Warren P. Tufts, assistant professor of pomology at the College Agricultural Farm, tells us that the increase in the diameter of the trunk of a tree demonstrates the degree of increase in both root and top—a balance between which is demanded by nature. The professor was asked if young trees should be cut back in the summer of the first year to induce a branching that would build the head of a tree the first year. The answer was: "Yes, if they have made good growth by the middle of May. The growth, however, should not be cut back later than May and only then if strong growth has been made. The trees will be a bit smaller the end of the first year, but not so much cutting will be necessary in winter. A man must know what he is doing and get it done early enough."

Killing Woolly Aphis on Roots.

The U. S. Department of Agriculture at Washington, D. C., has sent out the following bulletin (730): Carbon bi-sulphide in solution at the rate of one-half ounce to four gallons of water and applied at the rate of three-fourths gallon per square foot of soil will control the root form of the woolly apple aphis and without injury to the trees under suitable conditions. The solution is prepared by pouring the carbon bisulphide into the water and agitating the mixture vigorously. When applied to the soil around a tree the liquid penetrates into the ground and the poison gas given off by the chemical kills the pest. Every square foot of soil should be subjected to the action of the solution in order to insure complete control. This may be accomplished by pouring the liquid into a shallow basin made in the soil around the tree.

Pistachio Nuts.

The Department of Agriculture has already distributed about 25,000 of these trees, according to G. P. Rixford, physiologist to the Bureau of Plant Industry, who showed us a nice sample of nuts from Tribble Bros. at Elk Grove. These gentlemen have 250 trees, five-year-old grafts, now in bearing. C. J. Fobes has 150 trees the same age and there are about five acres on the Mills orchard at Hamilton City. Mr. Rixford says the finest nuts come from Sicily, the two best varieties being Trobonella and the Bronte; the Red Aleppo coming from Syria. He also says that one male tree should be planted to every six or seven of the female or bearing trees and preferably on the windward side of them.

Report on San Pedro Dam.

This is a reservoir and power project to be constructed on the Upper Tuolumne river at an estimated cost of nearly three and a half millions. A. J. Wiley, consulting engineer of Boise City, Idaho, has tendered his report and the directors of the Modesto and Turlock Irrigation Districts are considering it separately. The dam and power plant will be four miles above the La Grange dam now in use. The reservoir will have a capacity of 250,000 acre-feet of water and capacity of power will be 16,000 horsepower and 12,000 kilowats. It will require three years to vote bonds and complete.

Experimental Lemon Groves.

In the past year two experimental lemon groves were established in California by the U. S. Department of Agriculture—one at Corona and the other at the University Citrus Experiment Station at Riverside. Both were planted with progeny trees propagated from selected parent trees having the best production records. A number of trees were planted propagated from parent trees having inferior performance records, to use as a comparison. An accurate record of all these trees will be kept for a series of years after they come into bearing. The California Fruit Growers' Exchange has established a bud-selection department to supply reliable buds of superior strains to nurserymen and growers of citrus varieties grown in California.

Large Prices for Figs.

Fig growers received from 10c to 15c a pound for their dried fruit this year and some Calimyrnas brought even more. Packers are getting as high as 25c a pound for a special 16-ounce box. Practically all the crop has been sold and the bulk of the crop was excellent. The prices obtained have proven a stimulus to planting. The general opinion of packers is that the outlook for next year is bright, though nobody will venture to prophesy on prices.

Good Prices for Oranges.

In Butte county, with the crop about 30 per cent of normal, orange growers are netting $5 a box as compared with $2.20 and $2.30 last year, according to A. J. Kleinke of the Stewart Fruit Packing Company. In the south, growers are netting about $4.50 a box on a 60 per cent crop.

Paso Robles Planting Heavily.

The almond and prune acreage at Paso Robles is to be considerably extended this year. C. H. Nehrhood, a well-known horticulturist of this district, is now busy planting nearly 1000 acres more to almonds and prunes, in addition to those he already owns or manages.

January 31 and February 1 are the new dates for holding the fig orchard meetings at Fresno. Professor Condit is in charge. These orchard meetings do not take the place of the Fig Institute.

The Minturn Vineyard Company at Livingston is setting Thompson Seedless grapes this year to fill out its 500-acre ranch, which will then be all in fruit—peaches and grapes.

Trees for the Sacramento Valley

To the Editor: Which of the three varieties of elm (American White, Cork Barked, or English) and of maple (the ash-leaved box elder, English or Norway) is best adapted to our red clay loam and to our climate? Which makes most rapid growth and which is nicest shade tree?. Does "birch" do well here?—T. E. A., Wheatland.

[Answer by Dr. W. L. Jepson, University of California.]

The cork elm will do much better on the clay soils than the American elm or English elm, both of which need more water and a moister climate. Excellent specimens of the American elm are, however, to be found in the streets of Sacramento. The best maples for the Sacramento Valley are the white maple and the native big-leaf maple. The white maple has made fine growth without irrigation in some parts of the Sacramento Valley. It is also called silver maple and is the Acer dasycarpum of some nursery lists, or A. saccharinum of other nursery catalogues. The Norway maple does not like the intense summer heat of the interior valleys and I should not expect it to flourish with you. The box-elder should grow well, especially with some irrigation. As to "English" maple, I cannot say. White birch is used as lawn tree not rarely in the Sacramento Valley, but I would not recommend it for general planting. As to a particular locality and soil, the best way is to be guided by local experience or to make trial plantings.

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THE BEAN SITUATION—AN EXPLANATION.

Reports of certain interviews appeared in some of the daily papers on January 17 with E. H. Le Due, manager of the Western Import Company, in which he is reported to have said: "Our principal customers for Japanese beans have been the Government and the canners. Most of these canners are in the East." The report further said: "The Government is understood to have purchased enough beans to supply the army for from three to five years."

As stated last week, we went to the Food Administration offices and were referred to J. T. Brown, who is in the bean department (Grain Corporation). Mr. Brown showed us the copy of an indignant letter of protest from Mr. Le Due, also one sent in by the department against misleading statements in the public screed—a retraction of which had been promised. In reply to definite questions we received the following definite information:

All beans supplied to the U. S. Army and Navy are American-grown beans. Imported beans have been bought by the Government men for the allies and only on orders from them. These beans, which our Government has been commissioned to buy for the allies, come to the United States in bond and are reshipped in bond. Why were so many foreign beans bought? In the September rains it was feared that a large part of the bean crop would be destroyed. Michigan also loses beans every year from inclement rains. A shortage of beans was feared. Foreign beans were offered to the allies at this time. This was long before the armistice, when nobody could tell the end was to come so suddenly. These beans were then purchased on orders from European governments to whom they had been offered, and the armistice came at a time when the allies had bought heavily to cover large expected future needs.

Another reason set forth as to the slow movement of California beans was that Michigan got the early business by doing her big selling on the crest of the market—while there was demand and movement—and accepted the prices offered. Also the quality of our beans is a detriment this year, as, not being so bright and attractive to independent buyers.

As regards the canners, Mr. Brown said that very few dried beans were canned this year, as the canners could not get enough tin. Some of the foreign beans are brought in by importers, as they always have been, and distributed here. It is a legitimate business and there is no law to prevent it.

AUTOCRACY OF "OLD HUMUS" BROKEN UP!

(Continued from first page.)

Leguminous plants, in the absence of inoculation, will take all of their nitrogen from the soil like any other plant, and, even when inoculated, may draw to a considerable extent on the nitrates and other soluble nitrogen of the soil. In addition to all the other benefits accruing to soils from the growth of leguminous plants, there can be no doubt, of course, that the amount of organic matter added by the roots, stubble, and nodules to the soil is much greater than that obtained by growing non-leguminous plants.

ALL NITROGEN NOT NITRATES.

I wish also to correct the impression, which your inquirer evidently has, to the effect that the nitrogen which is fixed by leguminous plants is fixed in the form of "nitrates." There is no evidence whatever that such is the case. All the evidence which we have seems to indicate that the nitrogen fixed by the bacteria growing on the roots of leguminous plants is in an organic form, though it may be soluble to a considerable extent.

The dark green color which Mr. Barker has noted in oats grown together with vetch is unquestionably due to the larger amount of nitrogen in soluble and usable form which is obtained by the oat plant growing together with the vetch plant, than it would obtain from the soil if it were growing alone.

AT THE STATE FAIR GROUNDS.

[Written for Pacific Rural Press.]

State Fair visitors next fall will be struck with the magnitude and beauty of the new Agricultural Building. Half done last September, it was not very impressive, but the finishing touches are now being put on and this building is really imposing. Trees are being planted at many places on the grounds and the lawn is being extended in front of the swine sheds. Secretary Chas. Paine is hoping to be able to buy the corner next to the dairy barns; and if this materializes plans will at once be broached for the concentration of all livestock at that end of the grounds in buildings which will be architecturally harmonious with the Agricultural Hall. Mr. Paine would like to have a large hog barn, as many Eastern fairs have, but breeders prefer separation, so they can talk to customers without interruption. This is a matter for the future. The hope that $250,000 would be allowed for a grandstand is not strongly held, because the Budget Board did not recommend it. A bill will, however, be introduced for such an appropriation. Meanwhile the race track is being dug up several inches deep in order to put it into good shape for next season.

All cereals should be kept in dry, well-lighted storerooms. Damp, dark cellars should never be used for storing foods.

The KILLEFER AUTOMATIC Double-Disc Harrow





Automatically Straightened

The small cut shows the Automatic Double-Disc Harrow, automatically straightened. To accomplish this, the tractor is backed up until the hook on the draw chains can be placed in the hole on the front end of the adjusting swivel; then, by going ahead about 18 inches, the disc is drawn straight. To set for working position again, pull out the hook and go ahead. This can all be done by the driver from the seat of most tractors.

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this is the most important development made in the manufacture of farm tools to date. This is the **only Automatic Double-Disc Harrow** on the market. It was designed and built in our own shops, completely; we are, therefore, the **originators** and have it **fully covered by patents.** In the development of this, our latest triumph in Disc Harrows, we have not only maintained the great strength and durability as originally designed, but have added two additional most valuable features, namely, our **Automatic Shifting Device;** controlled by the operator from the seat of his tractor, and a **greater flexibility,** so desirable in a **tractor Disc Harrow,** but not found in other makes.

This Harrow is built in all sizes from 5 to 12 feet, inclusive.

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Is There Any Reason for Dirt in Hay?

[Symposium by Rural Press Subscribers.]

In its issue of January 18 the Pacific Rural Press published an important article calling attention to the vicious practice of careless or dishonest hay balers in incorporating 25 per cent of dirt, more or less, in hay baled for the market. It cited several flagrant cases that were called to the attention of Charles G. Johnson, State Superintendent of Weights and Measures, and verified by him or his deputies on personal inspection. Readers of the Press were invited by the writer of the article to address to this office a postal or letter giving expression to their feelings on this matter. Below we print a number of communications received in response thereto, the tenor of which would show that the disreputable practices complained of are not countenanced by our farmers as a body, but on the contrary are indignantly repudiated, and that a legislative measure to prevent and punish deliberate dishonesty in hay dealing would be favored.

GLADLY LENDS HIS NAME.

To the Editor: Use my name as being favorable to the proposed law protecting hay buyers.—Chas. E. Parsons, Nevada City.

NEED A LAW TO PREVENT IT.

To the Editor: As a shipper of baled hay I see no necessity of baling dirt in hay, and think we need a law preventing it.—Roy K. Knowlton, Porterville.

WILL IMPROVE AND STABILIZE THE HAY BUSINESS.

To the Editor: I am writing to tell you that I for one heartily approve of your hay measure and will give it my very highest support. It will go far toward bettering and stabilizing the business.—D. M. Searby, Sebastopol.

SHOULD BE FREE FROM MOLD ALSO.

To the Editor: I should like to see a law passed to provide for baling hay free from dirt and rocks; also, in case of alfalfa, compelling dealer or producer to guarantee the same free from mold and of a quality so that stock will eat it.—E. T., Wrights.

WE WANT HAY—AND HAY ALONE.

To the Editor: I'm sure I speak for every man in California when I say when we buy hay we want hay—and hay alone, not dirt. We want our Legislature to make a law prohibiting anyone from selling hay that contains a large per cent of dirt.—G. D. Hensell, Morgan Hill.

STOP THIS DIRT-SWINDLING PRACTICE.

To the Editor: I think if every person in the State who buys hay could see your article in the Rural Press you would be swamped with lettters urging you to get a bill through the Legislature, if you can, to stop this dirt swindling practice of the hay balers.—D. B. Monroe, Gilroy, Cal.

GET TOGETHER AND PUT THE BILL THROUGH.

To the Editor: The article by R. E. Hodges in regard to dirt at the price of hay is good. Is this law needed? Does a horse need a mouth to eat with? There is just as much sense to the last question as the first to any fair-minded and just person. Unless the farmers of California get together and put this bill through, the worm will turn as it did in the bean market, to say nothing of saving the future market of hay. I am a producer in a small way and would like much to see this law put through.—F. Seifkes, Newman.

DIFFICULT TO AVOID SMALL PERCENTAGE OF DIRT.

To the Editor: I have just finished reading your article in the Rural Press of January 18 on selling adobe at the price of hay, by R. E. Hodges. There must have been an awful lot of dirt in that hay. Why, I don't believe my hay would average over a pound of dirt to the bale, but it is impossible to have it absolutely clean from dirt, as the rake will pick up a little. But I throw out what I notice when hauling it in, and if I am working around where they are baling my hay I try to have the baling crew throw out as much as possible. Still I find small lumps in the bales. I believe it would be a good thing if we can get a law to punish those that willfully throw in dirt to make it weigh heavy. It would be a good thing if the hay was tagged with the grower's and baler's name and address. It would protect the honest man and expose the dishonest. Let us hear from others on this subject.—M. A. Lund, Lancaster.

A PRACTICABLE REMEDY SUGGGESTED.

To the Editor: I have just finished reading your article on clods and dirt in baled hay, and I wish to let you know some few true facts. I have a small ranch here. In the summer I work on a hay press. The hay is generally in shocks, and when the ground is rough and cloddy we know right away the hay will be full of clods. The clods are all mixed up in the hay and nobody in the world can take them out. When the hay is stacked it is not quite so bad, but bad enough. The only way to exclude all these clods is to have a law that the farmers must cold-smash or roll this land after planting. I know through experience when we go on a ranch to bale and the land was clod smashed there are no clods, and it makes it much cleaner work for the baler. If you don't believe it, just come out some summer while we are baling and see for yourself the dirty job it is.—R. W. Bean, Novato.

CROP Production

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It is not enough to merely fertilize. It is important that the tree be fed material giving maximum results under California conditions

These materials are furnished in

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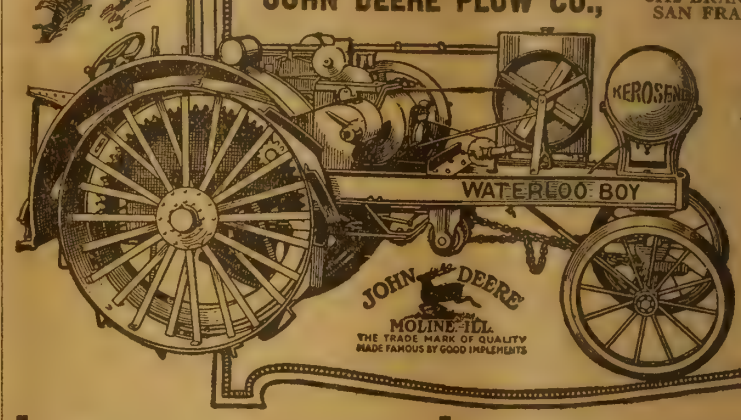
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"Your tractor has given the best satisfaction. I plowed seventy acres of ground in eight days, with a 3-bottom John Deere Plow; did most of my discing with it, pulling two 18-inch wheel discs at all times. $2.00 a day pays for all fuel and lubrication, when doing a full day's work—on light work it is much less. I consider it a very economical machine. The service given by your distributors has been satisfactory at all times."

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That's Enough For Any Engine to Weigh

Any engine that weighs more than 60 pounds per horsepower is too heavy for farm work. It wastes gasoline, material, time and energy.

Cushman Engines weigh only one-fourth as much as ordinary farm engines, but they are balanced so carefully and governed so accurately that they run even more steadily and quietly. No loud explosions—no fast-and-slow speeds—but smooth, steady running like automobile engines.

CUSHMAN Light Weight Farm Motors

4 H. P. weighs only 190 lbs., being only 48 lbs. per horsepower. Besides doing all ordinary jobs, it may be attached to any grain binder, saving a team, and in a wet harvest saving the crop. Also it may be used on corn binders and potato diggers.

8 H. P. weighs only 320 lbs., being only 40 lbs. per horsepower. For all medium jobs. Also may be attached to hay presses, corn pickers, saw rigs, etc.

15 H. P. weighs only 780 lbs., being only 52 lbs. per horsepower. For heavier farm jobs, such as 6-hole corn shellers, ensilage cutters, large feed grinders, small threshers, etc.

20 H. P. weighs only 1200 lbs., being only 60 lbs. per horsepower. For heavy duty jobs, such as shredders, shellers, grain separators, heavy sawing, etc.

Cushman Engines do not wear unevenly and lose compression. Every running part protected from dust and properly lubricated. Equipped with Throttling Governor, Carburetor, Friction Clutch Pulley and Water Circulating Pump. Ask for Book on Light-Weight Engines.

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Giant Winter Rhubarb

Now Best Time to Plant

Should return from $1,000 to $1,500 per acre first year. If interested in Rhubarb or Berries, write J. B. WAGNER, Specialist, Pasadena, California.

MOST ADVANCED GRAIN HARVESTING.

[Written by our Special Sacramento Correspondent.]

"Elevators for bulk grain are a great advantage for the farmers," says H. K. Huls, manager of the Merced Elevator Co., whose elevator is an old mill in part of which thirteen bins of 6000 tons capacity were built two or three years ago. "The price of sacks alone would pay for the hauling, cleaning, and storing of grain in a bulk elevator and there has not been over three or four cents' difference between the price of grain in bulk and in sacks. Lots of people ask to buy grain in bulk. It is no trouble to sack it in case of orders for less than carload lots."

The Merced Elevator Co. handled about 6,000 tons of the 1917 crop; and when Mr. Huls was visited last September he had 3000 tons in the bins with grain still coming from field bins where it had been stored to await a convenient time for hauling. This in spite of a short crop due to the dry winters preceding.

Bulk handling, which saves two men on the harvester, permits immediate hauling to the shipping point elevator or storage in field bins safe from loss by sunburned bursted sacks or by mice and other rodents. It is cheaper to haul direct to the elevator if trucks and drivers can be obtained at this season, because it saves storage in and removal from the field bins. But if everybody hauled at harvest there would be an overload at shipping points. And it probably will cost less with an average haul to use the rancher's own truck over a long period than to rush several hired trucks at harvest time.

All stages of transition from sack handling to the most advanced methods of bulk handling are to be found around Merced. Big cotton sacks were filled on the harvester, tied instead of sewed, hauled to field bins or elevators, dumped, and used repeatedly during the same harvest. This saved $7 to $8 a day for a sack sewer last harvest, as cheaper help could be used, but it involved too much work.

WAGON ALONGSIDE HARVESTER.

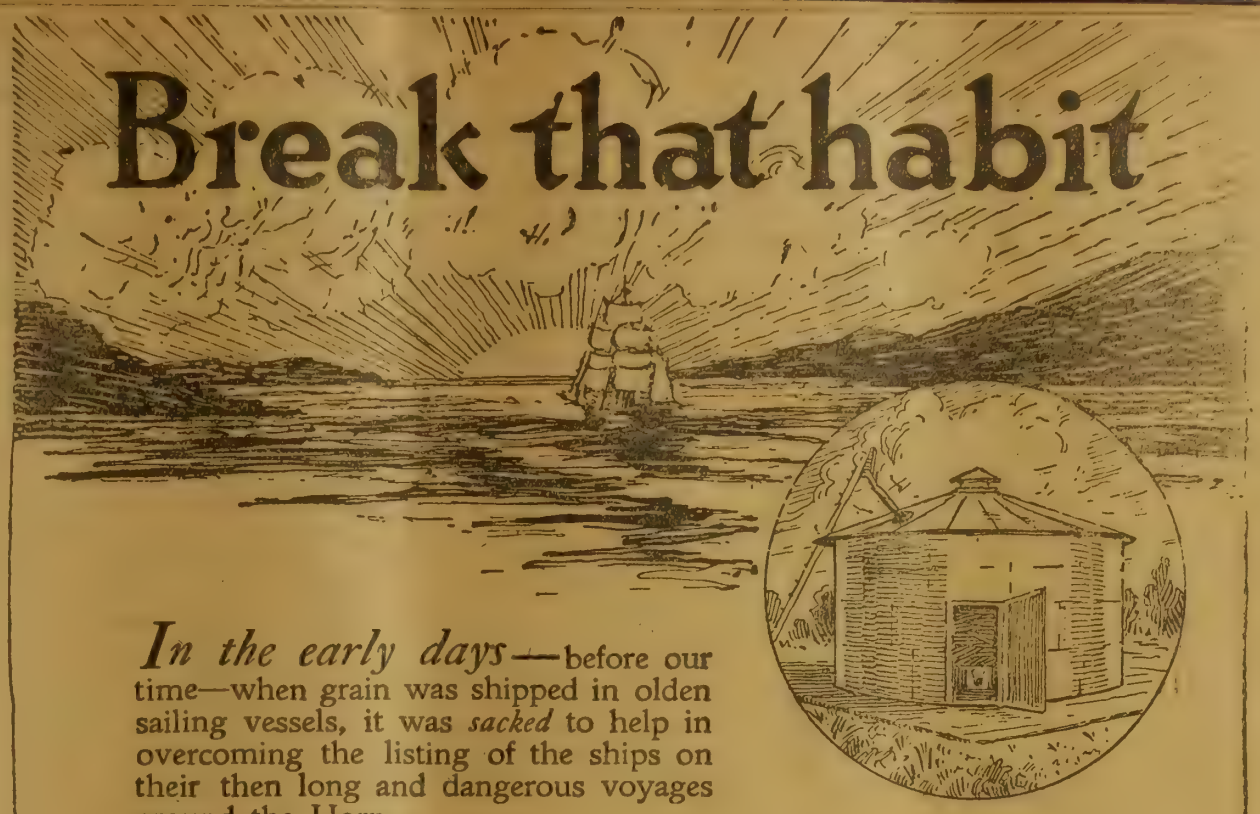
One of the most advanced practices we have known in grain handling is that of E. V. Givens, who has a wagon holding 3000 to 4000 pounds of bulk grain hitched to the tractor, so it trailed along under the spout from the harvester. When it was full or when the harvester came near a field bin, the spout would be shut, the wagon dropped and when the harvester had pulled ahead a few feet another wagon would be hooked on. Two horses and a man would do the work.

Generally in bulk harvesting, a bin on the side of the combine receives the grain so it may be dumped into wagons or trucks whenever a load has been threshed.

MOVABLE FIELD BINS.

Many of the field bins are movable from one field to the other. Mr. Givens moves his on skids. With trucks and wagons hauling at night to the shipping point and part of them used on the harvester in the daytime, it is easy to keep hauling up to the harvester. Mr. Huls showed us a bin on wheels. Its bucket elevator was arranged to receive grain from wagons and dump direct into motor trucks if trucks were ready or into the bin if no trucks were at hand. If dumped into the bin, the trucks would be loaded later by pulling a slide so grain would drop from the sloping floor of the bin into an auger conveyor which carried it to the bucket elevator and into the truck. This bin had a capacity of about 35,000 pounds, with a total weight of 1800 pounds. It was operated by a 4½-horsepower gas engine, but Mr. Huls said 2-horsepower would be better. A mistake was made in building it too high. It stood nine feet above the slope of the floor, requiring more power than necessary. Four feet less height, adding that much capacity to the width, would be more economical. Motor trucks with trailers haul about eight tons per load, the driver loading and unloading with no particular labor.

Break that habit



In the early days—before our time—when grain was shipped in olden sailing vessels, it was *sacked* to help in overcoming the listing of the ships on their then long and dangerous voyages around the Horn.

That was in the old days of '49. But it started a costly habit. Using sacks to ship grain has stayed in California—though the rest of the grain-growing world discarded the habit long ago. Stayed, in spite of the fact that California mills and railroads are fully equipped to handle grain in bulk.

How do farmers in other grain districts handle grain in bulk? They install metal grain bins on their farms. They thresh directly into dump wagons and haul to their own storage bins. They cheat the rats, the rain and the thieves. They eliminate the entire cost of sacks, twine and needless labor.

Use metal grain bins

CALCO Metal Grain Bins are made for the California grain grower—to save grain and the cost of marketing grain. Two men with hammers and monkey wrenches can erect a Calco Bin very quickly with the punched and shaped-to-fit galvanized sheets that come. Strong bolts hold the rust-resisting sheets together securely.

A Calco Metal Grain Bin will last a great many years. It will pay for itself quickly—and then costs nothing. It fits the economical bulk handling facilities of mills and railroads. The Calco Bin breaks the old, costly, disadvantageous, rat-feeding, grain-losing sack habit.

Get this booklet—free

Write for the booklet, "Calco Grain Bins." It compares costs in a simple, direct way. It tells of actual installations of Calco Bins. You should have it. It's entirely free if you write for it at once.

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Practical Ranchers and Growers

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Send them your orders for prompt and proper attention.

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One man with a **Louden Litter Carrier** on Louden overhead steel track system can clean the barns in half the time that two men would take without it. **That's** Louden economy. On **every** up-to-date farm—**your** farm—the **Louden Litter Carrier** and steel track system will earn its cost many times a year. Track can be bracketed to barn wall—out one door—in at other, and in this way no switch is needed. Manure loaded direct on wagon or spreader—its full fertilizing value thus saved.

Louden Litter Carriers

are made of heavy galvanized steel—wear for years; have improved worm gear—**1 pound on chain lifts 40 pounds in box**; box stands at any elevation—raised or lowered any distance up to 25 feet; have many **special advantages not found in other makes.**

Send today for valuable **free** book on manure uses, and catalog of hay and litter carriers, sanitary steel stalls, cow stanchions, etc., for modern barns.

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424 E. THIRD ST., Los Angeles, California

Field and Garden Suggestions

[Written for Pacific Rural Press.]

"String Beans" Mostly Water.

A Sacramento cafeteria bought some canned string "beans" which were mostly water. One can was submitted to the State Department of Weights and Measures for inspection. It was labeled "net weight, six pounds." This proved to be the true net weight of the contents, of which three pounds six ounces were brine and two pounds ten ounces out of the six pounds net contents were really string beans. State Superintendent of Weights and Measures Charles G. Johnson wrote to the packers that such a statement of net contents, if permitted on the labels, would defeat the purpose of the law, which is to prevent deception of consumers as well as to prevent unfair competition by dishonest packers under cover of the law. About 17,000 cases of the canned products of this one packer were held up until they were honestly labeled.

Memorial Trees Along Highways.

Native trees are to be planted along our State highways as memorials for our soldiers and sailors by the State Highway Commission under supervision of the State Forester. This is a proposition long boosted by State Forester G. M. Homans and his assistant, M. B. Pratt, who carried on his work while Mr. Homans has been in Uncle Sam's service at Camp Zachary Taylor and later in Massachusetts recovering from influenza. A great many acorns have been planted near Paso Robles and the trees from these are now three or four feet tall. They have been offered by the State Forestry Department to the Highway Commission, who will plant and care for them. Soldiers and sailors who want work will be employed in planting them.

Alfalfa Five Per Cent Johnson Grass.

A man in Texas shipped two tons of alfalfa seed to a Californian. On its arrival, the County Horticultural Commissioner found that it contained 5 per cent of Johnson grass seed. He notified the shipper that it was held at his disposal, either to be destroyed or to be shipped back. The Texan ordered it shipped back and paid the freight both ways. The California district to which it was shipped was saved from this dreaded pest. There is need of a drastic law to prevent such shipments. Such a bill is before the Legislature and it is up to the farmers of the State to bring pressure on the legislators to push it through if they want such protection.

Rice Crop Half to Mills.

About half of the rice crop is yet to be taken to the mills, according to Chairman William C. Davis of the valuation committee of the California Rice Committee of the Food Administration. Quite a few acres were cut but can never be threshed. About three-quarters of a million bags have become damp, musty and reduced in value 50c to $1.50 below the $4.32 price fixed. Some is entirely worthless. The mills are all busy, many of them night and day. Most rice growers have had a prosperous season and the acreage next year will be greatly enlarged.

Many Varieties of Seed Beans.

Eleven varieties of beans were grown for seed on 50 acres near Carpinteria, Santa Barbara county, by H. E. Ellery last season. Mr. Ellery had 475 acres of seed beans, including a field in Monterey county. About 40 acres were Improved Burpee or Fordhook limas, a lot were Henderson Bush limas, and the rest Bluepods, Kentucky Wonders, etc. These are grown on contract for an Eastern seed house.

Nine-tenths of Tulare Squirrels Dead.

Ninety per cent of the squirrels in Tulare county have been killed this season and farmers are patting themselves on the back, according to Horticultural Commissioner Charles Collins, who says that never has any other activity of his office been of so much value as this—not even excepting scale control—on his 39,000 acres of citrus trees. Through the Horticultural Commissioner's office over 123 tons of poisoned barley, two carloads of carbon bisulphide, 250,000 waste balls, and 2000 gallons of distillate and gasoline have been sold at cost for rodent destruction. This is in addition to what was sold commercially.

More Barley Seed on Worn Soil.

In planting barley for hay, Overfelt Bros., producers of 400 acres of the best hay of San Benito county in 1918, say that early planting makes solider stalks and better hay. They used about 100 pounds of seed per acre last spring because the ground had been in hay the previous crop and the grain does not stool so well on worn ground. When they plant for hay on rich ground or after a crop of sugar beets, 80 pounds of seed per acre are enough.

Kentucky Wonders for Seed.

Twenty-seven sacks of Kentucky Wonder seed beans per acre were being threshed last fall in a Monterey county field by A. L. Roddick. They had been contracted at 11½c per pound to a California seed firm for delivery to one in Michigan. Mr. Roddick said the Kentucky Wonders in his district varied from 20 to 30 sacks per acre. They make long vines, which are not poled in field culture, but which break easier than any other variety ahead of the cutter and cut easily under ground. Being matted, they are handled with less labor than white beans because a whole pile is picked up at once, with no raking up of stray vines.

Small Mustard Seed Crop.

A very small acreage of mustard seed was grown in Lompoc Valley last season because it was an unfavorable season at planting time. All the rain came at once and there was no time to prepare the ground to hold moisture. Lompoc Valley grows practically all the cultivated mustard grown in the United States. Dealers there also buy wild mustard seed.

Lima Beans Must Have Fog.

Five counties grow practically all the limas of the United States. These are Santa Barbara, Ventura, Los Angeles, Orange and San Diego. Limas must be grown in the fog belt and production is heaviest near the ocean, where fogs are most persistent. Many failures have been made trying to grow them in other counties and even in these five in locations where the fog is shut off. Ventura county produces most and has the highest average yields per acre, according to Manager R. L. Churchill of the California Lima Bean Growers' Association.

Why Different Speeds on Threshers.

The teeth on a threshing machine cylinder should travel about 5000 feet per minute at their bases. Two cylinders of different diameters and the same revolutions per minute will give the teeth different speeds. This is why the one with a smaller cylinder must make more revolutions per minute to thresh the grain well. Sometimes threshermen try to run at the same speed as others without considering this fact. If they run too fast, the separation is poor—if too slow, the grain is not beaten out of the heads.

Tankards for Cows.

Twenty-five to thirty-five tons of yellow tankard beets per acreage are grown for the dairy cattle belonging to the Pecho Ranch and Stock Co. of San Luis Obispo county. The tankards are fed during the dry season to cows, all they will eat, about 60 pounds each per day.

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Complete information on every planting subject. Valuable information for stockmen, ranchers, fruit growers, florists, and gardeners. One of our customers pronounced it the best book of its kind ever published. Send for a free copy and verify this statement to your own satisfaction.

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Every rancher, stockman or dairyman should read this book. Thirty signed letters give eye-opening facts about this improved variety of alfalfa. Don't take our word that Germain's Proven Hairy Peruvian is the best alfalfa on the market—read what satisfied ranchers and stockmen from all parts of the state have to say about it.

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Established 1871
N. E. Corner Sixth & Main Sts.
Opp. P. E. Depot
Los Angeles, Cal.

Agricultural Notes

It is proposed to colonize the James ranch, twenty-nine miles from Fresno. The proposed method is to divide the 3600 acres into 40-acre tracts.

Cotton ginned in the United States prior to January 16 was 11,051,845 running bales. Ginnings by States include Arizona, 35,713 bales, and California, 55,440.

F. Furkuda, a Japanese farmer of Livingston, will plant about 20 acres to eggplant. He had two acres last year and finds that it does well on the sandy soil of Livingston.

The first carload of Durango cotton seed was received in Bakersfield last week—ordered by Robert Hulme of the California Products Co. It will be bought by farmers at wholesale price.

In addition to the list of tractors and implements, mentioned on another page, participating in the tractor demonstration at Cupertino, were the John Deere plows and disk harrows and the Clark cutaway harrows.

One man planted alfalfa seed the same day that his neighbor on adjoining land planted. He got a perfect stand, while the neighbor did not get enough to cut. A strong argument for the seed bill now before the Legislature.

S. Husman of Ingomar (Merced county) grew some thirty tons of honey sorghum silage to the acre this year and he believes he can increase this. He planted June 19, which he considers too late, planting the rows 33 inches apart.

The Visalia factory of the Pingree Sugar Company will not operate this season, as it has been found impossible to create enough interest in beet growing in sufficient amount to carry the plant through the season. Farmers generally aim to plant what pays them best.

The United States Department of Agriculture has conducted experiments and proved that it is possible to recover most of the starch from frozen and otherwise spoiled potatoes dumped at terminal markets. This leads specialists of the department to believe that attempts should be made to salvage such stock.

The highest price ever recorded for Coast hops is reported in Portland. Nine thousand bales of Oregon hops sold for $500,000—at the rate of 25 cents a pound. The contract is for delivery of 3000 bales a year for three years to a London firm. English demands have become strong since the armistice was signed.

Some of Mr. Husman's comments on his honey sorghum are: "Hard for binder and silage cutter to handle; heavy for men to handle; makes good quality silage; toughness of outer layer objectionable to cows; betters cows' condition materially but not a great deal of direct result noticed in increasing milk flow; packs in silo easily and does not readily spoil."

Reduced freight rates over various routes have been announced by the Shipping Board, including: Cotton from American gulf ports to Ghent, $5.10 per 100 lbs.; coal from American gulf ports to Chile, $16.50 per gross ton; coal from Hampton Roads to Hawaiian Islands, $20 a ton; barley from the Pacific Coast to the United Kingdom (for the Food Administration), $52.50 a short ton.

J. E. Meadows, south of Huron, near Hanford, will plant 640 acres of wheat under the "dry farming" plan evolved by Prof. Hardy W. Campbell of the Southern Pacific Company's land department. The grain will be drilled in rows 24 inches apart with a grain of wheat planted every six inches in the row. Special planting machinery is necessary. This will be an interesting experiment for Kings county.

The United States Department of Agriculture, in its plant breeding work with cow peas during the past year, has developed several new kinds that look promising. These are now being grown in quantity for distribution. Two hybrid selections—unnamed as yet—have been found highly resistant to both nematode and wilt and are said to be superior also for the production of seed and forage. These two selections are being grown for more extensive field tests next year.

The U. S. Department of Agriculture is sending an expert to Kern county, who will grade the lint cotton of any growers who desire it free of charge. The expert, George Butterfield, will also be able to put growers in direct touch with buyers in the East desiring long-staple Egyptian cotton. Ten members of Congress from cotton-growing States have sent a telegram to President Wilson urging that all embargos against cotton exports to non-enemy countries be lifted at once.

GREASEWOOD OR GREASEWEED.

To the Editor: The "greaseweed" that I. B. F. of San Ardo asked about in your issue of January 11 is called Eriodictyon tomentosum. The botanical name is as bad as the weed. In the fall it has seed and the wind scatters it. I have had it come up in barley and clog the machine so it could not cut the grain. Last season, before I cut my grain, on damp mornings I had men go through what grain I could, and cut the weed. In such places I saved the grain. Where I could not cut out the weed, the stock got the grain. Grain will mold in the sack if there is much of the weed in the grain.—T. J. McCool, San Ardo.

[Thank you. We evidently took the writing to be greasewood and not greaseweed, which must be surely a bad one. We regret we can tell nothing about getting rid of it.—Editor.]

SAN FRANCISCO'S BIG AUTO SHOW.

Everyone interested in automobiles, trucks, tractors and accessories, and that means practically every farmer, should visit the big auto show to be held in the Exposition Auditorium, San Francisco, February 6-15. This is promised by the management to be the biggest and most complete show ever staged in this city. Many of the manufacturers are getting out new models at this time and these will all be shown.

There will be some special attractions, such as the Liberty motor, the contribution of the United States to the great war; the big tanks of Cantigney and their smaller brothers, the whippet tanks.

Among those in charge of the exhibits will be many who have come back from France, and they will have stories to tell of the use of autos, trucks and tractors in the great conflict that will be of special value and interest.

SEED POTATOES

Oregon-grown, selected strains. A car of genuine British Queen from California certified strain. Two cars Snow, Burbank, Wonder, and other varieties.

H. A. HYDE, WATSONVILLE.

Twice The Work-Half The Expense



MOLINE UNIVERSAL TRACTOR

"One man and a Moline-Universal Tractor will do about the same work (taking a season through) as two men with four horse teams."— *Crumbaugh Bros., Vandalia, Illinois.*

Statements such as this from Moline-Universal owners—and we have many of them—support our claim that the Moline-Universal enables one man to do twice as much work at about half the expense as is possible with horses.

With a Moline-Universal you can plow 9 acres a day, double disc 27 acres, drill 35 acres, cultivate 15 to 20 acres, mow 25 to 35 acres, and harvest 30 to 35 acres. Figure out for yourself how long this would take you with horses. Then keep in mind that in case of necessity you can work night as well as day, because the Moline-Universal has complete electrical equipment, including electric lights and self-starter.

As for expense it runs about half what the same work with horses would cost.

Charles J. Deck of McArthur, N. D., says: "I plowed 60 acres—fuel amounted to $32.94. It would have cost me $82.40 to plow this with 6 horses, not figuring feed for Sunday, or rainy days. I did not have to get up at 5 o'clock every morning either." Mr. Beck did not consider the saving of his own time.

"If I hadn't had the Moline-Universal I would have kept 4 more horses, which are a bigger expense than the tractor," says J. E. Carey of Wilmington, Ohio.

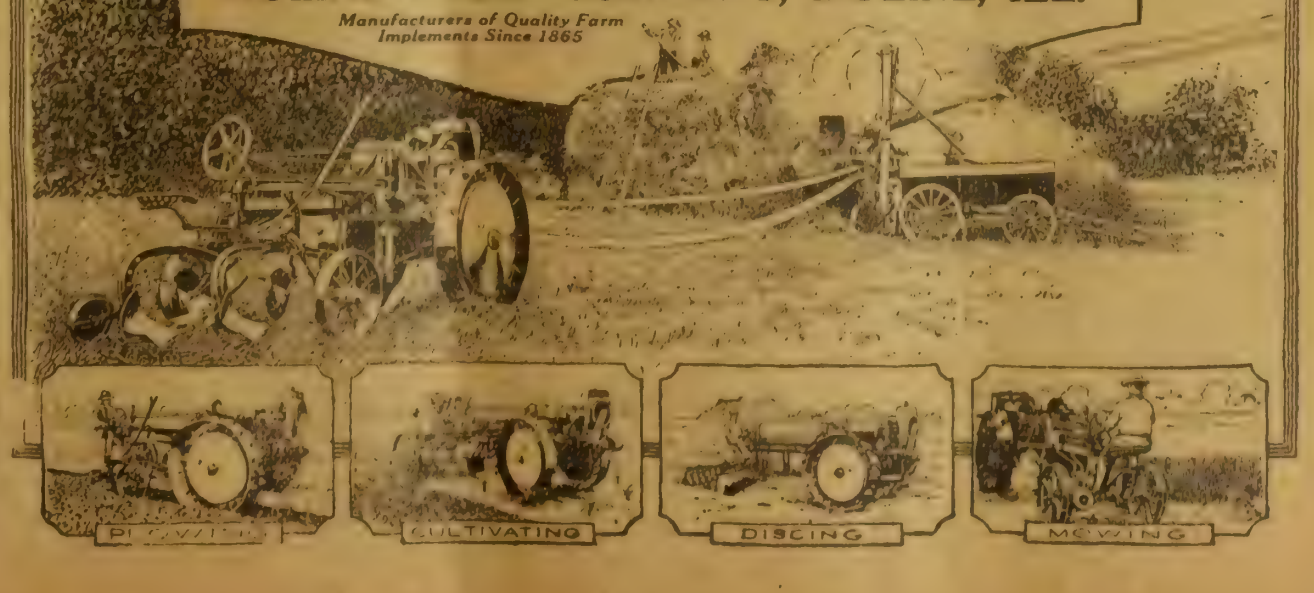
Many other statements similar to this prove that the cost of operating a Moline-Universal Tractor is no greater than maintaining three or four horses, while it will do twice as much work. Then there is another big advantage—belt work. The Moline-Universal has enough power for all ordinary belt power requirements.

"I purchased a 20 x 36 separator and then threshed my grain, pulling it with the Moline Model D. The tractor handled this separator very easily and did fine work. After I had threshed my own grain, I threshed for four of my neighbors, about 350 acres in all."—G. C. Appenzeller, Bouton, Ia.

Considered from every angle the Moline-Universal is the best tractor for you. It does all farm work, including cultivating. One man operates both tractor and implement from the seat of the implement. It will make you money. See your Moline dealer now or write us for full information. Address Dept. 97.

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Manufacturers of Quality Farm Implements Since 1865



We Manufacture Levelers for Any Power From 6 Horses to a 75 H. P. Tractor

A Schmeiser Leveler

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WILL WORK WONDERS ON YOUR FARM



Moving immense amounts of dirt daily, and working on ground too tough for horses and Fresnos to tackle, SCHMEISER POWER LAND LEVELERS are now being used with utmost success by a great many ranchers, large and small—also by contractors—saving their owners time, labor and money.

WE SEND THEM ON THREE DAYS' TRIAL.

So extremely simple, a child could operate one, as a simple twist of the wrist raises and lowers the bucket or holds it stationary, as the case may require.

YOU SHOULD

send for our latest catalog, J-600, which is full of interesting information on Labor Saving Devices and machines for moving the earth.

Schmeiser Manufacturing Co.

12 Mechanic Street DAVIS, CAL.

Manufacturers of

Sure Pop Almond Huller and Separator, 3 sizes; McGarvin Fruit and Olive Graders, any size; Schandoney & Harrington Equalizing Hitches, any size; Diamond Special Harrows, Baker Clips, Clevises; and Schmeiser Portable Automatic Hay Derricks. We sell the Martin Ditcher and Grader.



Better Seed Beds —Bigger Yields

Make the most of high-priced seed and fertilizers. Put them into perfect seed beds made as smooth as a flower bed with an

"Acme" Pulverizing Harrow

"The Coulters Do the Work." They slice their way through sod and trash. They fill air spaces and compact the furrow slices. They pulverize and level the surface soil.

The "Acme" Harrow is light in draft—easy on the team, and *you* ride. Sizes: 1-horse to 4-horse; the larger sizes are just right for the tractor.

Ask your dealer to show you the "Acme." Write us today for prices and new catalog. Be sure also to ask about our new "Acme" *Disc* Harrow.

DUANE H. NASH Inc.

651 Elm Street Millington N. J.



"Acme" Standard No. 23—Two-horse Harrow

This model has 12 coulters and cuts 6½ ft.
No. 26 has 16 coulters and cuts 8½ ft.

The greatest crop-raisers you ever used—Planet Jrs.

Planet Jr. implements are so practical in design that they do the most thorough work in the quickest time and with least labor. This is the result of over 45 years of actual farming and manufacturing experience. They are fully guaranteed.

No. 4 Planet Jr. Combined Hill and Drill Seeder, Wheel-Hoe, Cultivator and Plow is a special favorite, and there are more of them in use throughout the world than any other seeder made. Opens the furrow, sows all garden seeds (in hills or drills), covers, rolls down and marks the next row all at one operation. Hoes, plows and cultivates all through the season. A hand machine that will pay for itself in time, labor and seed saved in a single season.

No. 8 Planet Jr. Horse-Hoe does a greater variety of work in corn, potatoes, and other crops requiring similar cultivation, and does it more thoroughly, than any other one-horse cultivator made. It is stronger, better made and finished. Lasts longer. Its depth regulator and extra long frame make it steady-running. Cultivates deep or shallow and different widths of rows.



S. L. ALLEN & CO. Inc. Box 1203F Philadelphia

72-page Catalog, free!

Illustrates Planet Jrs. doing actual farm and garden work, and describes over 55 different tools, including Seeders, Wheel-Hoes, Horse-Hoes, Harrows, Orchard-, Beet and Row-Wheel Riding Cultivators. Write postal for it today! *Agencies in all principal Pacific Coast cities*

Mechanical Power on the Farm

Users of tractors, engines, pumping plants, motor trucks, automobiles, electric motors, and other mechanical farm power are invited to make this department an exchange of their experiences and troubles.

TRAVELING TRACTOR SCHOOL.

Well, the boys got their wires crossed and their spark plug gaskets omitted and bolts loosened unbeknownst. They had things taken to pieces and were told to put them together again. They had three or four old automobiles and eight or ten tractors in conditions ranging from full running regalia and fringed with students, down to the most desolate broken-down skeletons. They were performing most all of the operations of a tractor driver except actual pulling of implements when the writer visited them at the tractor drivers' school held for three weeks at Elk Grove. About 50 of the 108 originally enrolled had proved they were there for business, even though it meant hard work and dirty clothes. It was one of the three traveling schools supported jointly by the high schools and by Government funds administered by the State Board of Education. R. R. Reedy, who was in immediate charge, pointed to ponds scattered over the grassy field in which they were to plow this week, and we saw a big automobile stuck in deep, soft mud beside one such puddle at the highest part of the field. Unfortunately such conditions did not encourage the plowing, which students wanted to do. Nevertheless, they were running empty tractors even over the ground where the automobile stuck and were doing all kinds of "trouble-shooting" both in the field and in the large building which served as a tractor and automobile garage and lecture room. Those who came for business were well repaid.

The series of such schools now being carried on in California were organized as war emergency courses to supply the muchly needed tractor drivers. They were under direction of J. C. Beswick of the State Board of Education and hundreds, if not thousands, have already received practical instruction.

No more will be held than those already scheduled; but they have so well proved the value of visiting rural towns with instructors and tractors that it is hoped that the University Farm may be provided with funds to repeat the project annually or continually. If you want such a course in your town, write to the Pacific Rural Press and we will place your letters where they will do the most good.

TRACTOR OR MULES?

To the Editor: Which is the best tractor of about 12 horsepower on the drawbar—a wheel or track type? Will any of them pull three 10-inch plows satisfactorily without straining or lost time? Is it cheaper to own and operate one of these engines than it is to own eight or ten good mules, work or no work, and feed them the whole year, to farm 160 acres? I could put this amount of hay through my milk cows and get better results, I think. —J. H. L., Williams.

You will be benefitting humanity as well as yourself if you turn the hay into milk and let distillate do your work. If you keep a tractor conscientiously lubricated and all the nuts tight, and if you do not overload it we feel entirely safe in saying that it will last until you outgrow it and want another. Most any of the well-known makes of tractors of the size you mention will be not only cheaper to maintain than the draft stock to correspond if you have three or four months' work for it, but will be cheaper to run and it will get your work done on time. Three tons is a light load for a 12-20 tractor in fair plowing condition and going deeper than ordinarily. You err on the right side, however, for if there are hard spots, slippery spots, or sticky spots, or uphill pulls in the field, they may pull you to the limit, and the same is true where the plow varies in depth with the same adjustment. It is better to keep on plugging with three tens than to use four tens or three fourteens and be stopped much of the time. If the footing is good all over, a wheel tractor will probably please you best. But if a wheel tractor gets stalled in soft or slippery places very frequently, you will lose more than the extra first-cost and maintenance of the track type.

THREE-DAY TRACTOR DEMONSTRATION.

The three-day tractor demonstration at Cupertino last week was one of the most successful local demonstrations so far held under the auspices of the University of California. The attendance was excellent—around 2000 every day—and great interest was manifested by those who came from all parts of the Santa Clara Valley.

The demonstration was largely of orchard work, and showed all sized machines, from the Beeman tractor with one small plow attached to the large machines pulling eight bottoms and turning over the greater part of the land between two tree rows, at one time. Cultivation with tractor-drawn disk harrows and other tillage implements was also demonstrated.

The following tractors and implements took part: Avery tractors, 3 sizes; Bean tractor; Beeman Garden tractor; Best tracklayers, 2 sizes; Bates Steel Mule; Cleveland tractors; Fageol tractors; Holt Caterpillar tractor; Killefer double disk harrow; Knapp disk plows; Moline tractor and plows; Oliver chilled plow; P. and O. plows; springtooth harrows, etc.; Samson Sieve-Grip tractor; Wallis Cub tractor, and Yuba tractors and plows.

ANOTHER WAY TO SAVE ELBOW GREASE.

To the Editor: I read an article in the Rural Press headed "Less Elbow Grease to Start Cold Tractor." This may help to save someone's elbow grease: I build a fire somewhere near the tractors at a safe distance and heat a small pan of water while we are getting ready to start. By the time we are ready the water is hot. I then take it off the fire and put the priming can full of gas in it. In a very few minutes the gas is hot. If very cold, I take out one plug and put a little gasoline on the points and prime with this hot gas. My I. H. C. then runs on distillate without any more gasoline. But my Avery must be run on gasoline for a few minutes. This way I have no trouble starting. — Alfred Labadie, Marysville.

MACHINE SHOP PRACTICE INSTRUCTION.

Machine shop practice instruction will be given in a course announced today at the University Extension office, 599 Market street, San Francisco. The first meeting of the class will be held Wednesday evening, January 29, at 7 o'clock, in the Polytechnic High School. On Monday evening, January 27, at 7 o'clock, at the Lick School, Sixteenth and Utah streets, an extension class in shop instruction in oxy-acetylene welding will begin.

WORTH WHILE TO DOPE A TANK?

To the Editor: I have a twelve-year-old 3000-gallon galvanized water tank that has been on an exposed tower. I wish to put this tank in a new tank house, over a cellar, etc. Would a good coat of hot asphaltum inside and out give it longer usefulness, or have you anything better to suggest?—J. P., Pleasant Grove.

[Who can answer?—Editor.]

REO



Another Triumph for Reo Engineering

There has existed a great need for a more adaptable motor truck.

The need was not for a chassis, for the Reo "Speed Wagon" had proven, in several years of use, that this chassis is ideal for every class of farm hauling.

But there was great demand for a body that would enable you to carry a maximum load of any commodity regardless of its density.

Many attempts have been made to develop a body that would be readily convertible into several practical forms.

Some of these have been successful to a degree.

Fault with all of them, however, was too much complication—too many adjustments and connections to get out of order.

Such construction also ran into a lot of needless weight to be carried all the time.

It remained for the Reo engineers to solve the problem in the simple, direct, substantial Reo way.

And they did it, not by making a convertible body that would fold first into one form and then another, but by a set of sectional units with one basic body as a foundation.

This basic body itself performs fully fifty per cent of all delivery service.

No user will need all the extra sections.

Each user will, however, need one or several of them.

You buy the Reo chassis equipped with the basic—low express—body shown below.

Then, to fit your special service, you select such other attachments or sections as you find most applicable to your work.

This Reo body in its several forms meets every requirement of speedy, economical hauling—in city and suburban as well as rural service.

There are seven forms in all.

On the left we show four forms of this body.

The other forms you may obtain at a few dollars extra cost.

Need we add that the chassis on which these body types are mounted has been longer in service and has been more conclusively proven than any other?

It is, in fact, the pioneer of its class—the first motor truck to be mounted on pneumatic tires.

Also, lest you forget: Reo was the first to see the need for, and to equip a motor truck with electric starter and lights.

The very classification "Speed Wagon" was original with Reo.

This Reo proved the superiority and the greater economy of the pneumatic-tired truck.

In operation and upkeep cost this Reo easily surpasses all others.

And so it should—for it represents the ripest experience and the soundest engineering known to the industry.

Your own Reo dealer will show you this versatile Reo "Speed Wagon" with the seven styles of bodies and quote you price on such as you may select as best suited to your own requirements.

Demand is—tremendous. Always is for Reos, but this season more so than ever before.

Only way to be at all certain of getting a Reo "Speed Wagon" for early delivery is to place your order at once.

Today won't be a minute too soon.

Reo Motor Car Company, Lansing, Michigan

Price—Chassis equipped with low Express body (shown below) $1350 f. o. b. factory, plus Special Federal Tax.

Legislative Matters of Interest to Farmers

(Continued from page 141)

generated may be sold to anyone or used for pumping within the district or for other power purposes.

Agricultural Efficiency Committee.

The Committee on Efficiency and Economy in State Government, appointed by Governor Stephens, has appointed its sub-committees, which are to have hearings and make recommendations on particular subjects assigned to them. The one which is to consider the agricultural offices and commissions will also look into public works and properties and into natural resources. Its members and their agricultural interests are noted below. Former U. S. Senator Frank P. Flint of Los Angeles is chairman of the sub-committee, and so far as we know he is not directly financially interested in farm land. State Controller John S. Chambers is another member not directly interested in farming. Chairman Marshall De Motte of the State Board of Control has recently sold his 100-acre fruit ranch and bought another 80 acres. Lee A. Phillips is connected with big Delta farm operations. Clyde L. Seavey of the Board of Control has 90 acres of bean land in Sutter county and is working 20 acres of hay, beans, etc., near Sacramento in his spare time.

This sub-committee has selected a large advisory committee, including eight or ten men known all over the State for agricultural leadership. The advisory committee is expected to be a strong factor in determining what recommendations the sub-committee will make to the main committee for its final report as to what changes will be made. The agricultural sub-committee's hearings will be open to the public; and the farmers of California should attend as much as possible. These hearings and the names of the special advisory committee will be announced later.

National Fruit-Vegetable Standardization

[By Our Special Sacramento Correspondent.]

A national fruit and vegetable standards act of great importance to California fruit and vegetable producers and shippers is pending in Congress and our readers should express their views to their Congressmen and Senators at once. A meeting which represented practically the whole industry of California passed a resolution January 18 calling on State Horticultural Commissioner G. H. Hecke to be represented at a national meeting to be held in Chicago, February 5, to discuss the bill which is more shortly known as the "Lever Bill." Mr. Hecke had already made arrangements for such representation, but he feels strengthened by the resolution.

The bill, if passed, will authorize the Secretary of Agriculture to investigate the handling of fruits and vegetables from harvesting to consumption and "to establish standards of classification of fruits and vegetables according to grade, which shall be known as the official standards of the United States." Notice of establishment of standards and of changes to be made in them later must be publicly given a year before they become effective. Before issuing such a notice, the Secretary must give interested parties opportunity for consultation or hearing. After any such standard becomes effective, no one may enter into any transaction involving interstate shipment by grade of any fruits or vegetables which come within the standards except by the grades established. An exception is made of products sold only by variety. All fruits and vegetables shipped in closed packages will have to be plainly and not deceptively labeled with the name and address of producer, packer, or distributor, and the official grade of the contents. If the transaction involving shipment is not made on the basis of grades, the package must be unmistakably labeled to show this fact. Individual producers may sell direct to individual consumers without complying with this law. Packing fruit or vegetables so the exposed layer will misrepresent the interior layers is made unlawful.

The Secretary may license any competent person to act as inspector so long as he does his work right, but no inspector may certify products in which he is financially interested. The Secretary of Agriculture is also authorized to certify the grades for anyone upon request and payment of reasonable fees. Violation of any provisions involves a fine of $1,000 or imprisonment for a year, or both. An appropriation of $250,000 is made.

Now, what effect the operation of this bill would have on our own California standards and packages may only be conjectured by the wisest at this far distance from Washington. Certainly uniformity in grades, etc., is desirable for the whole United States if it can be worked out on the basis of varieties, but as certainly nobody wants hasty or ill-advised action on such an important factor of our State's production. California fruit and vegetable men are talking some of trying to get California standards adopted as the national standards so far as they will apply. At least there will be a vigorous defense of the packages and packing which are known to be satisfactory for transcontinental shipments.

ALFALFA SEED THAT MEETS YOUR CONDITIONS

If you wish to plant seed especially adapted to your soil and moisture conditions, **get this booklet before planting.**



It tells you why, and the illustrations show you why, one of our different kinds of specially selected alfalfa will yield heavier and live longer under your conditions.

Don't Delay!—The planting season is now here and you should have a copy of this booklet and our price list right away. It will be sent free upon request.

Bomberger Seed Co.
(Desk A)
728 TENTH ST., - MODESTO

BALSAM APPLES NOT POISONOUS.

To the Editor: I wish to plant some balsam apple vines, but am told that the bright red seeds and seed pods are very poisonous to children. These vines give a dense shade, grow quickly and rankly, but I can't use them if they are poisonous. Do you know anything about them?—I. V., Dinuba.

You are certainly misinformed about the balsam apple (momordica). The fruits are not poisonous and they are, in fact, eaten to some extent by Chinese in this country.

D. S. Nelson of the California Almond Company has just completed a sale of 40 acres of four-year-old almonds near Arbuckle at $250 an acre. This was part of the R. L. Roberts place.

FAGEOL
WALKING TRACTOR

THE Fageol Walking Tractor is just the kind of a Tractor you would expect the builders of the widely known and successful Fageol Motor Truck to build.

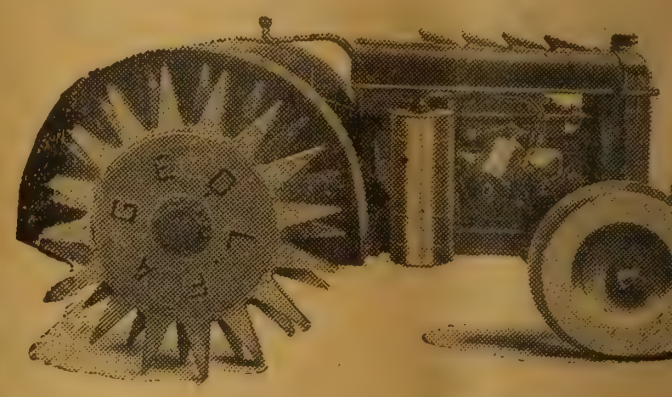
The Fageol utilizes a new traction principle—securing positive traction in all soils, with 64 walking legs, as does a team with eight legs.

There is a minimum of power-consuming parts—a live rear axle and separate clutches in each wheel.

It is a truly economical tractor—light, well built and well balanced—a tractor that will produce low cost power for any farmer.

Price $1295.00 f. o. b. Oakland. Send for booklet of information and catalog.

BUTLER-VEITCH
INCORPORATED
Sales Organization—Fageol Products
306 Syndicate Bldg., Oakland, Cal.



"My WADE Saws Four Cords an Hour!"



"The Wade is certainly the farmer's friend. I have cut 1600 cords of yellow fir wood with it, and it's as good as the day I bought it." — Dan Ross, Corbett, Oregon.

Why break your back sawing wood by hand, when the powerful little Wade Portable Gasoline Drag Saw will ***outsaw 10 men at one-tenth the cost!*** Light, simple, economical. Cuts wood of any size. Averages 8 cords to a gallon of gasoline. Thousands of Wades now in use. When not sawing wood, the 4 h. p. engine will operate other light machinery.

Wade Portable Gasoline Drag Saw





Lake County Needs a Highway

[Written for Pacific Rural Press.]

The Switzerland of California, a county abounding in health-giving mineral springs, blue lakes, and mountain air, the forgotten county, the only one in California without a railroad. Lake county needs a wagon road to the outside world that will be passable all winter. The only county in California that has decreased its population in spite of more than usually abundant rainfall and more than usually fertile soil, has lost about 40 per cent of its population largely due to the difficulty of getting crops out at any time of year. Lake county dried pears are known as the best in America, they command surprising premiums over market prices. They are made of the finest mountain fruit and dried because the roads are so bad that they cannot profitably be shipped fresh or canned and hauled out. Lake county canned string beans have been famous many years, but they are not canned in Lake county because of the heavy haul to get them out. They are taken over the mountains as they come from the field and canned in Ukiah. The acreage of these could be greatly increased, but it hasn't been increased in recent years. The pear growers thought they saw hope in the two State highway bond issues, for which they voted enthusiastically, and they quadrupled the pear acreage. These pears are not yet bearing, but they will be soon, and a large part of the fruit will be hauled out over one of the four toll roads that lead out of the county. Two free roads out of the county there are, but the toll roads are used, and any of them are hazardous or impassable in winter.

Out of the $38,000,000 voted for State highways, Lake county has received just this much: The engineering department has surveyed a seven-mile road out from Ukiah including some 6 per cent grades. Those grades will limit the loads that can be hauled on the entire trip. Lake county people and Mendocino county people do not want the proposed highway built. By making a little longer trip, the highway can follow a creek with probably not over 1 per cent grade anywhere. In prehistoric times geologists say that Clear Lake drained to the Russian River from its north end by way of this creek. Volcanic eruptions laid a dam across the head of the creek in the form of a ridge which held the water until it broke out at the southern end. This ridge would have to be cut or a grade built over it, and citizens are determined to have a highway by this route connecting Lake county with the Russian River Valley in Mendocino county, which is the route of the highway from San Francisco to Eureka. This would help some, but it would require Lake county products to be hauled to Ukah, thence shipped to San Francisco and out, or hauled on trucks via Santa Rosa, Vallejo and Sacramento. If they could be taken from the southern end of the county eastwardly, they would be almost immediately in Yolo county with its network of highways and its transcontinental railway. Such a route has been surveyed up Cache Creek, which is the present outlet. The State engineers state that by using gravel, which abounds in the creek, a highway 35 miles long, having no grade over one-half of 1 per cent, can be built at a cost of $104,000. Most of the cost would be in making long cuts in the precipitous creek bank.

This would be one connecting link and the easy grade at the upper end of the lake would be the other connecting the great central valleys of California with the Eureka highway and eventually with the coast, probably via Willits. It would permit a doubling of the cultivated level land in Lake county and would bring under the plow a number of small valleys and a great acreage of rolling hills now used only for sheep and cattle pasture. It would permit Mendocino county people to make a relatively straight drive to Sacramento, reducing the time en route by about 40 per cent. It would permit Californians to benefit from this natural health resort and playground, and would add to our scenic attractions for tourists the hitherto unknown Switzerland of California.

Bills appropriating the necessary money have passed previous Legislatures and have been vetoed by the Governor, probably on account of expense. Proponents of the road claim that no highway in California could be built at less expense per capita of the population it would serve. They include the lower Sacramento Valley and the bay cities in this estimate, which may be somewhat overdrawn, but such a road would in all probability serve a great number of these, besides increasing the food produced in the State and speeding up the tourist crop, as well as giving more people a chance at recovery of health.

"FO'ARD, HARSH."

After coming in from a twenty-mile "hike" the officer in command of a negro company said, before dismissing them, "I want all the men who are too tired to take another hike to take two paces forward."

All stepped forward except one big husky six-footer. Noticing him, the officer said, "Well, Johnson, ready for twenty miles more?"

"No, sah," replied Johnson. "Ah'm too tired to even take dem two steps."



Water

WHERE and WHEN you want it the year 'round. For house, barn, field, any place. BORE YOUR OWN WELL with our time-tested

Standard Well-Boring Outfit

Easily operated by hand. Bores wells 8 to 16 in. dia., up to 100 ft. deep. One man bored 48-ft. well in 5 hours. Another bored 5 wells averaging 75 ft. each and wrote "its a humdinger."

BORES 100 ft. WELLS by hand

Thousands used during war by U. S. and English Governments.

ONE DAY'S WORK PAYS FOR OUTFIT

Easy to get 50 cents to $2 per ft. —make $20 to $30 per day boring wells for neighbors. One man bored 47 wells — another 75 and another bored 35. Satisfied users in 46 states. Every claim *guaranteed* and *proved*. Write now, TODAY, for full information.

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Use Your AUTO As a Stationary Engine

There's a great fuel shortage —Protect yourself—saw your own wood. It's easy with our Equipment and your car to furnish power. A big labor and money saver for you. Does all a 14 H. P. engine can do.

Fits: Ford, Fordson, Reo, Hudson, Studebaker, Overland, Dodge, Buick & others

Furnishes plenty of power for filling silo, running shredders, grinding feed, sawing wood, etc.

Get one NOW — hundreds in use — Satisfaction guaranteed — only . . . $35.00

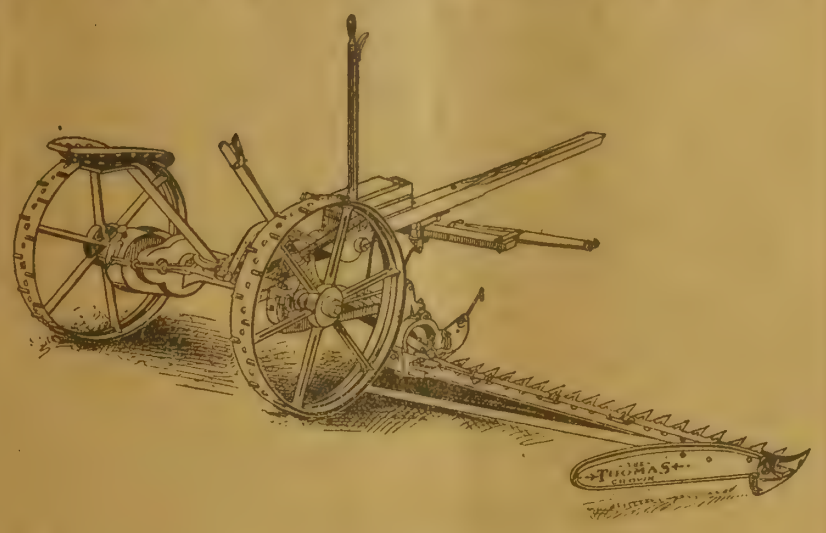
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LAWRENCE AUTO POWER EQUIPMENT

Minnesota Street. St. Paul, Minn.

LAWRENCE AUTO POWER CO.

THOMAS 2-SPEED MOWER



Your past experience has more than likely caused you to wish you had a two-speed Mower.

HERE IT IS

A high speed and a low speed. Works in heavy or light cutting and does not shake itself to pieces.

STOP AND STUDY

Then write us if you feel we can enlighten you regarding a machine that you really need.

Baker, Hamilton and Pacific Co.

SAN FRANCISCO, CALIF.

Orchard-Vineyard Work
THIS TRACTOR'S SPECIALTY

Reasons in TrackPULL Book

MOST makers make a general-use tractor. We make a **special kind**, after 34 years' experience in building orchard and vineyard machinery to meet special needs.

The Bean TrackPULL Tractor will be as famous as the noted Bean Power Sprayer when as many are in use.

Don't buy merely "a tractor" until you know the TrackPULL's special orchard and vineyard features. When you learn all the facts you'll decide



at once that a "general-purpose tractor" will not do.

BEAN TrackPULL Tractor

The TrackPULL turns in a 10-foot circle with full power — tools deep in the soil. You turn back in the same row. No getting out. No stopping.

Its low height gets under branches four feet off ground.

Makes no difference how far off-center tools are hitched.

New "After-the-War" Proposition

We have a new "After-the-War" proposition which includes a bond covering a liberal guarantee on one season's work of 90 days, without expense for repair parts. This guarantee bond is furnished each purchaser of a BEAN. A reduction in price is also effective at once, and guaranteed up until June 30, 1919.

Also manufacturers of famous Bean Power Sprayers



See this Tractor at either of our Branch Houses 131 N. Los Angeles Street Los Angeles, Cal., or Fresno, Cal.

California Dairy Council Formed

Written for Pacific Rural Press by R. H. Whitten

To promote and develop the dairy industry of California; to encourage the consumption of pure dairy products as human food; to inform the public of the food value of dairy products by publicity, demonstrations, and other educational means; to extend mutual acquaintance and co-operation among producers, manufacturers, dealers, and consumers of dairy products; and to work to the end that all may have a higher appreciation of the value of pure dairy products as human food, thereby greatly extending their production and use—these are the purposes of the California Dairy Council.

PROBABLY the most outstanding lesson of the war is the power of co-operation, for the struggle has been won through the irresistible sweep of this mighty force. As long as each nation carried on its part independently, no progress was made, but from the very day that the hosts of democracy began their united action under a unified command, Germany was doomed.

Co-operation is a power in peace as well as in war, and President Wilson has been making a supreme effort to induce the allied nations to co-operate on a higher plane than ever before. Heretofore peace settlements have been made on the basis of getting as much as possible out of the other fellow, and industrial and commercial settlements in this country have been made on the same basis. But now it is proposed that the nations settle the scrap with proper regard for the rights of the other fellow, and we find our business men already shaping their agreements and understandings along similar lines. Co-operation has demonstrated not only that it is a power to get things done, but also that it is a protection which enables those operating under it to weather a storm, and it will prove an important factor in this period of readjustment.

Already the business of the world is being done largely by organized interests. And no matter what the line may be, where there is co-operation we find the greatest advancement made and the greatest success achieved. The old spirit of competition has died out, and today producers, manufacturers and dealers are competitors in name only. Instead of sending spies into his competitors' camp to learn their secrets and laying plans to wreck them, the modern business man is attending a love feast with his competitors and is putting all of his fighting energies into a campaign for the good of the industry.

That this spirit of co-operation has reached the dairy industry was proved by the gathering at San Francisco, Friday, January 24, to consider the organization of the California Dairy Council. Probably it was the most representative body of men interested in the dairy industry that was ever gotten together. There were the dairymen with grade herds, the purebred breeders, the manufacturers of butter, of cheese, of ice cream and of condensed milk, the retail distributors of milk, the milling men, the dealers in dairy supplies—all lines relating to the industry were represented. And there was not a dissenting note sounded in the whole meeting. The object and purposes of the council were explained and everyone present fell for the plan as readily as a lonesome girl falls for a soldier in a uniform. Both moral and financial support was promised, and so generously that it will enable the council to carry on its important work in a big way.



When the farmer is educated to develop a heavy-producing herd like this one, and the public is educated to the food value of dairy products, the industry will be on a sound basis.

WORK TO BE EDUCATIONAL.

Just what will this work be? Well, it should be clearly understood at the start that this is not a producing, manufacturing or selling organization. Its work is purely educational and legislative. It does not compete with any existing organizations, but instead includes all these organizations in its membership and works for the good of all, as well as for the good of each individual dairyman.

Land, feed, labor, cows—all are higher and contribute to the increased cost of producing milk or butterfat, so the dairyman rightly figures that he should get more for his product. The milk distributor and the manufacturer of dairy products are up against rising costs, and they, too, must have more. But under existing conditions prices cannot be arbitrarily raised, for the public does not know how indispensable the products are. Milk is considered merely a beverage, butter a spreader, cheese a coaxer and ice cream a luxurious confection in the minds of most people, and the public will pay for these products only what it has been led to believe they are worth. Raise the price above the standard of value that they have established and they begin to use substitutes, which lessens the demand for dairy products and the prices are soon back again.

MILK AN INDISPENSABLE FOOD.

Consequently, one of the objects of the council is to capitalize the knowledge that has recently been brought to light by Dr. E. V. McCollum and others regarding the food value of milk, and persistently keep it before the public through all available channels of publicity. Provided Dr. McCollum's discoveries are given proper publicity, all worry over the problem of substitutes for butter can be banished, for he has found that dairy products alone contain a vitamine which is absolutely necessary to the proper maintenance of human life, and that persons when deprived of it become weak, torpid and prone to disease. He found, too, that milk is one of the best all-around foods for adults as well as children.

A quart of milk is equal in food value to 8 eggs, 2 pounds of chicken, 3 pounds of codfish, ¾ pound of beef, 4/5 pound of pork chops, 3/5 pound of ham, so if it costs 14 cents or even 16 cents a quart it is still the cheapest food of the lot. And not only does the cow produce one of the most economical foods, but she supplies one for which there is no substitute—a food which constitutes an indispensable part of our diet and without which we cannot develop properly.

But how many people know these vital facts? How many know that butter substitutes do not contain the vitamines necessary to maintain human life? The manufacturers of substitutes and of almost all other foodstuffs advertise extensively and persistently and they constantly create a wider demand for their products, but those interested in the dairy industry do nothing except to sit back and bemoan their fate.

PUBLIC MUST BE EDUCATED.

They have something to moan about, too, for consumption of dairy products is not keeping pace with production. One of the milk distributors stated at the meeting that San Francisco is not buying as much milk now as she did eight or ten

Calf Enemies

WHITE SCOURS
BLACKLEG

Your Veterinarian can stamp them out with **Cutter's** Anti-Calf Scour Serum and **Cutter's Germ Free** Blackleg Filtrate and Aggressin, or **Cutter's** Blackleg Pills.

Ask him about them. If he hasn't our literature, write to us for information on these products.

The Cutter Laboratory
Berkeley, Cal., or Chicago, Ill.
"The Laboratory That Knows How"



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Butter making is the chief business of the Holland Dairymen, the originators of the Holstein-Friesian breed of cattle. Upwards of forty million pounds of butter per year is exported from that little country, which is more per cow, and more per acre, than does any other country export.

HOLSTEIN CATTLE

Send for our booklets—they contain much valuable information.

The Holstein-Friesian Assn. of America
Box 141 BRATTLEBORO, VT.

REGISTERED HOLSTEINS

Creamcup Herd offers service bulls and bull calves of 34-lb. breeding. Females offered for foundation stock. Tuberculin tested.

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years ago, yet the population is much larger. Figures for the State are not available, but in the United States there are about 23,000,000 dairy cows, producing 89,000,000,000 pounds of milk. Large as this may appear, after taking out dairy products it is not sufficient for one full glass per capita per day. And yet every child should drink a full quart, and every adult at least a pint. Why, if advertising would increase the per capita consumption but one-half a glass per day, it would take care of the production of 11,500,000 additional cows. And to accomplish this ought not to be difficult, for when milk is offered on the basis of its relative food value it has all other foodstuffs backed off the map.

Consider what the California Fruit Growers' Exchange did. It increased the per capita consumption of oranges 71 per cent in ten years with only a 21 per cent increase in population. An even greater percentage of increase in the consumption of dairy products should be made, and one of the chief objects of the council will be to conduct an extensive publicity campaign which shall give dairy products the place they rightly deserve in the diet of the people of our State.

DAIRYMAN NEEDS EDUCATING, TOO.

But the dairyman himself needs to be educated quite as much as the consuming public. The educating of the consumers may result in a moderate increase in the price of dairy products, but a good share of the dairyman's increased profits must come through lower cost of production. As explained by Ed H. Webster in last week's issue, the average dairyman is only 50 per cent efficient. His cows average only 180 pounds of butterfat, while they should produce twice this amount. So he must test his cows, weed out the poor ones, and breed up. He must feed more scientifically. He must inject system into his work and cut labor costs. He must become a scientific dairyman, instead of a mere plodder.

So the council will work with the dairyman, showing him how to increase production, reduce expenses and make a good profit at prices which now mean very little profit, or perhaps no profit at all.

WILL ADJUST DIFFERENCES.

A third and very important object will be to provide a common meeting ground, or forum, where all the interests dependent upon the dairy cow or benefited by the use of her products may meet together, air their grievances and adjust their differences. The Food Administration did much to convince the public that the producers and distributors were not making an unreasonable profit and to increase the consumption of dairy products, but with the passing out of that agency the dairy industry is left in a serious position—too much at the mercy of outside interests.

Selfish interests of the city people prompt them to agitate and insist upon cheap milk and dairy products. This is not to be wondered at, for it is human nature to want to buy as cheaply as possible, and these people, thinking only of themselves and knowing nothing of the other fellow's many problems, brand the dairyman and the distributors as profiteers, make false accusations, insist upon prosecution, and sometimes resort to boycotts.

So if the milk distributors of Los Angeles, for instance, find it necessary to increase the price of milk from 12 to 14 cents, instead of doing so arbitrarily they will an-

(Concluded on page 161)



DE LAVAL

The World's Greatest Cream Saver

All over the world creamerymen, big milk concerns, dairy authorities and cow owners who have special opportunity for judging the worth of cream separators have for years recognized the superior skimming and all-around efficiency of the De Laval.

That's why 98% of the plants throughout the world separating large quantities of milk use the De Laval. It skims so much closer that they can't afford to use any other machine.

That's why 2,325,000 De Lavals are in daily use, more than all other makes combined.

Not only is the De Laval the greatest cream saver but it turns easier, is easier to wash, has larger capacity and greater durability than any other separator.

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ALPHA GASOLINE ENGINES
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EVERYTHING FOR THE DAIRY

Catalog of any of these lines mailed upon request.

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B-K



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Save every Calf. High meat and milk prices make control of Calf Scours doubly necessary.

Scouring calves indicate a germ infection that is likely to run through your entire herd with serious losses. The loss of one calf is bad enough, but nothing compared to your loss when the infection spreads, as it will unless checked. Then your year's work in building up your herd is wasted and your profits lost.

Our method of handling calves will promptly stop scours and finally banish it from the premises. One good calf saved will repay the expense of protecting your stock for a long time against the disease.

B-K, the powerful germicide and disinfectant, is especially adapted to this work. B-K contains no poison, acid nor oil. When used internally it destroys germs, heals inflamed membranes, relieves irritation, restores healthy action. B-K may be given freely in the milk and drinking water.

The B-K plan is simple and practical. It is giving wonderful results. A well known breeder of registered stock says:

"We found vaccines of no value in stopping calf scours, but the prompt, efficient treatment with B-K checked the trouble quickly and saved us the loss of many valuable calves."

B-K is sold by Dairy and Farm Supply Dealers, General Stores, Druggists, etc. If your dealer does not have it, send us his name.

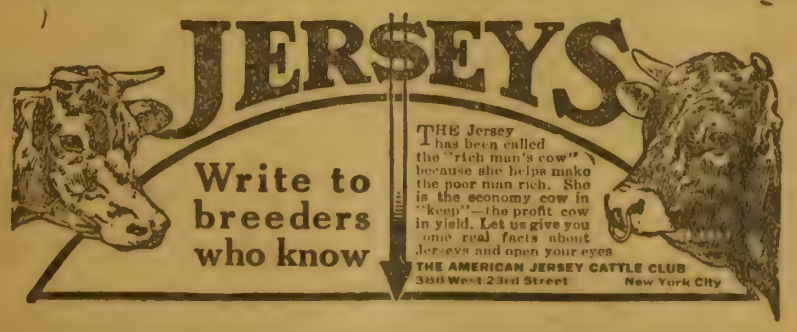
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FREE BULLETINS: Send for our valuable bulletin No. 136, "Calf Scours," also information on other farm uses and our "Trial Offer."

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N. H. LOCKE CO.
Lockeford, Cal.
Choice young bulls of King's Valet Blood, backed by Records.
Call at the ranch and make selection.

VENADERA HERD REG. JERSEYS
Herd headed by Altanna Interest, Grand Champion 1918 State Fair. Awarded two other championships and 10 firsts, including Aged Herd Breeders' Young Herd, and get of sire. Young bulls for sale from dams and granddams in Register of Merit.
GUY H. MILLER, MODESTO, CAL.

LEONARD FARM JERSEYS
Bulls for sale from Register of Merit cows. Write for information.
W. J. HACKETT, CERES, CAL.

T. B. PURVINE & SONS
PETALUMA, CALIFORNIA
Breeders of
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Young bull calves for sale. Fine individuals with Register of Merit backing.

RANCHO SANTA MARGUERITA, D. F. Conant, Prop., Modesto, Cal
Register of MERIT JERSEYS A limited number

FOR LARGE AND ECONOMICAL PRODUCTION
Get one of my young Jersey bulls from a high producing dam. They are rich in the blood of Gertie of Glynllyn and Lady Letty Lambert. Occasionally one old enough for service.
A. A. JENKINS, TULARE, CAL.

Livestock and Dairy Notes

Livestock breeders all over the State are invited to send on postal cards, notes regarding their sales, State and County Fair intentions, new stock, etc.

The Dairy.

H. J. Faulkner has been engaged to succeed the late Lowell Gum as manager of the Central California Milk Producers' Association plants in Stanislaus and Merced counties.

Guy H. Miller, Modesto, has sold to Herbert G. Wylie, Los Angeles, a son of his noted herd sire, Altama Interest, to head the Jersey herd that Mr. Wylie is founding at his ranch in Santa Barbara county.

The officials of one of the largest milk concerns in Southern California have been arrested for alleged violation of the State and city milk laws in selling cowless milk made out of milk powder and aqueduct water.

W. J. Hackett, Ceres, has sold a registered Jersey cow to George A. Moore of Ripon; two to J. H. Thomas, Ceres; one to C. W. Whitmore, Modesto; one to Herbert G. Wylie, Los Angeles; and a young bull to N. Knopp, Keyes.

It seems quite the style for Holstein cows to make 40-pound records. During the week from January 13 to 20 the Holstein-Friesian Association sent out notices stating that four different cows had completed tests of more than 40 pounds of butter.

Raphaella Johanna Aaggie 3rd, the famous Holstein cow owned by the Napa State Hospital, has completed her year on test and has made the world's official record of 30,641.2 pounds of milk and 826.53 pounds of butterfat, which would mean 1033 pounds of butter. The cow's best seven-day production of milk was 930 pounds, which is also a record for the United States.

Beef Cattle.

A carload of Hereford steers raised on the Vaughn Ranch at Porterville and exhibited at the Denver Livestock Show by the Western Meat Company won second prize and sold at auction for 21c per pound.

The American Shorthorn Breeders' Association recently sounded the call of "forward march" to the tune of a $100,000 appropriation for prize money at the 1919 stock shows. This is a 40 per cent increase over any previous appropriation.

A mysterious malady has been attacking cattle in Siskiyou, Plumas and Sierra counties. It is somewhat similar to "cornstalk" disease, which has attacked herds in other States, but according to State Veterinarian J. P. Iverson efforts to combat the malady have so far been futile. It seems to attack the liver and other organs.

An Angus steer shown by the Western Meat Company of San Francisco was grand champion at the annual Denver Livestock Show. This steer was raised at the University Farm and was shown at Chicago, being purchased there by the Western Meat Company. It was two years old and weighed 1475 pounds. After the Denver show it was sold to the Brown Palace Hotel for 60c per pound.

H. H. Gable of Diamond G Ranch, Esparto, has sold his entire crop of yearling Hereford bulls to H. W. Rice of the Island of Maui, Hawaii. The purchase was made by James Wight, who has been buying purebred Herefords in the Middle West for two Hawaiian Island ranches. All of the Gable bulls were sired by Donald Hope, a son of old Bright Hope, for many years an outstanding member of the University Farm herd.

The annual sale of the Shorthorn Breeders' Association is to be held on the 7th and 8th of April, with Col. Fred Reppert in the box. The consignors will include Pacheco Cattle Company, Hopland Stock Farm, Thomas B. Dibblee Estate, T. S. Glide, Roselawn Stock Farm, Jack London Ranch, Ormondale Stock Farm, Carruthers Farm, T. T. Miller, University Farm, Charles A. Trosi and D. & H. J. Baughman. It is planned to hold a convention of cattlemen on the two days following the sale and an interesting program will be provided.

Swine and Swinemen.

Definite action regarding the February minimum has been deferred until January 28, as Herbert Hoover, who is now abroad, announced that he would not be able to learn what the foreign requirements would be until that time.

C. E. Barrows, until recently herdsman for W. F. Sandercock, will take charge of the Berkshire herd of H. C. Muddox & Son of Sacramento. Mr. Barrows showed the world's prize winning herd at the National Swine Show in 1917 and is considered one of the best fitters on the Coast.

At the Tegner Farm Bureau sale, January 6, a carload of hogs brought $16.10, which price was higher than that paid on the ranches the day previously. This made the hogs worth at least $17.10 at terminal points, while the minimum for the month is $16.50. It shows that good hogs will bring good money.

Sheep.

Removal of restrictions on the importation of wool from non-enemy countries has been ordered by the War Trade Board as a step in the program for reopening the ordinary peace-time channels of trade.

R. H. Brotherton of the National Shipbuilding Labor Adjustment Board, has started a herd of registered Hampshires at his Los Altos ranch by purchasing 15 fine ewes from J. R. Allen, Draper, Utah. These ewes have been bred to a noted imported English ram.

Dr. S. W. McClure, secretary of the National Wool Growers' Association, has gone to Washington to protest against the move to persuade the Government to sacrifice its entire wool stock, which action, Dr. McClure says, would mean great disaster to wool growers. It would so lower the price wool growers would receive next year that they would be forced to sell at a loss and would be at the mercy of speculators.

Livestock Miscellaneous.

The Government will sell at Camp Lewis, Camp Fremont and Camp Kearny during January, February and March, 10,000 surplus animals, including artillery horses, cavalry horses and mules. The sale has already begun and will continue until all of the animals are sold. They are not condemned animals, but simply surplus stock.

ANNUAL BERKSHIRE CONGRESS SALE.

Arrangements were completed at a meeting of the directors of the Western Berkshire Congress in Sacramento last week to make the fourth annual Congress meeting and sale at the University Farm, Davis, Thursday and Friday, February 19 and 20, one of the greatest events in the history of Berkshiredom. A draft will be made on herds from the entire Pacific Coast for foundation offerings to new breeders and farmers desiring outstanding specimens of this breed.

Special attractions are announced by W. M. Carruthers, president of the Congress, for Thursday, consisting of a fat barrow contest on individual barrows and pens of three farrowed since the first of last March, a carcass-killing contest and a students' judging contest, with an afternoon meeting of breeders, concluding with a dinner in the University Farm dining-hall in the evening.

As an added premium on the best fitted barrow, Bert Nixon of Yountville has offered a purebred Guernsey heifer. The cash prizes on the individual barrows will be $15, $10 and $5, with $25, $15 and $10 on the pens. Three trophies will be given in the students' judging contest.

To make the sale prove satisfactory to the buyers, the directors will guarantee every bred sow to be with pig or the purchase price will be refunded. A few carefully selected boars will also go under the hammer.

KINGS COUNTY POLAND-CHINA SALE.

When we hear Poland-Chinas mentioned we instinctively think of Kings county; when we hear Kings county mentioned we think of Poland-Chinas. Whether this breed of hogs has made Kings county, or whether the county has made the hogs, is immaterial. The important point is that the man who buys hogs at one of the Kings county sales will have his fortune made—or at least nicely started.

The semi-annual sale of the Kings County Breeders' Association will be held at the County Fair grounds, Hanford, Saturday, February 22—Washington's birthday. Eighty head of bred sows, gilts and boars will be sold, and while we have not yet received a catalogue we are safe in predicting a grand offering, because at each succeeding sale of this wide-awake association the stock is better than that at any previous sale.

CHOICE HERD OF
SHORTHORNS
Headed by
"Princely Stamp"
Grand Champion of the West at Denver, 1918, also Liberty Fair at Los Angeles, and imported
"LOTHIAN MARMION"
The Kind You Want.
Will sell any quantity of stock—from a single animal to a carload.
Maxwell-Miller Cattle Co.,
STEAMBOAT SPRINGS, COLO.

Red Polled Cattle
15 head fine, purebred bulls and 10 heifers, 8 to 12 months of age. For further information address:
F. A. MECHAM ESTATE,
Petaluma, Cal.

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The best veterinarians available were engaged for army service. They clipped horses and mules regularly. Just as army horses did their best work when properly clipped, so will yours. Get a clipping machine NOW. You can't beat a Stewart No. 1, and it costs only $9.75. Send $2.00 today and pay the balance when you get the machine. Or write for our 1919 catalog
CHICAGO FLEXIBLE SHAFT COMPANY
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FOR SALE
30 registered heifers, two years old, bred to our herd bulls, Farris Standard 2nd (425030), Mystic Debonair. (592515), Debonair 64th (616840), and due to drop their first calves this spring.
30 registered heifers, 12 to 16 months old—open.
4 good young bulls, now ready for service.
Will sell in lots to suit buyers.
We guarantee everything we sell to be right.
For particulars address,
NEVADA HEREFORD RANCH
JNO. H. CAZIER & SONS CO., PROPS.,
WELLS, NEVADA.

ORMONDALE SHORTHORNS
Are all heavy boned, and of Scotch and Scotch-topped breeding.
Suited for either the range grower or breeder.
EVERY ANIMAL POSITIVELY GUARANTEED.
Whether you buy or not, visit our ranch, 7 miles from Palo Alto on Woodside Road. We welcome inspection. Prices and pedigrees on application.
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HEREFORDS
The home of MISS RIALTO 2ND, NEVER defeated Grand Champion. Over 900 breeding cows, representing choicest blood lines. Great Bulls in service. Look up our records at the BIG livestock shows.
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BRIGHTON FARM SHORTHORNS
One three-year-old bull bred by H. R. Clay.
Three outstanding under-a-year bulls sired by Sir Type, a son of Cumberlands Type. A few under-a-year heifers of same breeding.
Also registered Berkshires of both sexes of best breeding.
H. L. & E. H. MURPHY Perkins, Sacramento Co., Cal.

and we know that this one will prove no exception.

Send to F. D. Ross, Hanford, for a catalogue. Plan to attend and take home a few of the good ones.

LIVESTOCK DIRECTORY.

Rate in this directory 3c. per word each issue.

SWINE

Poland-Chinas.

SOW BARGAINS—We are offering some exceptionally nice tried sows, bred and open gilts, at attractive prices. They are all sired by the undefeated and world's grand champion Superba and out of big type sows, which cost me $200 and over. Investigate before buying elsewhere. Rough's Greenfields, Arlington Station, Riverside, Cal.

FOR SALE—One extra good, big type, 1914 sow, bred to Major Improved—half brother to 1917 Grand Champion. Two big Orange tried sows, bred to Major Improved. One April gilt, bred to above boar. Prices, $40, $50, and $75, registered, crated and transferred f. o. b. Gridley. N. M. Lester, Gridley, Cal.

NOW BOOKING ORDERS for spring pigs, either sex, from my prize-winning, large type Poland-China hogs. Also will book a few orders for bred gilts, February and March farrow, and a few good, serviceable, aged boars. Hale I. Marsh, Modesto, Cal.

REGISTERED POLAND-CHINAS — Bred gilts safe for March and April farrow; bred to "Fresno Samson," our big Nebraska-bred boar, a hog with size and an easy feeder. October and November weanling boars, priced right. Fred Gatewood, Route J, Fresno.

FOR SALE—A five-month-old boar pig, sired by King's Big Bone Leader and out of a President sow. He is a dandy. Price reasonable. Everything else sold. Will be with you in the spring, bigger and better than ever. P. E. Mitchell, Atwater.

McCARTY'S POLANDS—Cholera immune. Big, vigorous boars. The kind Kansas King sires. Price reasonable. "Money back if no like." Alex D. McCarty, 324 Insurance Exchange Building, San Francisco.

THE BEST IN THE WEST—California Gerstdale and President's Equal are my herd sires. Fall and spring boars now ready to move—each one a corker. Dr. J. A. Crawshaw, Hanford, Cal.

WEANLING PIGS, both sexes, Gerstdale Jones and Caldwell's Big Bob blood lines. Booking orders for spring. Forest View Ranch, Paradise, Cal.

ELDERSLY FARM—Big type Poland-Chinas with quality. Young stock from the breed's best big type sires for sale at reasonable prices. J. H. Ware, Live Oak, Cal.

OXBONE HERD offers March boars for sale from King's Big Bone Leader, grand champion at State Fair, 1918. Write F. E. Fay, Tipton, Cal.

40 SOWS and daughters of Big Bone Bob and I B A Wonder sows for sale. Price right. N. K. Horan, Lockeford, Cal.

REGISTERED POLAND-CHINA SWINE—Prize winners. Finest stock in the State. $20 up. M. Bassett, Hanford, Cal.

BIG TYPE POLAND-CHINAS—Stock from the best herds of the Middle West. N. Hauck, Alton, Humboldt county, Cal.

20 HEAD of Big Bone Bob, Grand Model and I B A Wonder Stock for sale. J. W. Wakefield, Acampo, Cal.

FOUR GOOD four-month boars, "I. B. A. Wonder" breeding—$25 each, or $80 for the lot. J. E. Thomas, Gilroy, Cal.

LAKE SIDE STOCK FARM—Large, smooth and big boned Poland-Chinas. Geo. V. Beckman & Sons, Lodi, Cal.

POLAND-CHINA PIGS WITH RIBBONS. Prices right. Johnnie Glusing, Winton, Cal.

POLAND-CHINA PIGS — Bernstein, Frewhitt, and Ross blood. B. M. Hargis, Tulare.

REAOAKS RANCH herd of registered Poland-Chinas. W. J. Hanna, Gilroy.

Berkshires.

CASTLEVIEW GIANT TYPE BERKSHIRES are the thrifty, typey, quick-growing kind that will make larger profits for you. Prizes and Championship honors are awarded—by the greatest judges in America—only to animals possessing the essential qualities for economical meat production, viz.: heavy bone, good feet, broad strong backs, large hams and easy feeding qualities. Our grand champion herd includes Riverby Princess, grand champion sow of the world; Rookwood Lady 100th, 1917 grand champion of America; Mayfield Laurel 15th, 1917 grand champion of California. Bred sows, bred gilts and fine weaned pigs for sale. Castleview Ranch Santa Rosa, Cal.

MONEY-MAKING BERKSHIRES—The prolific, easy feeding kind that make the highest priced pork from the lowest priced feed. They will increase your profits. Prices reasonable; satisfaction guaranteed. Write for free booklet describing our world's reserve champion, Star Leader. Anchorage Farm, Orland, Cal.

$25.00—$35.00—$50.00
BARON DUKE 201ST
Omaha Grand National Champion
BOAR PIGS: 3, 5, and 6 months old, from 650-pound prize-winning sows. We will sell nothing that we wouldn't use ourselves.
SANDERCOCK LAND CO.
906 K St., Sacramento.
In charge of Natomas Land sales.

CROLEY'S BALANCED HOG FEED—The cheapest feed to fatten hogs. Write Geo. H. Croley Co., Inc., Livestock Supplies, 8th and Townsend streets, San Francisco.

MAPLEWOODE RANCH, Calistoga, Cal., offer some fine Berkshire fall and spring pigs of both sexes. Prices consistent with quality and breeding.

BERKSHIRES—GUERNSEYS
GRAPE WILD FARMS
A few fall boars left, by Royal Superbus; also a limited number of fall gilts. We have early spring pigs of both sexes, and we are breeding some top gilts for fall farrow. Prices upon application. A. B. Humphrey, Escalon, San Joaquin county, Cal.

BERKSHIRES bred at Imperial Stock Farm are the kind that satisfy. Write us or call and be convinced. R. J. Merrill & Son, Morgan Hill, Cal.

BERKSHIRES IN PERRIS — They make money for me. Write for catalogue and prices. F. L. Hall, Perris, Cal.

BERKSHIRES—Sired by Star Leader, the $1,500 boar. Kounias Registered Stock Farm, Modesto.

FOR REAL GOOD BERKSHIRES write Frank B. Anderson, B. 724W, Sacramento, Cal.

HOPLAND STOCK FARM—Registered Berkshires. Prices on application. Hopland, Cal.

CARRUTHERS FARMS BERKSHIRES—Cholera immune. Live Oak, Cal.

BERKSHIRES—Fair Oaks Ranch, Willits, California.

Chester Whites.

THE "BILLIKEN BRAND" of Chester Whites. The San Francisco fair has been called off, so I am offering some of the stock I had intended showing there. This offering will consist of 8 boars and 8 bred gilts and sows. Still have a few weaned fall pigs, both sexes. Everything cholera immune. C. B. Cunningham, Mills, Cal.

VIGOROUS CHESTERS—All ages. Prices right. The Melone Co., Oak Knoll Ranch, Napa, Cal.

Duroc-Jerseys.

DUROC-JERSEYS AT IRELAND—Home of Cherry Volunteer II. Grand Champion Boar at Riverside. Ireland's Orion Defender and Orion's King of Ireland are excellent sires in service. Booking orders for spring delivery. Ranch at Owensmouth. City office, 1219 Brockman Bldg., Los Angeles.

THE JOHNSON HERD of Duroc-Jerseys—Spring gilts and boars, sons and daughters of Johnson's Defender, the 1917 junior champion, for sale. Weaned boar pigs, $25. Frederick M. Johnson, Napa, Cal.

HAVING RENTED MY FARM I offer for sale 3 registered Duroc-Jersey sows and six open gilts and six weanling pigs, all good breeding. Wm. B. Allen, Box 200, Walnut Ave., Patterson, Cal.

WE WON MORE MONEY on Durocs at the State Fair than any other exhibitor. Why not buy some of this winning stock? June Acres Stock Farm, Davis, Cal.

DUROC-JERSEYS — Burke's Good Enuff, Golden Model, King's Colonel and Pathfinder blood. Derryfield Farm, National Bank Building, Sacramento.

DUROC WEANLINGS for the farmer. Easy feeders; 200 lbs. at seven months. W. W. Everett, River Bend Farm, St. Helena, Cal.

OPEN GILTS, weanling pigs, either sex, at $20 each, out of mature sows. F. W. Gardiner, Route 4, Box 735, Sacramento.

BOUDIER DUROCS all sold out, excepting some sow pigs weighing 100 lbs. apiece. H. E. Boudier, Napa.

A FEW CHOICE BRED GILTS, spring boars and gilts of the best blood lines. H. P. Slocum & Sons, Willows.

HEAVY-BONED DUROCS—A few service boars for sale. Ormondale Co., Route 1, Redwood City, Cal.

REGISTERED DUROCS — All from prize-winning stock. W. P. Harkey, Gridley, Cal.

DUROC-JERSEYS—A few choice weanling boar pigs for sale. Cordel Bros., Loomis, Cal.

DUROCS—University Wonder and Advancer breeding. McDowell & Kendall, Lemoore.

Yorkshires.

LARGE YORKSHIRES—The ideal hog for the progressive farmer. Young stock for sale. A. L. Tubbs Co., Calistoga, Cal.

DAIRY CATTLE.

Holsteins.

A PRICE ON EVERY ANIMAL.
Herd free from tuberculosis. All sales subject to sixty days' retest. Sons of **Finderne Soldene Valdessa**, whose dam is not only a world record cow in seven-day division, but has two sisters holding world's records for yearly production.
Tovon Farms Association,
679 Mills Building. San Francisco.

HIGH-CLASS HOLSTEINS—I have for sale some sons of Sir Veeman Korndyke Pontiac from A. R. O. dams. Write for particulars or come see them. R. F. Guerin, Visalia, Cal.

FANCY GRADE HOLSTEIN COWS and heifers from herd testing 100 per cent. Animals qualified for certified dairies. The Lewis Company, San Jose.

THE McCLOUD RIVER LUMBER CO., McCloud, Cal.—High-class thoroughbred Holstein bulls for sale. Write for prices and pedigrees.

BREEDERS OF REGISTERED HOLSTEIN cattle and Berkshire pigs. Whittier State School, Whittier, Cal.

PALO ALTO STOCK FARM, Palo Alto, breeders of registered Holsteins. Heifers and service bulls. Reasonable prices.

GLORIETTA STOCK FARM, WOODLAND, CAL.—Registered Holsteins. Special offering of fine heifers and young bulls.

REGISTERED HOLSTEIN BULLS with world's record backing. Koumas' Registered Stock Farm, Modesto.

CREAMCUP HERD — Registered Holsteins. Pontiac bull calves. M. Holdridge, Rt. A, B. 437, San Jose, Calif.

F. H. STENZEL, SAN LORENZO, CAL.—Breeder of Registered Holsteins. High test producers.

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REGISTERED HOLSTEINS—Best blood lines of the breed. R. L. Holmes, Modesto, Cal.

SUNNYBROOK RANCH, Willits, Cal. — Registered Holstein Friesian bulls for sale.

GOTSHALL & MAGRUDER — Breeders of registered Holstein-Friesians. Ripon, Cal.

BREEDERS OF REGISTERED HOLSTEIN cattle. McAllister & Sons, Chino, Cal.

CHOICE HOLSTEIN bulls for sale. No females. Millbrae Dairy, Millbrae, Cal.

HOLSTEIN BULLS and bull calves from A. R. O. cows. C. A. Miller, Ripon.

REGISTERED HOLSTEIN CATTLE—E. E. Freeman, Route B, Modesto, Cal.

HENGERVELD DE KOL BLOOD. High producers. T. B. King, Visalia.

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Jerseys.

SUNSHINE FARM JERSEYS—Tuberculin tested. Production counts. E. E. Greenough, Merced.

YOUNG BULLS from Register of Merit cows. W. G. Gurnett, Orland, Cal.

Guernseys.

EDGEMOOR FARM GUERNSEYS — First in the show ring and in official records. Few animals of either sex for sale. Edgemoor Farm, Santee, Cal.

HIDDEN VALLEY FARM offers for sale 2 young Guernsey bulls, ready for service, out of high record advanced register dams. A. J. Welch, proprietor, Redwood City.

PALO ALTO STOCK FARM, Palo Alto—Breeders of registered Guernseys; both sexes; prices reasonable.

Ayrshires.

NORABEL FARM AYRSHIRES—Purebred young stock for sale at reasonable prices. Le Baron Estate Company, Valley Ford, Cal.

AYRSHIRES—Registered; all ages. E. B. McFarland, 412 Claus Spreckels Building, San Francisco.

ELKHORN FARM AYRSHIRES—Choice young bulls at reasonable prices. J. H. Meyer, 440 Montgomery St., San Francisco, Cal.

MILKING SHORTHORNS.

BREEDERS OF REGISTERED SHORTHORNS—Milk strain; choice young stock for sale. John Lynch Ranch, Box 321, Petaluma.

INNISFAIL DAIRY SHORTHORNS—Registered young bulls for sale. Alexander & Kellogg, Suisun, Cal.

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ALAMO HERD REGISTERED HEREFORDS (founded by Governor Sparks). Herd and range bulls. Reasonable prices. W. D. Duke, Likely, Modoc county, Cal.

REGISTERED MILK AND BEEF SHORTHORNS, bulls and heifers for sale; catalogue free. Thomas Harrison, Santa Rosa Stock Farm, Santa Rosa, Cal.

REGISTERED YEARLING SHORTHORN Bulls—Heavy-boned, thick-meated Scotch and Scotch-topped breeding. Ormondale Co., Route 1, Redwood City, Cal.

RANCHO SAN JULIAN SHORTHORNS — Purebred range bulls, unregistered, for sale. Estate Thos. B. Dibblee, Santa Barbara or Lompoc, Cal. John Troup, Supt.

THE NEVADA HEREFORD RANCH, Jno H. Cazier & Son Co., props., Wells, Nevada. Registered Hereford cattle. Breeding stock for sale.

REG. SHORTHORNS—Calves and yearlings for sale, both sexes, reds and roans. Choice Goods breeding. Fair Oaks Ranch, Willits, Cal.

JACK LONDON RANCH—Breeders of prize-winning beef Shorthorns. Glen Ellen, Cal. Eliza Shepard, Supt.

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REGISTERED HEREFORDS—H. H. Gable, Diamond G Ranch, Esparto, Cal.

SIMON NEWMAN CO., breeders of Registered Herefords. Newman, Cal.

GEORGE CALLAHAN, Breeder of registered Herefords, Milton, Cal.

GEORGE WATTERSON—Breeder Registered Herefords, Bishop, Cal.

HEREFORDS—Mission Hereford Farm, Mission San Jose, Cal.

SHORTHORNS — Carruthers Farms, Live Oak, Cal.

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BISHOP BROS., SAN RAMON, CAL.—Breeders and importers Shropshires.

KAUPKE BROS., WOODLAND, CAL.—Breeders, importers of Hampshire sheep.

CHAS. KIMBLE—Breeder and importer of Rambouillets, Hanford, Cal.

CALLA GROVE FARM, MANTECA, Cal.—Breeders and importers of Hampshire sheep.

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FOR SALE—Percheron stallion with pedigree; color grey; weight about ton. Correspond with J. E. Trosi, Box 272, Sparks, Nevada.

FOR SALE—Two imported Percheron stallions. Reasonable prices. Mars A. Hunter, Bradley, Cal.

MISCELLANEOUS.

BUTTE CITY RANCH—Shorthorns, Shropshires, Berkshires and Shetland ponies. Write for prices and descriptions before buying. Butte City Ranch, Box P, Butte City, Glenn county, Cal. W. T. Dwyer and W. S. Guilford, owners.

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Valley View Farms Durocs

Two March boars, one a grandson of King's Col. Dam: Junior Champion sow of Glenn county, 1917. One son of Bates Orion King, dam importer from Iowa last spring. They are real ones. Price, $60 each. Get your order in early or you may get left. We are also booking orders for March pigs for spring delivery.
W. T. HOLLINGSHEAD & SONS, Orland, Cal.

Damaged Beans as a Stock Feed

To the Editor: I have a lot of pink beans that were slightly damaged by rain and frost and seem to stay soft and damp. Can they be safely fed to milk cows, and, if so, in what quantity, with what other feeds, and what is their value?

[Answered by Prof. F. W. Woll, University Farm, Davis.]

Beans like those described differ from dried beans mainly in the fact that they contain a relatively high percentage of water; hence they will not keep as well as dried beans and will readily get moldy and spoil. Like cull beans in general, they make a valuable stock feed, however, and can be safely fed to hogs, sheep and cattle under certain precautions. If badly damaged, the only safe way of preparation is to cook them; for hogs, beans had better always be cooked, whether damaged or not. Soft or but slightly damaged beans may be fed to sheep and cattle without previous cooking, but should be given in limited quantities only, along with grain or mixtures of grain and other medium or low-protein feeds, making up not more than one-third or one-half of the weight of the grain mixture.

Pink beans contain, on the average, the following amounts of digestible components: 17.6 per cent protein, 3 per cent fat and 54.8 per cent carbohydrates (of which 2.1 per cent is fiber and the balance mainly starch). The nutritive ratio is, therefore, 1:3.5, which shows that they are a protein feed containing a still higher percentage of protein than alfalfa. They should, therefore, be supplemented with starchy feeds in feeding most kinds of stock. If silage from Indian corn, milo or saccharine sorghums, and alfalfa hay are fed to milk cows, the grain mixture may be composed of common concentrates like barley and dried beet pulp, aside from beans, say in the proportion of equal parts by weight, or two parts each of barley and beans and one part of cocoanut meal or wheat bran. If alfalfa is the only available coarse feed, better results will be secured by feeding a grain mixture of low-protein feeds only, like grain and beet pulp, with the beans.

If the beans are in a fairly good condition and do not contain an excessive amount of moisture, they will be worth nearly as much as barley, pound for pound. Dry cull beans have a similar feeding value to barley.

Western Dairy Products Show

Dr. C. L. Roadhouse, California member of the publicity committee of the Western Dairy Instructors' Association, informs us that the Western Dairy Products Show will be held at Boise, Idaho, February 10 to 12.

Entry blanks have been mailed to the butter makers and cheese makers for their classes and entry blanks for the market milk and cream classes have been sent to the dairy inspectors for distribution. A bulk cream class has been added this year, which provides for cream producers of California sending to Davis one five-gallon can of cream. The cream will be paid for at market prices and the County Farm Bureau having the five highest scoring exhibits will receive a banner. Premiums in other classes will consist of gold and silver medals, banners and diplomas.

Last year the California butter makers entered the five highest scoring exhibits of butter in this show and a handsome silver trophy was awarded to the State and has been on exhibit in the dairy building at the University Farm. It is hoped that the butter makers will be as successful this year and that the trophy may remain in California another year.

The bulk cream exhibits must be shipped to Davis on January 28, care C. F. Hoyt. The butter, cheese, market milk and cream exhibits should be shipped express prepaid to Boise, Idaho, on February 3. All milk and cream exhibits to be placed in tight boxes and covered with sufficient ice to last until reaching destination. Additional entry blanks and rules governing the contest can be secured by writing Dairy Division, University Farm, Davis.

An interesting and instructive program has been prepared for the meeting. Among the speakers will be Dean H. E. Van Norman of the University Farm and Ed H. Webster of the California Central Creameries.

Gibson Cow Makes Good Record

That the great young bull, Prince Alcartra Korndyke, transmits to his daughters the wonderful producing qualities of his world-famed mother, Tilly Alcartra, is proved by the records that his daughters are making. The latest is a record of 30.06 lbs. of butter made in seven days by Roma Princess Alcartra, a senior four-year-old. The J. S. Gibson Company of Williams are justly proud of both this cow and her sire, who is at the head of their excellent herd of registered Holsteins.

Breeding Will Tell

KING KORNDYKE PONTIAC 20TH as a calf looked like the real bull to head our herd, adding to his great individuality the backing of a pedigree with an unbroken line of great producing dams and type of the highest character. The price of $6,500 which we paid for him was really a minor consideration. Now that his calves are coming on we know that we made a fortunate choice, for they are certainly beauties. His oldest son in our herd was sold at 40 days of age to become the future head of a newly established Stanislaus county herd.



And the last six calves by King have all been heifers, mostly white in color, beautiful individuals, and every one of them has large, well-placed teats, just what we expect from the great uddered cows in his ancestry.

Better get in touch with us for one of his young sons for YOUR herd. We already have requests for reservations of unborn calves if they are bulls.

Satisfaction of the buyer is our first consideration, and our prices are reasonable.

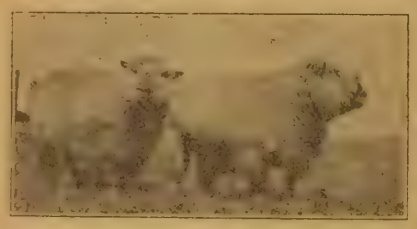
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W. J. Higdon, Owner TULARE, CAL. H. L. Redd, Herdsman

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Champion Ram, P. P. I. E.

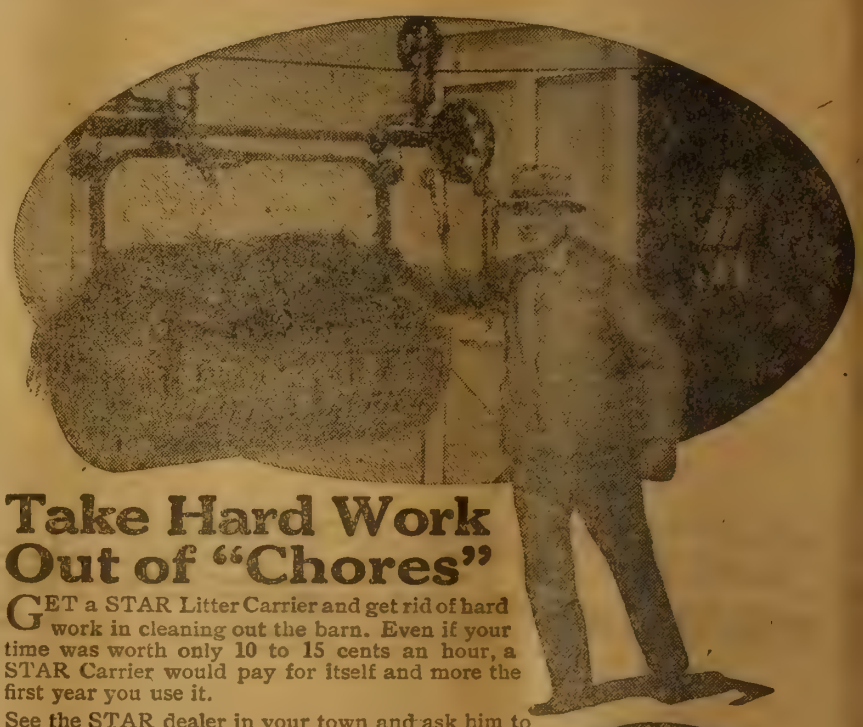
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WINNINGS P. P. I. E., 1915

Aged Ram, First and Second. Yearling Ram, First. Ram Lamb, First, Second, and Third. Champion Ram. Yearling Ewe, Second. Ewe Lamb, Second and Third. Get of sire, First. Pen of three Lambs, bred by Exhibitor, First and Fourth. Pen of Four Rams, bred by Exhibitor, First and Fourth. Flock, any age, Second. Flock, any age, bred by Exhibitor, Second. Flock, one year old, First. Flock, one year old, bred by Exhibitor, First. Flock under one year, First. Flock under one year, bred by Exhibitor, First. Produce of Ewe, First, Second and Third. Premier Championship for Breeder. Premier Championship for Exhibitor. A total, including American Shropshire Specials, of 15 Firsts, 9 Seconds, and 6 Championships.

Purebred Registered Rams and Ewes.
Individuals or Carload Lots.

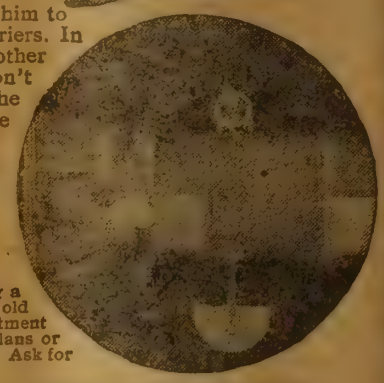
BISHOP BROS., Agents, SAN RAMON, Contra Costa County, California.



Take Hard Work Out of "Chores"

GET a STAR Litter Carrier and get rid of hard work in cleaning out the barn. Even if your time was worth only 10 to 15 cents an hour, a STAR Carrier would pay for itself and more the first year you use it.

See the STAR dealer in your town and ask him to show you one of the three styles of STAR Carriers. In STAR Carriers you get features which no other carrier can offer. Rapid lowering—you don't have to work to lower the tub—simply pull the trip chain. Quick hoist. Interchangeable feed and litter carriers operating on same tracks by simply changing the tub. STAR Carriers are but one of the many articles in the complete line of STAR Equipment.



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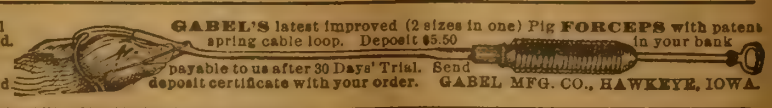
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CALIFORNIA DAIRY COUNCIL ORGANIZED.

(Continued from page 157)

nounce their intention to the council, which will call a meeting of all the different interests and the matter will be considered from every angle.

This can be done in a most satisfactory way, because the scope of the council will be so broad as to include members from all different classes interested in either production or consumption. The active members will include dairymen, purebred breeders, city milk distributors, manufacturers of butter, cheese, condensed milk and ice cream; manufacturers and dealers of feeds, machinery and equipment; supply houses, salt manufacturers, fertilizer manufacturers, dairy chemical manufacturers, cold storage warehousemen, transportation officials and the agricultural press. The associate members will include faculty members of the College of Agriculture, city and county school superintendents and health officers, officials of women's clubs, civic clubs and labor organizations, and retail food distributors.

Get representatives from all of these different organizations and interests together, and the dairyman, manufacturer and distributor won't have such a hard time in making the public see things from their standpoint. The president of a women's club will go back to her members and say: "Why, we were wrong. These men are not profiteers. They are entitled to a raise in price, and even then, in proportion to what we are paying for other things, dairy products will be our cheapest articles of food." The other representatives will do the same, and soon the sunshine of peace will spread its healing rays over the troubled dairy world.

A WHALE OF A TASK.

Begins to look big, doesn't it? It is a big undertaking, and that things will be put across in a big way is shown by the plan adopted at the first meeting which will result in a fund of at least $50,000 to carry on the work of the first year. Yet so many different interests will contribute that the amount from each will be small. Associate members will pay only $1 per year, and of the active members dairymen will pay only 20 cents per cow per year, butter manufacturers 25 cents per 1000 pounds, and so on.

A NATION-WIDE MOVEMENT.

But it must be borne in mind that this is not a new, untried scheme. The California Dairy Council will be a unit of the National Dairy Council, which was organized in Chicago, November 5, 1915, and which has already done a great deal for the dairy industry. Its work was slowed down on account of the war, but it is now ready to begin again in earnest. State councils have been organized in nearly all of the leading dairy States, and as each one is federated with the National Council this brings all of the interests into one concrete working force, first by getting everyone engaged in any branch of the industry in each State organized into a comprehensive unit, and then having all these State units participate in the affairs of the National Council—the States conducting local publicity campaigns, and the National taking care of all national work and furnishing copy and material to the States, so as to preserve uniformity in the work.

THE START IN CALIFORNIA.

In California the ball was started rolling at the annual convention of the California Creamery Operators' Association at Visalia in December, when funds were raised by assessment to promote the organization of a State Dairy Council. Almost immediately thereafter the San Francisco Wholesale Dairy Produce Exchange appropriated money for the same purpose, and soon the San Francisco Milk Dealers' Association and the Alameda County Milk Distributors did likewise.

These four associations agreed to provide the money necessary to carry out the work of organization, and S. H. Greene agreed to contribute his time to the work for the first three months of the year. Since then Mr. Greene has presented the matter to different interests in different parts of the State and everywhere the plan has been received with enthusiasm and liberal support has been promised. Only the routine work of perfecting the organization was done at the first meeting, but another meeting will be held soon at which regular officers will be elected and plans for a vigorous membership campaign will be perfected. Headquarters have been established in the Hansford Building, 268 Market street, San Francisco.

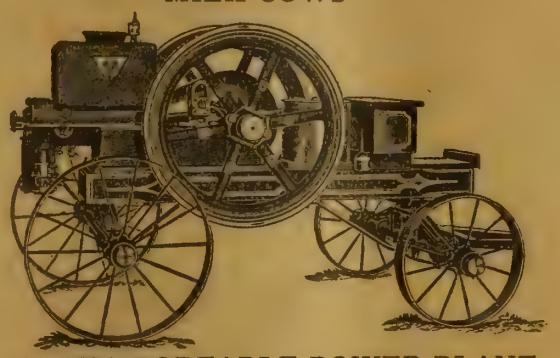
Mr. Greene already has many good plans up his sleeve, and he certainly is just the man to have at the steering gear. He is no novice at the game, for during the past twenty years he has been over the entire Highway of Experience. He was originally one of the old-time "commission merchants." Later he became a wholesale butter distributor, and for fifteen years was managing owner of the Western Creameries Company. After disposing of his interests in this company, he was made chairman of the Division of Dairy Products of the Food Administration for California, but he gave up that work at the end of the year to devote his time to the organization of the Dairy Council.

For a number of years Sam, as he is known by all his friends, has been a producer, operating a dairy in Colusa county, and he now has no financial connection with any other branch of industry. He is, therefore, exceptionally well fitted for the work undertaken, and California is indeed fortunate in having such a man available at this time. With him at the helm of the California Dairy Council its success is assured.

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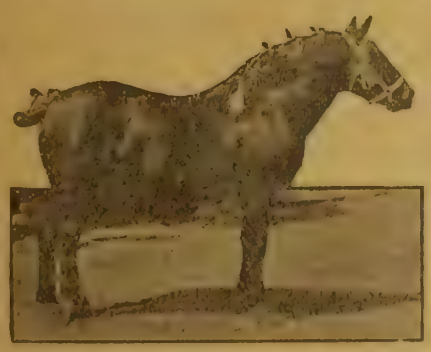
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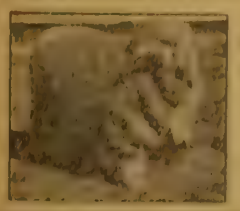
My Fall shipment of stallions has arrived. These horses were personally selected by me in the best breeding districts of Iowa, Illinois, and Indiana. Two, three, and four-year-olds that will weigh a ton or over.

The largest collection of Percherons, Belgians, and Shires west of the Rocky Mountains. State certificate of soundness and life insurance with each stallion. Every horse priced to sell according to his individual worth. Any reasonable terms will be given. I also have a carload of Heavy Draft Mares and Geldings for sale—age 4 to 7 years, weighing from 1400 lbs. to 1700 lbs. Matched teams in black, bay, or chestnut.

Correspondence invited and visitors always welcome.

N. W. THOMPSON, Patterson, Stanislaus County, California

The Sheep that bring the Big Prices are the kind to buy



RAMBOUILLETS

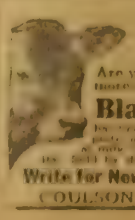
I purchased at the Salt Lake sale 31 head of the best (Butterfield, Quealy and Bullard strains) to head my breeding ewes. I have about 100 big, smooth, heavy-wooled rams for sale

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Are you getting them? Can profits mean more to you now than ever before?

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Write for New Data

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Shall We Immune Brood Sows?

[Written for Pacific Rural Press.]

Is it safe to immune sows while carrying pigs? Now that nearly all progressive breeders of registered stock are immuning their entire herds, this question is often asked, and a few words from one who has learned the answer from experience may prove helpful.

This breeder had a herd of 52 brood sows, 20 of which were cholera immune. He wanted to have the balance of the sows given the serum and virus treatment, but found it difficult to set a favorable time for the work because the sows were farrowing during every month of the year except July and August. It was finally decided to do the work about the first of August and a veterinarian, who was agent for an Eastern serum, was employed.

Apparently this veterinarian used good serum and virus and did his work well. But along in September, when it came time for the sows to farrow, some of them had dead pigs and the pigs of other sows were so small and weak that they could not nurse and all died within 24 hours. Twenty-six sows out of the 32 lost their litters and the only ones that had normal litters were those that farrowed very late in the season.

Dr. Bert J. Cady, then a representative in this State of the U. S. Bureau of Animal Industry, was called and after investigating the case thoroughly he decided that the trouble was due to the cutting down of the sows' feed. They were on alfalfa pasture, and until the day before the work was done they had received a liberal amount of grain and skim milk. But the veterinarian ordered all feed except alfalfa pasture to be cut out entirely for two weeks, and Dr. Cady was satisfied that this stunted the growth of the pigs to such an extent that they died either before or right after birth.

Since then the writer has given the double treatment to hundreds of sows in all stages of pregnancy, and without a single unsatisfactory case. But he has always been very careful in handling the sows so as not to let them strain themselves or get badly excited, or do anything that would tend to bring on abortion; and he has only kept them off grain feed for 24 hours before treating them and 48 hours afterwards. They were not put back on full feed at once, but were started on a little grain after two days, and within five days they were eating as much as ever and showed no bad effects from the treatment.

However, while brood sows can be immuned successfully while carrying pigs, it is advisable, whenever possible, to wait until the sows have farrowed and the pigs are about six weeks old, at which time both the sows and the pigs can be treated. It is not best to immune the pigs right at weaning time, as two setbacks at one time might prove too much. If the pigs are to be weaned at eight weeks, immune them at six or ten weeks—two weeks before or after weaning time.

When sows are already cholera immune, their pigs are immune as long as they are being suckled, and it is the custom of most breeders to immune at ten weeks. This is a better age for all pigs, as there is some doubt about the immunity lasting for life when pigs are treated as young as six weeks of age.

But don't neglect to immune the pigs—yes, the whole herd. It's just as necessary as fire insurance.

NATIONAL LIVESTOCK ASSOCIATION RECOMMENDATIONS.

At the twenty-second annual convention of the American National Livestock Association, held last week at Denver, resolutions were adopted opposing Government ownership of railroads and urging the early return of the railroads to private control under adequate Federal regulation; favoring Federal licensing and regulating of packers and stockyards, but opposing Government ownership of marketing facilities. The convention also adopted resolutions urging changes in the method of administering the public lands and the national forests; advocating a protective tariff on livestock and meat products; and regulation of imports of hides and cattle from Mexico, so as to detect those stolen from American ranches. Larger appropriations for State agricultural colleges and for the bureau of markets were urged. The work of the Federal Trade Commission in investigating meat packers was endorsed.

"Pigs is pigs," according to some of the hog syndicates operating in this State, but they are also finding that business is business, as a petition has been made for a receiver for the Montezuma Improvement Company, stating that this concern induced more than 500 prospects to buy stock and promised that a brood sow would be given with each share of stock and that the company would pay all the expenses and divide the profits. According to the petition, this has not been done.

Grand Champion
BERKSHIRES



AMES RIVAL 70TH

We have in our herd the Grand Champion Boar, Grand Champion Sow and First Prize Senior Herd at State Fair.

Forty-three litters this year averaged ten to the litter. Let us supply you with foundation sows and boars to head your herd.

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TAMWORTHS
(The Bacon Hog)
Largest Herd in the State
DUROC-JERSEYS
Mature Stock and Weanlings of both sexes. Sure to please.
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Registered Big Type Poland-Chinas
Bred Sows and Gilts, 25c. per lb.
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SWEETWATER DUROCS
California's Most Popular Big Type Sire.
GREAT MODEL
(By Great Wonder and Model Lady 3rd)
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Berkshires for Profit

WESTERN BERKSHIRE CONGRESS ANNOUNCES ANNUAL GUARANTY SALE OF
50 BRED SOWS, GILTS, and BOARS 50
University Farm Davis, California
FRIDAY, FEBRUARY 20th

Careful selections from the tops of Pacific Coast herds are offered to farmers and breeders at their own prices.

Every bred sow guaranteed with pig or purchase price refunded.

A few of the best bred boars, ready for service, will be offered.

This is THE OPPORTUNITY for breeder and farmer to secure excellent stock for foundation herds or building up with the infusion of new blood from the greatest and most popular families of this great breed—THE BERKSHIRE, THE STANDARD HOG, THE HOG OF QUALITY, STYLE AND VITALITY.

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Attend this Congress Meeting and Sale at Davis.

Meeting: Thursday, Feb. 19th. Sale: Friday, Feb. 20th, 1:00 o'clock.

Write Secretary for Catalog.

WESTERN BERKSHIRE CONGRESS

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COL. ORD L. LEACHMAN, Auctioneer.

Seventh Semi-Annual Sale
OF
Kings County Poland-China Breeders Association
SATURDAY, FEBRUARY 22nd, 1919
KINGS COUNTY, FAIR GROUNDS
HANFORD, CALIF.
80 = HEAD = 80
BRED SOWS, GILTS and BOARS

To be sold without reserve from the best herds in Kings county.
Consignors.

M. Bassett,	J. A. Crawshaw,	W. S. Hubbard
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UNEEDA QUEEN MODEL,
Grand Champion State Fair, 1918.

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Duroc-Jersey Hogs
KEY HERD OF PACIFIC COAST
Won at Sacramento:
Grand Champion Sow, Senior Champion Sow, Junior Champion Boar, seven Firsts, 23 other prizes.
PIGS BY NOTED SIRES
High Orion, the world's record-breaking sire, Great Wonder, Grand Champion Iowa; King Orion Cherry, First Prize Indiana and Ohio, and other best boars of the breed. Get some of their pigs. Few bred sows and gilts left.
H. P. SLOCUM & SON
WILLOWS, CAL.

OAK KNOLL FARM
LAKEPORT CALIFORNIA
We have sold all our young boars and are now booking orders for March delivery. Highlander, the $1,000 Grand Champion Boar, heads our herd of
CHESTER WHITES
SAN FRANCISCO OFFICE, 601 BALBOA BLDG.

The JOHNSON HERD OF DUROCS
We have for sale at the present time 20 Spring Gilts, daughters of JOHNSON'S DEFENDER, the 1917 Junior Champion, and out of winning sows. 5 Spring Boars old enough for service, and weaned boar pigs. Also 700-pound prize-winning Junior Yearling Boar, a grandson of ORION CHERRY KING, dam by Joe Orion II.
Frederick M. Johnson, Napa, Cal.

Poultry Breeders' Directory

Rate in this directory 3c. per word each issue.

GIANT BRONZE TURKEYS—Gold Nugget Strain. Prove their superiority by winning Gold Special Sweepstakes for best turkeys at the following great shows: Arizona State Fair, 1916; Texas State Fair, 1917; California State Fair, 1917-1918; Los Angeles Show, 1917-1918; Pacific Coast Land and Industrial Exposition, Oakland, 1918. An unequaled record. Large turkeys can be raised at practically the same cost as small ones. Toms for sale that will increase size and improve any flock. I am the originator of the Gold Nugget Strain. J. Will Blackman, 607 East Third St., Los Angeles, Cal.

"BEST CHICKS I EVER BOUGHT." "Greatest layers we ever had." Why? Bred 20 years to lay 200-290 eggs yearly. Brown, White, Buff Leghorns; Barred, White Rocks; Reds; Anconas; Minorcas; Orpingtons; ducks, turkeys; clearing customers $5. Valuable circular with proof free. Chicks. Half booked to April. Reasonable. 40,000 egg hatcheries full now. Many repeat orders, monthly, yearly. Breeders. Pullets. J. Beeson, Pasadena, Cal.

WHITE LEGHORNS are the most profitable breed of poultry. If you are in the business for profit, you will eventually have them. Early broilers; early layers; early profits; we sell only White Leghorn Baby Chix from heavy laying Hoganized hens. Safe delivery of full count live chix guaranteed. Prices per 100: February, $15; March, $14; April, $12.50. The Pioneer Hatchery, 408 Sixth street, Petaluma, Cal.

BARRED PLYMOUTH ROCKS—Champion prize winners and wonderful layers. Choice cockerels, hens and pullets for sale. Hatching eggs from twelve grand matings. I have made a specialty of Barred Rocks for over twenty years. That's why I win at all leading shows. "Nothing Better In Poultry" than Vodden's Barred Rocks. Catalog free. Chas. H. Vodden, Box 396, Los Gatos, Cal.

BABY CHICKS—We specialize this season on money-making White Leghorns—hatching from stock with high records that are unimpeachable. Also Brown Leghorns, Anconas, Minorcas, Rocks, Reds, Orpingtons, and White Wyandottes. Especially interesting circular with price list ready January 1st. B. W. Archibald, Soquel, Santa Cruz Co., Cal.

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Quality Chicks . . Economy Prices
White, Brown, Buff Leghorn; Black Minorcas, Rhode Island Reds, Barred and White Rocks.
Circular on request.
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GOLDCROFT BUFF ORPINGTONS fulfill every standard and utility requirement. Won San Jose show first, second, third, pullet and cockerel. Eggs, $5.00 and $3.00 from winning pens; $2.00 from general flock; $12.00 per hundred. Stock for sale. Samuel Abrams. Los Altos, Cal.

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My specialty. Bred for eggs, size, color. Hens on free range means strong chix. 18c each; 17c in 1000 lots. Denton Poultry Yards, Box 360, Campbell, Cal.

FINEST HATCHERY IN THE WORLD—CHICKS, White Leghorns, Rhode Island Settings—1000's—hatched right in our $60 000 brick and concrete hatchery from our Hoganized heavy layers. Stock,—eggs. Pebbleside Poultry Farm, Sunnyvale, California.

BABY CHICKS—Ready in January. Order early and get the date you want. White and Brown Leghorns, Black Minorcas, R. I. Reds, Barred Rocks. Safe delivery guaranteed. Write for circular. Stubbe Poultry Ranch and Hatchery, Palo Alto, Calif.

SPRING CHIX—White and Barred Rocks, Rhode Island Reds, Buff Orpingtons, Black Minorcas, and White Leghorns from Hoganized stock, bred to lay. Satisfaction and safe delivery guaranteed. Tobener Poultry Ranch, Washington Ave., San Jose, Cal.

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BABY CHICKS—Booking orders for spring deliveries. White and Brown Leghorns, Rhode Island Reds, Barred Rocks. E. W. Olsen, Campbell, Cal.

Poultry for Profit

[Written for Pacific Rural Press by Susan Swaysgood, Pomona.]

FEEDING AND CARE OF YOUNG CHICKS.

(Continued.)

In last week's issue I told you how to feed and care for the chicks through the most trying time of their lives—the first ten days. But that does not mean that chicks will stand any amount of neglect after that stage. In fact, neglect at any stage of the game is paid for by slow growth and delayed maturity, even when the chick does not give up and die. Thousands of those little starvelings would be a more profitable investment if they had died early in the game, but it is surprising how they will hang on and eventually reach a stage where they can be disposed of to some confiding amateur, as so-many-weeks-old pullets, though the real age may be nearly twice that. No amount of good feeding or care ever undoes the early neglect of chicks, which is why it is so important to keep up the good work you set your hand to.

USE EXTREME CARE IN FEEDING.

Feed plenty, but feed with judgment, never overdo even a good thing. It is better to feed a little and often than feed a lot and let the chicks tramp it under foot. If you go to feed something and find they have not cleaned up the feed before them, leave without feed, regardless of clock time. Fresh water, grit and charcoal are almost as necessary to young chicks as feed and these should be supplied in quantity. If you have sour milk or buttermilk, give the chicks all they want; it makes bone and keeps them healthy. But always give a vessel of fresh drinking water, too, so that the chicks can choose for themselves. Any of the commercial mash feeds advertised for hens may be safely fed to chicks over a month old, in quantities not to exceed a third of the other rations. Or it may be mixed with a third its weight in good bran and fed in any quantity.

ENOUGH GREENS TO WHET APPETITE.

A handful of fresh greens or a square of sprouted oats, just enough to whet the appetite but not enough to stall it of any one thing, is the way to feed chicks successfully. Then at night, just as late as possible, give a good meal of cracked grains. Now that wheat can be bought, it should enter into the bill of fare of every growing chick, not exclusively but in part. Ground oats with the hulls on are fine for growing stock, and all Californians use more or less rolled barley, though without soaking I would almost as soon feed sawdust. Rolled barley, fed dry, has killed numbers of chickens that folks wondered what they died of. They died of malnutrition, because they could not digest that dry fibre and they could not eat enough to sustain life on the small amount of digestible food inside the husk. If barley is sprouted, a chick a week old can digest it and get all the food value out of the barley. So, in preference to buying rolled barley, I would buy whole barley and sprout it; then I know my chicks will get the nourishment that good barley contains. If rolled barley is soaked several hours, the fibre softens so that chicks get more nutriment out of it, but it never can compare, in food value, to sprouted barley. Milo maize and gyp corn are very easily digested and both make excellent chick feeds, with something not quite so heating added. Milo wheat, steel cut oats and pearl barley, equal parts, make a good grain for growing chicks until old enough to eat whole grain.

GUARD AGAINST DIARRHEA EPIDEMIC.

In any good commercial chick feed you will find these ingredients, with the addition of a little millet and other small seeds, but millet can be easily overdone, and just a little too much will cause diarrhea, and somehow chicks like to pick up the little bright grains, so that it sometimes happens that one chick gets more than its share and takes on a diarrhea, while others are all right. That would not be a serious matter of itself, for it would seem to be merely a matter of justice meted out to a greedy chick, but all diarrheas are more or less contagious, and if one starts you may soon look for others to follow. Nothing but the greatest care and sanitation will prevent a single case of diarrhea from becoming epidemic.

IMPORTANCE OF CLEANLINESS.

The remedy is clean up, and keep cleaning up. Don't be content with doing a thing once; do it as long as necessary to the health of your flock. Cleaning up is the greatest thing in life to insure against disease.

HATCHING EGGS FOR STRONG CHICKS.

To the Editor: On September 16, 1918, we got some Barred Rock and R. I. Red baby chicks. They have grown nicely. At what age will their eggs produce good, strong chicks to grow into broilers? Can we save cockerels from this flock to mate with these pullets? I am planning to get 300 White Leghorn chicks soon. When should they be hatched to be laying by October, 1? Hope to give part of them to hens to raise. We have no house for them, but can give them a warm place at night. Is there an outdoors brooder you could recommend for day use?—Mrs. A. P., Athlone.

To raise broilers successfully the parent stock should be two years old. Broilers must be forced from the start. Eggs from young stock lack stamina. The chicks give way in the legs. The Cyphers Company used to have a good outdoor brooder, but I have not seen any advertised of late.

SOFT EGGSHELLS.

To the Editor: What is the cause of eggshells being soft? My hens have plenty of grit and shell before them and always plenty of green barley, a mash of milk and bran once a day, and milo maize in litter for a morning feed. A little rolled barley is often mixed in the mash or a feed of split blackeyed beans (soaked) is given.—Mrs. C. L. M., Puente.

Your hens are fat internally. Give them a few doses of Epsom salts in their drinking water once or twice a day, and make them hustle more for their grain feed. If you can do nothing else, bury the grain and make them dig it out or go without.

HIGH GRADE BLACK MINORCA COCKERELS, $5.00 each. Eggs $2.00 per 15. Edward A. Hall, Route 1, Box 39, Watsonville, Cal.

BABY CHICKS (White Leghorns) shipped on approval before remitting. No goal—once charged for. Schellville Hatchery, Schellville, Cal.

BARRED PLYMOUTH ROCK EGGS for sale. Good, large, thrifty breeding cockerels, $5 to $10, to 200-egg stock, $1.50 per setting. Mrs. J. A. Vassar, Laytonville, Cal.

BABY CHICKS—White Leghorns from good laying strain of Hoganized and R. O. P. tested stock. Rose Hill Hatchery, Turlock, Cal.

THOROUGHBRED BUFF ORPINGTON EGGS—From [illegible] $1.50. Mrs. M. Lopez, Lathrop, Cal.

LIGHT BRAHMA EGGS—[illegible] stock for sale. J. Dolan, 146 Woodside, Stockton, Cal.

DON'T FAIL to order now if you want early chicks from our Hoganized S. C. White Leghorns. Tupman Poultry Farm, Ceres, Cal.

CHICKENS, DUCKS, GEESE, GUINEAS, Pet Fowl, Pigeons. Wm. A. French, 615 W. Park St., Stockton, Cal. Stamp.

BUFF ORPINGTONS, BUFF DUCKS, BOURBON RED TURKEYS. The Evans Ranch, R. F. D. 1440, Petaluma, Cal.

PLACE ORDERS EARLY for chicks with the Madera Hatchery, Madera, Cal.

RABBITS.

MONEY IN RABBITS—We are now paying $6 per pair for all you can raise. Send stamp for particulars. H. E. Gibson, Co., Arcadia, California.

DR. B. BEARS, VETERINARIAN. Breeder New Zealand and Flemish Giant Rabbits. R. R. 2, Porterville, Cal.



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Then send for the latest KRESKY catalogue, 20. Our latest development of the Liberty Stove has 'em all beaten.

Economy, Efficiency, Convenience

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We Guarantee More Eggs

A good layer will transform one dollar's worth of food and supplies into $3 worth of eggs at present prices. To be a good layer a hen must be in top notch of health. That is GERMOZONE'S strong hold.

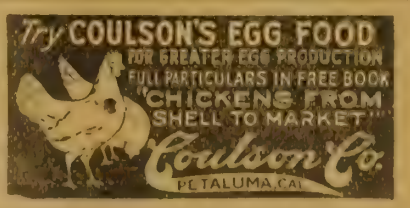
Germozone, three times a week, coupled with our simple directions for daily feeding, care and culling out slackers, is guaranteed to produce better and more permanent health and egg supply, or no pay.

One woman averaged 18 eggs daily from 21 hens in December. Germozone costs less than one cent per hen per month. See the profit.

Germozone cuts out the illnesses from musty or spoiled food, impurities picked up with food from floor, contagion through the drink, roup, colds, canker, throat inflammation, sour crop, etc. It goes well with any modern method of feeding—grain, vegetables, meat.

SIXTY DAYS' TRIAL—PAY IF SATISFIED. To those who agree to use as directed and pay if satisfied, we will send GERMOZONE first time on 60 days' trial, postpaid, without preliminary charge. Write today, stating how many hens you have. Germozone is sold by drug and seed stores in 75c and $1.50 sizes.

GEO. H. LEE CO., Dept. 428 Omaha, Neb.



Get Eggs to Sell—and Eggs to Hatch

The big demand for poultry products insures a continuance of high prices for a long time. Take advantage of this money-making opportunity. Make *your* birds lay heavily *now*. Have lots of eggs to sell. And get highly-fertile eggs too, the kind that gives big hatches of sturdy chicks which will grow rapidly to market weight. Use

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to put your layers and breeders in perfect physical condition. Abounding health and vigor mean profitable egg production and strong, vigorous chicks.

Pratts Poultry Regulator keeps the flock in splendid health and that means better results, greater production, bigger profits. It tones up and strengthens the organs of digestion, assimilation and reproduction, enabling each to do full duty. And it does this work in a perfectly *natural* way. It is a scientific combination of tonics, appetizers, digestives and laxatives which are so necessary to heavy production. Test it *now* on all or part of your flock *at our risk*.

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THE HOME CIRCLE

DON'T STOP AT THE STATION DESPAIR.

We must trust the Conductor, most surely;
  Why, millions of millions before
Have made this same journey securely
  And come to that ultimate shore.
And we, we will reach it in season;
  And ah, what a welcome is there!
Reflect then, how out of all reason
  To stop at the Station Despair.

Aye, midnights and many a potion
  Of bitter black water have we
As we journey from ocean to ocean—
  From sea unto ultimate sea—
To that deep sea of seas, and all silence
  Of passion, concern and of care—
That vast sea of Eden-set Islands—
  Don't stop at the Station Despair!

Go forward, whatever may follow,
  Go forward, friend-led, or alone;
Ah me, to leap off in some hollow
  Or fen, in the night and unknown—
Leap off like a thief; try to hide you
  From angels, all waiting you there!
Go forward; whatever betide you,
  Don't stop at the Station Despair!

—Joaquin Miller.

THE VISITATION OF THE BLACK CAT.

Yes, Charcoal certainly must be lost; for the children had rummaged the house from cellar to garret, in a vain search for him, and Nanna Brooks had laid aside her sewing to help.

The little Brookses were inconsolable at the disappearance of the pet, which had won its way into the heart of every member of the family from the day it first stepped paw across the threshold.

And what would Jack Sprat do without his little playfellow? From the beginning the big, awkward St. Bernard pup and the tiny kitten had shown the keenest interest in each other, an interest that soon developed into warm friendship. A pretty picture they made, eating from the same dish, playing at hide-and-seek, and, when tired out from their frolics, cuddling down close together for a nap.

"Oh, I have an idea!" cried Sister Nell, as she fled to her room, returning soon afterward with a dozen neatly printed slips of paper, each one of which read as follows: "Lost—A six-months-old black kitten, answering to the name of Charcoal. When last seen, he wore about his neck a yellow ribbon with bell attached. Finder will be suitably rewarded by leaving him at No. 7 A street."

"Now," exclaimed the triumphant printer, "if you children will tack up these posters in conspicuous places, I shouldn't be surprised if something came out of it. At any rate, it will do no harm to try."

Whereupon the little Brookses dried their tears, and suddenly became very busy.

The next day, in her zeal for good works, Nanna Brooks went to the kindergarten, the primary, and the grammar schools in the neighborhood, and asked permission of the teachers to address the classes, which was cheerfully given; and, going from room to room, she announced, in her bright and inimitable way, the loss of little Charcoal, and succeeded in so interesting the small fry that before another twenty-four hours nearly every boy and girl in the district had become a self-appointed detective bound on discovering the whereabouts of that kitten or knowing the reason why.

And now comes the strangest part of my story — strange, but true, nevertheless; for all this really happened, and not so very many years ago either, right in a suburb of Boston!

For some days after the announcement of their loss, the Brookses' door-bell seemed to have acquired the secret of perpetual motion, as kittens galore descended upon the household. Not only were black kits produced in breathless expectation of receiving the coveted reward, but various-colored kits of assorted ages and sizes—tabbies, tigers, calico cats, black-and-white kits, kits tawny yellow, and even a couple of Angoras!—for descriptions of the waif had become somewhat distorted. So was it strange that after awhile the Brookses themselves became confused in their judgment of cats, and black kittens in particular?

"And kittens grow so fast, too," declared Ted, fondling one especially engaging little beauty. "'Course Charcoal would be bigger'n when he went away a week ago. I believe this is Charcoal!" giving the ball of black fluff a loving squeeze.

"No, it isn't Charcoal, his eyes were yellower!" replied Lou, who was taking lessons in water color, and described the eyes of the missing one as "pure gamboge."

"Yes, but a cat's eyes change with age and the weather! Wait, I have an inspiration!" exclaimed Nell, ever ready of resource. "Call Jack Sprat!"

Jack Sprat shambled in from the yard, and simultaneously the ball of black fluff assumed the appearance of a small demon, as it confronted the big puppy in a fury, eyes blazing, back elevated, and tail distended, and hissing and spitting like a bunch of firecrackers. Jack Sprat fled in dismay. That settled the question, and thereafter, in times of doubt—and there were many such occasions—his puppyship was called in to act as judge.

But one day, after three weeks had passed and forty-seven kittens had been interviewed, and the Brookses had about given up hope, an odd-looking bit of feline forlornity put in an appearance, borne in the arms of a freckle-faced ragamuffin. Surely this hungry-looking waif could never be the once plump Charcoal; but the eyes—big and bright and beautiful—were the nearest approach to "pure gamboge" seen since the ill-fated day of their owner's disappearance. Lank and collarless, it seemed incredible that so short a time could have wrought such a change.

"Call Jack Spratt!"

Once again was the umpire summoned, and—oh, joy!—no longer could there be any doubt about it! Who but Charcoal would dare to rub so affectionately and with such an air of proprietorship against the awkward legs of the great puppy! And who other than Jack Sprat could have looked so silly and sheepish and, yes, actually happy, as he sniffed his former playfellow with every indication of delight, and immediately began a set-to at hide-and-seek!

Great was the rejoicing in the Brooks household that day, and great also was the rejoicing in the heart of the young tatterdemalion who had restored Charcoal to his rightful owners, thereby receiving a crisp dollar bill and a good dinner for his trouble.

Needless to say, the truant grew plump and beautiful again; and one day, when he had nearly reached his full stature, Sister Nell brought him home a new ribbon with a tinkling silver bell attached—a ribbon almost the identical color of his eyes—and at the same time his puppyship was presented with a handsome collar on which was engraved in plain script—so plain that "he who runs may read," quoth Nell — these words: "Jack Sprat—member of the Humane Society."

"But, if I had my way about it," she added, "I believe I'd rechristen the dear beastie, and call him King Solomon; for, like that monarch of old, he helped settle, in the wisest and surest way, a difficult question as to rightful ownership."—Louella C. Poole.

Sowing Now for Summer Blooms

THIS IS THE MONTH for planting seeds for summer blooms—sweet peas, asters, dahlias, zinnias, and other old-fashioned flowers. These flowers have been all so improved that they produce much larger, more showy flowers than formerly; so do not be satisfied with anything but the new varieties. They may cost a little more to purchase, but they more than repay the difference in cost with the greater size and brilliancy of their flowers.

When Buying a Piano
Think More "How Good"
Than "How Cheap"

Pianos like everything else are priced according to their intrinsic worth.

When you buy a piano it is usually intended for a life time—then special care should be used in its selection.

It is to your interest to go to a reliable dealer, and when making your selection think more of how good a piano you can get than how cheap you can buy it.

We invite you to call at any of our stores—or write us asking for illustrated catalogs and prices.

We are dealers in Steinway and other Pianos, Pianola Pianos, Aeolian Player Pianos, Player Music, etc.

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Stores also at Vallejo, Portland, Seattle, Tacoma, Spokane.

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OUR newest catalog, revised, enlarged—128 pages, picturing "quality" furniture and dependable home furnishings from reproductions of actual photographs; rugs in colors. In sending this book we literally "send our store"; retail division (pictured) occupies 35 floors in five connecting buildings, with 100,000 square feet floor space in other buildings devoted to warehousing and manufacturing. In all, over nine acres floor space.

Forty years of successful catering to needs of Western homes. Nearly 1000 employees to serve you; capable staffs to help you buy "exactly what you want"—to acknowledge orders same day received—to insure careful packing and make shipment same day where possible. *We prepay all the freight* reasonable distances, and make liberal allowance to further points.

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Barker Bros
ESTABLISHED-1880

734 SOUTH BROADWAY LOS ANGELES

STARS AND STRIPES.

Thank God we can see, in the glory of man,
The invincible flag that our fathers defended;
And our hearts can repeat what the heroes have sworn,
That war shall not end till the war-lust is ended,
Then the blood-thirsty sword shall no longer be lord
Of the nations oppressed by the conqueror's horde,
But the banners of freedom shall peacefully wave
Over the world of the free and the lands of the brave.
—Henry Van Dyke.

TASTY SALADS.

At this time of year housewives should devote some thought to salads, to satisfy the craving of the system for succulent greens. To satisfy, a salad must be crisp and fresh and not be prepared long before time to serve.

Pineapple Salad.—Sliced pineapple and lettuce make a most refreshing salad. Serve a slice of pineapple whole on a bed of lettuce, with a ball of cream cheese in the center, or dice the pineapple and shred the lettuce, mix well together, dress with French dressing and serve on lettuce leaves with a dash of paprika. The pineapple juice may be used either for a gelatine pudding or to add to a drink.

Cabbage Salad.—Shred the cabbage, salt and blend with it sweetened mayonnaise dressing. Serve in individual salad plates. Over the top sprinkle grated raw carrot. This looks attractive and also gives it a nutty taste. Prepare just before serving.

Tuna Fish Salad.—One can tuna fish, flake, using a silver fork, add one and one-half cups chopped celery and one tablespoon minced onion. Mix together with salad dressing.

Bean and Celery Salad.—One can kidney beans, six sweet pickles, one-half cup celery chopped fine. Mix together with mayonnaise and serve on lettuce leaf.

Birds' Nest Salad.—Take fine white lettuce leaves and the crisp yellow ones, but none of the green. Arrange the lettuce on individual salad plates in the form of nests. Dress with French dressing. Fill the centers with ribbons of the green leaves shredded and on these place on each plate one whole hard-boiled egg yolk with a spoonful of thick mayonnaise over it. Run the whites of the hard-boiled eggs through a ricer and let fall delicately over each salad.

Cherry Salad.—Stone carefully large white canned cherries. Arrange on lettuce leaves, pour over French dressing and serve.

Macaroni Salad.—Cook one cup macaroni in boiling salted water. When done, drain and rinse well with cold water. Chop two bell peppers, one-fourth cup of celery and one small onion. Toss together lightly with a fork, season and serve with mayonnaise.

FOR HOUSECLEANING DAYS.

To mend cracks in walls before repainting or tinting, fill with plaster of paris, let harden and then brush lightly with shellac. After it is thoroughly dry, the paint or tint may be applied and it will cover without leaving a discoloration.

To wash a painted wall, all that is necessary is pure soap and softened water and a strong right arm. The difficulty of getting walls evenly cleaned may be obviated by washing a small portion at a time and drying immediately. A thin coat of starch, made by dissolving ordinary laundry starch in cold water and putting on with a clean brush, will make walls easier to wash.

TIMELY SALES.

Many stores are having sales of household furniture, dishes, glassware and the like, which are well worth investigating, if one has needs along that line.

The regular white goods sales are in progress and include not only muslin underwear, but linens for table and beds. The general talk seems to be that it will be some time before we may expect lower prices on any linen goods.

Blankets, comforts and feather pillows are also included in these sales, but even at reduced prices they are high.

All the shoe stores are having reduction sales of regular stock, as well as accumulated odds and ends.

Many art stores are selling mirrors, book ends, statuary and the like at reductions that should tempt one to buy for future needs, either in their own home or for gifts.

FASHION NOTES.

Hats of black satin, many times combined with lace for a brim, are very new style.

Satin continues to be a most popular material for street dresses as well as afternoon frocks.

Marabout capes are in favor again in such variety of styles that one's old cape might easily be remodeled to be up to date.

Jet is being used as a trimming on black Georgette blouses and evening dresses of black net over a foundation of white silk.

There is much interest in what is termed the new silhouette, but so far the lines of garments are slim, with a slight tendency to drawing in around the bottom of the skirt.

Umbrellas have grown to be quite festive, taking to themselves the many and varied colorings that used to seem to belong solely to parasols.

The bell sleeve is shown on many of the handsome dresses. This sleeve is quite snug from the shoulder to the elbow and flares out from there.

MORE LIGHT THAN 20 OIL LAMPS

AT LAST—the light of lights—A beautiful lamp that lights with common matches just like oil lamp, but makes and burns its own gas from common gasoline, giving a brilliant, steady, restful, white light of 300 candle power.

MOST BRILLIANT LIGHT MADE

Brighter than the brightest electricity. More light than 20 oil lamps. Cheapest and best light made. Costs less than one-third of a cent per hour. Safer than the safest oil lamp. The



COLEMAN QUICK-LITE

No wicks to trim—no globes to wash. No dirt, no grease, no glare or flicker. Absolutely safe. Fuel can't spill—no danger even if tipped over. —will last a lifetime.

Write or office for Catalog 21-R. P.

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Facts--and a Circuit



Hundreds of burners have been offered the public for the purpose of making gas from coal oil, but have been disastrously incomplete in the means of permanently maintaining the seeming state of perfection first obtained.—Why?—Simply owing to the total lack of circuit—the "Goose" neck and dead end having always been trouble makers. The accumulation of carbon at the dead end putting the burner out of business sooner or later—usually sooner.

A complete circuit, therefore, is the secret of the continued and permanent success of "The Simplest Thing in the World"—a three-year record in this our home city has fully proven that fact.

Full and complete information upon request. Describe your stove and ask for circular "B" and drawing.

Burner for Stove Mailed Anywhere—$5.00 $9.85 for Complete One Burner Outfit—Express Charges Collect. Fully Guaranteed—Complete Instructions.

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BUSH CAR—FREE

This Five Passenger 37 H. P. car, 116 in. whl. base. All bearings Timken. Delco Ign.–Dyneto Stg. and Ltg. Write at once for my great Free Offer and 48-page catalog. Agents wanted to drive and demonstrate. Territory open. Prompt shipments. Big money. Cars guaranteed or money back. 1919 cars ready.

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Get This Blow-Out Patch

THE Firestone blow-out patch performs both duties, holds the blow-out securely and protects the inner tube while in casing.

Built of six plies of rubberized fabric, it is flexible and yielding. It is protected at both ends by a molded-in real rubber tip, originated by Firestone, which does not allow the tube to come in contact with the raw, rough edges of the fabric. It is wide enough to extend from bead to bead. It is curved to fit snugly the inside dimensions of case and cannot buckle, see illustration.

Authoritative figures show that one in every four car owners prefer Firestone blow-out patches. Firestone will make 5 million of the 20 million to be sold this year.

Prepare for most miles per dollar and least trouble per mile by getting this patch and other Firestone Tire Accessories from your dealer.



FIRESTONE TIRE AND RUBBER CO.
FIRESTONE PARK AKRON, OHIO
World's Largest Manufacturers of Tire Accessories and Repair Materials

Market Comment

Bean Growers Not Neglected.

California bean growers have not been slighted as badly as represented in the daily press. An article printed elsewhere in this issue sets forth the situation in the main correctly. The latest on the subject is a declaration from H. Clay Miller, who has charge of the purchase of beans in this State for the Food Administration. He says the Government will need 5000 tons of beans a month for the army, navy and marines and 65 per cent of that amount will be bought in California. With the exception of 200 sacks of beans that were needed in an emergency, no foreign beans have been bought. Mr. Miller also says there are 6,000,000 sacks of beans in the country, which is more than enough under ordinary conditions. The over-supply is the direct result of the high price California growers received for their crops a year ago. So prosperous were the State's bean growers that twenty States raised beans in commercial quantities, thus filling locally the needs of many buyers, who otherwise would have bought from Michigan and California, the original bean States.

Livestock Increases in United States.

Livestock on farms and ranges of the entire country was valued at $8,830,204,000 on January 1 by the Department of Agriculture. This is an increase of $546,006,000 over their value a year ago. The number of the various animals, with a comparison to the number on January 1, 1918, is as follows:

Horses, 21,534,000; decrease, 21,000; value, $2,120,709,000.

Mules, 4,925,000; increase, 52,000; value, $667,767,000.

Milch cows, 23,467,000; increase, 157,000; value, $1,836,055,000.

Other cattle, 44,399,000; increase, 287,000; value, $1,960,670,000.

Sheep, 49,863,000; increase, 1,260,000; value, $579,016,000.

Swine, 75,587,000; increase, 4,609,000; value, $1,665,987,000.

To Guarantee 1919 Wheat Price.

The Food Administration has transmitted to the chairmen of the Senate and House Agricultural Committees an Administration bill appropriating $1,250,000,000 to enable the Government to carry out its guarantee to the farmer of a price of $2.20 a bushel for the 1919 wheat crop. The measure, which was drawn by officials of the Food Administration and the Department of Agriculture, is described as an omnibus measure which would permit the President to continue the Food Administration in operation and to exercise all of the powers conferred upon him by the food control act.

Fruit Shippers May Be Hard Hit.

The proposition to increase freight rates, to become effective some time this month, is being vigorously opposed. Citrus fruit shippers will be especially hard hit. The proposed rates are $110 per car on citrus shipments from California to Missouri, compared with a former rate of $60, and the proposed rate to New York from California is $125, against the former rate of $75. This is an advance of $50 per car. Deciduous fruit shippers would also feel the increase. The proposed rate from here to Missouri is $120 per car and $135 to New York, as against the former rates of $65 and $80, respectively.

Seeking an Outlet for Barley.

State Market Director Harris Weinstock has gone to Washington to seek some channel as an outlet for California's large stores of barley. It is claimed there are 400,000 tons of last year's crop still unsold. It is suggested that the Federal authorities might permit shipment of the grain to the neutral countries of Europe and to Great Britain.

Propose to Raise Duty on Rice.

Rice growers of California are preparing to urge an import duty of 2 cents on foreign-grown rice instead of 0.6 of a cent, the present tariff. Some of our growers fear the competition of the Oriental rice fields.

THE MARKET REPORTS

Figures Given Are Independent and Reliable.
Prices Quoted as Paid to Producers.

SAN FRANCISCO

San Francisco, January 29, 1919.

WHEAT.

The following prices were announced by the Federal Grain Corporation last year and are still in effect. They are figured f. o. b. San Francisco, Los Angeles, Seattle, Tacoma and Portland and guarantee the grower a minimum of $2 f. o. b. shipping point:

Per bushel—	
No. 1 hard	$2.20
No. 2	2.17
No. 3	2.13
No. 1 soft	2.18
No. 2	2.15
No. 3	2.11
Club or Sonora, No. 1	2.16
do, No. 2	2.13
do, No. 3	2.09
Recleaned for seed, per ctl.—	
California Bluestem	$4.15@4.25
Early Baart	4.15@4.25

BARLEY.

The barley growers have appealed to the State Market Director to come to their assistance in disposing of their crop. Meantime the growers are beginning to get impatient and are shading the price wherever there is a chance to make a sale.

Choice feed, per ctl	$2.15@2.25

OATS.

Oats are somewhat weak in sympathy with barley. All seed oats are practically off the market, as the demand is only nominal. For red feed $2.35 was the top this week, while many buyers decline to offer more than $2.20.

Red feed, per ctl	$2.20@2.35
Red for seed	2.75@3.00
Black for seed	Nominal
Recleaned Red or Black for seed	$3.15@3.20

CORN.

There is still some activity in Egyptian, but otherwise the market is quiet and unchanged.

California	$2.85
Egyptian, choice	$2.75@3.00
Milo	2.70@2.75

HAY.

Receipts of hay for the past week were 1106 tons, compared with 1225 the previous week. These receipts have been practically of all kinds and grades and have been sufficient to fill all demands and leave a surplus to be placed in the various warehouses. The demand has been exceedingly light. In fact, there can hardly be said to be any market, each dealer handling his hay to the best advantage possible. On this account quotations are really nominal. There has been very little trading going on in the country, the uncertain weather unsettling trading and buying is of the hand-to-mouth description. Consignments are therefore not solicited by local dealers at the present time. Export trade continues light.

Wheat, No. 1	$22.00@24.00
do, No. 2	16.00@20.00
Choice tame oat	21.00@23.50
Wild oat	16.00@18.00
Barley	16.00@18.00
Alfalfa	18.00@22.00
Stock	14.00@17.00
Barley straw	.50@ .80

FEEDSTUFFS.

There are no changes in the prices of feedstuffs. Rolled barley and rolled oats are weaker, but prices have been maintained. Weather conditions are favorable for early grass and this will have its effect on future prices of feedstuffs.

New alfalfa meal, per ton	$35.00@36.00
Coconut cake or meal	45.00@47.00
Whole yellow corn	73.00@75.00
Cracked corn	76.00@78.00
Linseed Oilcake Meal	78.00@80.00
Rolled barley	47.00@49.00
Rolled oats	53.00@54.00
Mill run	38.00@40.00
Bran	36.00@38.00
Fish meal, per 100 lbs	4.80@ 5.00

POTATOES, ONIONS, ETC.

Potatoes and onions are dull and unchanged. The demand is regarded as normal for the season. Mexican tomatoes came into the market this week, and the first arrivals sold at fancy prices. They are in excellent condition. Rhubarb was not plentiful this week and sold at higher prices. The vegetable market as a whole is considered in good condition.

String beans	25c
Lima beans	12½@15c
Carrots, per sack	$1.25@1.50
Rhubarb, San Jose, per box	2.00@3.00
do, Strawberry, per lb	10c
Pumpkins	$1.00@1.25
Cucumbers, hothouse, box of 30	2.50@3.00
Los Angeles, lugs	3.00
Eggplant, per lb	20@25c
Lettuce, per crate	$3.00@3.25
Celery, crate	5.00@6.00
Tomatoes, Southern, per crate	2.00@3.00
do, Mexican	3.50@4.00
Sprouts, per lb	8@10c
Potatoes—	
Fancy whites	$1.90@2.15
Choice	1.75@2.00
Sweets, per sack	3.00@3.50
Onions, Warehouse Stock—	
Yellows	1.65@2.00
Australian Browns	1.65@2.00
Garlic, new	25@35c
Green corn, Alameda, per sack	None
Okra, per box	None

BEANS.

H. Clay Miller of the U. S. Food Administration has just returned from Washington, with the statement that California during the coming year will supply about 65 per cent of the beans for the army and navy. The announcement comes too late to have any effect on this week's quotations, though it was generally known to all dealers. Prices of nearly all descriptions show a decided falling off and this would seem to indicate previous prices were not on "a competitive basis with other bean producing States," and that the market had to recede to take advantage of this Government demand.

Bayos, per ctl	$7.10@7.30
Blackeyes	4.75@5.00
Cranberry beans	7.25@7.50
Limas (south, recleaned)	9.50
Pinks	6.00@6.25
Mexican Reds	6.75@7.00
Tepary beans	3.50@4.25
Garbanzos	9.50@9.75
Large whites	7.25@7.50
Small whites	8.25@8.50

POULTRY.

The poultry market is overstocked in a number of descriptions and a wide range of prices prevailed in different sections. Hens of all descriptions sold all the way from 33c to 40c and roosters had practically the same range. Broilers and fryers were weaker than last week, but were the steadiest article on the market, except turkeys, of which there were only a few arrivals. Belgian hares were in excess, and some of the very best sold at 16c, while 18c was obtained in only a comparatively few cases. Jack rabbits were also lower in response to the general weakness of the market.

Turkeys, live, young spring, lb	34@36c
do, old	30c
do, dressed	40@42c
Broilers, 1½ to 2 lbs	42@45c
do, 1¼ lbs	42@45c
do, ¾ to 1¼ lbs	45@50c
Fryers	40c
Hens, extra, per lb., colored	35@40c
do, Leghorn	33@37c
Smooth young roosters, per lb. (3 lbs. and over)	33@39c
Old roosters, colored, per lb	21@23c
Geese, young, per lb	32@34c
do, old, per lb	30c
Squabs, per lb	60c
Ducks	29@31c
do, old	28c
Belgian hares	15@18c
Jack rabbits	$3.00@3.25

BUTTER.

The butter market continued its rapid decline until Friday of last week, when the bottom for the present was reached. On Saturday it reacted 5c and gained another cent on Monday. Since, it has dropped away until the close is a cent and a half below the opening and only 3½c above the low point reached. The local market is following very closely the fluctuations of the Eastern markets, and while they have been more violent here the tendency has not been contrary to the other markets at any time. A statement just made public by the Bureau of Markets shows that the production of butter in the United States for December was 15 per cent above the production during the same period of a year ago. This increase in production has had an important bearing on present prices. Following are exchange prices, with the discounts deducted:

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extra	46	41	46	47	45	44½
Prime firsts	Nominal					
Firsts	Nominal					

EGGS.

Eggs are following butter in the downward trend of prices, the Eastern market being the dominating factor in the decline. Extras closed 9c lower than last week, while pullets were 9½c lower. The following quotations are exchange prices, with the discount deducted:

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	52½	51	49½	48½	48	48
Extra 1sts	81	Nom.	—	—	—	—
Firsts	Nominal					
Extra pullets	49½	44½	43	43½	44	41

CHEESE.

With little business transacted, cheese this week followed butter to lower levels. Fancy California flats lost 5c and even the Oregon triplets was off a half cent. The prices given are the exchange quotations, less the usual commission, and should represent the price received by the makers:

Fancy California flats, per lb	23½c
Firsts	22½c
Oregon triplets, fancy	36c
Oregon Y. A. fancy	38c
Monterey cheese	23@26c

FRESH FRUITS.

Apples are stronger. There was an especial demand for Newtown Pippins this week, resulting in an advance in the quotations of this description.

California apples	$2.00@2.50
Northwest apples	2.00@3.25
Winter pears	2.00@3.50
Persimmons	1.00@1.50

CITRUS FRUIT.

The demand for oranges was very light this week and the price was lowered 50c for the best in order to move them.

Oranges, navels	$3.00@4.50
Mandarins	1.75@2.25

Special Livestock Market Report

San Francisco, January 29, 1919.

CATTLE—There is little change in the market situation for cattle, except that there seems to be increasing difficulty in getting supplies. As a result, there has been a fractional advance in some classes. Animals of the better grade are especially hard to get, so are calves.

Steers—	
No. 1, weighing 1000@1200 lbs	12¾@13c
do, weighing 1200@1400 lbs	13@13½c
do, second quality	11½@12c
do, thin	9@10c
Cows and heifers—	
No. 1	9@10c
do, second quality	8@9c
do, common to thin	6@7c
Bulls and stags—	
Good	6½@7½c
Fair	5½@6½c
Thin	4½@5½c
Calves—	
Lightweight	11½@12c
Medium	10½@11c
Heavy	8@9½c

SHEEP—Mutton animals come mostly from the feed lots, and are drawn on just sufficiently to meet the rather light demand of the consuming public. Prices unchanged.

Lambs	14@14½c
Yearlings	12½c
Sheep, wethers	11½@12c
do, ewes	8½@9¼c

HOGS—The hog market is easy. Receipts are plentiful, but are taken care of by the packers, whose handling department is better equipped, and so prices hold steady.

Hogs—	
Hard, grain-fed, 100@150 lbs	16c
do, do, 150@250 lbs	16½c
do, do, 250@300 lbs	16c
do, do, 300@400 lbs	15½c

DRESSED MEATS.

Steers, No. 1	20@21c
do, second quality	19½@20c
Cows and heifers	17½@18½c
Calves, as to size, etc	18@21c
Lambs, suckling	24@25c
do, yearlings	20@21c
Sheep, wethers	18@20c
do, ewes	15@17c
Hogs	25c

Los Angeles, January 28, 1919.

Following is the report of livestock market conditions in Los Angeles compiled by the United States Department of Agriculture, Bureau of Markets, through the local office, for January 27: The market for beef producing animals continues strong. The supply is light and the quality is improved. Hogs are in fair demand, but supplies are still liberal. Lambs continue firm. Wethers are scarce. Ewes, supply liberal and the market is weak and draggy.

PRICES—Steers, good, $13.50@14.00; medium, $12.00@12.50; common, $11.00@11.50. Cows, good, $11.00@11.50; medium, $9.00@10.00; common, $6.50@7.50. Hogs, No. 1, $16.00@16.50; No. 2, $15.00@15.50. Lambs, 65 to 80 pounds weight, $16.00@16.50; wethers, $11.50@12.00; ewes, $8.50@10.50.

North Portland, Ore., Jan. 27, 1919.

CATTLE—Trading opened rather early Monday morning at the Portland Union Stockyards with about 40 carloads of livestock for the packers to look over and trading was brisk from the start, with prices on the whole holding their own. Three hundred and eighty-seven head of cattle, 7 calves, 2334 hogs and 971 sheep. The cattle were of an average grade and brought corresponding prices. One batch of steers was weighed up at $13.60, a rather high quotation for the day's run of business. Cattle quotations on the average run of sales throughout the day were about holding their own with last week's.

HOGS—There were about 18 carloads of hogs offered this morning. For the past week little activity has been shown around the hog scales and most of the sales have been made at $17 as a top quotation, with the bulk of sales around $16.80. The market in swine has been weak and draggy and hogs this morning had another fall when $16.80 was the best offered for prime stuff.

SHEEP—Only three loads of sheep were on the market today, which has been holding very strong for the past ten days. A top price of $14.50 still prevails for prime lambs, with the bulk of sales for good quality around $14. There is a good demand for nearly all grades, with an extremely limited supply.

Special Citrus Market Report

Los Angeles, January 27, 1919.

The Eastern market for California navels remains steady in the face of heavy shipments north from Florida. After the turn of the month about 10,000 to 12,000 cars of navels will be ready for shipment from this State. The exact extent of the frost damage is still undetermined. However, the use of water separators is rapidly segregating the frosted fruit from the sound. Standard sizes of choice fruit are bringing $3.50 to $3.75

The demand for lemons is good and the price situation is satisfactory. Some fruit frozen in transit has lowered the average price obtained, but $4 to $4.50 delivered is offered for stock of good quality. There are few Sicilian lemons on the Eastern markets.

Shipments of oranges to date total 6846 boxes, last year to date, 4882 boxes. Lemons this year, 1720 boxes; last year, 759 boxes.

Tangerines	2.75@3.25
Lemons, fancy	4.00@4.50
do, choice	3.50@4.00
do, standard	3.00@3.50
Locomottes	2.50@3.00
California limes	1.50
Grapefruit, new	2.25@3.00

HONEY.

There were no developments in the honey situation this week.

DRIED FRUITS.

An active export demand continues for dried fruits, but no material increase in trading prices is reported.

RICE.

Paddy rice, 1918 crop	$4.32
Clear No. 1, 1918 crop, at mill	7.00

LOS ANGELES

Los Angeles, January 28, 1919.

BUTTER.

A sharp break was had in this market the past week. Milder weather and an increase in production anticipated, and lower markets East, caused extras to break here on 'change up to Thursday of our review week 8c. But at this decline there was very good buying. Receipts for the week were 240,900 pounds, against 301,800 pounds the same week last year. With San Francisco declining 10¼c on extras at the same time and New York 6c and Chicago 7c on extras the first half of the week, the light receipts failed to influence the market. Lower prices encouraged freer consumptive buying and Saturday of our review week extras advanced here on 'change 1c, while San Francisco and the Eastern markets were reported steady and firm. There was withdrawn from cold storage during the week 17,419 pounds, against 6358 pounds the same week last year. The holdings now are only 32,141 pounds. This want of stocks, however, is having no influence upon the market in the face of mild weather and the anticipation of a gradual increase in production both East and West. The Government, too, is holding back and is taking no new butter, which is having its influence upon the market.

We quote—

California fresh extra creamery	48c
do, prime first	46c
do, first	45c
Same time last year—	
California extra creamery	52c
do, prime first	50c
do, first	49c

Daily quotations—

1919 -	Tu.	Wed.	Thu.	Fri.	Sat.	Mon.
Extra	52	52	47	47	48	48
1918—						
Extra	52	52	52	52	52	52

EGGS.

There was more doing in this market the past week than for some time. Receipts for the week by rail were 1692 cases, against 1680 cases the same week last year. As the receipts by truck run about four times as heavy as the arrivals by rail, the supply for the week was 8460 cases, against 8400 cases the same week last year. This increase in the supply brought sharply lower prices. Extras on 'change broke during the week 5½c, case count 6c and pullets 4½c. These prices are now 2c to 2½c lower than this time last year. San Francisco broke on extras 4¾c during the week and Chicago lost 5½6c and New York 3¼c during the week. Under freer arrivals and milder weather throughout the country, causing hens to lay more freely everywhere, receivers dropped prices day by day to avoid the accumulating of stocks on a declining market. There were 742 cases taken from cold storage during the week and the holdings now are only 431 cases and they held on contract.

Daily quotations—

1919 -	Tu.	Wed.	Thu.	Fri.	Sat.	Mon.
Extra	57	55	52½	51	50	48½
Case count	53	53	52½	49	49	47
Pullets	52	52	51	49	49	47½
1918—						
Extra	58	58	58	55	51	51
Case count	57	57	57	53	49	49
Pullets	55	55	55	53	48	49

POULTRY.

A fair demand and steady market was had the past week for most offerings. While prices are no lower, the tone of the market was weak. Broilers were in better supply than for some time and slow sale. Fryers and hens were in only moderate supply and the same may be said of turkeys and ducks, and they sold fairly well.

We quote from growers:

Broilers, 1@1¼ lbs	40c
Broilers, 1½@1¾ lbs	43c
Fryers, 2@3 lbs	33c
Roasters (soft bone), 3 lbs. and up	33c
Stags and old roosters, per lb	20c
Hens	30@31c
Turkeys	33@36c
Ducks	30@32c
Geese	28c

VEGETABLES.

There is little new to note in this market from a week ago. Offerings were not heavy and all choice stuff sold fairly well. Cabbage was in very good demand and sharply higher. Cauliflower was also in very good request and brought full last week's prices. Onions scarce, firm and in very good demand. Potatoes were in very good demand, but under freer offerings Idaho Russets sold a little lower. Celery steady and the best in fair demand. Poor very dull. Sweet potatoes in better supply and the market was dull and lower. Bell peppers and Chile peppers out of the market.

We quote from growers:

Peas, per lb	10@15c
Potatoes, northern, per cwt	$2.25@2.40
do, Idaho Russets, per cwt	1.90@2.00
Sweet potatoes, per cwt	2.25@2.75
Garlic, per lb	50c
Onions—	
Australian Brown, Lompoc, per cwt.	$2.00@2.25
White Globe, per cwt	7.00
Cabbage, per 100 lbs	1.00@1.25
Celery, local, per crate	4.00@5.00
Celery, northern, per crate	7.00@8.00
Cauliflower, standard crate	1.75@2.00
Hubbard squash, per cwt	$1.00
Banana squash, per cwt	1.00
Pumpkins, per cwt	50@75c

FRUITS.

A firm market and good demand was had the past week for all good apples. They continue to make up the offerings of deciduous fruit from the country. The fear of buying frozen oranges is causing buyers to take hold of them cautiously and this has helped the apple market.

We quote from growers:

Apples—	
King Davids, Northwest pack	$2.75@3.00
Black Twigs, Northwest pack	3.00
Baldwins, Northwest pack	2.75
White Pearmains, 4-tier	2.00@2.25
Yellow Newtown Pippins, 4-tier	2.25@2.35
Bellefleur, 4½-tier	1.75@1.80
do, 3½-tier	1.85@2.00
Jonathans, Northwestern pack	3.00@3.25
Winesap, loose, per lb	6@6½c
Roman beauties, Northwestern, per peck	3.00@3.25

Orange and Lemon Statistics to Date

[Prepared for the Pacific Rural Press.]

The Rural Press has received from the California Citrus League (F. O. Wallschlaeger, Secretary), the following valuable compilation of figures covering the orange and lemon production of California for the five-year period from 1914-18, inclusive. This information was requested for our 1918 annual edition of December 28 last, but for sufficient reasons could not be furnished us until now:

	Acres bearing	Year ending October 31st (boxes)	Acres non-bearing
LEMONS—			
1914	18,960	1,174,242	17,414
1915	18,442*	2,601,024	18,208*
1916	21,946*	2,712,715	18,553*
1917	22,651*	3,024,876	16,709*
1918	29,640*	2,492,976	18,613*
ORANGES—			
1914	107,281	17,986,482	64,651
1915	112,926*	15,857,856	55,927*
1916	113,739*	15,490,399	57,256*
1917	113,821*	20,267,846	45,758*
1918	118,699*	7,802,757	50,451*

*Per State Commission of Horticulture.

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MISCELLANEOUS.

REMANUFACTURED PIPE. All sizes standard pipe and wrought iron screw casing. All kinds of fittings. Guaranteed good as new. Write for prices. Weissbaum Pipe Works, 160 Eleventh street, San Francisco.

PEAFOWLS—VERY TAME for sale; 9 months old; pair, Trio $45; 8 months old, $37.50 pair, Trio $34.50. Crating extra. Eggs in season $3.00 each. Also Mammoth Spanish Jacks and Jennets. A. Everett, Moorpark, Cal.

FOR SALE—Two five-point Hanch bottom P. & O. cultivator plows, almost new and in fine condition. Listed new at $550 each. Will sell both goings for $400 each. J. H. Rizer, Watsonville, Cal. Phone 1385.

CO-OPERATION (not operated for profit) reduces living expenses. Particulars and catalogue from Co-operative League, Commercial street, San Francisco.

CABBAGE CUTTER—SIX KNIVES. Shreds vegetables rapidly. Excellent for potato chips. Postpaid $1.00. Three for $2.50. Lasher Brothers, Elkhart, Indiana.

FOR SALE—3 bottom power lift P. & O. tractor plow $150. Double 6 ft. John Deere disc harrow, $100. 1 ton auto or truck trailer, $100. 8 ft. Dunham double power crowder $75. All practically new. Barker, Fortuna, Cal.

MILKING MACHINE—3 unit Sharples suspensions for 25 cows, complete with 1 cr. Bamber Morse gas engine. All in first-class condition. Price $500. Box 1170, Pacific Rural Press.

ALL SIZES OF PIPE and screw casing, both new and second hand, dipped and undipped. Guaranteed. Prices right. Exeter Pipe Works, 304 Howard St., San Francisco.

FOR SALE—Fourteen 50-gal. oak wine barrels, used but once, like new. Guaranteed to be in fine condition. Price $4.75 each, f. o. b. Watsonville. C. W. Carroll, Watsonville, Cal.

FOR LEASE—48 acres orchard, country. Houses for 5000 boxes, equipped to ship; houses, machinery, horse. Good soil, fruit and income. Box 1430, Pacific Rural Press.

MADE OF REDWOOD, Hackley Perpetual wooden well casing the best and cheapest well screen made. Send for descriptive circular. G. M. Hackley, La Mesa, California.

CLEVELAND TRACTOR for sale, 1 ton. Must sell at once. Cost $1000. P. Peterson, 3 D 1 box 1, Lodi.

FOR SALE—40-acre ranch, in good condition, 18½ acres bearing prunes, 5 acres almonds, 5 acres alfalfa, balance in other crops. Cement piping for irrigating. Electric pumping plant; abundance of water. Close to town. Good location. Address, Owner, Box 346, McFarland, Cal.

FOR SALE—The famous Bane Almond orchard at Orland. On account of labor conditions, as well as physical condition, I have concluded to sell my almond orchard, either in subdivisions of 10 acres, or as a whole. For particulars address P. D. Bane, Orland, Glenn Co., California.

DO YOU WANT a good small ranch—37 acres—under irrigation? Plenty of water. Good income property. For sale at a bargain. For particulars address J. B. Kroetch, Willows, Cal.

FOR SALE—Five acres fine four-year-old almonds, 3 blocks from State Highway and car line. Finest soil. Just outside city limits of Chico. Box 104, Route A, Chico, Cal.

FOOT HILL RANCH for sale, 30 acres in cultivation, implements and stock, all for $3000. For particulars write to E. A. Winsor, Hornbrook, Cal.

FOR SALE on very easy terms, or will rent, 270 acres of rich bottom land on Grisly Island, Solano county, all in cultivation. F. N. Chaplin, Dutton's Landing, Cal.

FOR SALE—Improved ranch with all implements and cattle. Address, Box 476, Placerville, Cal.

SEEDS AND PLANTS.

YOUR ALFALFA SEED should meet the needs of your soil and moisture conditions. One of the seven different kinds of Green Gold brand seed will yield heaviest and live longest because they are selected for particular conditions. Our illustrated booklet tells you all about each kind. Write for it now. Bomberger Seed Company, Desk B, 725 Tenth street, Modesto, Cal.

BUDDED AVOCADOS—Fuerte, Sharpless, Lyon, Dickinson, Blakeman, Puebla, Simkes, Taft, Landa, Rey, Queen, Knight, and others. A fine stock of field grown trees $2.50 for one, $2.00 each by the 100, 25c per tree for packing. Newbery-Sherlock, 2202 East Colorado St., Pasadena.

TUSCAN AND PHILLIPS CLING PEACHES—extra heavy caliper, one year 4-6 ft. J. H. Hale and other good varieties peach, plum, apple, and pear trees. Walnut and citrus fruits. Clean, healthy, vigorous trees, true to name. Grown under expert supervision. Los Nietos Valley Nursery, Downey, Cal.

EUREKA WALNUTS are the best grafted on Paradox roots. They resist blight. You are sure to get the real thing by placing your order with us. We graft Eurekas only. Gever Brothers Walnut Nursery, 214 S. Alexander street, Alhambra, Cal.

TREES! TREES! Eureka and Placentia walnuts on black, a general assortment of high-grade nursery stock. A. R. Marshall's Nurseries, 1217 Rose street, Santa Ana, Cal.

WALNUT SCIONS. All the standard and new varieties. Payne and Pedro scions. Pedro seed absolutely genuine. Send for list. Tribbey Bros., Elk Grove, Cal.

FOR SALE—Budded Mission olive trees, ready for planting. Limb-grafted from choicest trees, special price for large lots. D. C. McCallum, Oroville, Butte Co., Cal.

GENUINE FRANQUETTE WALNUT GRAFTWOOD, 3c per foot. Orders filled in Route 4, Box 117, Santa Rosa, Cal.

OREGON PLUM STRAWBERRIES. Plants $6 per second, $5 per hundred. J. E. Dunn, Route 3, Sacramento, Cal.

Relished by the Best of Men

A Farm Bureau monthly recently stated that the farm advisor is not a "know it all," but one who is in close touch with farm affairs and able to secure the required information on short notice.

Yes, he keeps "in touch," and to do this he finds the Rural Press of inestimable value, as is proved by the following from one of the most prominent farm advisors in the State. He says: "Ever since I was Prof. Wickson's student I have been a great admirer of him and his work, and I constantly read your valuable paper. I thoroughly enjoy his editorials, and I find the Rural Press of much benefit to me in my work as farm advisor."

We are glad that Prof. Wickson is out of the office today, so that we can slip in this puff about him. Glad, too, that such experts as farm advisors find our paper helpful. Really no man is so big or so important that he can afford to get out of touch with what is going on in his sphere of endeavor, or neglect to study the methods by which others have made progress.

In this issue, for instance, the best of farmers will profit from the first page article on fertilizers by Dr. Lipman, the foremost authority on soils in California, and from the one on the application of dormant sprays by George P. Weldon, Deputy State Horticultural Commissioner. Every dairyman should post himself on the new State Dairy Council, and every farmer on the legislative doings at Sacramento. The good articles are too numerous to mention. Read them all.

COUNTRY LANDS.

30 ACRES—Half mile from State highway, three-quarters mile from point where local trains stop, and 3 and a half miles from Arbuckle. This place partially improved. 11 acres 6-year-old almonds, 1 acre 6-year-old fruit, and 5 acres 1-year-old Thompson Seedless. 13 acres to be planted to almonds this spring. Fine location. Will make a dandy home. Write us. Nelson Realty Company, pioneer dealers in almond land, Arbuckle, Calif., the Home of the Almond.

$6000 BUYS HOME-SITE with good income. Five-acre tract on State highway, one mile south of Gilroy depot, 2½ acres prunes, 2½ acres cots, 12 years old, in full bearing. Good stand alfalfa between trees. Good well, 4-inch centrifugal pump. Income 1918, $1500. Terms, half down, balance twenty-five per cent per year. Interest 6 per cent. J. E. Thomas, Gilroy, Cal.

A GOOD HOME and a paying business. A practical man with experience and 40 acres of land, wants someone with $2000 to take half the land and go into partnership and help develop a poultry and gardening business. One of the best locations of the kind in California. Thos. Hall, Box 398, Orland, Cal.

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Cash Nurseries, Sebastopol, Cal.

ASK FOR SNOW'S GRAFTING WAX—In use all over the State. If your grocer does not keep it, send to D. A. Snow, Route 1, Box 443, San Jose, Cal.

WANTED.

WANTED, POSITION AS SUPERINTENDENT—By young man, 27, recently returned from army. College trained. Four years practical experience in management of orchards, hogs and grain. Surveying for, and the laying out and installation of irrigation systems for bare land or orchards a specialty. References. Address H. H., Box 1390, Pacific Rural Press.

POSITION WANTED as manager of hog ranch on diversified farm. Experienced with registered stock, irrigated crops and deciduous fruits. Address: H. Duveneck, 1004 Paru St., Alameda, Cal.

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Yes—and come to think of it—the right start is *everything!* For it is in the first few weeks that these baby chicks lay the foundation of their lives—of their future egg production—*of your very profits!*

Baby chicks are little bits of life but, at the same time, each one represents a whole chicken. That's why it is profitable to save every one.

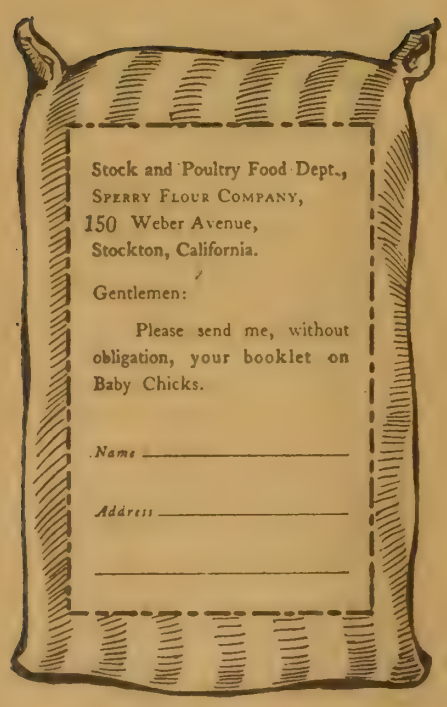
It is here that Sperry Baby Chick Feed comes as a signal help. For it supplies *all* the food values that Nature intended a growing chick to have.

No matter what your methods may be—you can depend on Sperry Baby Chick Feed to produce results. Why? Because it is prepared by experts to meet the demands of fast-growing bodies. It is clean, uniform, properly granulated and proportioned for the delicate organs of the baby chick.

Also—remember this: Sperry Baby Chick Feed is *absolutely gritless.* You don't have to pay a fancy price for shell and grit. (You should, however, add about 5% fine shell and grit, when using.)

Sperry Baby Chick Feed is a perfectly mixed ration based on the *practical findings* of the most successful poultry raisers. That's why chicken raisers are so enthusiastic about it! That's why professional poultrymen are making money by using it! And so can you!

The new edition of our booklet, "Makes Hens Happy", explains just how to feed baby chicks—gives you the advice of practical poultry experts—tells you how to boost your poultry-profits. No one knows so much about the poultry business that he can afford to overlook the big money-saving and money-making suggestions to be found in this booklet. Your copy is waiting for you—and it's *free!* Simply fill in the coupon—and mail TODAY!



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Vol. XCVII—No. 6 THE PACIFIC RURAL PRESS Forty-ninth Year

SAN FRANCISCO FEBRUARY 8, 1919 LOS ANGELES

How the State Created the Wine Industry

Thirty-First of the Editor's Series of Historical and Analytical Sketches of California Agriculture

THIS WRITER has neither interest nor sympathy with any effort to question the competence of the American people to prohibit the manufacture and use of alcoholic drinks. All contentions that the nation cannot make and amend laws to secure what it believes for the public good seem to us idle, vain and discreditable to those who make such contentions. The people have spoken: let the people obey. It is the true American way.

Although we have no professional knowledge of the law, and therefore do not intend to provoke or invite any discussion thereof, we have the conviction that efforts to impeach the recent national action, by the claim that the nation or any State thereof precluded itself from following its conception of public welfare by previously giving individuals or corporations privileges to manufacture what it now prohibits, are an insult to rational public sovereignty. If such public action can be shown by the decision of the highest courts to be invasion of vested rights, let the commonwealth pay the bill and proceed resolutely to the execution of its will. We have therefore no sympathy with the claim that the nation has "sold its birthright for a mess of pottage" and therefore must everlastingly partake of it. We do not for a moment believe that such contention has any importance nor that it can vitiate the decision of the highest court of all—the declaration of the public will in the way the organic law of the nation provides.

There is, however, one point of view from which the previous attitude and transactions of the State of California in not only permitting but also participating in efforts to establish and extending wine making in this State are of great importance. It is in connection with careful inquiry and consideration as to whether the State morally owes anything, in the way of compensation or other special assistance, to those who under its guidance and exhortation placed their property and livelihoods in jeopardy through a reversal of the State's attitude. It is imperative that this matter should be conscientiously considered by all who believe that it is the highest duty of the State to be fair to every citizen. The foundation of such a conscientious consideration is a knowledge of what the State really has done to create and extend the wine-making industry in this State. As we have within reach more definite records than most readers possess, it seems a duty to make some contribution thereof to current knowledge. We do not undertake to indicate the public attitude during the last seventy years toward the creation of a wine industry, by means of citations from published declarations of public opinion throughout this period—which we have in abundance—or by means of other inferential testimony about the public will in the matter. We shall only cite a few things which the State actually did, or ordered its servants to do, by legislative enactment, and for the execution of which it appropriated public money.



SCENES OF A LOST OCCUPATION.

The wine grape took kindly to the sunny hillsides of California, many acres of which are useless for other forms of culture. Under Federal Prohibition, wine grape growing becomes an outlawed industry in California, after forty years of careful and expensive nurture.

A State Commission to Europe.

After about a decade of oratory about the desirability of making California a great wine-producing State and after award of prizes at State Fairs for excellence of wine and brandy made by pioneer producers, the State took its first official transaction to realize a great wine industry. By joint resolution the Legislature, in March, 1861, authorized the Governor to appoint a commission "to promote the improvement and culture of the grapevine in California," and Governor Downey accepted, as a definition of what that enterprise should consist of, the following: "an examination of the different varieties of grapes and the various modes of making wine in the vine-growing countries of Europe." He appointed as commissioner to pursue such examination a California vine grower, A. Haraszthy, who discharged his duties abroad during the vintage season of 1861. His report of the work consists of a large octavo volume of 420 pages published by Harper Brothers of New York in 1862. Mr. Haraszthy not only reported in detail wine-making methods in Europe which he conceived would be of practical value in this State, but he "purchased in Europe 100,000 grapevines of about 1400 varieties, employed a gardener to take charge of them during the trip across the Atlantic, to repack them in New York and reship them by Wells Fargo & Co.'s express to San Francisco and remain with them during their journey. It was a very successful importation and under instructions of Governor Downey the vines were planted in Sonoma county, "to be held, with their increase, subject to the future disposition of the Legislature." The performance was considered commendable and several important varieties are traceable to Haraszthy's importation.

State Preference for Grape Products.

During the decade of the '60s there were a number of indications on the part of the State indicating that the conviction prevailed that the manufacture of pure grape brandy by grape growers should not be classed with distillation from grains and other baser materials. For instance, the legislative committee on the culture of the grape presented to the Legislature of 1869 a memorial and joint resolution declaring: "The existing internal revenue law of the United States is oppressive and unjust in its operation toward the fruit-distilling interest of California, leading to arrest as criminal and working a confiscation of machinery, house and land, * * * and prevents the working of light and inferior wines into brandy and if persisted in will effectually destroy the fruit interest of California: therefore, our Senators and representatives use their utmost endeavors for the repeal of said law or such modification of it as will exempt fruit distillers from its provisions as applied to malt and grain distillers."

A similar attitude toward fortified wines seems to have been assumed, and with some effect, for in 1870 it was announced that " a late ruling of the Collector of Internal Revenue to the effect that sparkling wines made from native grapes are not subject to taxation, as such wines made from foreign-grown grapes are, is most favorable to the wine interests of our State.",

Such declarations are ample evidence that the State accepted the products of the grape and favored them and was not slow to urge development thereof. It saw an opportunity following the Franco-German war of 1871, for it was then said (in the Report of the State Agricultural Society, 1871): "We are not insensible of the advantages accruing to many of our industries as a result of that war. Among those already most favorably affected are grape-growing and wine-making, and we hope our people will not be slow to make the most of the advantage

(Continued on page 187)

PACIFIC RURAL PRESS

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EDITORIALS

COMMISSIONISTIC.

CONVERSATION about what are familiarly called "the commissions" is rising to such pitch and tempo that we must take a tongue in it. It is fortunate for the success of this run of popular oratory that it follows the decadence of the flu, because the most promising treatment of it is diametrically different. The requirement of flu-victory is to shut up: that of commissionitis is to hold forth. There is inscrutable wisdom in the fact that one pandemic is conquered by "masks on" and the other can only be routed by "masks off." We call it inscrutable because we can no more understand it than, in our youth, we could fathom the pages of geometrical demonstrations which labored strenuously toward a certain definite conclusion and then generously added: "the converse is also true"! Therefore, we are quite sure that the prevalent affliction of economic chills and administrative fevers which is raging in the circulatory and nervous systems of the body-politic over "the commissions" can only be reduced by plenty of free talking and that unmasking is one of the essentials thereto.

UNMASKING OF MOTIVES.

WE ARE also quite sure that though there may be plenty of free talking on the subject of the economy and public service of "government by commissions" there can be no clear talking unless there is an unmasking of motives. And we are just as sure that this ought to be done as we are that we cannot do it. We have an impression that the whole subject is as full of politics as a trench-soldier is apt to be of "cooties," and we believe that enough hot air in the form of public discussion will drive them out of the seams of the governmental trousers—as they are now being worn, or hoping to be. For really it is not now at all clear whether the motive of those who are assailing "the commissions" as such is statesmanlike or selfish. Is it, for instance, their purpose to render the State Government less diffuse and more consistently concentrated and therefore, theoretically, less expensive? If so, can it be made clear that as much or more efficiency in doing the things which the people believe they need to have done can be had by a more closely-knit State administration, or is the change which is being striven for simply a way to regain a State Government which cost less and, from the point of view of promoting the common man and protecting him from corporate and other exactions, was not worth an old damn of a tinker? We cannot answer such questions, which seem to us fundamental, and therefore we cannot unmask the motives in the current onset against "the commissions" as such. We have an idea that enough public discussion may disclose something of significance and that in the course of such discussion either some of the opponents of "the commissions" or some of the incumbents or proponents thereof may reel off enough oratorical rope with which to hang themselves withal in the public view. It is an old proverb that when rogues fall out honest men get their due, but so long as we do not know whether the proposed "sweeping away all the commissions" has more reactionary political rogues on the advocacy side than there are inefficient, useless and costly incumbent rogues on the other, how can the public judge? Obviously that government is best which governs best—not least, as the old political saw cut it. Of course, a government can do least by doing nothing but politics, and it may cost the public less in the aggregate, but if its scheme is simply to do politics by the most consistent and concentrated organization to do it economically, it nets the public a loss, no matter how little it costs. But we have said enough of things which we admit we know nothing about.

COMMISSIONS BUILT UP OR PUSHED DOWN.

THERE is one thing about the two-score or so of commissions we have which we have not seen pointed out, and that is the fact that they were not all begotten by the same parentage of impulses, purposes and, perhaps, ambitions. Some of them were builded up from below from particular initiatives originating in popular industrial demand for special wisdom and enforcement of such wisdom upon those who endangered certain industry by ignorance or defiance of it. Some of them, and perhaps the greater fraction of them, were pushed down from above as "policies" from initiative in proposed or realized administrative control of State affairs. Some were wholly non-political in origin and purpose: others were political in conception and delivery and have been freely claimed to be party virtues. The former may be roughly classed as purely industrial in motive and purpose: the latter, though of clear industrial bearing, were chiefly social in motive and purpose. For the former no party could claim credit: on the other hand they came from producers of all party affiliations and have almost always been officered and operated in a non-partisan manner. For the latter, a party has claimed all credit and has officered and operated them from the point of view of the politically faithful. It is quite possible, therefore, that a condition might arise in which a transfer of faithfulness might not be easy and the existence of a substratum of misfit faithfulness might be irksome and possibly awkward to the attainment of a consistent, homogeneous administration of prevailing politics. Thus we have unfortunately hit upon another thing which we know nothing about, but we could not avoid it because we only hit it accidentally while on our way toward another thing which we do know and think worth pointing out because its agricultural importance and significance seem to us clear and unmistakable.

Thus, then, we have done with the larger group of semi-social commissions which manifestly came from above—though we do not count them heavenly either in purity of motive or in unselfishness of purpose. They were not intended to be of benefit to farmers; some of their supporters have admitted that they were intended to "fix the farmer" and certainly farmers have had to exercise considerable agility in dodging the downward thrusts of their celestial pile-drivers. For the sake of argument, we are willing to admit that we do not care how far they are homologized into the structure of a consistent, executive agency under the gubernatorial thumb.

COMMISSIONS WHICH CAME FROM BELOW.

THESE commissions were created by popular demand, to meet specific needs of producers, to guide and assist them in developing new industries and to place the strong arm of the State between their budding enterprises and the aggression of autocratic greed of corporations and the invasion of Bolshevic pests and diseases of plants. We have in mind, of course, the California Railroad Commission, which was driven into the constitution of 1879 by popular will, but was immediately "hog-tied" by the corporations it was designed to curb and control and lay in idleness and corruption until set free by reorganization under Hiram Johnson in 1911, and started on a glorious career with multiplied powers. But we do not count this an agricultural commission and therefore do not use it as an illustration of the point we desire to make. Such an illustration is furnished by the State Horticultural Commission, which is oldest in continuous existence of the group of agencies for the protection and promotion of agricultural production which we invoke it to typify.

In the latter '70s fruit growing as we now know it as a group of industries emerged from the pioneer period and entered upon enthusiastic expansion. At the same moment worms became conspicuous for their boring into apples and pears, scale-bugs brought gumming and destruction to most other fruit trees and the phylloxera became conspicuous for killing grapevines in the valleys north of the bay. All these pests had been formerly observed, but not appreciated as a State-wide destroying agency nor feared as an industrial menace. Growers had been inclined to believe that the California climate was a panacea for horticultural ills and a protection for their industry. Matthew Cooke, a Sacramento fruit-box maker, clearly saw the menace to his occupation and became a voice crying in a wilderness of negligence: "Fight ye; strike together, ye fruit growers, or these pests will kill your trees and destroy your business." Neighborhood meetings of alarmed growers were held in all fruit-growing sections and delegated meetings at central points followed. At all of these Matthew Cooke lifted his voice and showed his collections of fruit pests and their work. Growers who had not thought themselves menaced went home and found the same things on their trees. There was a universal alarm, a trained entomologist, Professor Comstock, then U. S. entomologist, came to California, identified old pests and christened new ones and supported the campaign for action proposed by the Sacramento box-maker. All who knew pests or feared them joined in the hue and cry against the invasion of the State by fruit pests. The first Viticultural Commission appointed a temporary Horticultural Commission and the Legislature of 1881 passed a law enabling counties to take up warfare against menaces to the fruit industry. The Legislature of 1883 passed a law "to create and establish a State Board of Horticulture—for the purpose of preventing spread of contagious diseases among fruit trees; for the prevention and extirpation of fruit pests and diseases, etc." The law provided that appointees to the board should be "specially qualified by practical experience and study in connection with the industries dependent upon horticulture." The fruit growers were delighted. The law had provided for qualified appointees and there would surely be no interference with the popular will. There could be no doubt about it: a competent commission had arisen from below!

WHAT COME FROM A GOVERNOR'S GOING WRONG.

IT IS impossible now to appreciate the revulsion of feeling, the disgust at the intrusion of political interests, the discouragement over all that the growers had resolved to do, when nearly all those who had secured the passage of the law were overlooked by the Governor in making appointments and the requirement of special qualification which the law required was ignored. Six members of a board of nine commissioners had no qualifications which growers would concede. They included two honorable Spaniards, survivors from the pre-gold period; a large sheep-farmer from Tehama county, a retired preacher from Placer county, a pioneer, without fruit property or pest knowledge, from Napa county and an insect-powder promoter from Stockton. The other three members were qualified. Politics, personal friendship and other things than fruit-pest efficiency had a two-thirds majority on the board!

All that need be said about this fiasco of thirty-six years ago is that the growers accepted the situation, smothered their resentment and took up again the endeavor—not with the strong men as officials on the part of the State, whom they had planned for, but with the lame ducks which politics provided, and in a few years, by new appointing power, etc., the board became efficient and representative of the fruit industries as it was originally designed to be. And ever since that distant day when a foolish Governor made bold to turn the importunities of the fruit growers to his political advantage or personal vanity, this body of producers has come as near to having its own way with its own affairs as any bunch of constituents ever had under a political environ-

ment. It has been the custom of the fruit growers for three decades at least to meet in popular assembly to discuss their needs: to present those needs to the Legislature by their own representatives: to take part freely in promoting State horticultural appointments; and they have been as a rule treated by law makers and executives as men who knew best what their industry required and who should have their own way with it so far as circumstances could be made to allow.

We have spoken particularly of the Horticultural Commission because it has rather more picturesque elements in its history than others; but in the main all the distinctively agricultural commissions are like unto it in their relation to the government of the State. The State Board of Agriculture, the State Dairy Bureau, the State Stallion Board and others dealing with purely agricultural affairs were created and have been maintained by and through the efforts of producers in the distinctive lines of production they ministered to and they have been always regarded as non-partisan and not constituting any part of the Governor's political family nor any part of his administrative furniture, either political or patriotic.

IS THIS THE LESSON OF THE HOUR?

AND NOW comes the onset of the economists, the politico-statesmen, the pure statesmen (with a genius for academic organization) and others, upon "the commissions" as they now exist. We are not going out with an army of job-holders to meet and try to vanquish them, for we are not sure that they are not right in their chief contentions, but we have the conviction that they should exercise their insight and ingenuity first upon those forms of committed action which they presumably know most about and these are obviously the "commissions" which were handed down from above and which are endowed with philanthropic, legal, judicial and political functions and operations. It seems to us that the patriotic reformers who have been selected to re-upholster and reduce to simpler designs the executive furniture of the State might have the time of their lofty and honorable lives in wielding their trenchant blades among the functions and functionaries of these Jovian institutions which fell upon the State full-panoplied out of the sky of political ambition and are therefore proper fuel for later furnaces of political reform. We do not consider them a part of our agricultural family, except for the trouble they have made, and we have the lofty willingness to sacrifice them for the good of the State which Artemus Ward manifested when he declared that he was willing to give all his wife's relations to win the war of 1861. But as we have already abundantly claimed, this is not our line of goods and we have no courses to approve nor to condemn in a venture which clearly belongs to the more or less qualified statesmen who now have their faces turned towards it.

But this lesson of past and present seems to us clear. Reorganization of executive furniture and system should not enter the enclosures nor disturb the provisions made by the State for the protection and promotion of production, in response to the modest demand of producers for that which they could not themselves provide. They have asked for just the specific things they need. For several decades the State has given them such things to be administered by experts whom, in most cases, they have themselves named and whom they know to be good, faithful and efficient. These are particularly expert things which are not capable of being handled intelligently by a single executive functionary with an outfit of clerks, clerk they even with surprising clerkliness.

We do not say that the distinctively agricultural "commissions" cannot be improved and rendered more efficient by different alignment and correlation, but we are perfectly sure that it cannot be done in a couple of months while the air is full of the fragments of the really political "commissions" which are being picked to pieces. The organization of executive machinery to meet the diverse needs of a number of complex agricultural industries should receive the earnest efforts of a group of experts representing all of them and acting through a considerable period of time. And these experts should be for the most part those who have livelihood and property in the industries which they represent. So far as we have seen the published list of those invited to consultation on agricultural subjects, there is only one man who is more of a farmer than anything else and he is a lemon grower in Ventura county. He can, however, bring to the conference from one of his own trees just what should be expected as a result of attacking a proposition of superlative agricultural importance in that way!

QUERIES AND REPLIES

By the Editor.

Inquirer Must Give Full Name and Address.

Our Asparagus Produced by Local Conditions.

To the Editor: It is a generally known fact that asparagus grown in south Texas is inferior in every way to the California product. I have attempted to explain this partly on the ground that our growers do not know the cultural requirements of asparagus. Recently, however, I found a man who had been a successful grower of asparagus in California. He was employing the same methods here, but the results were not satisfactory.—R. L. R., Galveston.

Although the California growth of asparagus in private gardens and local market gardens is based upon ordinary loams amply enriched with manure, as is usual in other parts of the country, the commercial product of asparagus is almost wholly made upon soils of great depth, lightness and tillability which are not found elsewhere with the same characteristics and capabilities. These soils are naturally formed of disintegrating rushes (tule) intermixed with river sediment. They are warm and well drained in their upper layers because of their coarse character and still moist below because of high water level or moistened by admission of river water to the deep trenches between the rows of roots. On such soils are our vast asparagus fields and canning establishments which take the colossal shoots straight from the cutters. To emulate the California asparagus product one must have California conditions of soil and climate: knowledge of methods will not suffice. Nor will imitation of the soil by admixture of manure produce the same result. Eastern asparagus growers know and do all that is possible in that line and yet produce no such crop. Nor can Californians working with ordinary loams produce such asparagus as is grown on the special soils which are chosen for our commercial crops.

Burning Out Stumps.

To the Editor: I occasionally notice someone inquiring how to stop stumps from sprouting. I have had a great deal of experience with white and live oak, and have been very successful by my method, which I will give you. Both these varieties of oak sprout very badly. We grub the small trees. The large ones we cut close to the ground and trim out the wood. We dig around the stump about six inches deep and burn the brush upon it. It begins to decay at once, and in two years' time we burn them out of the ground without any trouble.—W. H. J., Red Bluff.

That is a rational treatment and we know by experience that it settles eucalyptus stumps and probably many others. The chief essential is the killing of the cambium by the fire. When this is killed there can be no sprouts—except of trees which sucker from the distant roots. When there can be no sprouts, vegetative activity stops, the wood dies and becomes flammable. After that decay begins, though it does not proceed with equal speed with all kinds of stumps. Stumps can be burned out as you suggest, but that does not interest our ordinary inquirers. They generally wish some dope which will make a stump burn up or will make it decay and blow away, while they wait. For such rapid persons there is nothing to be prescribed but dynamite or powerful stump-pullers.

Growing Tobacco.

To the Editor: Kindly give me some information regarding the culture of tobacco in California, time of planting, cultivation necessary and amount of irrigation required in Sacramento Valley; also the best variety of seed to plant and where same may be obtained.—W. T. S., Maxwell.

Make a seed-bed in about a month; cover it with a cloth frame to avert both frost and too strong sun heat, sow the seed on the surface and simply press the fine soil lightly with a board, to cover as little as possible, and sprinkle lightly often enough to keep the surface reasonably moist.

Here's a Better Position

Don't think that because you have never done any soliciting you cannot make a success of our subscription work. No matter whether you are young or old, or what your previous experience has been, if you like the paper, have an earnestness of purpose and are willing to learn, you can make good with the help we give you.

If you have an automobile and are free to travel it will pay you to investigate this pleasant, permanent, profitable work. Straight salary with advancement. Let us tell you more about it. You will be glad you investigated.

Plant out after danger of frost is over just as you would tomato plants and cultivate in the same way. Irrigate enough to keep the plants growing strongly: the amount of water will, of course, depend on the soil you are working on. You can get Havana seed from any seedsman and that is as good as any to begin with. After you get the plants well grown, you will not know how to get your money out of them and no one can tell you, for the trick of curing tobacco in California has never been mastered. You can use the leaves to make sheep dip or kill plant bugs, or you can go out behind the barn and fill your pipe with them. Your wife will probably not allow you to smoke them around the house.

Propagating Persimmons.

To the Editor: How can I propagate the seedless Japanese persimmon? I have one, supposed to be a "Yemon," but it is exceptionally fine, as the fruits are extra large, being from 11 to 13 inches around, and I wish to get more trees exactly like them.—G. W. S., Marysville.

If you only wish a few trees, dig up a few roots from trees of any variety you have and make root-grafts with scions from the tree you desire to multiply—just as you would make a root-graft of an apple or pear. For larger propagation get seedling persimmons from a nurseryman and graft on them. If you are not handy at grafting, get a nurseryman to take scions from your tree and graft on the stock which he has as many trees as you desire. Trees can be grown from cuttings, but it is neither sure nor easy.

Hoeing Around Old Trees.

To the Editor: I would like to see discussion in your query department as to the advantage or disadvantage of hoeing around old trees.—H. B., Winters.

We can conceive of no disadvantage except that it costs a lot of money and takes time when one would like to be doing something else perhaps. If any reader knows other disadvantages, let him take up the discussion. As an offset to the cost of the work is the additional moisture-conservation, for hard ground around a tree sucks out and evaporates much moisture and draws it sidewise from far beyond its own area. Hard soil in contact with the bole of a tree is apt to pinch the bark, prevent expansion and perhaps cause gumming. It is also a safe refuge for many kinds of pests which a good stirring destroys.

Pear Thrips.

To the Editor: When does the pear thrips make its appearance? How can you detect its coming?—A. F., Healdsburg.

It usually comes out of the ground in February and attacks the opening bloom buds, sometimes before, sometimes after opening. You can find it by examining the unfolding buds with a magnifier or you can knock the bud-cluster over a sheet of writing paper and see if you get on the paper some small, colorless, slim insects which have to the naked eye some rough resemblance to "cooties."

California Weather Record

The following rainfall and temperature record is furnished the Pacific Rural Press by the United States Department of Agriculture Weather Bureau at San Francisco for the week ending at 5 p. m., February 4, 1919

Stations	Rainfall Data: Past Week	Rainfall Data: Seasonal To Date	Rainfall Data: Normal To Date	Temperature Data: Highest	Temperature Data: Lowest
Eureka	.01	19.67	25.66	58	
Red Bluff	.04	17.31	11.19	64	
Sacramento	....	9.31	11.28	58	1
San Francisco	.12	13.62	13.1.	64	4
San Jose	.02	11.01	9.1.	66	3
Fresno	.02	4.31	5.3.	64	2
Soda Lake (Shandon)	.8	9.18	11.2	72	2
Los Angeles	1.05	5.19	8.5.	76	4
San Diego	1.10	5.32	5.19	68	4
Winnemucca	.06	4.05	4.12	50	2
Reno	.51	5.70	3.8.	52	1
Tonopah	.34		4.01	44	1

Better Dairying Through Bull Associations

Written for Pacific Rural Press by R. H. Whitten

AT THE recent meeting of the State Creamery Operators' Association a most important subject was assigned to Prof. C. W. Rubel—"Co-operative Bull Associations." He delivered a very interesting address, but more publicity should be given to this movement. Many associations have been formed back East, and they have been in operation long enough to prove their real value, yet the plan is almost unknown here on the Coast.

What is a co-operative bull association? It is an organization of farmers who want to use high-class registered bulls to breed up their herds, but who cannot afford to purchase the right kind of bulls alone, or who do not have enough cows to justify the purchase of high-class sires. They get together for the joint ownership, use and exchange of such bulls. The purchase price and cost of maintenance are distributed according to the number of cows owned by each member, thereby giving each dairyman an opportunity to build up his herd at a minimum expense. The organization also helps its members to market dairy stock and dairy products, to fight contagious diseases of cattle intelligently, and in other ways to assist in improving the local dairy industry.

The typical co-operative bull association is composed of from 15 to 30 farmers who jointly purchase five bulls. Their territory is divided into five "breeding blocks," one bull being assigned to each block. As many as 50 or 75 cows may belong to the farmers in each block, and the bull is kept on a conveniently located farm. To prevent inbreeding, each bull is moved to the next block every two years. If all the bulls live, and if all are kept until each has made one complete circuit, no new bulls need be purchased for ten years. In this way each member of the association has the use of good purebred bulls for many years, at a cost of only a small part of the purchase price of one good bull—usually less than is invested in greatly inferior bulls owned by individual dairymen.

Low Cost of Co-operation.

No investigations have been made in California to show how urgent the need for purebred bulls is, but to get general data on this subject the U. S. Department of Agriculture had a survey made in eight districts in which there were no associations in the States of Iowa, Minnesota and Massachusetts. It was found that on 1219 farms there were 817 bulls, having an average value of $76. Had the owners of these cheap bulls been properly organized, the same investment would have purchased the necessary bulls of an average value of $283. On these farms nearly four times as many bulls were used as would have been required under proper organization. The farmers were therefore feeding four bulls when they should have been feeding only one.

Actual figures from associations now in operation show that the first cost is slight. In one association having more than 100 members the original cost to each was only $23. The members already have had the use of good bulls for four years and probably will have their use for six years longer without additional cost other than maintenance. Another association with more than 50 members has had the use of good bulls for more than seven years at an average investment of less than $25 per member, with prospects of being able to use them for three or four years more.

Quick Returns on Investment.

When questioned regarding the value of these associations, 150 farmers in Maryland, Michigan and Minnesota estimated that the use of co-operative bulls increased the production of the offspring in the first generation from 30 to 80 per cent, with an average of 65 per cent.

Getting down to individual cases, an association at New Windsor, Md., purchased three bulls, and in the first generation the daughters of the first bull made an average increase over their dams of 62.2 pounds of butterfat; those of the second bull 55.2 pounds, and those of the third bull 115.5 pounds.

And listen to this: Nine years ago dairymen near New Salem. N. Dak., decided to join together and breed up. So they bought two purebred bulls and transferred them from one herd to another. The first year the cows averaged 131.9 pounds of butterfat, at a net profit of $16.90 each. Seven years later, as a result of the purebred sires, the cows then in the herds averaged 427.6 pounds of butterfat and the net profit was increased to $90.24 per cow.

Looks like a case where a bull makes a bully profit, doesn't it? Usually in business transactions where there is a probability of great gain there is also a possibility of heavy loss, but in bull associations the chances of profit are excellent, with little probability of loss. The investment is small, the risk light and the chance for herd improvement great.

How It Works Out.

Let's take a typical case right here at home and see how it will work out. Jim Smith of Modesto has six cows. If he bought the right kind of a bull it would set him back at least $200, and he couldn't possibly keep the bull for less than $75 per year. Then, after two years, he would want to dispose of the bull and buy another to avoid inbreeding. So this means that at the end of two years he would be out $350 for the cost of the bull and his keep, less whatever he would bring when sold.

Jim would not have kept the bull long enough to have tested any of his daughters, and as farmers are not very keen for bulls three or more years old that have not proved their worth by their daughters' production, the chances are that the bull would have to be sold for beef and would not bring more than $125.

So this means that Jim Smith pays out $225 in two years for the service of a purebred bull on six cows—$112.50 per year, or $18.75 per cow per year. Of course, it would be quite different if Jim had 60 cows, as the cost would then be only $1.87 per cow. But he's got to make a lot of money before he can be the proud possessor of 60 cows, and one of the ways he can do it is to reduce the cost of this service fee, and still not use an inferior bull.



A bull of this caliber should increase the production of a grade herd at least 30 per cent in one generation.

Jim has neighbors who are in the same fix—say six with an average of ten cows apiece. If these neighbors get together and buy and maintain one bull, each one is put on about the same basis as though he had 60 cows of his own.

But that is not a co-operative bull association. It is only a block, and it requires at least two other blocks before the benefits can be fully realized—five or six blocks are better. The bulls are changed from one block to another every two years, and if there are four blocks Jim Smith will have the use of four good, registered bulls during eight years without paying any more than his share for the purchase of one bull and the keep of the bull.

If there are 60 cows in Jim's block and a $200 bull is purchased, this means $3.33 per cow, and as Jim has six cows his share for the purchase of the bull is only $20. If it costs $75 per year to keep the bull, this means that Jim has to pay at the rate of $1.25 for each of his cows, or $10 per cow for the entire eight years, and as the first cost when buying the bull was $3.33 per cow, this makes the total cost per cow $13.33 for eight years, or $1.66 per year. Pretty low as compared with the $18.75 per cow that it would have cost poor Jim if he had bought a bull on his own hook.

Bull Can Be Tried Out.

A great advantage of the co-operative association is that an opportunity is afforded to try out bulls. Before a bull finishes the second block his daughters in the first block are producing and his value can be determined. If his daughters do well, he can be used to the best advantage. If they do poorly he can be sold, and another bull can be purchased in his place. You know many bulls have gone to the butcher early in life for $100, when it was afterwards discovered that they were worth $1,000 or perhaps $10,000.

Another advantage is that purebred herds can be developed more quickly. Jim Smith, like all other dairymen, has the ambition to raise purebred cattle, but cannot afford to purchase individually such a bull as is needed to develop a profitable purebred herd. The bull association overcomes the difficulty, and Jim can use the money he saves toward the purchase of registered females. It is surprising how quickly a herd can be developed from a start with only two or three cows, and how good a profit can be made.

No Spreading of Diseases.

How about disease spreading through the herds in a block? It would be quite natural to suppose that contagious abortion and other diseases might be spread by using a bull in several herds, but you will remember it was stated at the beginning of this article that an association helped its members to fight contagious diseases of cattle intelligently, and records show that there is less trouble with abortion in bull asociations than outside of them.

Important to Select Bulls Carefully.

The selection of bulls for an association is one of the most important considerations. A prepotent bull will make rapid and marked improvement in the herds, and the association interest will increase in proportion to the improvement obtained. But if a poor bull is used the production may be decreased, in which case the interest will be lessened and the association may be broken up.

It has been found that trouble arises if each association buys its own bull, and to avoid this trouble it is best for a director to be selected from each block, and these directors transact the business of the association, including the buying of all the bulls.

How to Form an Association.

Success also depends upon the care that is used in forming an association. If you are interested you should get as much information as possible regarding the plan of operation, and it would be well for you to get in touch with your Farm Advisor. He might be able to give you valuable information from experience. If there are any associations in your locality, you should visit them and study their methods, for the more information you can get the better the prospects will be for a well-organized, successful association.

Send to the Division of Publications, Department of Agriculture, Washington, D. C., for a copy of Farmers' Bulletin 993. This will be found of great value, particularly the suggestions given in connection with the constitution and by-laws. Your Farm Advisor will be glad to help you in starting an organization, or you can get help from the Dairy Division of the Department of Agriculture at Washington, D. C.

Already there are more than 1000 farmers in 18 States, and in 44 associations, who have proved the bull association to be both practical and successful. We want to see many of these associations in California. And to give more publicity to the movement we shall be glad to hear about the progress of any associations now in operation, or about the formation of any new ones.

GOLDEN STATE SWISS CHEESE.

Would the sight of 480 gigantic Swiss cheeses weighing from 130 to 160 pounds each make you hungry or take away your appetite? Perhaps that would depend on whether or not you were fond of Swiss cheese; but you could hardly fail to enjoy that being turned out by the California Central Creameries plant at Arcata. This new plant—the first in the State to turn out Swiss cheese—is now making nine cheeses a day, or a total of 1500 pounds daily. The total output of the plant to date is in excess of 100,000 pounds, and as the wholesale price of this fine article is now 57 cents per pound, the plant has already manufactured a product valued approximately at $57,000, the larger part of which has been paid back to the dairymen in the form of milk checks.

The demand for this cheese is shown in a shipment made to the large produce firm of A. E. Paulsen of New York, who in December purchased a full carload of 219 cheeses at over $18,000. This "Golden State Swiss Cheese," as it is called, is finding a ready market and most satisfactory prices are being received.

Power Profitable on the Modern Fruit Ranch

Written for Pacific Rural Press by John J. Fox

THE WRITER was in charge of a certain fruit and stock ranch some fifteen years ago, and in this article will set forth the difference of conditions between then and now. This ranch has always been notably well equipped and efficiently administered, and is now, as always, in a very high state of cultivation. There were, at one time, as many as thirty head of horses in the stables and boxes at this ranch, perhaps eight of which were workers and the rest registered stallions and mares. The keeping of so many head of stock has, of course, helped to keep up the 100 acres of fruit land in very fine condition.

DISTILLATE, gasoline, and electricity make possible the production, harvesting, and distribution of the enormous amount of foodstuff we have been and are being called upon to furnish for the use of our own people and for the hungry and famine-stricken nations of Europe. Short-handed as we have been, we would also have been practically stripped of work-animals as well had not tractor and truck been most largely used for transportation on the fields of war.

Fifteen Years Ago

Farm wages were about an average of $35 a month for a good, efficient American boy. An extra good teamster got $40. Teams were in the field by 7 o'clock and kept going till six. We had only oil lamps and lanterns for lighting in house, barn, haymow or bunkhouse. There was no telephone, and water was pumped by a windmill. An automobile was a curiosity, beyond the reach of the average rancher, and, anyway, the roads were not particularly inviting for such travel, especially in winter. In short, the automobile was looked upon as a luxury, and its owner was cursed in private by every man who owned a team of spirit each time it passed on the road. Practically everybody shipped their green prunes to the "drier"—sold them green. Irrigation was not even considered, except for alfalfa. It was not necessary in this particular neck o' the woods.

Today

There is a fine pumping plant on this ranch—enough to take care of 20 acres—complete in all its details, with a 7-horsepower motor, the "juice" for which costs a minimum of $6 per horsepower per year. This is based not on the size of the motor, but according to the load it carries, which, in this instance, is very much less than 7 horsepower. In 1917 the average cost for the year was about $5 a month, and never over $10 a month, for power. This is for irrigating. The transformer stands in a central position and distributes also power for the small pumping plant that furnishes water for houses, stock and garden—also for running the fruit grader, buzz-saw, grinder or any other necessary tool. Also, the "juice" for a large electric stove and water heater are here connected.

The bill for electricity in this department averages $8 a month. This pays for that used by the electric stove, water tank heater (hot water any hour of the day or night), light for three houses, and all buildings, as well as pumping water for all domestic use and stock. In the electric baking or boiling ovens of the cooking stove the joint, stew, mush or whatever is needed can be put in the oven in the morning, the clock set for the time you want your stove to start action, the degree of heat you want—then you can go away and spend the day. If you want supper at 6 o'clock, and the cooking will take two hours, you set the clock for 4 o'clock and get home at 6, and lo! there is the meal all hot and ready to set on the table, and it is never burnt—because you have set the clock to shut off juice at 6, and it faithfully obeys.

You can have a hot bath at any hour of the day or night, and never think about the other fellow, for the water is always hot. Because the juice starts heating up the incoming cold water instantly and only stops when the desired heat is reached. Electricity can also be used for ironing the clothes and for a vacuum cleaner.

Transportation.

The telephone probably saves as many trips as we used to make fifteen years ago, when we had to hitch up "old Bill." The road to the nearest depot being pure black adobe was taken at a walk in the winter time, with a six-inch width of the black stuff around the rim of each buggy wheel. It was often impossible to haul any kind of load over this stuff after a prolonged rain. Today these roads are to be traversed comfortably at a 25- or 30-mile clip any month in the year. Instead of a buggy and horse or team, a neat Franklin Six roadster is kept for hack use and for the ladies to get about in. Also, besides a large family car, there is an old Cadillac which is about to have its rear end turned into a bed for hauling small loads, with possibly a trailer behind. A trip to town and back, including an errand or two, can be accomplished in less than an hour, where it used to make a hole in half a day—without counting the aggravation of getting covered with mud and sweat and horse hair in hitching up and unhitching. The automobile, like the telephone, is almost an absolute necessity to a busy man, even on a small ranch.

Gas Engines and Tractor.

We asked what had become of the gas engines on the ranch. With the exception of the one used on the large Bean spray pump, they have been replaced by electricity, though our host said that they were about the same cost to run, he believed, as the motor. He considered it economy in every way to purchase the best engine possible for the work required. It saves time, expense and worry.

Only five work horses are now kept for 100 acres in fruit and these may be cut down to three. The others have been replaced by a 12-20 Yuba ball-tread tractor, which was bought in the spring of 1917 (or late in 1916) at $1,670—before the rise. This tractor has done a lot of work since then and plowed deeper than would have been practicable with horse labor.

Cost of Running the Tractor.

The total cost for distillate, oil and repairs on this tractor for 1918 was $201. As the owner said, this seems singularly little, but we went carefully over the accounts and totaled them up.



Yuba 12-20 ball-tread tractor pulling four two-row bean planters on second speed.

The work done was plowing, disking and cross-disking several times for cultivation and working down, in addition to the work on irrigation, for which it made ditches and filled them again. We figured that horse work alone on such deep plowing on this heavy clay loam would cost $1.50 per acre at the present price of feed and supplies, without counting wages.

In the heavy plowing two women were at work at a cost of $6 per day, an average day's plowing being about eight acres. In all other operations only one man was used (cost $3). Twenty acres a day could be chopped out with the double cut-away disk—a splendid tool for so many purposes. Of a late season the double disk can be used to great advantage in disking and cross-disking before plowing to hold the moisture, so that centers won't dry out before you can get to them. Such cover-crops as vetches, peas, etc., can easily be chopped up in this way and plowed in afterwards without a lot of entanglement in the plow standards.

"Even if cost of horse labor and power were the same, power would still be preferred," said mine host, its chief advantages being the thoroughness and expedition with which the work can be done. If the season is late and the ground drying out, you can, without skimping the work, do it in such a short time if need be. Of course, he uses horses on the manure spreader, single work or small jobs; but Mr. Tractor takes hold of all the heavy work and eats it up.

Car Converted to Truck.

We asked how it was going to pay to convert the old Cadillac into a truck and were told that it depended on how much hauling a man had to do and how much he spent on converting. "My old Cad's engine is as good as ever," he said, "even at nine years old. I haven't enough work for a large truck, but I can put a platform on the back of the old "Cad" for very little that will carry small loads and perhaps be able to handle my cherries and apples on the short trip to the depot. Now, if I bought a $2,000 truck, interest and depreciation would cost $120 a year at least and would nearly pay for all my hauling at present. It isn't all ranches that can afford to keep a truck, but they might be bought by a company of men for use. It would also pay a man to buy one in most any community that had enough hauling and get the promise of doing his neighbors' hauling at a fixed sum per ton.

"Now, I have at present perhaps 100 tons of dried prunes a year (besides apples and cherries). I get it hauled for $1.50 a ton, which is cheaper than I can afford to do it till I have more orchard in bearing that will warrant a truck. I recently had four tons of lime delivered to me and sent back four tons of prunes to town. Loading both ways, I got a dollar a ton rate, or $8 for the whole."

Farm Tools.

We asked about the relative desirability of the disk and moldboard plow. He said that for himself he should prefer the moldboard for field work—you could do straighter work with it. He used the disk plow in the orchard, as there was less likelihood of root injury or snagging off a standard, and the cover-crop was put well under out of sight, but in plowing "away" you could not get so close to the trees. The double disk and the double cut-away disk are necessary. He never plows a second time any more, as he can always work down a mulch (even after heavy rains on plowed ground) with the double disk and leave it in good shape.

Electricity on This Ranch.

Electricity is now the hewer of wood and the drawer of water. It furnishes light and heat. It cooks the food. It is the messenger boy and means of communication with the neighbors and the distant city. It lends aid in washing and ironing the clothes, and cleanses the house from dust and dirt without wear on the costliest fabric. It grinds the tools and grades the fruits. It even starts the automobile. When not required, it is unobtrusive. When I look back to fifteen years ago it is difficult to believe that such a short time has elapsed since the lamp-trimming, axe-handle days. This ranch is in a higher state of cultivation, is more profitable and better worked than in the old "here's the lantern—feed and water Baldy" days. And all the comforts of a city are here, and its amusements within reach of a fifteen minutes' drive. The city dweller is waking up to the joys of country life, thanks to good roads and "POWER."

To show how the city dweller is really taking hold, I might say that the immediate neighbors to this ranch comprise an ex-professor, ex-manager of a lumber company, a master smith, a dentist, electrician, a doctor, and two merchants, all doing well, I believe.

GROWERS AND BUSINESS MEN.

The Growers' Packing and Warehousing Association, Inc., has just retired 25 per cent of preferred stock invested in packing houses, etc., for the Prune and Apricot Growers, and have all their affairs in such shape that the association is well on its feet at the end of the second season—in spite of the bad weather at harvest and the small pack.

Deciduous Fruit and Nuts Experiment Work

(Senate Bill No. 319.)

AN ACT appropriating money for investigation, research and demonstration by the Department of Agriculture of the University of California in regard to deciduous fruit and nuts was introduced into the State Legislature by Senators Benson (San Jose) and Jones (San Jose). It reads as follows: The people of the State of California do enact as follows: Section 1. The sum of $150,000, or so much thereof as may be necessary, is hereby appropriated out of any money in the State treasury not otherwise appropriated, to be used in accordance with law, for investigation, research and demonstration by the Department of Agriculture of the University of California, during the biennial period ending June 30, 1921, in regard to deciduous fruit and nuts, including olives and figs, and to be expended for that purpose by the regents of the University of California.

Farmers' Interests in the State Legislature

Written for Pacific Rural Press by Our Special Sacramento Correspondent

Irrigation Contractors Must Pay Bills.

Folks who supply labor or material to contractors for improvement of irrigation districts will be assured of getting their pay if a bill introduced by Senator S. C. Evans of Riverside becomes law. It provides that contractors must file a special bond for half the amount of the contract. Sureties on this bond agree to pay labor and supply bills if the contractor does not. Claims may be filed any time within 90 days after the improvement is finally accepted, and legal action to collect may be begun any time within six months. Of course the cost of the extra bonds will be figured in the contract bids, but laborers and business men are entitled to a convenient, effective way of getting their pay.

State to Build Storage Reservoirs.

State construction and permanent State ownership of storage reservoirs to make flood waters more useful for power and irrigation and to protect lowlands from flood is declared to be of prime importance to the welfare of the State in a bill presented by Senator L. L. Dennett of Modesto. A "Bureau of Water Storage" is created within the State Engineering Department to investigate proposed projects and to build them after approval by the Governor and by a capable official "consulting board." The bureau may enter agreements with the Federal Government, local irrigation districts or other agencies who may agree to help pay the cost, and such agreements may provide for return to the State of all money spent by it within 50 years with 5 per cent interest. This money is to be returned from sale of water or by assessments on lands protected from floods, according to agreements of interested parties, before the work is commenced. The bureau is given the right to condemn land for the purpose of the act. Money must be provided by one or more of the co-operating agencies or by the Legislature before any project is begun, to complete it. Whether this proposition will alter the scheme of flood control worked out by the State Reclamation Board and co-operating agencies remains to be seen. Certain it is that the water which now runs to sea in flood time could be made useful on an imperial acreage in California after developing thousands of electric horsepower, and at the same time lowlands could be saved from danger of floods, rich soil could be saved to farm rather than to be deposited as an impediment to navigation in our rivers.

State Fair Appropriations.

The State Agricultural Society gets $70,000 per two years as a fixed amount from the State. In addition, it received for the two years ending June 30, 1919, $22,600 for salaries and expenses. For land and buildings in the same period it received special appropriations totaling $323,660. This included $300,000 for the Agricultural Building. The State Budget Board has recommended increases in salaries amounting to $1,200 for the next two years, but has cut the special appropriations to $95,000. This last item includes $15,000 for repairs, $10,000 for improvement of grounds, $40,000 for the new Agricultural Building, and $30,000 for purchase of the corner of land where automobiles were parked last State Fair. The board of directors had asked $20,000 for collection of agricultural statistics and $250,000 for a new grandstand. These were denied by the Budget Board, but bills already introduced carry the following items: $20,000 for compilation of agricultural statistics, introduced by Senator M. B. Harris of Fresno; $250,000 for a grandstand, introduced by Assemblyman Lee Gebhart of Sacramento; $15,000 for repairs to buildings and equipment, introduced by Senator J. M. Inman of Sacramento; $10,000 for improvement of the State Fair grounds, introduced by Assemblyman J. W. Johnston of Sacramento; $40,000 to complete the Agricultural Building, and $30,000 for the purchase of additional land for the State Fair, introduced by Mr. Gebhart.

New Powers to Market Commission.

The State Market Commission is to have almost unlimited powers to help improve the marketing of California farm products in the interests of producers, consumers, and distributors, as provided in the bill introduced by Senator W. S. Scott of San Francisco. One of the purposes for which the commission is created, as stated in the bill, is to certify the quality and quantity of agricultural products represented by warehouse receipts, making a charge that will cover the cost of the work. He may issue State seals for any farm products except those already under State auspices under such regulations as he may think proper. Others of the eleven purposes mentioned include activity and advice in almost every phase of co-operation and mediation. This bill is radically different from some others aimed to destroy the commission or to compel it to do the local commission marketing for which the original law was passed. One bill gives the commission full jurisdiction over fish markets and canning; while many people high in authority in the Bay district are bitterly opposed. Watch for a scrap when the Legislature convenes.

Palace Cars for Poultry.

Suffering poultry! shall suffer no more while crated, for feeding, transportation, or sale, if a law proposed by Assemblyman Sidney T. Graves of Los Angeles is passed and enforced. Crates must permit free access of air on at least three sides, must be high enough to permit poultry to stand in them, must be provided with plenty of food and water in receptacles so placed that the birds cannot befoul them, and must not be overcrowded. Sick, injured, and dead birds must be removed at once on discovery. Penalty for violation is five to one hundred dollars. This bill is not only in the interests of humaneness, but is likely to repay shippers the cost of proper crates by reducing loss and shrinkage en route. Poultrymen may well look beyond the first cost of such crates and urge the passage of the bill. Consumers may well support it because losses en route must be added to the price of poultry remaining to be sold.

Department for Bee Men.

Bee laws as they now stand are to be repealed and replaced by a State Department of Apiculture, to be administered by the State Horticultural Commission, according to bills introduced by Assemblyman Fred E. Lindley of San Diego. The purposes of the bills are to promote production of honey and bee products and provide for a revolving fund called the State apiary fund, as well as to protect the industry from diseases and abuses. One of them provides for inspection of apiaries by horticultural commission inspectors, and another appropriates money to the University for a laboratory to study bee culture and especially the means of controlling bee diseases.

Viticultural Compensation.

Compensation of "viticultural interests" of California for damage resulting from ratification of the national prohibition amendment gets its first boost in a bill introduced by Bismark Bruck of St. Helena. This provides that the Governor shall appoint a commission to investigate the damages and report its findings and recommendations to the Legislature of 1921.

Irrigation Functions by Counties.

Here is a measure for local economy and efficiency. Certain irrigation district functions may be transferred to county officials by joint action of the district board of directors and the county board of supervisors and by payment to the county for such services. These include assessment and collection of taxes, sale of property for taxes, and the custody and auditing of moneys so received. The co-operation may be terminated by one years' notice from either party or immediately by joint action. The bill was introduced by Assemblyman J. Stanley Brown of El Centro.

Nursery Growers Must Register.

It has been impossible under the present law for the State Horticultural Commissioner to keep track of all nurserymen who sell trees. It is to strengthen this part of his work that Senator F. H. Benson introduced a bill providing that it shall be unlawful to ship or deliver within California any package of nursery stock not bearing a license number issued to the nurseryman by the State Horticultural Commissioner at a charge of $1.

Bond Issue for State Reservoirs.

Five million dollars of 4½ per cent bonds are authorized with which the State Water Commission is to build dams of not less than 50,000 acre-feet storage capacity, as provided in a bill introduced by E. S. Hurley of Oakland. Water so impounded is to be sold for power, irrigation, municipal, or other purposes and the money received is to be returned to the State treasury.

Stealing from Water District.

Wrongful interference with the flow of needed water belonging to county water districts must not continue even where the officials dislike to prosecute, according to a bill introduced by J. Leonard Rose of Newark. It provides that the district must defend itself by law from such steals.

Siskiyou Crop Investigations.

Because the Dorris section of Siskiyou county is on a high plateau, differing from other parts of the State, the University is given $10,000 to carry on special investigations on crop culture there, if the bill introduced by Senator W. B. Shearer of Yreka shall become law.

University Extension Buildings.

A million dollars are authorized to be spent, half on a University Extension Building in Los Angeles and half on a similar building in San Francisco, so soon as suitable sites are donated to the University, according to a bill introduced by Senator Lester G. Burnett of San Franciso.

Drainage District Bonds.

Bonds issued by drainage districts after the directors have legally called an election and the bond issue has been authorized by a four-fifths vote are declared legal and valid obligations against the district in a bill introduced by Assemblyman Mrs. Elizabeth Hughes of Oroville.

New Tract for Citrus Experiments.

The "Gage tract" of 300 acres, near Riverside, is to be bought at a cost not to exceed $90,000 for use of the Citrus Experiment Station if the bill introduced by Assemblyman C. M. Kline of San Jacinto shall pass the Legislature and Governor.

University Farm Gymnasium.

A gymnasium at University Farm School is provided for in two bills by Senator J. M. Inman of Sacramento. One of the bills appropriates $125,000. If it does not pass, the other will be urged, carrying an appropriation of $25,000.

Work on the big plant of the Lassen Lumber and Box Company has been resumed. The box factory is closed for a few days for the installation of new and modern machinery. A unit of the plant known as the shook warehouse is now being built and will have storage capacity for 1,500,000 feet of shook.

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STATE AID FOR SUTTER BY-PASS.

[By Our Special Sacramento Correspondent.]

Levees and farms on the east side of the Sutter By-Pass are in peculiar danger from next spring's floods from the Sacramento river unless gaps in the levees already built on the east side are closed before the floods come. Thus declared the Assembly of the California Legislature, January 22, by a two-thirds vote. Assemblyman Lee Gebhart of Sacramento had introduced a bill with the constitutional urgency clause, whose adoption by two-thirds vote permits immediate passage of any bill.

WHY BY-PASS IS URGENT.

As the situation now stands, the Sacramento-San Joaquin Drainage District, already organized to work out a comprehensive drainage plan for those valleys, has done a great deal of work in the Sacramento Valley. The project has been approved and aided by the Federal Government, but it works a hardship on a number of private projects previously completed. The State Reclamation Board has had the power to make assessments against land to be benefited to help pay the costs and there have been many objections to these assessments.

The general flood control and drainage project includes the building of a by-pass along the eastern side of the Sutter Basin to carry some of the floods that heretofore have gone through the basin. About 65,000 acres of this basin have been enclosed with levees finished last summer by the Sutter Basin Co. Thus the surplus flood waters from the Sacramento river will hereafter pass the north end of this Reclamation and southward along its east side. The country east of the Reclamation is therefore likely to find itself under water, for it is not high land. The levee along the east side of the Sutter Basin will form the west levee of the Sutter By-Pass. The eastern levee of the By-Pass has been built in sections, with gaps which endanger the sections already built if floods should come. Sutter-Butte assessment No .6 has been made against the property to be benefited by the By-Pass, but this assessment is not due until June 1, 1919, nor delinquent until a month later. Meanwhile warrants aggregating $1,100,000 have been issued bearing 7 per cent interest. The proceeds have been used up and there is no money with which to finish the gaps before the floods come. The Reclamation Board asked the State Board of Control for funds to carry on the work until the assessment shall become due. This will take about $50,000 per month with the dredges and machinery available. The Board of Control gave its opinion that warrants of the Sacramento-San Joaquin Drainage District issued by the State Reclamation Board against Sutter-Butte assessment No. 6 are as good as Liberty Bonds and would be a safe investment for State money at higher interest than it is now drawing. Mr. Gebhart's bill authorizes them to buy these warrants to the extent of $300,000, and directs the Reclamation Board to finish this eastern levee with all possible speed.

It was passed by the Assembly and sent to the Senate, which referred it to the Committee on Drainage. The latter on January 23 reported it to the Senate with a recommendation from five members that it do pass, while four members recommended that it do not pass. At this writing there seems to be need for skillful steering to keep the measure off the rocks, partly due to the opposition noted in our second paragraph.

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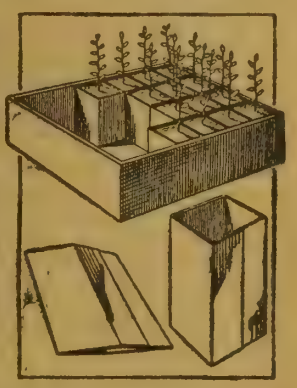
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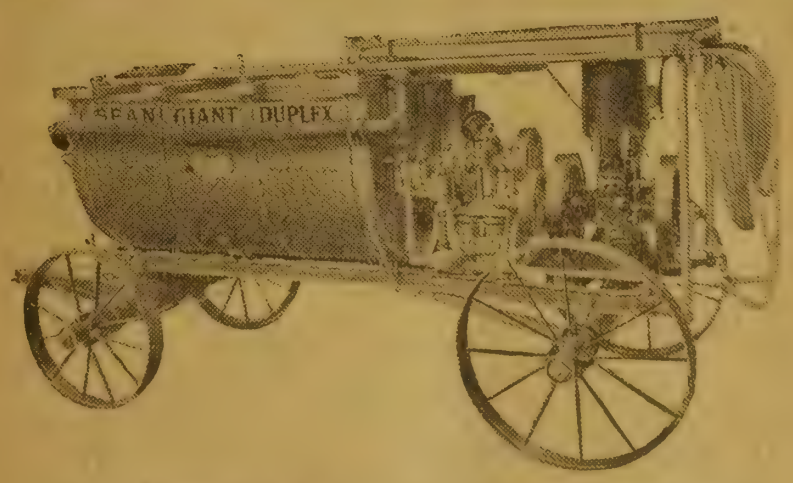
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Frost Control in Orchards; Related Factors

[Written for Pacific Rural Press by J. C. Whitten, Prof. of Pomology, Univ. of Cal.]

THE RELATION OF SAP CONCENTRATION TO LENGTH GROWTH.

Studies made at the Missouri Experiment Station show that nominally the sap of a fruit tree is least concentrated (contains the least sugar and digested plant food) during the period of rapid-length growth in spring and early summer. Sap becomes more and more concentrated after length-growth ceases. The supply of plant food reserves becomes greatest as the tree goes into winter condition.

The earlier a tree finishes its length growth, the more concentrated its sap becomes and the more abundant its supply of plant food reserves. The more concentrated its sap the more cold the tree will stand, either in winter or during spring frosts. In one plot, peach trees which had continued rank length-growth until frost in autumn had all their flowers killed on a night the following spring at a temperature of 27 degrees. The following night the temperature dropped to 22 degrees. An adjoining plot of trees, which ceased length-growth early, but which maintained healthy mature leaves until frost, endured this lower temperature safely without injury to their blossoms.

Heretofore we have thought of protecting plants from cold only by direct methods, such as covering or sheltering the plants or by orchard heating, to raise the temperature of the surrounding atmosphere. This conception was based on the accepted belief that a given kind of plant inherits a given degree of hardiness; that there is a "critical temperature," above which the plant will live, without injury, and below which the plant will be injured or even die. Certain kinds of plants are notably hardy or resistant to injury from cold. Others are notably tender and subject to injury, even in relatively mild climates.

We now know that while the above factors are true, in part, they do not explain the whole truth in determining the resistance of the plant to cold, or to drought or to heat or to any other environmental influence that may oppose the health and safety of the plant. To emphasize this statement, we only need to call attention to the fact that a given variety of fruit tree may safely endure low winter temperatures, while it is dormant, or at rest; that it may be injured by a mere frost, after it has started growth in spring, and that a sudden frost may kill it after it has gotten into the accelerated growth of the warmer summer.

The state or condition of a plant at a given time; its degree of ripeness, and rest, or its degree of activity and growth governs largely how much cold, or other unfavorable influence, it may safely endure.

We should get in mind the fact that a fruit tree is a living, sensitive, plastic, shapable thing. In developing its growth it responds to every outside influence that reaches it. Everything we do to it makes it different from what it otherwise would have been. Every cultural practice, such as pruning, fertilization, tillage or irrigation, applied to the tree or its soil, causes a response which makes the tree either hardier and more resistant, or tenderer and more susceptible to injury. Let us understand why:

First, let us outline the more important phases of the annual cycle of growth and development of a fruit tree. The tree puts out its leaves (and blossoms) in spring. This new growth is supported by plant food reserves (mainly starch or sugar) stored in the tree. Except for the presence of this stored reserve supply of plant food the tree could not put out its leaves.

As soon as the green leaves are put out, they become the source in which further supply of plant food is elaborated (or digested) to supply the daily growth and development of the tree and its fruit. Crude sap, taken in by the roots, is helpless to build new tissue or support further growth, until it is digested in the leaves. From the leaves, the digested plant food is distributed, through the growing layer, to all parts of the tree, where it builds up new growth. Digestion of plant food can go on in the leaves only in the presence of the green coloring matter and of sunlight. Crude plant food is carried to the leaves and digested plant food is distributed from the leaves, dissolved in water, or sap.

The main length growth of branches and the formation of additional leaves normally should take place during the first few weeks of spring and early summer. So long as the plant food, digested daily in the leaves, is being used up largely in promoting rapid length growth of branches and formation of more leaves, just that much less remains available to nourish and develop the fruit crop, the blossom buds for the following year and to store for winter in the tree.

As soon as length growth and leaf formation slows down, more digested plant food becomes available to accelerate rapid growth of the fruit, to develop blossom buds for the following spring and to store plant food reserves in the tree for the coming winter and spring. This emphasizes the desirability of spraying for red spider and maintaining green, healthy leaves to digest plant food throughout the summer and fall.

The merits of the new system of pruning, now being advocated, are better understood in the light of the above facts. The prominent feature of the former standard system of pruning is that the trees are severely headed back each winter. As a result, rank new growth is stimulated at the top of the cut-back branches. This rank, tender growth continues to lengthen and to make new leaves throughout practically the entire summer. This prevents early storage of plant food reserves and concentration of sap in the tree.

In the new system of pruning, the main limbs are established as early as possible. Once they are established, they are not subsequently headed back. They are pruned by thinning out surplus limbs. Not being headed back, their length growth slows down. Length growth ceases early and terminal buds form. Storage of plant food reserves begins early. The tree accumulates a more concentrated sap. Better development of fruit and fruit buds becomes possible. The tree becomes more resistant of cold.

Trees severely headed back call for more moisture, or are less able to endure drought, during the following summer. The rank, new branches are soft, tender and succulent. This condition continues throughout the summer. They evaporate much water. The rank growing branches and leaves toward the top are able to draw water out of the leaves and fruit on the twigs below, whenever the water supply becomes inadequate in the soil.



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FOR CALIFORNIA SOILS

These rank growing parts above rob and shade out growth lower down on the tree.

Where the main limbs are not headed back, rank length growth at the top of the tree is not stimulated. Shorter growth of branches is about equally distributed in branches up and down the entire tree. Length growth ceases early. The tree early attains a concentrated sap and stores plant food reserves. These slow-growing limbs and leaves become firm in texture and evaporate but little water. There are no rank succulent upper limbs to rob or shade out the parts below. The leaves are not likely to draw water out of the fruit in time of drought. The concentrated sap gives up its water less readily. Such trees will endure more spring frost or more drought, due to their better ripened or perfected tissue and their more concentrated sap.

Judicious summer pruning may be understandingly practiced. Indiscriminate summer pruning may severely weaken the tree. The removal of mature limbs which have ceased length growth, or of leaves that are healthy and firm, reduces the amount of plant food that may be digested and stored during the remainder of the summer. If summer pruning is severe enough to induce the production of new, tender twigs and leaves, this draws upon the stored plant food reserves and results in a thinner, weaker sap, just when the tree should be storing instead of using up stored food.

Judicious summer pruning consists of the removal of any surplus, tender, succulent water sprouts that are growing where they are not wanted. Any permanent limbs that are continuing length growth too late, may be checked in their growth by clipping them back. Dead, broken or diseased parts should be removed.

So long as trees can secure ample water to supply their leaves, it is not desirable to reduce the leaf surface more than to check length growth of late-growing limbs. If drought is severe and trees are evaporating more water than can be supplied, evaporating surface may be reduced by judiciously removing the more tender, succulent parts, which are least needed as permanent limbs of the tree. Tender, soft, new leaves evaporate many times more water than older, firmer leaves that formed early in the season. The older, firmer leaves, if healthy, and which take on a dark green color, are more serviceable in the elaboration of plant food reserves.

TRAINING HIMALAYA BERRIES.

[Written for Pacific Rural Press by D. B. Munroe of Gilroy.]

I frequently see in your paper inquiries about handling Himalaya blackberries. I have had considerable experience with this berry, and I will tell you what I think is the best method.

Plant the vines six feet apart one way, by eight feet the other way. Drive a stake the six-foot way every eighteen or twenty-four feet, according to the size of the stake used, and strength of the wire you intend to use. Have the stake five feet above the top of the ground, sawed off square on top.

Take a piece of 1x3 about two feet long; nail it in the center on its flat side on top of the stake. Stretch a wire across both ends of this crosspiece and secure it by staples driven over it in the ends of the piece. Telephone wire will do.

When the vines have grown to be seven or eight feet long, pinch off the end. The pinching will cause them to throw out laterals. Late in the fall cut the laterals all back to three or four inches, and then pull the canes straight up to the wires and tie them with wrapping cord. Bend the top over and tie it down. Leave from two to three canes in each place. The Himalayas do not die every year as other blackberries do, but I prefer to cut out all the old canes every year if I have enough new ones.

The Tulare cannery will be ready to make contracts for the 1919 crop of tomatoes as soon as the price to be paid can be determined.

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Number 2

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Grafting-in Capris Not the Best Way

To the Editor: I have some capri fig trees and some Smyrna fig trees. The figs would not mature, though the trees were six years old. I read about the growers stringing the capri fig and hanging them in the Smyrna trees to pollenize them. I thought it was wasted time taking figs from one tree to another. So I grafted scions of the Smyrna on the capri and scions from the capri on the Smyrna two years ago. This season the Smyrna on capri had four or five fine large figs in each graft, and the branches of the Smyrna that were next the capri graft had figs on. Has this cross grafting ever been tried before?—James Somers, Hollister.

[Answer by G. P. Rixford, fig specialist, U. S. Department of Agriculture.]

Your correspondent's experiment is interesting but not original. A cultivator with a Smyrna orchard of twenty acres at Orosi, Tulare county, is trying the experiment of inserting a capri graft into each Smyrna tree, for the same reason as given by your correspondent. This practice is not general among fig growers for a number of reasons. If an unfavorable season should cut off the capri crop, all the capri grafts would have to be caprified with the overwinter crop early in spring in order to get a profichi crop well supplied with insects to caprify the Smyrna crop, involving extra labor. It is found in practice that three or four applications of capri figs to the Smyrna orchard, three or four days apart, greatly increases the yield. The reason is that at, say the first application of the capri figs, a certain number of Smyrna figs are in receptive condition. In a few days the first capri figs applied are exhausted of insects, and in the meantime other Smyrnas have pushed and reached the receptive condition and are ready for another installment of blastophaga, and so on as long as capri figs giving off insects are obtainable to caprify figs as late as the locality will permit them to ripen before the advent of the fall rains. This late and early caprification can be accomplished by securing capri figs from early and late varieties, or obtaining them from early and late localities.

Presumably your correspondent's capri trees are colonized with the blastophaga, though he does not say so. The grafts bearing figs devoid of insects would have no effect in causing the Smyrna trees to bear. An instance came to my notice last fall of a single Smyrna tree ten miles west of Modesto with no capri tree near it, and which bore a good crop of splendid figs. The owner was confident the crop was produced without the intervention of the fertilizing insect. Investigation showed that the Smyrna tree was located about a mile in the direction of the prevailing wind from the old Gates capri, swarming with millions of the insects. The wind carried the insects to the tree in question, and thus the mystery was solved.

In Asia Minor the belief is general that over pollination (too many bugs) is the cause of splitting of ripening Smyrna figs, and the idea is entertained by some growers in this State. Of course a large crop of capri figs on the grafts in a Smyrna tree would give that tree an overdose.

I have doubts of over pollination being the cause of splitting. The principal cause is climatic. It is well known that damp weather, not necessarily rain, is a prolific cause. Varieties have something to do with it, as we have strains of Smyrna figs which never split.

It is a good practice to have the capri fig trees in a group by themselves, and if possible located on the least frosty place on the ranch, or near buildings or tall trees that will give some winter protection. The capri grove should be composed of several varieties, including the earliest and latest obtainable.

ORCHARDISTS FOR STATE MARKET COMMISSION.

The following resolution was passed by the California Pear Growers' Association at a meeting held in San Francisco, February 4:

Whereas: The organization of producers is of the utmost importance for the purpose of making agriculture a safe and stable occupation. Without organization distribution is limited and inadequate, resulting in periods of so-called "overproduction," which is really underconsumption.

When the producer is disheartened enterprise falters, projects are abandoned and in the long run the consumer suffers. For example, had it not been for the work of the Market Commission in assisting the organization of the Peach Association, half the peach acreage of the State would have been dug out. The commission advised organization. For three years orchardists had lost heavily and were prepared to abandon production. With organization there have now been three years of fair profits and as a result thousands of new orchards are being planted—thereby benefiting both consumers and producers.

The organization of all producers, in all lines of agriculture, means safety in production. It means the best use of every acre of land in California. It means good wages for farm laborers. It means better housing for employes. From 50 to 60 per cent of every dollar received by the farmer goes to farm labor, and at least 25 per cent to city labor—to the men who manufacture and transport the things the farmer buys. The farmer is asking but little from the State in proportion to the taxes, direct and indirect, which he pays. The maintenance by the State of the Market Commission and its continuance along the same satisfactory lines is one of the vitally important matters before this Legislature; therefore, be it

Resolved: That the directors of the California Pear Growers' Association hereby memorialize the Legislature requesting the continuance of the State Market Commission, and ask that suitable appropriations be made. By so doing the Legislature will help place California in a position where its agriculture and horticulture will be stabilized and encouraged, and California placed in the front ranks of the States of the Union, to the lasting benefit not only of the producers in the country, but of every man, woman and child of both the city and country.

Cal. Pear Growers' Assn.
By Frank T. Swett, Pres.

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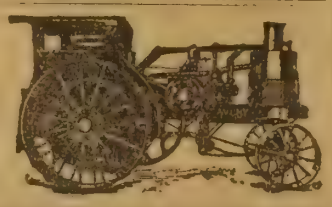


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MUST THE ORCHARDIST FENCE AGAINST STRAY STOCK?

A Senate bill has been introduced into the State Legislature by Senator King to amend the act now in force relating to stray animals (approved 1901), and which is important to orchardists, truck growers and grain men. We would especially commend to their consideration Section 9a of the bill. It begins thus: "Whenever the term 'premises' is used in this act, it shall be construed to mean land entirely enclosed with a good and substantial fence, and none of the provisions of this act shall apply to any unfenced lands." It then goes on to describe the effective fence needed, with posts not more than a rod apart (!) and firmly set in the ground, and at least four feet high.

In other words, if you have planted out a young orchard and taken out the fences to insure better cultivation, and you have a neighbor who keeps cows, hogs or sheep, you must fence "against" them in the effective manner described, or you can collect no damages if your young trees, or grain, or truck are injured by trespass of such stock.

We have been busy the last few years taking out our orchard fences the better to cultivate out any weeds that harbor injurious insects or interfere with good cultivation. If Senate Bill No. 34 passes, you will have to put those fences back if you want to be safe.

On the other hand, there is no doubt that the bill will be an aid to the small man who has one acre and a small family. He can keep a cow or two and let them range at large as long as they are not alone on the public highway. It will also help stockmen who are adjacent to good grain fields, as they are not liable for damage unless the grain man keeps good fences up and his gates closed—a return to primitive conditions.

This bill has been referred to the Committee on Agriculture—Senator E. S. Rigdon, San Luis Obispo, chairman. If you wish to favor or oppose this bill, write him at once, also let your representative know your attitude.

ANOTHER ESTRAY BILL.

Assembly Bill No. 22, introduced by Charles Kasch of Mendocino county, seems to be all right so far as it goes. The amendment to the act now in force provides, in addition to the amount paid by the taker-up to the County Recorder or poundkeeper, a reasonable cost for publishing notice, attorney's fees for preparing said notice up to $5, and up to $1.50 a head a day for the keep of any draft or horn stock of any age, and not to exceed 50 cents a day for sheep, goats, hogs, etc. The bill is not complete unless it also makes provision for damage done as well as for the keep of the animals. A few cows can soon knock a carefully trained young orchard about or trample a truck seedbed to pieces. The mental anguish of the owner who has trained his trees or prepared his garden with such care might also be considered. There is even the damage a bunch of stock can do in tramping wet or irrigated ground, which a bunch of hogs can do as effectively as cattle.

Generally speaking, if a neighbor makes a kick at all it is because of the damage done, and the usual thing is to call up the neighbor and tell him to come over and get his stock.

DECIDUOUS FRUIT SHORT COURSES.

This series of lectures, orchard demonstrations and discussions, held at Cupertino and the surrounding country from January 24 to February 1, comprised about as "meaty" a program as it was possible to compile. This co-operative extension work was carried out by the University of California, the College of Agriculture and the U. S. Department of Agriculture, the County Horticultural Commissioner making himself responsible for the carrying out of details and assisting in arrangements. We gave an account of the tractor demonstrations and have included a lecture by Dr. J. C. Whitten in this week's issue.

We have also already given publicity to Dr. W. L. Howard's experiments in pruning young trees. The amount of matter included in these lectures would in itself fill several issues of this paper and more of it will appear in our pages later.



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"I HAVEN'T an animal on the place," said F. B. Nims of Stockton, recently, in telling a visitor how he handles his work on his ranch in the Sacramento Valley.

"I used to have forty horses and all kinds of trouble keeping drivers for them. Finally I decided to try gas engine power. I bought a 75-horsepower 'Caterpillar' Tractor, a motor cultivator and a 3-ton motor truck, and now my troubles are over. I never want to see a horse again."

The F. B. Nims ranch is irrigated, protected from inundation by dykes. Beans and barley are grown alternately on 500-acre tracts. In the early spring, water is let on to the land from the river until it is entirely covered. Immense gas engine-driven pumps then pump it out until the level has been reduced to a foot or so below the surface of the soil.

In a few days the surface has dried sufficiently for plowing and the big "Caterpillar" 75 Tractor goes to work and keeps at it twenty-two hours a day until the plowing is all done. Then it pulls the seeders for the barley, while the beans are planted by the motor cultivator. Water again is let into the proper level. After the beans are up they are cultivated with the motor cultivator.

At harvest time the tractor pulls a 26-foot cut harvester and bean harvester. The harvesters thresh and sack at the same time and drop the sacks in bunches of ten. These are picked up by the motor trucks and carried to market. The whole cycle of operations is performed by gasoline power.



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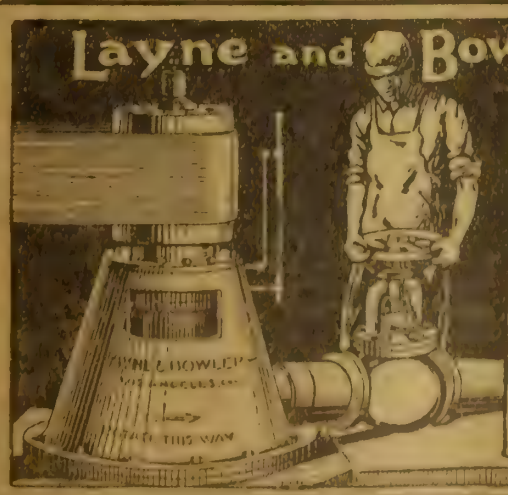
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Here and There in the Fruit Business

[Written for Pacific Rural Press.]

A Peep at a Busy Grower.

In a letter from a fruit and grape grower in Lake county who is a good friend of the Pacific Rural Press, he says: "Help is scarce here and I am pitching in every day possible with pruning, etc. Am writing this before breakfast, having lighted three fires in the house, but none in this icicle of a den. Am squeezing in a day pruning vineyard and did the same yesterday, as my two pruners do not like pruning the vine. They seem to be affected with weak back and lack general pep. On looking back I find I have pruned vines for the last twenty-seven years, and still like to do some of it. The only kick being that it is more than a little uncertain whether we shall be able to dispose or our (wine) grapes this year. However, I hate to let the vineyard go unpruned until it is a dead open and shut that no more wine will be made in California. I deeply regret the extreme radical tendencies of this country. I noticed recently that most of the vineyards in the neighborhood of St. Helena in Napa county and vicinity were pruned and hear that they are doing the same in Sonoma county."

Nearly a Million Dollars in One Year.

Is the increase of returns to fruit growers in Sacramento county, according to the report of Fred C. Brosius, County Horticultural Commissioner. Following is the tonnage and estimated returns to growers of different crops:

Shipping pears 23,418 tons, value $2,154,456; canning pears 2,653 tons, value $145,915; 12,516 tons table grapes, $800,023; 22,879 tons mixed grapes, $571,975; 4,447 tons shipping plums, $444,700; 356 tons canning plums, $23,140; 1,476 tons shipping peaches, $147,600; 1,742 tons canning peaches, $87,100; 1,440 tons shipping strawberries, $288,000; 1,143 tons canning strawberries, $101,152; 308 tons shipping cherries, $116,040; 636 tons miscellaneous fruits, $133,299; almonds, oranges, olives ,etc., $600,000. 1,709,300 fruit trees have been planted in Sacramento county in the last eight years, in addition to 11,218 acres of grapes and 500 acres of berries.

Toasted Almonds—A New Delicacy?

The discovery of the toasted almond as a possible new delicacy came about through overheating in a small lot of almonds in the drying sheds of the California Almond Association in the drying of some soft-shelled almonds. One of the workers. testing a nut that was supposed to be spoiled, found it had a peculiarly attractive flavor. Officials were notified, with the result that experiments in toasting almonds have been made with a view to creating a demand for a new comfit. These experiments have shown that almonds can be toasted much more easily and cheaply than they can be blanched and hold their flavor better, as they are toasted before being shelled. Samples have been sent to Eastern dealers and met with approval, and it will be up to the consumer to deliver the final verdict,. which is the decisive one—provided the article is attractively offered.

Housing for Workers.

A new departure in the management of canneries in planned in the San Jose establishments. Ranges of small houses are to be provided at the works for cannery workers. Most of the canneries are arranging their schedules to cover a ten months' season. Half a million dollars have been spent this season on new canning plants and half a million more will be spent in enlarging and improving to prepare for the coming season.

A Farm Bureau Auction Sale.

A Farm Sale is to be held on the Franklin ranch of E. A. Gamaron, under the auspices of the Sacramento County Farm Bureau, on February 12. Any farmer who has any product, livestock, material, implement or anything portable that he wishes to sell or which is not being used, can dispose of it here. It helps bring farmers together and is a common practice in Europe. Farm Advisor O. W. Jarvis is a live wire.

Smyrna Figs Taking Lead.

About one-third of the acreage of figs in California is said to be of the Smyrna variety -- the remainder chiefly Adriatic and Mission. In the best fig sections the Smyrna or Calimyrna is the favorite. Properly caprified, it bears fully as heavily as the Adriatic, and is then much more remunerative. A five-year-old Smyrna fig orchard properly cared for is beginning to give returns other than the intercrop.

A New Mealy-bug Parasite.

A new enemy to the Baker Mealybug is announced by George H. Hecke, State Commissioner of Horticulture, as having been received by the Insectry Division from China. Our entomological expert there is C. P. Clausen. The Baker Mealy-bug is one of the most dangerous pests to the citrus industry, is very prolific and difficult to control.

The Oil of Joy.

W. S. Runyon of Modesto has been inquiring as to the best time to work over his olive trees. He has some Picholines and will work them over to Missions. He had contracted his oil olives at three cents a pound and they cost him about four cents a pound to pick, with the result that he left most of them on the trees.

High Price for Malaga Vineyard.

One hundred thousand dollars was paid for one hundred acres, almost all in Malaga grapes, by Lucius Powers of Centerville. This was the John Gunn vineyard, near Sanger. Malagas made a record showing last year in the table grape market—good crops and strong prices.

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Fertilizer is to the tree what gasoline is to the engine. If you want small returns, feed little; if you want BIG RETURNS, feed liberally.

90 per cent of the non-paying groves are the UNFERTILIZED groves. Feed your trees into the dividend-paying class by using

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"Look at those roots—dusted *clean!* I just stuck a good charge of low grade dynamite under her, lit the fuse and—*bang*—out she came as clean as a whistle, roots and all. Why—it's as easy as pulling weeds. No more stump grubbing for *me*."

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"The best day's work that I ever did was when I sent to the Hercules Powder Co. for a copy of their book, 'Progressive Cultivation.' This book has taught me a heap about the uses of dynamite on the farm and in the orchard; how to plant my trees, how to keep my bearing orchards in good condition, how to clear my land, dig ditches, blast post holes and do a lot of other things. Every farmer in this section should have a copy of this book."

And any farmer in your section *can* have a copy of "Progressive Cultivation." Sign the coupon printed below and mail it to the Hercules Powder Co.

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Largest stock of Surface Irrigation Pipe and Pipe Equipement on the Pacific Coast

Horticultural Jottings

The Visalia National Farm Loan Association has closed loans to the amount of $72,300 and has applications on hand for $35,300 more, according to its first annual report.

It is reported from Chico that No. 2 prunes are being cleaned up rapidly from the local packing houses. Movement has taken place since the lifting of the Canadian embargo.

O. G. Brundage of Farmersville, who owns a 40-acre Calimyrna fig orchard west of Exeter, is preparing an adjacent 75 acres for a further planting—to black figs this time.

Robert Horbach, visiting Springville, in Fresno county, has been advocating the planting of the Mammoth (table) grape, which he claims matures earlier than most varieties and packs well.

The Portuguese farmers around Atwater and Livingston complain that they cannot book any orders for sweet potatoes this year. Last year at this time they were going rapidly at good prices.

The State highway between Turlock and Modesto is being widened by a cement shoulder on either side, two and a half feet wide. About thirty men are on the job. The asphalt is to be resurfaced to the depth of one and a half inches.

The California Packing Corporation, whose plant at Hanford was destroyed by fire last August, has taken the first official step towards the restoration of their cannery and dried fruit plants. Construction work is to begin at an early date.

During the month of February demonstrations of trapping and poisoning gophers will be given in Sonoma county to the Horticultural Commissioner and Farm Advisor. February is the best month to get them—right in the breeding season.

George E. Merrill, Farm Advisor of Sonoma county and his assistant have each purchased a tract of bottom land with a small portion of hill land in the northern part of the county and will carry on experimental work there along various lines.

The Federal Farm Loan Board reports that, of $4,644,000 due from borrowers up to January 1, 1919, for interest and payments of principal, only $83,000, or 1.8 per cent, had not been paid and only $11,000 of this sum was more than ninety days overdue.

Thirty tons of olives of excellent quality were grown on the Bonanza ranch on the Nevada-Yuba line during the past season. Picking has just been finished, the fruit being taken by motor trucks to Marysville and shipped to one of the established processing plants.

There are about 1000 acres of young lemons in the Jasmine district, which expects to have a packing house of its own next year. This year the fruit was sent to Porterville to be packed. Many Lisbon lemons are grown here and are reported in fine condition.

A committee of Sacramento Valley rice growers, at a meeting with the West Side Canal Company in San Francisco, agreed to a raise in rice water rates from $7 to $8 an acre, the amount received by the increase to be used by the company in enlarging the pumping plant.

Two carloads of oranges, said to have been frosted, shipped from Riverside, January 18 and 22, have been seized at Kansas City, Mo., by Federal inspectors. A close watch is being maintained at Eastern terminals for frosted fruit, according to State Horticultural Commissioner George H. Hecke.

The San Dimas marmalade factory opened a few months ago and, operated by the California Fruit Growers' Exchange, is now turning out 20,000 glasses of marmalade a day. Cull oranges and lemons are used. The first year's output is expected to be worth $250,000. Employment is given to 200 persons and the monthly pay roll exceeds $8,000. Another valuable demonstration of organization.



Olive Trees
such as these are grown only on our foot-hill locations. — Note the good roots—for hardiness they have no equal.

We have a fine lot of Mission and Manzanillo trees, both on Picholine roots and grown from cuttings. We have had splendid success on all Olive plantings—a most important assurance to you.

Submit a list of your tree wants for special quotation. Do it right now.

We have also a complete assortment of Shipping Plums, Cherries, Prunes, Bartlett Pears, Fall Pears, Peaches, Almonds, Apricots, Walnuts, etc.

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And remember—we will accept Liberty Bonds as full or part payment for trees. Write us today.

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"Behind each tree is our guarantee"

To California Farmers

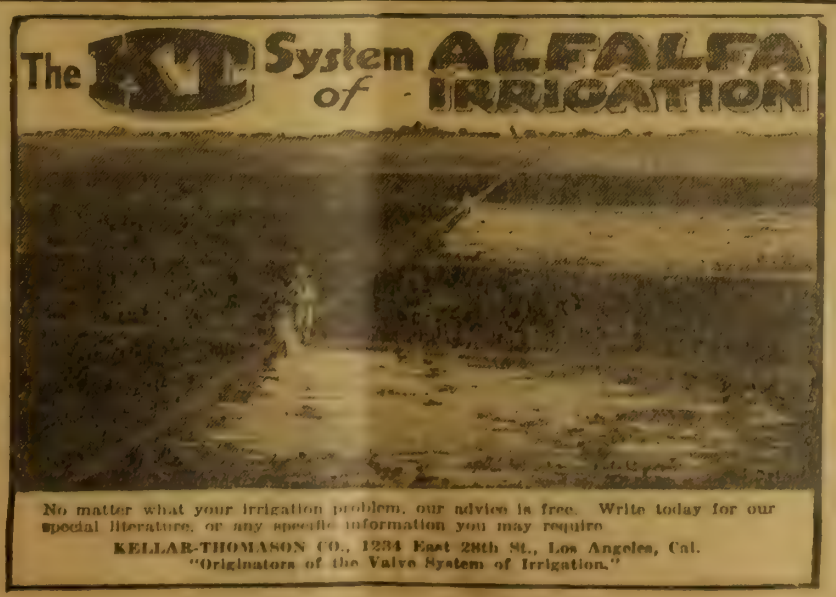
You may have a commercial orchard, or merely an assorted family orchard, but your farm is incomplete and unsatisfactory unless you have suitable shade trees and ornamental shrubs. Our collection is equal to any in the state, and suited to any soil or climatic conditions. Also, do not forget the "wood lot." **Eucalyptus trees** are best for this purpose.

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We Owe Squirrels a Good Living

[Written for Pacific Rural Press.]

We pay more taxes to ground squirrels than to tax collectors, says the State Horticultural Commission. It must be that we owe them their living or we would not be paying them. Considering the $17,000 paid out one season in five-cent bounties on squirrel tails by the San Luis Obispo Board of Supervisors, and considering that there seemed nearly as many afterward as before, Assemblyman Carlton W. Greene of that county figured there were at least 2,000,000 squirrels collecting taxes from the farmers. If each one collected or destroyed five cents' worth of grain or crops per year, the tax would total $100,000 for this county alone. California's annual loss, according to the University, is easily over $5,000,000.

To a grain grower or cattleman, or to a small gardener, or to the producer of almost any kind of crops between those extremes, it is unnecessary to mention the methods of these tax collectors which have a reputation worse than the "publicans and sinners" of former days and yet have no known chance for repentance. The only bearable sentence to be passed on them is extermination to the highest degree possible.

SQUIRRELS REDUCE GRAIN CROPS.

In the grain fields and range lands these outlaws (they are already outlawed but in most counties they don't care) dig up sprouting grains and later make beaten paths after breaking down the grain in their way. They eat our crops till they are fat and store away enough for winter. In doing so they break down a great deal of standing grain that they do not eat. They build big colony mounds which interfere with cultural operations, and dry out the roots of plants. Many fields there are in which the plow has to take lessons in the navigation of choppy seas before attempting to turn the mosquito-bitten landscape. They bore irrigation ditch banks like honeycomb. Fruit men find their stone fruits cleaned off the trees in some districts by the squirrels.

SQUIRRELS REPLACE CATTLE.

On the ranges, squirrel damage is much greater than is apparent. If I were a squirrel in a range country, I would pick up the plumpest grass seeds for my own household, and would leave those shriveled specimens that consist mostly of hulls. Next season those shriveled seeds might sprout into grass for cattle and sheep or they might not. If they did, even I, the squirrel, might expect them to sprout weakly and die prematurely if any unfavorable conditions should arise; and I would eat all the green grass I could, too. The pasture could not be expected to grow or fatten as many cattle as it ought to. I would expect the cattleman to devote the price of a few bullocks per year to exterminate my tribe.

WHY HAVEN'T THEY BEEN KILLED?

While the squirrels are most plentiful where crops and output are least valuable per acre, it also follows that they do more damage per squirrel in the more valuable crops. One would think that farmers who see the depredations on their own crops would support a law for squirrel extermination. A lot of them do, but man after man complains to the Pacific Rural Press that it will break him up in business or something like that to maintain a perpetual campaign to keep his land clear of squirrels which breed unmolested on his neighbor's land.

We have a law providing practically (but not exactly practicably) for ground squirrel extermination. It is incidental to the horticultural laws and is hard to find, for it consists in mentioning ground squirrels and gophers among many other pests which county horticultural commissioners are to control as best they may. Horticultural Commissioners are given authority to kill the squirrels by their own deputies if land owners fail, and to hold the cost as a lien against the land. But not all of them have enough deputies, some of them do not have enough energy, and some of them do not get any encouragement from the county supervisors who pay their salaries. The State Horticultural Commission has some persuasive and advisory powers, which have been used to the limit, but the present law may be pronounced well nigh a failure from a State-wide standpoint.

We had hoped that a really effective law might be passed at the present Legislature and enforced afterward. The writer believes that if county horticultural commissioners and their deputies were made directly responsible to a State official and paid out of State funds, squirrel control would come with one fell swoop. At least two counties have reduced their squirrel population 90 per cent under the present law. The cost is probably repaid in the first crop year in the saving of crops alone.

PROPOSED LAW AGAINST SQUIRRELS.

But realizing that this reorganization of horticultural commissioners may meet enough opposition to prevent its carrying out at present, an alternative is the bill introduced by Assemblyman Greene.

This provides that "squirrel dis-

Stump Land Worth Money To Day

This one-armed man Pulls big trees by hand



FRANK M. HANCE, a one-armed farmer of Bowie, Md., sent me this photo of himself and a "K" pulling a double silver maple, 3 ft. 8 in. in diameter at the ground. What he has done you can do. Clear your stump land cheaply—no digging, no expense for teams or powder. Your own right arm on the lever of the "K" Stump Puller can rip out any stump that can be pulled with the best inch steel cable. I guarantee it. I refer you to U. S. Government officials. I give highest banking references.

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ANY red-blooded man with a "K" can outpull 16 horses. Works by leverage—same principle as a jack. 100 lb. pull on the lever gives a 48 ton pull on the stump. Made of best steel—guaranteed against breakage. Has two speeds—60 ft. per minute for hauling in cable or for small stumps—slow speed for heavy pulls. Works equally well on hillsides or marshes where horses cannot go.

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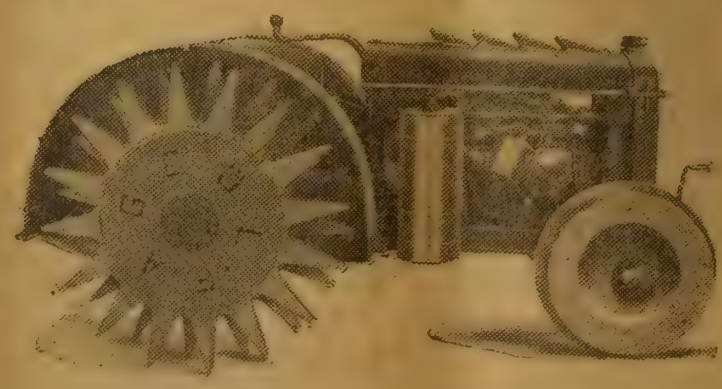
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tricts" may be organized on petition of 100 resident freeholders of any district to the Board of Supervisors; or the board may initiate such districts on its own motion. A resident of the district is to be appointed "squirrel commissioner" to direct operations for extermination of ground squirrels, not only on farms but on highways and public lands. Railroad rights of way are not mentioned, nor is the reluctance of a man to prosecute his own neighbors considered. Amendments covering these points may be made. The squirrel commissioner is to inspect every farm in his district twice a year and notify occupants of infested lands to get busy and keep busy in a way to get concerted action and leave no infested spots untreated. Failure to do the work as directed by the squirrel commissioner lays a person liable to a fine big enough to pay a large part of the cost of extermination, and, in addition, the commissioner is to do the exterminating. The costs of such extermination become a lien on the property, taking precedence "over all mortgages, liens, and other charges thereon." The lien is payable and delinquent in the same manner as taxes. Squirrel districts may be discontinued by the Supervisors on petition of a majority of the resident freeholders of the district.

RESIDENT FREEHOLDERS CONTROL.

A great source of strength in this bill is that it puts "resident freeholders" in control. The great weakness and source of irritation in the past has been inability to interest non-resident land owners and renters. By this bill a renter must notify his landlord when squirrel notice is served. While the bill is good as a local option measure and is likely to work because it has local support, it has the same objection that applies to other local option measures, in that a cleaned-up district is continually subject to infestation from less progressive surrounding districts.

The Federal Food Administration in California closed its business on January 31. The grain department will continue in operation, but will be directed solely from Washington.

Agricultural Notes

Shipment of celery from Southern California is expected to be light during the next two months.

The War Trade Board at Washington has given notice that rice has again been added to the list of restricted imports.

In reply to our inquiry, George E. Merrill, Farm Advisor of Sonoma county, estimates that there may be in the neighborhood of 4000 acres in wheat in his county in 1919.

Over 30,000 acres are already said to be signed up in the Honcut Irrigation District in Butte county. It is planned to have the main canal under construction by spring.

The Globe Milling Company (Yolo county) is now 60,000 bags ahead of its record last year this time. About 400,000 bags of rice have been already handled this season and triple shifts will be resumed.

A large part of the local acreage to be devoted to tomatoes had already been contracted to the canneries in the Manteca section before the California Tomato Growers' Association met at the Veritas school house this week.

Eighty-two thousand five hundred and seventy acres of alfalfa was raised in Stanislaus county this year, according to the estimate of J. L. Rutherford, County Horticultural Commissioner. At $10 a ton, the product would be worth $4,128,500.

One million sacks of rice have been handled by the mills up to January 1, according to E. E. Behr, secretary of the California Rice Growers' Association — three times more than at the same time last year. The average price paid was $4.24 per hundred pounds.

About 18,000 acres were planted to castor beans last year in response to Government desires. The Government is paying $4.50 per bushel of 46 pounds for the beans and a bonus of $2 a bushel for good seed beans. It costs about 25 cents a bushel to shell them. William Terry, in Santa Barbara, is doing this with a reconstructed Owen bean machine. Gas masks are needed by thresher operators. The oil is used for lubricating aeroplanes.

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EVERY feature desirable or necessary for quick, thorough spraying will be found in the Alpha Sprayer. It is the simplest, most accessible power sprayer made. Its reliability lies in the simplicity and strength of every part as proven by its performance in the field.

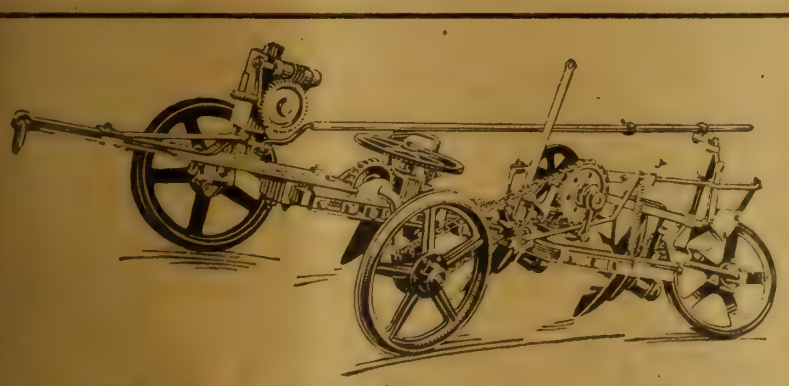
Driven by the easy-starting ALPHA ENGINE and equipped with our dependable automatic pressure regulator, the Alpha Power Sprayer has proven its superiority to growers who have used all the best known makes.

ATTRACTIVE PRICES. We are in position to offer Alpha Sprayers at prices probably lower than other sprayers of equal capacity.

Write for Complete Specifications.

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CHICAGO FLEXIBLE SHAFT COMPANY,
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Relations of Good Pay and Good Work

To the Editor: In many respects I like your paper, but to be frank with you, I am entirely out of sympathy with your editorial policy toward labor. On most things you give us leadership in a progressive, forward movement, but in your attitude toward labor, which agrees with the policy of many conservatives, I believe you are leading us inevitably to revolution and chaos.

I certainly do not care whether you favor or are opposed to organized labor, and I presume that the producing farmer is the man for whose cause you would especially fight, but you have consistently opposed advance on the part of labor while I have not seen where you in any way condemned the land-owning class for taking advantage of war-time conditions and gouging the farmer.

You must know that fully half the work done in the country in California is done by men who never see sheets except when they are out of work and stopping in some city hotel. Before war times these men got something like an average of $40 per month and board, or say $65 per month. They could not marry and raise a family on this amount, so there has been practically no reproduction of workers so far as these men were concerned.

It seems to me that farm labor should be paid enough so that it would be considered an occupation which a man might take up and expect to follow and at the same time be a good citizen and raise a family. A man has a right to live a full, well-rounded life in the community in which he works, and to try to treat labor as a commodity, governed by the law of supply and demand, simply spells revolution and bloodshed. —B. R. Burroughs, Knightsen.

[We are quite willingly to publicly record your protest. From the way you differentiate between land-owners and farmers we suspect that you hold some line of nationalistic views which we have no hope of displacing. We believe that the farmer should be the land-owner—if not immediately, then as soon as he can. And we believe also that the owner of agricultural land should be whatever kind of a farmer or grazer his land fits him to be—for productive land should not be held idle. It should not be profitable to hold it idle.

We agree with you that a good, reliable farm laborer should have a home and a family. That is the way the United States secured most of its native-born rural population and started most of its land-owning farmers. But you are mistaken in the view that the wages a man receives determines whether he helps build up the country or not. The secret is in the man, not in the wage-rate. The wage-rate neither makes him a good, profitable worker nor a decent citizen.

Employing farmers do not as a rule object to what are called "high wages" if the product will sell for enough to cover what they have to pay. They do as a rule desire just such men as you describe and are willing to pay all that good, trustworthy- non-striking labor is worth. Their issue is not against good wages but against bad work.

A threat of revolution and chaos is an outbreak of un-Americanism which is unworthy of any man who desires to live in this country. There is ample opportunity to correct and adjust all our social and economic hardships and misunderstandings under our constitutions and laws and political methods, and we are going very fast into better and fairer conditions for all who deserve them. Anyone who cannot see the true way to real progress in this country and takes to preaching or practicing Bolshevism, will be brought up with a short turn. We think you are in error in apprehending danger from such a source.

We are not "opposed to organized labor." Nearly every week we are exalting the American Federation of Labor as an example for the organization of all other interests. We can see no other way by which all conflicting interests can be brought to the realization of a square deal all around by the enforcement of the American doctrine of equal opportunity for the exercise of American individualism and initiative—the doctrine of liberty without encroachment.—Editor.]

CELERY IN GOOD DEMAND.

An active demand and a reduced acreage is cleaning up the celery crop earlier than usual. At Christmas time 60 per cent of the crop tributary to Antioch had already been moved and 80 per cent at Walnut Grove. It is estimated at this time that 40 cars left Walnut Grove and 220 left Antioch.

SUPERPHOSPHATE INCREASED WHEAT.

Use of fresh stable manure and steamed bone meal increased a wheat crop in Missouri by $11 per acre. Addition of superphosphate increased the crop by $39 an acre, the superphosphate being valued at $2.60.



American Horizontal Pump. Can also be furnished direct-connected to motor or engine.



American Vertical Pump for deep well work. No end thrust.

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—have easy flowlines, split casings, so that interior of pump is readily accessible, improved hydraulic thrust balance, minimum of wearing parts, and many other advantages. A type and size for every pumping requirement.

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California Hydraulic Engineering and Supply Company

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A Bosch on Every Tractor

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Any tractor will do more work, better work and steadier work if it is equipped with

BOSCH Magneto Ignition

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Magnetos are stronger and more reliable than other ignition systems. The supreme tests of severe war service have shown that. Bosch is stronger and more reliable than other Magnetos. Years of use in every branch of ignition service have proved that.

The rip-roaring Bosch sparks make every drop of fuel every possible ounce of power. Grade of fuel and richness of mixture make little difference, kept cleaner and in better condition.

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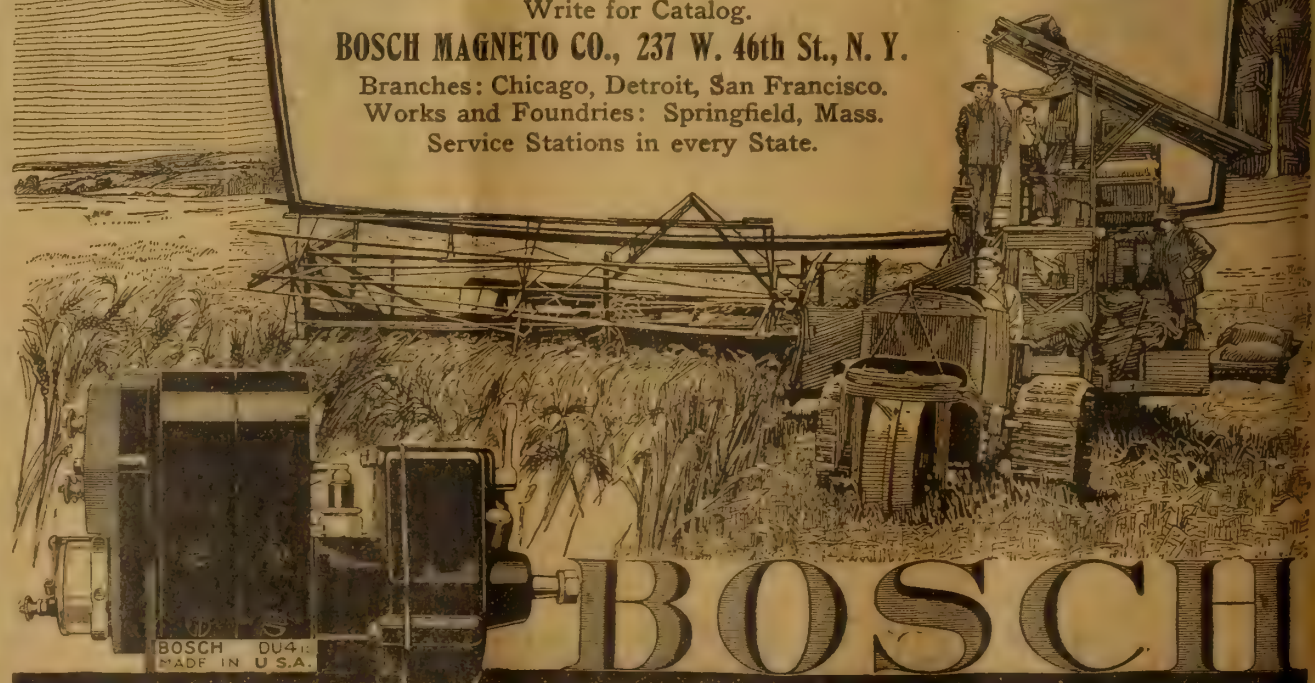
Have a Bosch Magneto on your tractor. Many fine makes use it as standard equipment, though it costs the maker more than ordinary ignition systems. Any maker will give you Bosch if your order specifies: "Bosch Magneto Ignition." Any Bosch dealer or service station will install it on your present tractor.

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AMERICA'S SUPREME IGNITION SYSTEM

MOTOR TRUCKS - TRACTORS - AIRPLANES - MOTOR CARS - MOTOR BOATS - MOTORCYCLES - GAS ENGINES - ETC.

BOSCH MAGNETO CO 1918.

WHY BARLEY YIELDED AND SOLD HIGH.

[Written for Pacific Rural Press by R. E. Hodges.]

Last year the Onstott Brothers averaged 30 sacks of barley per acre on 500 acres in the southern edge of Butte county, and the grain averaged about 116 pounds per sack. The year before they averaged 32 sacks of about the same weight on the same land. The 1918 crop was sold for $2.50 and $2.55 per hundredweight. Fred Onstott, who handles this ranch, says he can prove these figures if you doubt them. We saw some of the seed he is now sowing, being unrecleaned grain from his last crop, and it is surely as plump and big as could be desired.

The Onstott ranch is fertile, level sediment loam, with a water-table not over two or three feet down. This helps the yield in dry years; but there is a whole lot in the way the crop is put in and cared for.

NEED NOT WORRY ABOUT CLIMATE.

"Put your money into the crop before you sow it," says Mr. Onstott. "Climatic conditions needn't worry you much if your soil is in the right condition. Every harrowing adds a sack and a half per acre if done when it is dry enough; but it makes you lose twice that much if harrowing is done when too wet. We never sow on freshly plowed ground. We plow right after the first rains and let it stand in the rough all winter until just before seeding time in February. That makes it all right to plow, however wet the land is, for later rains melt the clods and help settle the subsurface so it won't dry out soon in the spring."

Last season Mr. Onstott paid $1.50 per acre to get the land double-disked about February 1. He harrowed it and drilled the seed on most of it, then harrowed it again. This season he started work earlier because he is drilling 800 acres of barley and it will be March before this can be finished. The seedbed is beautiful to look at; and the Onstotts expect from their many years' barley-growing experience that the crop will look even more beautiful, whether we get any more rain or not.

Three factors besides the good seedbed help to make the big yield. The land is plowed six inches deep one year and eight or more the next to prevent any plowpan and to give the soil aeration for roots to grow in. Never is any straw that grew on this ranch burned. It is sheeped off and the remains plowed under. Experience has led them to put in practically all of their 800 acres this spring with drills.

MONEY SPENT FOR ROADS.

To the Editor: How much money has been spent for roads in California in the past two years and how much is proposed for the next two years?—W. C. R.

The State Highways bond issue of $18,000,000, authorized in 1917, is still mostly to be spent, work having gone slowly on account of the war. The counties, not including municipalities, spent $15,059,232.32 on highway and bridge building and upkeep in the year ending June 30, 1917, not including interest on State Highway bonds. In the year ending June 30, 1918 (except for Stanislaus and Siskiyou, whose reports are not yet in), the counties spent $13,212,611.32 for roads, not including municipalities.

The State made a special appropriation for a joint highway district in 1917 of $250,000 and other special appropriations of $70,000. The State Engineering Department, part of whose work is on roads, received $204,600 in 1917. The Government paid to the State for roads in 1917 about $60,000, and there are over $2,000,000 available from the Government for post roads during the coming two years.

Governor Stephens, in his message to the Legislature, January 8, 1919, urged not only that the missing links in our main highways be completed with utmost speed, but also that highways be built from the interior valleys to the coast. A dozen bills providing for highways were introduced in the first period of the Legislative session, the most important of which is the one sketched in a recent issue providing that the State would put up as much money as any county for improved roads within that county.

MOHAWK *VS* - MUD



Your tires must fight the roads they travel. That's their job.

On most country roads, over gravel, macadam, rocks, ruts—the fight is hard.

On some roads, city asphalt for example, the fight is comparatively easy. High mileage records under easy conditions mean little or nothing.

We don't know where Mohawk tires will be used. We believe Mohawk users want a tire that will stand up and give a high mileage on *any* road. We believe they wish to go where they want to regardless of road conditions.

So from the beginning we have designed and built Mohawk tires not for easy work but for *any* work. We have built them with a tread so tough they will stand the abrasive action of macadam, cement, gravel and the cutting action of sharp rocks, fresh crushed stone, car tracks—with extra heavy fabric and an extra ply in most sizes to guard against fabric breaks caused by the hammering over rocks, cobbles, road holes and curbs—and with treads that hold secure against skidding, drive slipping or mud, snow, sand and wet pavements.

Where mud is prevalent we particularly advise the use of the Mohawk Non-Skid Tread.

The best proof that Mohawks do stand up under any and all road conditions is the fact our records show that 85% of all Mohawk buyers become permanent Mohawk users. A "fair weather," "good road" tire could never show such a record.

We have accomplished these results by the simple, logical method of using only the finest grades of rubber and fabric produced in the world—by using generous quantities of them—by avoiding all dangerous cheap compounds and substitutes—by financing and conducting our business economically and efficiently.

Isn't it reasonable to believe that such methods must produce a tire much above the ordinary?

Isn't this the sort of a tire you want.

You will find good dealers almost everywhere who sell them.

THE MOHAWK RUBBER COMPANY
AKRON, OHIO

Chicago Atlanta San Francisco Boston New York Kansas City

MOHAWK "Quality" TIRES

Mohawk Tires hold unusually well in mud. But there are altogether too many of these mud roads in our country—practically impassable winter and summer.

Do you know that less than 10 per cent of the 2,333,117 miles of public roads in the United States is improved?

Get behind the good roads movement in your county. It will pay you.

CHEAPER THAN A WHIP AND BETTER FOR YOUR HORSES

A horse with bruised, galled and chafed neck or shoulders can't earn his feed. Whipping only increases his suffering. You can prevent such injuries for less than the price of a good whip. Equip your faithful animal with Tapatco—The pad made with our

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(Found Only on Pads Made by Us.)

Consists of wire staple with felt washer. It gives hook a firmer hold and prevents pulling off, even though fabric is weakened by long usage. Life of pad is thus materially lengthened. This is the greatest improvement since we invented the hook.

STUFFED COLLAR PADS
Filled with our Special Composite Stuffing

are better than other kinds. They are soft, springy, absorbent and serve as a guarantee against bruised, galled and chafed shoulders. Ask your dealer for Tapatco Booklet.

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Look for the Felt Washer
SOLD BY DEALERS EVERYWHERE



(2)

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H. A. HYDE, WATSONVILLE.

Preparing Our Rice for the Market

[Written for Pacific Rural Press by R. E. Hodges.]

The profitable growing of rice depends on convenient milling facilities, and the rice mills of California have expanded almost as rapidly as the acreage. Several mills are operating in California this season for the first time. Others have greatly expanded for the present crop. Growers are not alone interested these days in the growing of their crops. They are more keenly interested in the markets for them. Preparation of all kinds of farm products for the market has rightly been focussing attention in recent years, for dear experience has shown that products poorly prepared are scarcely able to pay the freight for the long journey from California to the chief markets. Still, in an industry so new as rice growing in California, few growers have had opportunity to see the preparation of their product for market. So it was that we were glad of the privilege afforded by Mr. Morse and H. S. Smith of the National Rice Mills at Sacramento to inspect their new mill in full action. This mill is one of the most modern, compact and convenient in the State, though not the largest. Four thousand sacks of paddy can be milled here in 24 hours, and all of the products—coated rice for export, natural rice of three grades for domestic consumption, "brewers" rice, broken rice, chicken feed, rice polish, and rice bran—all of these products of 4000 sacks of paddy per day are packed in sacks on the main floor within a radius of 25 feet. On one side of the mill is the Sacramento river, which carries much of the export and domestic rice to San Francisco. On the other side is a railroad spur.

RICE HULLS.

Across the railroad is a huge pile of rice hulls ever increasing until hauled away by farmers who want to lighten heavy land or until burned in small piles to use the ashes for fertilizer. Last summer rice hulls were sold at $10 to $15 per ton as filler for mixed millfeeds. They are practically valueless for feed, but there was a great demand for tonnage and ground rice hulls furnished both bulk and tonnage. This practice committed suicide, almost, for Mr. Smith says there is practically no demand now for the rice hulls for feed. He also emphasizes the statement that his mill does not use ground rice hulls in any of its products. It will be remembered that the demand for rice bran has in recent months dropped very considerably because feeders found out that hulls had been used as fillers. The pure rice bran and rice polish make fine stock feed and it is gratifying to know that they can now be obtained.

HOW RICE IS MILLED.

Rice comes to the mill sacked but with each kernel covered by a more or less bearded hull and by three coats besides. This "paddy" is dumped and elevated to the fourth floor, where it goes over a cleaner to take out coarse foreign substances such as nails, straw, etc. It chutes through a clipper, which takes off the beards and thence into a 4000-sack paddy bin, which extends through three floors. It is then elevated again to the fourth floor to run through a separator, which takes out short pieces of straw, weed seeds, etc. Down the cleaned paddy goes to the "stone" bins, where it is stored before its encounter with the stones. Up to this point the paddy is known as "grain." After the hulls are taken off, it is spoken of as "kernels." There are three sets of the stones, made of emery and cement. These are set to revolve horizontally on a vertical shaft and are adjusted to loosen the hulls from large paddy without crushing the kernels. A little bran also comes off in these stones. The hulls, rice, and bran pass through a rotating bran "sifter," which is faster and better than the old-fashioned "reel." The hulls and rice go into a separator, which sucks the hulls off and sends them to the big pile outside by means of a rotating fan. The rice and small-sized paddy which the first stones could not reach are elevated and sent down through one or more of the four modern paddy separators. These take out the small paddy grains and send them back to stones which are adjusted closer together in order to hull the smaller grains, care being taken not to set them so close as to break many kernels. The hulls, rice, and bran are again separated and the rice is sent to a storage bin.

BROWN RICE MOST NUTRITIOUS.

The kernels at this stage, with only the hulls taken off, are known as "brown rice," much used by Orientals but rejected by Americans because of its dirty appearance. The Oriental people have a great advantage in this, for the brown rice includes much of the nutrition and is much more valuable as food than the white rice. It still retains two coats of bran and a coat which is called "polish" after it is taken off.

From the storage bin, the brown rice goes through the "first-break hullers," which take off the outer coat of bran. There are six or seven such "hullers." The brown rice and bran go thence to the bran sifters and the rice goes back to one of a half dozen "second-break hullers," which remove the second coat of bran, but leave the polish on. The rice and bran go back to the bran sifters, whence the rice goes to a cooling bin for a few hours because it has become warmed up in the scrap.

From the cooling bin the rice goes through a vertical cylindrical revolving "brush" to take the polish off. The outer part of this "brush" is a wire mesh revolving around and close to a central leather-covered core. The rice being rubbed between leather and wire mesh gets well cleaned up and the polish is sent to bins, whence it is sacked for feed. During the past season quantities of the polish were used as fillers in dynamite caps. Strong suction over the "hullers" and the brushes draw off moisture and dust.

GRADING THE MARKET RICE.

After being polished, the rice goes over shaking screens perforated with suitably sized holes to grade it for sizes demanded. Most rice for human food is of three grades—"extra fancy," "fancy," and "choice." This is called "head rice." The shaking screens, called "grading shoes," let the broken rice and smallest kernels through, and they are separated in a grading cylinder into "brewers' rice" or "broken kernels." The various grades go to their respective bins and the very finely broken kernels go to the chicken feed bin along with the weed seeds which were cleaned out early in the game.

EXPORT RICE.

Were it not for the quantities of our rice that are exported to Cuba, Porto Rico, and South America, the industry would languish. We were shown the preparation of rice for export. Crystal white shiny kernels are demanded for this purpose. The "natural rice," such as most Americans eat, must be "coated."

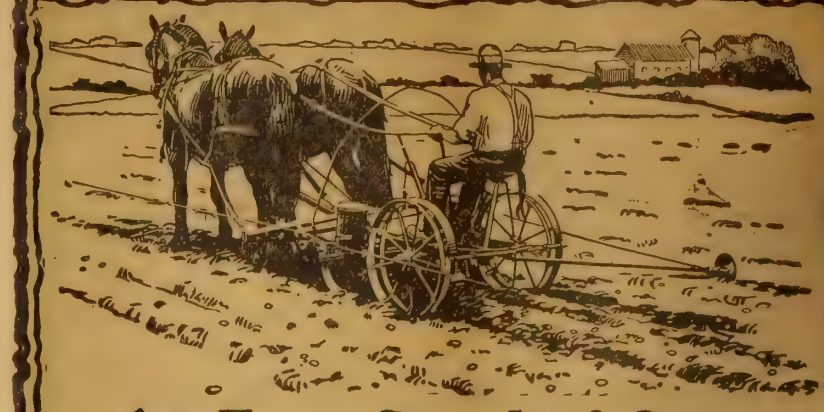
Coating is done by running the rice through a chute into and through revolving churns, called "toumbles," of which the National Mill has two. Into the chute there is continually dripping the proper amount of glucose from a tank and of "talc" from a hopper.

The coat put on in the toumbles not only gives kernels the luster demanded, but also preserves them better for long shipment. All rice to be exported is put into cotton bags inside of burlap bags, like sugar is packed.

RICE FLOUR.

The National Mill at Sacramento is equipped to make a carload of rice flour per day—about thirty tons. This is made both from domestic rice and from Siamese rice. The domestic rice is all out of the way by about May 1; and through the summer imported rice already milled is brought here to be coated for export or made into flour.

Two suits have been filed to recover sums aggregating $18,238 from the Consolidated Fruit Company, formerly the Consolidated Fruit Exchange, whose affairs are now being looked after by a receiver.



An Even Stand of Corn

GIVE your corn crop a good early start when you want an even stand. It takes a good planter to give it that start, a **C. B. & Q.** or **International Corn Planter** that is easily adjusted and that stays adjusted until the job is done. Consider these planters feature by feature.

They plant corn accurately whether used with edge drop, flat drop, or full hill drop plates; whether the corn is checked or drilled. The drop clutch can be changed, while the planter is working, to drop 2, 3, or 4 kernels to a hill. The tongue is easily adjustable to the height of the horses. A handy foot drop lever makes head-row planting easy.

When you look over the **C. B. & Q.** or **International** planter, don't miss the automatic marker, a handy feature that saves a lot of work and time. There are fertilizer attachments if you want them, combination pea and corn planting hoppers, open wheels or closed—your planter will be equipped just as you want it. You can plant rows 28 to 48 inches wide by 2-inch adjustments, with four distances between hills.

These planters are so good you will want to know all about them. Drop us a line and let us send you full information.

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Grain Harvesting Machines
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Disk Harrows, Cultivators, Tractor Harrows, Spring Tooth Harrows, Peg-Tooth Harrows, Orchard Harrows

Planting and Seeding Machines
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Haying Machines
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Belt Machines
Ensilage Cutters, Huskers and Shredders, Corn Shellers, Threshers, Stone Burr Mills, Hay Presses

Belt Machines—Cont.
Cream Separators, Feed Grinders

Power Machines
Kerosene Engines, Gasoline Engines, Kerosene Tractors, Motor Trucks, Motor Cultivators

Corn Machines
Planters, Drills, Cultivators, Motor Cultivators, Binders, Ensilage Cutters, Pickers, Huskers and Shredders, Shellers

Dairy Equipment
Cream Separators (Hand), Cream Separators (Belted), Kerosene Engines, Gasoline Engines, Motor Trucks

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Manure Spreaders, Straw Spreading Attach., Farm Wagons, Farm Trucks, Stalk Cutters, Knife Grinders, Tractor Hitches, Binder Twine

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Western Canada offers the greatest advantages to home seekers. Large profits are assured. You can buy on easy payment terms,

Fertile Land at $15 to $30 per Acre—

land similar to that which through many years has averaged from 20 to 45 bushels of wheat to the acre. Hundreds of cases are on record where in Western Canada a single crop has paid the cost of land and production. The Governments of the Dominion and Provinces of Manitoba, Saskatchewan and Alberta want the farmer to prosper, and extend every possible encouragement and help to

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Though Western Canada offers land at such low figures, the high prices of grain, cattle, sheep and hogs will remain.

Loans for the purchase of stock may be had at low interest; there are good shipping facilities; best of markets; free schools; churches; splendid climate; low taxation (none on improvements).

For particulars as to location of lands for sale, maps, illustrated literature, reduced railway rates, etc., apply to Supt. of Immigration, Ottawa, Can., or

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Hundreds of trappers send us their raw furs year after year—WHY? Because we treat them fairly and squarely, and pay them at once.

We pay highest prices because *we are manufacturers*, the largest in the West! We buy millions of dollars worth of furs annually. Furs shipped to us are made up by us. In this way, you get more money for your furs—not one cent deducted for commission or grading.

Today—pack up all the furs you have and ship to us by parcels post or express collect. WE STAND ALL CHARGES. We'll send you a check at once. If the check isn't big enough, send it back and we'll return the furs without cost to you—that's how sure we are that our prices will please you. Our record of 55 years' square dealing is your guarantee of satisfaction.

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HOW THE STATE CREATED THE WINE INDUSTRY.

(Continued from first page)

thus accruing nor in taking the necessary steps to render these advantages permanent and profitable."

THE STATE ORDERS THE PROMOTION OF THE WINE INDUSTRY.

There were many early official indications of State favor for wine making of which we have cited only a few, but it was not until April 15, 1880, that systematic promotion was provided for by law. On that date an act of the Legislature was approved entitled "An act for the promotion of the viticultural interests of the State," and providing for a State-wide board of commissioners to that end. Their duties beyond matters pertaining to the growth of the vine for the sake of its fruit included popular lectures upon "fermenting, distilling and rectifying." The same law provided: "It shall be the duty of the Board of Regents of the University to provide special instruction in the arts and sciences pertaining to viticulture: the theory and practice of fermentation, distillation and rectification, and the management of cellars * * * to report upon woods procurable for cooperage * * * to prepare comprehensive analyses of the various wines and spirits produced from grapes," etc. This was the beginning of prolonged work which the State Legislature provided for by biennial appropriations, increasing each year until the Viticultural Commission was receiving a maximum of $17,500 per year and the University about $5,000. This arrangement continued until 1894, when the first State Viticultural Commission was abolished and its effects turned over to the University, with but scant funds for operation, which were withdrawn in 1897. Thereafter for several years the University proceeded with viticulture with its own funds until the State reentered the promotion of the grape with renewed appropriation to the University and by organizing a second Viticultural Commission, which it has maintained for nearly a decade at about $7,500 per year.

NEARLY FORTY YEARS OF PROMOTION.

Thus roughly outlined, the patronage and promotion of the grape industry by the State has covered nearly 40 years, with slight interruption. It is safe to estimate that on the whole the State has paid for this enterprise not less than $300,000—wholly in addition to what the University and other institutions and private persons expended of their own funds for research experiment and promotion. A file of the published proceedings and promotive publications of the Viticultural Commissions and the reports of investigations by the University would fill one of President Eliot's "five-foot shelves" with more "stimulating" literature than he would probably prescribe, however. The expenditure and the volume of the printed word are both probably greater than any other State has ever provided for the promotion of a single industry. For, although the work covered all that can be had from the grape, it must be admitted that perhaps nine-tenths of the expenditure and publication proceeded with the grape from the point of view of wine making. The cultural work was also of great advantage to the production of raisin and table grapes, but neither of these branches had such complex and delicate requirements to meet. Their problems were largely commercial and the producers mastered them by their own insight and enterprise. It was for the wine industry that the State expended most of its money and for the permanent establishment of it made most persistent effort. On the whole, it has been but scantly profitable and therefore very few of those who have grown the grapes have accumulated anything to tide them over the embarrassment of a lost occupation.

The ninth Annual Orange Show will be held at San Bernardino, February 14 to 23, inclusive. It is said a million oranges will be used in the decorations.

SATISFIED USERS wrote this Ad for Us—

Their Experience is worth real Money to YOU!

I have owned three spreaders in my time. The first two I didn't think much of. Then I got one of yours and now I am more than pleased with the spreader proposition. I find by hauling manure in the winter time on clover sod and letting the rains leach it down before plowing it under will oftimes double the corn yield or even wheat. Where I used commercial fertilizer and barnyard manure together on 12 acres of wheat last year I got 600 bushels of wheat, an average of 50 bushels per acre. A farmer that owns ten acres can't afford to be without a spreader.

WILL HENSIL, Ohio.

I have had several spreaders on my farm, but there are none like yours. I could not farm without it. Last fall I put six acres to wheat, first putting on 30 loads of manure. This spring I put on 20 loads more. You just ought to see that wheat. The manure made it stool out very good, and it will give 35 bushels per acre. If I had not used the Spreader this spring I am sure I would not have gotten over 15 bushels. Your spreader is one of the best investments you can put on the farm.

C. E. HUPRICH, Ohio.

I would not be without your Spreader, because it saves so much labor, puts the manure on the ground evenly, and I can spread any kind of straw or cornstalks. I believe my spreader will pay for itself in two seasons. With the proper use of manure on my place and using lime, I have increased the yield of my farm 25% in six years.

E. M. PHILLIPPE, Virginia.

Have been using your spreader on two different farms for a year and find them lightest in draft of any I have ever used. Two horses will pull them anywhere when the ground is not too soft. The straw attachment is ideal for top dressing wheat ground or any kind of small grain. It gets rid of a great deal of straw which goes to waste and this alone will pay for the spreader in a year's time.

J. D. BLACKWELL, Sec'y.
Missouri Angus Assoc.

THESE letters answer every question you may have about the Nisco Spreader. We will gladly send you the writers' addresses and copies of similar letters from many others, if you want further proof. These letters, like the Nisco itself, stand every test. They prove that you yourself should have a

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Reg. U.S. Pat. Off.
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THE ORIGINAL wide spreading spreader that revolutionized old-fashioned methods—that has always been the leader. Has solid bottom with chain conveyors. Pulverizes thoroughly and spreads evenly. Drives with heavy sprockets and chain—no gears. Low down, light draft. Loads and pulls without undue strain on man or team.

When you buy insist on the "Nisco"—the machine you are sure of. If you don't know our dealer, we'll send you his name and a copy of a splendid book on soil fertility. Send your name today.

New Idea Spreader Co.
Spreader Specialists
Coldwater, Ohio



"NISCO" One-Man Straw Spreader Attachment.

(8)

THE FAMOUS "101 RANCH" ENDORSES THE NISCO

Gentlemen: Bliss, Okla., December 15th, 1918.

We are very much pleased with the three NISCO Spreaders. We have used several other makes, but seeing your advertisement, decided to investigate your spreader. After looking them over, we ordered three of them and have them working every day along with three others.

Yours pulls much easier and does much better work than the others. We are pleased to recommend your NISCO Spreaders, as we are convinced that they are the best we have ever used. Yours truly

MILLER BROS., "101 RANCH."

The largest diversified Farm and Ranch in the United States.

IRRIGATING PUMPS





Single Stage Motor Driven Pump

KROGH PUMPS absolutely hydraulically and automatically water balanced. No end thrust whatsoever.

Also DEEP WELL TURBINE PUMPS for bored wells 10 inch diameter and up

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SEED POTATOES

We specialize in selected SEED POTATOES: Certified White Rose, American Wonders, British Queens, Burbanks, Garnet Chilis, and other varieties. Also fancy, recleaned Alfalfa Seed. Write for prices.

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Giant Winter Rhubarb

Now Best Time to Plant

Should return from $1,000 to $1,500 per acre first year. If interested in Rhubarb or Berries, write J. B. WAGNER, Specialist, Pasadena, California.

Real Farm Homes with Real Futures

[Written for Pacific Rural Press by R. E. Hodges.]

Six months is a short testing time for an innovation of so far-reaching results as the project by which the State of California has undertaken to provide real homes for real settlers of real farm experience and real energy but with little real cash. That six months has put hope into many a family that they might have a real home of their own without slaving for years and years under the all but unbearable conditions that have been imposed by many of our colonization projects. Many a woman has lost her youth and has dulled her spirit while edging her temper by the drudgery and loneliness of building a farm home from the wilds. Not so the women of the Durham State Land Settlement project. Small homes most of them are, that form the abiding-places of sixty-nine families; but they are real homes in lovely, not lonely, surroundings. The land is fertile and it yields bounty for good men's toil. In that toil there is weariness of limb, but no weariness of spirit; for while the muscles of men coax the fruitfulness from nature, their minds are in continual flights to the bright future—what shall grow here and how this or that will be changed there, what beauty shall be added to home. The dread of annual installments on their ranches is not known. Payments of principal are least when the interest is greatest, and as interest decreases principal is paid faster, but with as much as 40 years to pay in the payments are not burdensome.

ONE PARAMOUNT OBJECT OF THE PROMOTORS.

One prime object of the promoters of the colony was to make it famous for one breed of dairy cows, one breed of hogs, one breed of beef cattle, etc. Thus would replenishment of herds be rendered least difficult; and thus would the sale of surplus stock be most easy at highest prices. But in the very nature of the project, moneyed men are not among the settlers, and of the seventy-odd dairy cattle only six or seven are registered Holsteins. Four of these were brought in this January. The situation will change, doubtless, as the settlers get money enough to buy registered stock. Meanwhile, Superintendent George C. Kreutzer of the project tells us that there are probably 150 purebred Duroc sows and gilts on the tract. Wherever you go among these farm homes built by the State you are likely to see a purebred Duroc or two. Many of these are prize-winning stock. Sheep are becoming almost an obsession among the colonists, who get abandoned lambs from range herds and raise them by hand.

Though no land was left fallow, Mr. Kreutzer says there are now 1750 acres in wheat—remember that the maximum valuation of any of these farms is $15,000—this includes all there is in the world of a translucent amber, exceedingly hard, heavy wheat sent to the colony by Congressman Kent and called the "Kent wheat." This, of course, is to be threshed separately and kept for seed. The rest of the wheat is of Bluestem seed, fine and reasonably priced, locally grown. Of alfalfa, about 400 acres are to be sown this spring and this will total about 1100 acres on the project.

ONE OF THE SETTLERS.

One of the examples of hopeful happiness is the family of A. I. Maxwell. Mr. Maxwell came to Durham last March and obtained work on the surveying of the tract preparatory to laying it out into farms and grading and ditching them for irrigation. In June, when the first allotments were made, he obtained a choice loamy ranch of 30 acres, about half in oak timber and half in barley. He threshed about 20 sacks of barley per acre and says the straw stack is full of grain passed through the faulty thresher besides. He put 10 acres into Lady Washington beans by July 13 and got 14 sacks per acre, as we remember the figures. While these and some corn were growing, Mr. Maxwell was hauling small boulders from the hills to build a rubble wall several feet high for his house—"the only house I ever expect to build," says he. "I wanted the rubble work and because I expect to live in the house indefinitely I went to the extra expense." Certainly he built an artistic home among the oaks. He early bought a couple of cows, which were pastured among the trees along with neighboring stock, which helped the income. Through the fall and winter he picked up five dairy calves which are growing into money. He irrigated a neighbor's alfalfa and received for the labor a cutting and more of the hay. What matters it if the September rain caught some of the nicest, best-matured and cured hay he had ever seen. It turned the hay black, but the rose hues of the future lightened the blackness. Next year he will have five acres of his own alfalfa and five acres of beans following some oats for hay, which sells readily here at high prices. Part of the woods will be cleared away, making room for expansion there. He already has a bunch of lambs in sight and has planned the funnel buckets with nipples for the lambs to suckle. He has even gone farther, for in his mind those lambs are already sold for enough to buy some registered ewes from which he hopes to raise registered bucks to sell to the range men.

If there be any virtue in giving men and women opportunity to work out happy destinies mid beautiful, healthful, hopeful surroundings, if there be any far-sighted policy in spending California State money to develop a contented land-holding population, let us recognize it and enlarge it along similar lines, and may many of our returning soldiers, sailors and marines find in the proposed enlargement of State land settlement, homes and happiness exceeding what they had in the cities and more than the cities could have led them to hope.

Monanthos Lentil--New Legume for State

[Written for Pacific Rural Press by Albert F. Etter, Ettersburg.]

Monanthos lentils (as they used to be, or vetch as some of the more modern botanists call them) are probably as old as human history. Of easiest culture and of high nutritive value, it is not difficult to see why they should have been a favorite food to primitive man.

ALL LENTILS NOT ALIKE.

The common lentil imported from European countries is the "Ervum lens," of which there are several varieties. These are all low-growing plants and the seeds are quite flattened. Indeed, the word "lens" is taken from the lens-shaped seeds of the common lentil. "Monanthos" is a big word of very simple meaning. It is Greek, and means "one-flowered." Hence, we have the Monanthos lentil differentiated from the common lentil, which bears its flowers in clusters of two to five, while the Monanthos has but a single blossom springing from the axis of each leaf.

All told, lentils are well described as miniature peas, and serve about the same uses. The true lentil grows from 12 to 16 or 18 inches high, much branched and erect. It is usually sown in early spring and matures about as quickly as barley. The Monanthos lentil, or vetch, is more like a vine in growth and grows up to three feet high under favorable conditions. In general appearance it is more nearly like the lentil than like the common vetch. Possibly because the common use to which lentils were put was as a human food, this vetch, being of about the same character as it came out of the pot as a nutritious por-

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DUST PROOF-ALL GEARS ENCLOSED



Dust Proof Construction

Absolutely dust-proof, all the gears including the final drive being enclosed in a dust-proof housing and running in oil. All moving parts and engine are protected from dust, grit, mud and dirt. This eliminates the friction that wears out machinery and wastes power.

The Lauson is "FULL JEWELLED." It runs as easily and as reliably as a high grade watch because of these "jewels"—the 24 Hyatt and Timken roller and ball bearings.

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It will pay you to study Lauson construction, because, in every particular, it is the final development of tractor building—strong and rugged as a locomotive, but having the mechanical perfection of a high grade watch. Simple to operate, it performs reliably and without annoying expense or breakdowns, when steady work counts for so much in farm production.

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"Caterpillar" Plows are not a new product—we have been building them for years. They were produced primarily for use with the "Caterpillar" Tractor, so they had to BE good and MAKE good—we couldn't afford to endanger the enviable "Caterpillar" reputation by offering a plow that wouldn't prove equal to the severest tests of strength and service.

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dge, was by common consent called lentil.

A LAZY MAN'S CROP.

Because it could be sown in the all, or left to volunteer, it naturally took with the early farmer who as not too fond of work. Again, ordinarily seems capable of producing about twice as much forage r seeds as the common lentil, and is ot so exacting as to care in harvesting, as it does not pop out when ipe as does the true lentil. Indeed, ne can be real lazy about harvesting it without suffering severe loss. he seeds are a dark granite gray nd grow three to five in a pod, hile the true lentil has but one or wo only. The quality of the Monanthos is but very slightly in favor f the true lentil; in soup, scarcely oticeable.

A GREAT SOIL BUILDER.

Before a new crop can be considered, it would seem, it should have nique and valuable characters to ecommend it to the farmer. The riginal stock of seed of Monanthos entils was imported from Vilmorin, ndrieux & Co. of Paris, France, by he seed and plant introduction ranch of the U. S. Department of griculture in 1904. They have een grown to a greater or less exent at Ettersburg experiment place ver since. As a spring crop they ave been known to produce at the ate of 3000 pounds of seed per acre n a quarter-acre plot, when they vere well cultivated and all weather onditions favorable. Last season, n a six-acre field, simply harrowed n to come up with the early rains, hey turned off 17 tons of hay. Only because of an untimely frost hat caught them in full pod about he middle of May, they would have nade a heavy crop of seed. This rost was so severe that it blasted very pod on the garden peas also.

Many legumes require a soil with nuch bacterial life and free of acidty. The Monanthos lentil seems to e able to thrive well on soil deficient in both these regards where he common vetch does nothing vorth while. One need only see the rop of grain grow, following a crop f these lentils, to convince him hat they are good for the land. They seem adapted to well-drained and, but will not tolerate excessive vetness. They probably will thrive vell on any soil where common vetch vill thrive and possibly on many vell-drained soils where vetch will not thrive.

A VALUABLE STOCK FORAGE.

In nutritive value the Monanthos entil hay compares very favorably with alfalfa hay. It is an ideal food for cattle, sheep and goats, but rather too laxative for horses when fed alone; but as a half ration it is all that could be desired. As gleaners in the field after the crop is harvested, sheep will lick the ground bare of every vestige of lentil straw and leaves. The sowing and harvesting of the crop and the cultivation in every way is about the same as for the common vetch. The fact that the Monanthos lentil produces more and better seed and is more easily harvested makes it more desirable than the common vetch, and because they can be produced so much more cheaply than common lentils they probably could be profitably grown. Could people in general know the joys and wholesomeness of rich lentil soup, lentils would find a market waiting for them.

Summing the situation up, Monanthos lentils offer a new source of food as nutritious as the best of beans, and can be grown on land where one could not think of growing beans. At Ettersburg they have proven capable of producing a bounteous crop on light, black, gravelly soil that failed to grow grain or wild grass, and on this same land grain, following the lentils, did well. The lentil straw and leaves after threshing are about as good feed for cattle, sheep and goats as is real clover hay. As an orchard crop they grow exceptionally well in the shade. Here the pea aphis attacked the lentils and in turn the aphis provided food for myriads of lady birds breeding everywhere.

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Implements That Prove Their Worth In Every Field Test

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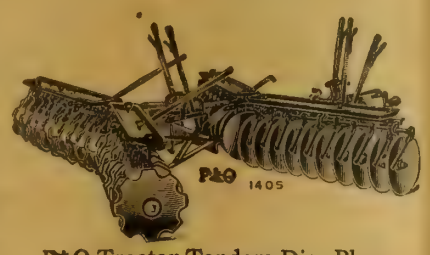
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Ease of Operation. Ease of operation is secured by a combination of simplicity with the application of certain mechanical principles which have been followed out in the construction of all P&O Implements.

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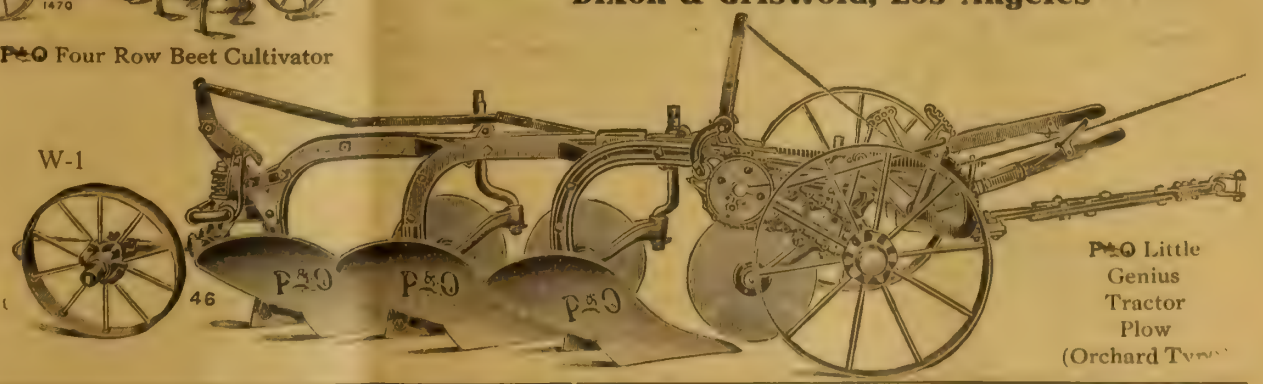
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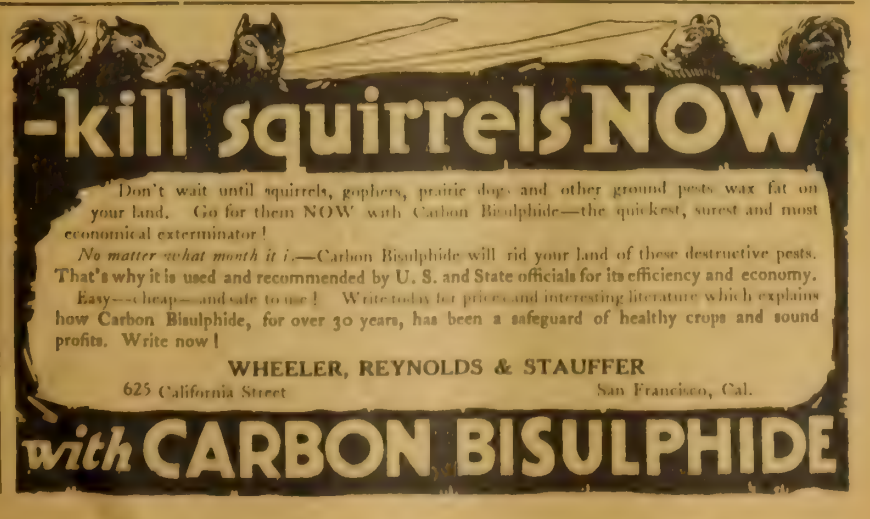


P&O Little Genius Tractor Plow (Orchard Type)

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Special booklet, mailed free upon application, describing construction of Test Special Belt. Sample also sent. Tell us your belt troubles.

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Don't wait until squirrels, gophers, prairie dogs and other ground pests wax fat on your land. Go for them NOW with Carbon Bisulphide—the quickest, surest and most economical exterminator!

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Mechanical Power on the Farm

Users of tractors, engines, pumping plants, motor trucks, automobiles, electric motors, and other mechanical farm power are invited to make this department an exchange of their experiences and troubles.

STARTING COLD TRACTORS.

To the Editor: It was with considerable interest that I read your discussion of tractor starting on cold mornings in your issue of January 25. I was not a little amused at your suggestion of setting a hot flat iron against the manifold while you eat breakfast. Perhaps you can tell us just how this would be done with the machine in the field anywhere from forty rods to two or three miles from headquarters, as is usually the case on California tractor-farmed ranches. Don't suggest this method to a real gas engineer.

The following methods have been used by the writer for several years and have been found to be of value in saving time, strength and a great deal of annoyance. If the engine is of a vertical type and is difficult to crank when cold, some gas engine oil can be thinned with gasoline, distillate or kerosene and a spoonful or two poured into each spark plug opening. Draining the radiator and filling up radiator and jackets with hot water usually helps, but is impractical except in the case of small engines or automobiles, because of the quantity of water needed and the objections offered to your use of the flat iron. Squirting gasoline on the plugs and setting fire to it often leaves them wet or sooty, especially when the cheap gasoline we get these days is used. If they get warmed a little, they are almost sure to get cold before they can be screwed tightly into the cylinder.

If the engine can be cranked fairly easily, but refuses to start when primed in the ordinary way (assuming, of course, that such refusal is due to cold only and that the ignition, compression, etc., is O. K.), a good method is to heat the intake manifold from carbureter to engine with a plumbers' torch or a torch made by tying some burlap firmly to an iron rod with some wire and saturating with distillate. When the manifold is heated until it feels hot to the hand or until gasoline squirted into it or the priming cups is seen to vaporize and appear as steam, the engine will usually go the second time over. This will often enable one to start on distillate only, particularly if the carbureter also is warmed. A better and safer way where an open fire might be dangerous is to add one or two tablespoonfuls of ether to a squirt can full of ordinary gasoline. This ether is practically a very volatile gasoline and will certainly give a "kick" to the common stuff. A still better way is to secure some high-grade or gas-machine gasoline and use it straight for priming. That sold at the present time by one of the big oil companies tests 76 degrees Baume and sells for about 55 cents per gallon and is certainly the best investment a tractor or other engine operator can make if he expects to run an engine when the temperature is likely to drop to freezing or below.

As pointed out in your discussion, it is always well to stop a distillate burning engine by shutting off the fuel supply and further opening the release cocks so the engine will come to a stop with the cylinders free from fuel or gases that might condense and form moisture on the inside. That will also give one a chance to fill the carbureter with gasoline and turn on the distillate at once. In this way the gasoline is used first and the change to the heavier, less volatile fuel made so gradually that it is not noticed.—James Koeber (Member American Society of Agricultural Engineers), Quarries, Sonoma county.

[Some objection might be made to use of distillate to thin lubricating oil when cranking is difficult, as mentioned in the second paragraph, because distillate cuts the lubricating film on the cylinder walls. Heating the manifold with an open flame might be dangerous to leaking carbureters.—Ed.]

REPLACING PISTON RINGS.

Test if a ring fits by turning it around in its groove rather than by taking it off and on. If the grooves are worn, they must be cut to a uniform width in a lathe and wider rings put in. To take a ring off, insert a piece of tin under each end. Slide one piece around to the center of the ring and put another under the end from which it was taken. The tins should be long enough to reach from the lowest ring beyond the top of the piston. A half-inch width is enough for common pistons. The rings can be slid off and others put on in the same way. Remove the lowest one first so the tin will be supported over the upper grooves by the rings in them. Also replace the upper rings first for the same reason. Place rings so their ends will not be directly over the ends of any other ring. If the ends of the ring are to be filed, fasten the file in a vise and rub the ends on it. To replace the piston in the cylinder, hold each ring close in its groove with a squeezer like the openers for fruit jar covers, or squeeze it yourself with a strong cord while another puts the piston in.

VALVE GRINDING.

The compound best suited to valve grinding is carborundum "90" or "100" mixed with just enough oil so it will not run into the firing chamber, as told to students at the University Farm tractor school course. Carborundum "200" is not suitable. Mix the compound on paper or glass and apply sparingly to the valve seat. With the valve freed of its springs, let it down easily on the seat and give it a quarter turn, without pressure except on the largest valves. Too much pressure may make the bevel edges of the valve concave, whereas they should make complete contact with a straight edge held at about 45 degrees from the valve stem. Also if a specially hard particle of compound should be in the mixture, pressure would score the surfaces from which the pits are being ground. Let the compound do the grinding without other pressure than the weight of the valve. After the quarter turn of grinding, lift the valve clear and turn it a quarter round. Let it down easy and grind a quarter, etc. This will help avoid grinding a circular score if the compound contains an extra hard particle. Grind until all pits are ground out. If the compound gets sticky and does not sound as if it were grinding, it has "lost its life" and should be replaced with fresh compound.

GOVERNOR URGES HIGHWAYS FOR MOTOR TRUCKS.

"In this day, when farmers till their fields with implements propelled by gas engines and haul their crops in auto trucks, even the old-fashioned country road serving only the need of local residents has assumed an importance never attached to it heretofore," said Governor Stephens in his address to the Legislature recommending haste in completing the main State highways, building highways from the valleys to the coast, and improving laterals tributary to them.

TIGHTENING CONNECTING RODS.

Never let an engine knock. It will crystallize the metal and you will soon have a break. To test the



Increase the Tractor's Value!

Use the tractor disk harrow that can take the place of a plow—gives greater acreage yields under all conditions.

Clark "CUTAWAY"

DOUBLE ACTION

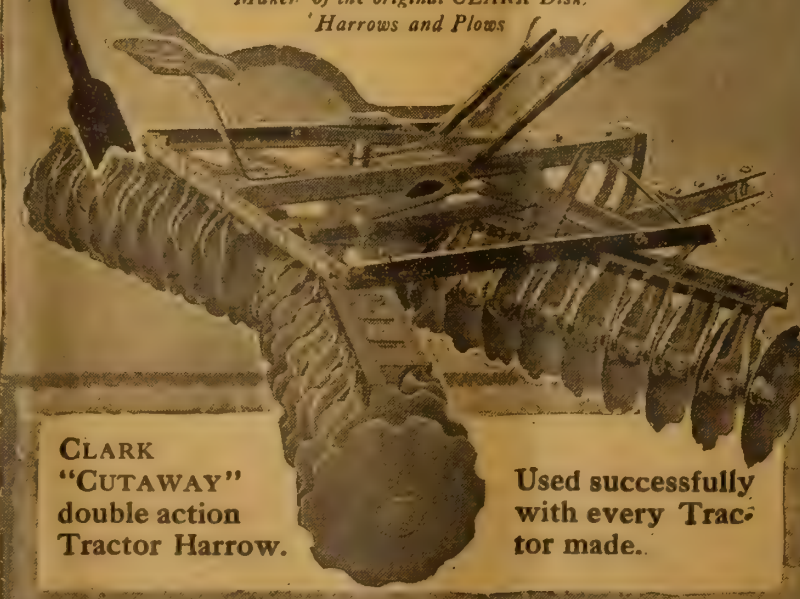
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All CLARK "CUTAWAY" Disks, both cutout and solid, are of the finest cutlery steel, *forged* sharp. The edge is the toughest part; they consequently stay sharp and cut easily and do not crack, bend or break like ordinary disks. Don't try to make an inferior disk do—you can profit by writing today for full specifications and name of nearest dealer, whether you have a tractor now or expect to buy one. Give make and size of tractor, work to be done, etc., for tillage advice.

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tightness of connecting-rod bearings, hold a finger on the connecting rod and the crank where they come together and pry the rod upward with a bar. The looseness should be just barely enough so you can tell it this way. If it is more, take out enough shims to make it right. Never take out a shim from one side of a bearing unless you take a corresponding shim out of the other side. If the surfaces of flat bearings must be filed, be very careful to keep even pressure on both ends and both sides of the file. In reaching into the crank case be careful that no dirt is going to fall from your sleeve. Do not use waste inside the crank case. It may give trouble by leaving small ravelings. Use whole cloth. Clean off all dirt that might fall into the opening before you open it.

WATER IN GASOLINE.

There is a trifle of water in all commercial gasoline, and it is not particularly harmful. Twelve per cent of water could be used if it could be kept well mixed, according to Prof. J. B. Davidson of University Farm. He has used gasoline containing 30 per cent water as fuel for a gas engine by keeping the mixture well agitated. But it is well to have a sediment bulb under the tank to catch the water, where it can be drained occasionally. Unless this is done, the water is likely to accumulate at the bottom of the tank and stop the engine. Water mixed with gasoline adds nothing to the power, though it may have some effect in softening carbon so that it is removed.

DISK FOR TWELVE-HORSE-POWER.

To the Editor: I am using a 12-25-horsepower tractor which pulls four ten-inch plows. What sized double-disk harrow, properly weighted, will it pull without overloading?—S. P. F., Ukiah.

An eight-foot double-disk, not weighted but set to the full angle, would probably be all the tractor should pull continuously, especially if you are pulling upgrade part of the time.

CLEAN CONTAINERS FOR FUEL.

A tractor driver used an old linseed oil can to carry his gas from the drum to the machine. The opening in the carbureter nozzle is so small that it gummed up and cost him ten times more in time than a new bucket would have cost. Dirty buckets of all sorts ditto.

POWER NOTES.

Engines kick when the force of explosion is exerted before the piston gets to top center. Retard the spark in cranking or in low speeds so it won't shoot too soon.

Is one of the valves in your tractor or automobile leaking? Have the crank or flywheel turned while you listen. You can hear the air leaking on the compression stroke.

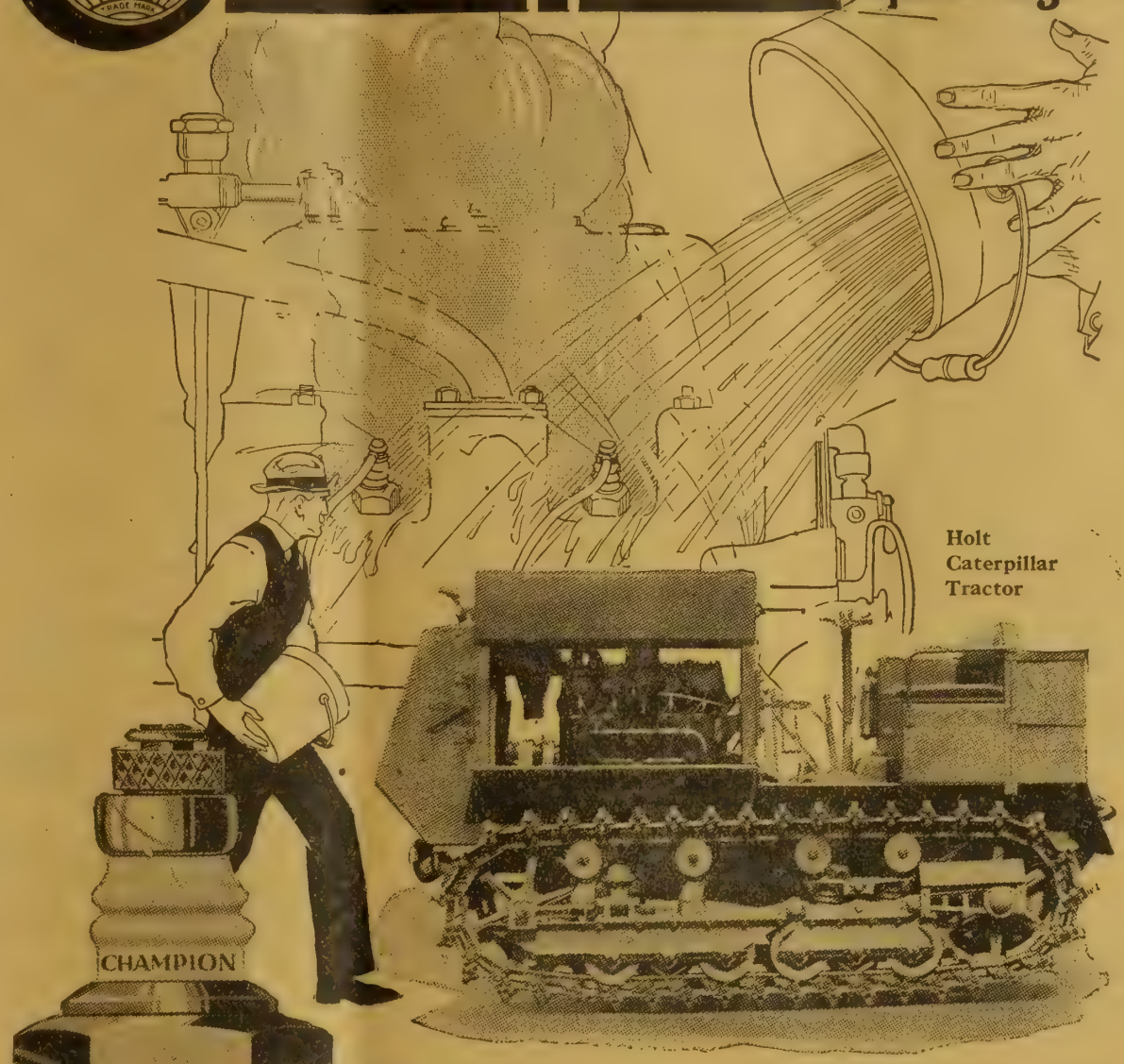
More power can be obtained from coal by making it into producer gas and using that in a gas engine than to use the coal in a steam engine, according to Prof. J. B. Davidson of University Farm.

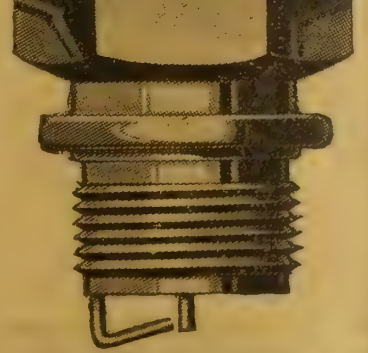
It is easy to use twice as much fuel in a gas engine as would be necessary to develop the same power because not all of the fuel will vaporize and burn in time to release its power efficiently.

The "oil film" in an engine cylinder is about one-half of one thousandth of an inch thick. This prevents the metal surfaces sliding against each other. If it isn't there, the engine gets out of whack very soon.

C. Zwerelin of the Sacramento Valley Tractor Co., who has been serving Uncle Sam, was discharged Friday, December 13, and is back in Sacramento boosting the Monarch tractors. Mr. Zwerelin says the Monarch Tractor Co. has outlined great expansion at headquarters. Their output has trebled the past year. The output at the Watertown factory is now ten tractors per day. Two other factories in the United States and one in Canada are making these Monarchs which serve democracy.

Champion Dependable Spark Plugs





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Champion Heavy Duty

Wins Out In Government's Severe Shock Test

At the factory of the Chalmers Motor Car Company, of Detroit, Michigan, the United States Government was conducting a most exacting ignition test of the Holt-Caterpillar Tractors, used in war-work for hauling cannons, caissons, etc.

With motor at high speed under heavy load, the spark plugs at sizzling heat were doused with a bucket-full of cold water.

This most severe test had not the slightest adverse effect, the operation of the motor continued perfectly, not a spark plug "missed" even temporarily.

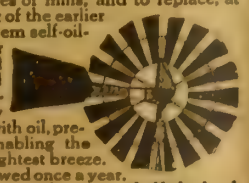
Every motor car owner has, in this test, irrefutable proof of the hardiness and efficiency of Champion Spark Plugs.

There is a Champion Spark Plug for *every* type of motor car, motor truck, tractor, motorcycle and stationary engine.

Champion Spark Plug Company, Toledo, Ohio
Champion Spark Plug Co., of Canada, Limited, Windsor, Ontario

THE SELF-OILING WINDMILL

has become so popular in its first four years that thousands have been called for to replace, on their old towers, other makes of mills, and to replace, at small cost, the gearing of the earlier Aermotors, making them self-oiling. Its enclosed motor keeps in the oil and keeps out dust and rain. The Splash Oiling System constantly floods every bearing with oil, preventing wear and enabling the mill to pump in the lightest breeze. The oil supply is renewed once a year. Double Gears are used, each carrying half the load.



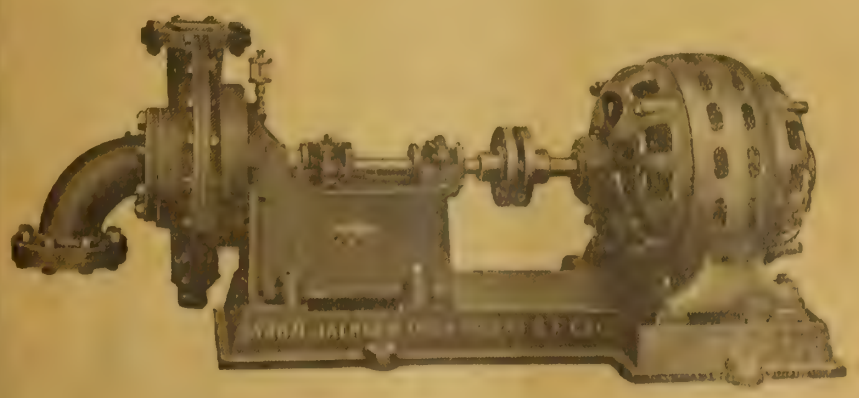
We make Gasoline Engines, Pumps, Tanks, Water Supply Goods and Steel Frame Saws.
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UNCLE SAM DEPENDS ON YOU!

Is your soil producing the maximum?

"BYRON JACKSON" PUMPS are built to meet every condition of "supply and demand" on your ranch.



Write us your conditions.
New Catalog No. 60-A for the asking.

BYRON JACKSON IRON WORKS, Inc.
LOS ANGELES SAN FRANCISCO VISALIA

Field and Garden Suggestions

[Written for Pacific Rural Press.]

Crops and Stock Instead of Sugar.

The Sacramento Valley Sugar Company's factory at Hamilton, Glenn county, will not run this season, chiefly because the folks from whom they contracted seed have been unable to deliver because they could not get it from Europe. This factory turned out last season about 77,000 bags of sugar, from about 30,000 tons of beets grown on about 5000 acres, according to Manager A. M. Gelston. They have this season planted about 4500 acres of wheat for the market and about 1000 acres of barley to feed cattle and hogs now growing on this former sugar-beet ranch. The company has recently sold 100 head of cattle and has about 300 left. Six purebred unregistered Hereford bulls were obtained from Ben Crouch, Butte county, a few days ago for use on the herd. Several hundred acres of alfalfa already on the ranch will help feed them, and about 400 acres of alfalfa have been leased to dairymen. Over 200 hogs are to be fed and bred. General field crops, such as beans, corn, and a five-acre cotton experiment will occupy considerable acreage of this erstwhile sugar-beet ranch. Lack of seed is not the only reason for letting investment in the big factory at Hamilton City lie idle. While Mr. Gelston feels that they have the soil, climate, and other conditions most favorable to sugar beets, unless the Government speedily puts a tariff on sugar that will overcome our handicap due to competition with cheap labor of other sugar-producing districts, the American beet-sugar industry must die.

The Spinach Outlook.

In the central section of California indications are that the spinach crop for canning will be much larger than last year, according to R. G. Risser of the Federal Bureau of Crop Estimates. Established growing districts are making substantial acreage increases. Preparations are under way in several new counties for canning it. Planting for the spring crop has been going on since November 1 and moisture conditions have been much more favorable than last year. Early plantings are further advanced than a year ago. Measures are being taken to avoid the heavy loss of last year by having such quantities maturing all at once.

Rolled Barley Seedlings.

Twelve sacks of barley per acre, with no rain after it was sown, was the yield J. L. Mendenhall of Colusa county made two years ago. Mr. Mendenhall believes much of his crop that year was due to rolling it when the plants were a few inches tall. He used a roller of cast iron wheels about 36 inches in diameter, with V-shaped corrugations in which clods do not stick as they do in U-shaped corrugations. The rolling, according to Mr. Mendenhall, broke up the crust and any holes through which moisture would evaporate, and retained enough moisture to make a crop.

Cabbage Planting Completed.

From R. G. Risser of the Federal Bureau of Crop Estimates we learn that in the southern section of the State cabbage planting for the main crop is about completed. Growers are now receiving from $8 to $10 per ton. Stimulated by the high prices early last season, growers planted extensively for an early crop. Cabbage in the Colma district is not moving in quantity on account of a weak market and buyers showing preferences for types other than the flat Dutch.

Kill Squirrels; Cheaper Than to Feed

About $17,000 was paid out in bounties on squirrel tails at 5c apiece in San Luis Obispo county in one season, and that is why Assemblyman Carlton W. Greene has introduced the bill we sketch in other columns. Mr. Greene figured there were at least 2,000,000 squirrels in that county and that the grain they break down and eat would pay the costs of a thorough squirrel campaign many times over.

Adobe Not for Beans.

Adobe makes beans run too much to vines, as told us in San Luis Obispo county, and when it dries it burns the beans. A. Lehman of Lompoc Valley says adobe is all right if we get late spring rains so we can work the ground down fine.

Gypsum Benefited Cantaloupes.

Cantaloupes showed their appreciation where two hundred pounds of gypsum per acre were applied by Sheppard Bros. of Stanislaus county. This land has been planted to cantaloupes seven years in succession.

Oats for Summer Pasture.

Black oats are sown so they will be in the dough in mid-August to furnish green feed for cattle on the Pecho Ranch and Stock Co.'s outfit in San Luis Obispo county. These are on the last of several lots that furnish pasture when native grass is dried and gone. The last lot provides feed until Indian corn can be cut for silage.

Farm Bureau Buys Lime.

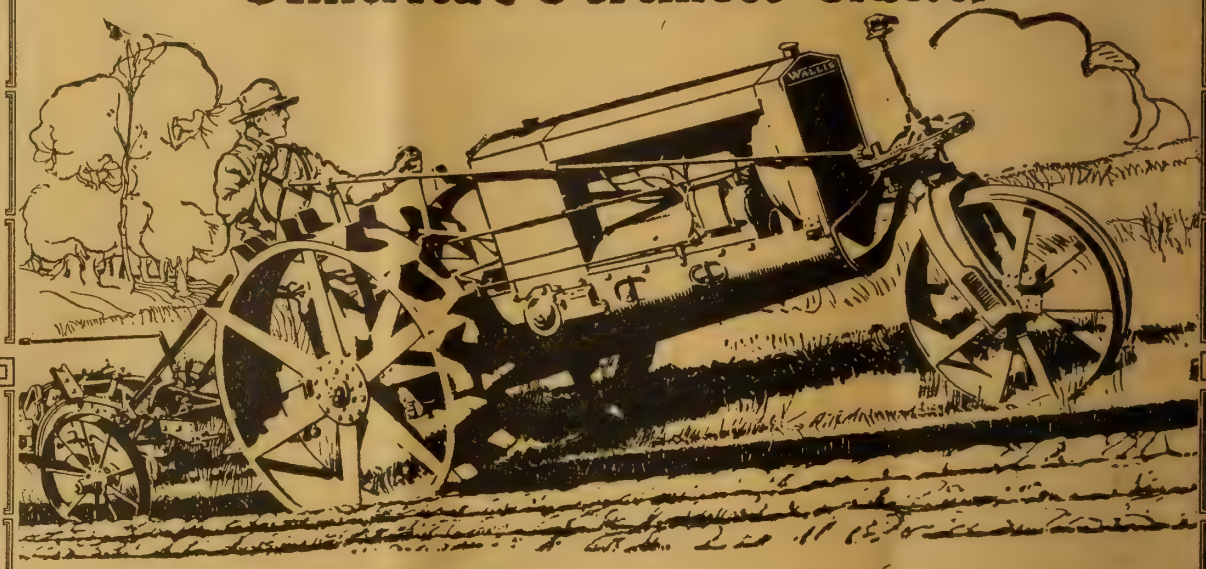
One Ohio county farm bureau ordered 17 carloads of lime last season and 60 people limed 400 acres with it. Half a dozen new lime spreaders were placed in communities which never had them before.

Small Bean Threshers.

Small bean threshers are quite common in the Arroyo Grande Valley of San Luis Obispo county. They thresh 250 to 300 sacks per day and enable small growers to get threshing done early.

WALLIS

America's Foremost Tractor



WHETHER plowing, threshing or doing other farm work, the Wallis Tractor gives true economy.

Wallis first combined light weight, great power and durability in a tractor; built a tractor weighing 1000 to 5000 pounds less than others of equal power.

This was accomplished by replacing heavy cast and malleable iron with strong, light steel; by designing light-weight, sturdy drive wheels; by introducing the simplified "U" frame—the lightest, yet strongest construction known to mechanics.

Wallis first enclosed all gears, including the final drive—thus saving power and protecting vital parts. The Wallis motor and transmission are as perfectly finished as an automobile motor.

The result is a tractor that burns one-third to one-half less fuel per acre plowed; that cuts the cost-per-acre of plowing to the lowest figure ever known. It made the Wallis America's Foremost Tractor.

The latest Wallis catalog tells all about this tractor. Write for a copy and for name of nearby Wallis dealer.

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Barley and Bean Growers Rejoice!

At last, there is good reason to believe that our barley and bean crops may be sold. Export restrictions have been taken off and our exporters may ship barley, beans, corn, rye, oats, and their products wherever they can find the buyers. The Scandinavian countries, especially, are anxious to get barley, and State Market Director Harris Weinstock who, with E. Clemens Horst and others, recently went to Washington to get something done for our markets, believes that Denmark alone will buy 100,000 tons, which is one-fourth of California's stock on hand. Norway, Sweden, and England also are normally great users of barley. We must not, however, think that California barley is all there is for them to buy, as may be seen from recent issues of Pacific Rural Press. Our anticipated enlivening of the bean market is also about to be realized, not only from the greatly increased possibility of exports due to the War Trade Board's recent removal of restrictions, but also from the promises we have recently had that the Government intended to buy heavily for our military forces. Here, again, we must remember that there are great bean crops in other parts of the world and we must not expect too much.

Proposed Ban on Christmas Trees

[Written for Pacific Rural Press.]

"Any person, firm, or corporation guilty of a misdemeanor who uses as a Christmas tree or for other decorative or ornamental purposes any tree, bough, or limb of spruce, cedar, fir, or balsam." So reads what is probably the shortest bill introduced into the Legislature by Senator J. M. Inman of Sacramento. This bill has a very good intent, which can be carried out better without being so drastic.

It is a shame, as pointed out by Forest Examiner Charles H. Shinn of Madera county, for the present system of cutting Christmas trees in National Forests to continue. Such trees are seldom obtained by thinning overcrowded thickets—they are the ones that grow in more open spaces because those are the most shapely; they are also ten to thirty years on the road toward the making of real timber. Ignorant and careless people sometimes ruin fine conifers by cutting out their centers, so they can never make straight trees.

The proposed law, as Mr. Shinn points out, might wisely forbid the cutting of any tree on public lands unless its removal would benefit the forest—this to be determined by a trained forester. Selecting branches from larger trees and genuine thinning of forest thickets can be made wholly beneficial and at very small cost.

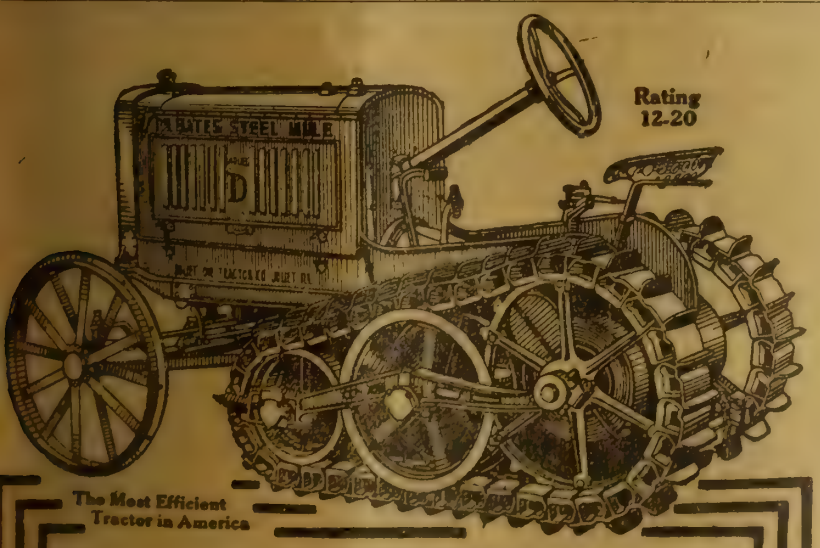
CHRISTMAS TREE NURSERIES.

If the forest supply of Christmas trees should be entirely cut off, says Mr. Shinn, the entire demand can and will be supplied by the nurserymen of California, who already supply a great many such trees. Rapidly growing conifers are easily produced by the acre under intensive culture. And if you give the average nurseryman a steady market for his surplus evergreens, he can grow a greater variety at less cost for other planting.

PLANT TREES USED CHRISTMAS.

One of the best ideas we have seen for California Christmas trees is to buy medium-sized balled or boxed trees and, after using them for the festivities, plant them in the yard, by the roadside, or in a park.

Mr. Inman's bill, without amendment, would prevent the shameful cutting of certain forest evergreens by destroying the market for them. It would also destroy the market for such trees beneficially taken out of thickets and branches pruned from larger trees without injury. It would also destroy the nursery business in these conifers, except those sold for transplanting. There are several other evergreens which deserve equal protection.



The Most Efficient Tractor in America

FLEXIBLE CONSTRUCTION

Three-point suspension and oscillating crawlers give the Bates Steel Mule unusual flexibility. This prevents internal strains, keeps bearings in perfect alignment and gives a comfort and satisfaction to the operator.

Crawlers that double the tractor's usefulness. Timken roller bearings, hardened cut steel gears, unit construction of power plant and heavy duty valve-in-head kerosene motor contribute to the year-after-year serviceability.

The model "D" BATES STEEL MULE has created more favorable comment than any tractor ever brought into this part of the country. Don't fail to see the one we have here.

THE ONLY CRAWLER TRACTOR ADAPTED TO BEET CULTIVATION WITHOUT MAKING CHANGES.

Excellent Proposition offered Live Agents.

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No. California Distributor,
417 E. Weber Avenue,
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Read what leading hay dealer says about Germain's Proven Hairy Peruvian Alfalfa Seed

LOS ANGELES HAY MARKET
HAY AND GRAIN

Los Angeles, Calif.
Dec. 10, 1918.

Germain Seed & Plant Co.
Sixth and Main Streets,
Los Angeles, Calif.

Gentlemen:

Replying to your recent inquiry asking if I had any occasion to buy Hairy Peruvian Alfalfa this season and what I think about it:

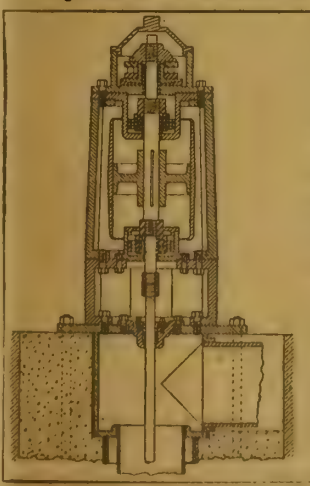
Will say, that I purchased some in the San Fernando Valley which was grown from Germain's Proven Hairy Peruvian seed, and it was the best hay I ever had in this market. It not only selle for more money than the common alfalfa hay, but it also makes satisfied customers. I am looking forward to the time when this will be the only variety grown.

Yours truly, J. R. Cale

Proprietor L.A. Hay Market
414 N. Los Angeles St.,
Los Angeles, Calif.

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Established 1871
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SAVE AGENTS' PROFITS

When goods are sold through agents or middlemen you can rest assured that the agents' commission and dealer's profit are added to the price received by the manufacturer, and as "the consumer foots the bills," he pays all these profits and commissions.

After twenty-one years experience with agents we have decided that in the future we will sell direct to the consumer at wholesale prices giving the buyer all these profits and commissions.

Therefore, if you want to save money, BUY AT WHOLESALE and at the same time get the

Best Pump On Earth

Write for catalog and price list of the
P.K.WOOD DEEP WELL PROPELLER PUMP
WOOD PUMP CO. 935 N. Main St., Los Angeles, Cal.

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Long Term *Low Rate*

All loans made on an amortization plan whereby the borrower repays the principal gradually with each interest payment.

Over three thousand satisfied borrowers in this district. It will pay you to investigate.

For information apply to the nearest **National Farm Loan Association** or write direct to

Federal Land Bank of Berkeley
Berkeley, Cal.

California Holsteins Stand High

[Written for Pacific Rural Press.]

The latest report of test cows issued by the Holstein-Friesian Association shows that California Holsteins continue to make their share of records.

In the short-time full-aged class, Novelty Pauline 2d, owned by James J. Jeffries, Burbank, produced 24.654 pounds fat from 634.6 pounds milk in seven days. Vera Walhalla Princess, owned by J. W. Benoit, Modesto, produced 24.408 pounds fat from 561.2 pounds milk.

In the senior three-year-old class, Piebe Canary Belle De Kol, owned by James J. Jeffries, stood first with 24.512 pounds fat from 501.7 pounds milk.

In the long-time semi-official classes, Riverside Sadie Burke, owned by A. W. Morris & Sons, Woodland, was included in the full-aged class with 763.75 pounds fat from 21,877.3 pounds milk in one year. Modjeska Crane 2d, owned by J. H. Harlan Company, Woodland, produced 669.04 pounds fat from 17,814.8 pounds milk in a year.

In the senior four-year-old yearly class, Miss Dutch 2d, owned by A. W. Morris & Sons, produced 614.63 pounds fat from 17,429 pounds milk.

In the junior three-year-old class, Fidorence 2d, owned by J. H. Harlan Company, produced 519.57 pounds fat from 13,342.9 pounds milk.

Among the official records begun not less than eight months after freshening, are: Hartinga Willis, with 14.21 pounds fat from 380.8 pounds milk, and Colona Beauty Butter Maid, with 13.076 pounds fat from 358.8 pounds milk, both owned by W. J. Higdon, Tulare.

In the long-time tests, Vera Walhalla Princess, owned by J. W. Benoit, led cows of all ages for the months of September and October, with 94.025 pounds for September and 101.4 pounds for October, and a total of 195.425 pounds for the forty-nine days on test. Aaggie Acme of Riverside, owned by A. W. Morris & Sons, was fourth for September, with 82.866 pounds fat and 179.094 pounds for the seventy-two days on test. Tilly Alcarta, same owners, was sixth, with 77.304 pounds for the month, and 840.814 pounds for the 267 days on test.

Flossie De Kol of Nevada, owned by A. W. Morris & Sons, made 65.856 pounds during September as a junior four-year-old, and 366.864 pounds for the 158 days on test.

In the junior three-year-old class, Johanna Princess Mooie 2d, owned by Palo Alto Stock Farm, Palo Alto, led with 81.481 pounds for September and 573.766 pounds for the 219 days on test. Coloma Beauty Butter Maid, owned by W. J. Higdon, made 54.517 pounds in September and 475.435 pounds for the 217 days on test.

Thelma Hartog Sunland De Kol 4th, owned by Palo Alto Stock Farm, was second in the senior two-year-old class, with 62.684 pounds in September and 343.948 pounds for the 161 days on test.

Madrigal Mooikie, 2d, owned by W. J. Higdon, in the junior two-year-old class, made 44.452 pounds for September, and 476.427 pounds for the 248 days on test.

For October, besides Vera Walhalla Princess at the head of the list, J. W. Benoit had Walhalla Princess 2nd in fourth place with 84.325 pounds for the month, and 107.715 pounds for the forty-one days on test. Aaggie Acme of Riverside made 70.751 pounds for the month and 249.845 pounds for the 103 days on test.

In considering these records it should be borne in mind that figures given are for fat, not for butter. The butter record in each case would be considerably greater.

Don't Let Cows Suffer with the Cold

[Written for Pacific Rural Press.]

Are your cows comfortable? Have they protection from the cold winds and driving rains? Conditions in nearly all parts of California where dairying is carried on are different from those back East, and the ordinary advice about winter housing of cows does not apply. The more fresh air cows get the better, and as a rule they can stand our coldest weather without being housed.

But cows do need protection from cold rains and raw winds. The writer had that fact impressed upon him one terribly stormy day several years ago. I had called a veterinarian to treat a sick cow, and as we walked to the barn he saw a bunch of cows in one corner of the corral, huddled together in their efforts to find protection from the beating rain. "Don't you know," said the veterinarian, "that the amount of milk you lose in one winter season by not protecting your cows from these storms would pay for a suitable shelter?"

He was right. And the result was that I had a shelter ready before another winter season rolled around. In those days I was not flush and could not afford an expensive structure, so I went to a place where a new bridge was being built, and by working my team for three days I got the foreman to give me all of the timbers from the old bridge. With these I made an immense framework about forty feet wide and 100 feet long, and covered it thickly with straw. It was all open at the sides and ends, so it did not afford very much protection from the winds, but it did keep the cows dry, and I found that when they were dry they could stand a great deal more wind without bad results.

This shelter proved just as valuable as a protection from the sun in summer as from rains in winter, and was such a success that when I could afford a regular shed barn I built one. This is long and narrow, being only about twenty feet wide. It extends along one side of the corral, has a shingle roof, and is enclosed on all sides except the one facing the corral. It is used as a feeding shed as well as a shelter, and is one of the best paying investments on the ranch.

The cow is a mother. The making of milk is a function of motherhood, and is a drain upon her system. Therefore, she requires quite different attention from that given a steer. The latter converts a part of his feed into a blanket, so to speak, with which he covers himself, and he is naturally fortified against storms. But the food of the dairy cow goes, first for the development of the unborn calf, second for the production of milk, and last of all for body maintenance. Consequently, it is very rarely that a dairy cow lays on enough flesh to give her the necessary protection, and must have man's aid.

A Bull Fit to Head a High-Class Purebred Herd

11 First Dams, Average 32.84 lbs. DAM: State Record 4 year old

Butter, 7 days.. 35.63 lbs. Milk, 7 days..... 623 lbs.
" 30 days..139.29 lbs. " 30 days..... 2883 lbs.

SIRE: King Segis Alcartra Prilly—whose dam has a 30.44-lb. 4-year-old record—"World's Record at time of making" and has a 35-lb. and a 30-lb. daughter.

The 11 first dams of this calf average 32.84 lbs. butter, 7 days—all different cows. He traces three times direct to King of the Pontiacs. He is a perfect individual, very large and perfectly straight; dark in color; born October 29, 1918. His dam is capable of a larger record; made her record at second calving and first time tested, a very persistent milker.

Also have for sale: Bull, born January 29, 1918.
Dam's record at two years two months, 26.37 lbs. butter, 7 days.
This calf—a show bull.
One born March 22, 1918: Dam—a 24.86-lb. two-year-old granddaughter of King of the Pontiacs. This calf mostly all white and a fine individual.
His dam—Reserve Grand Champion California State Fair, 1918.
Write for pedigrees and prices.

BRIDGFORD COMPANY, Knightsen, California

We have issued a convenient little b
for the keeping of breeding dates of
BREEDING tle, hoping to aid the bre
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California Breeders Sales & Pedigree
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Creameup Herd offers service bulls
bull calves of 34-lb. breeding. Fe
offered for foundation stock. Tuber
tested.

M. M. Holdridge, San Jose,
R. D. "A.," Box 437.
Two miles out North First Street



The Greatest Hour of the Dairy Farmer

NOW that the war is over, the farmer's responsibility and opportunity are greater than ever—for the American farmer and dairyman must literally feed the world. It means greater production and getting the *most* out of that production. Waste is as unpatriotic now as it was during the war.

But there is many a farmer who would not think of planting a hundred rows of corn and only harvesting 95 rows, who is now using a fixed feed separator and wasting a good part of his butterfat through turning under speed. Even tho the proper separating speed is marked on the handle, tests show that 95 per cent of *all* separators are turned below speed. If you turn a Sharples Suction-feed Separator below speed, you skim clean just the same—due to the patented suction feed. No other separator has this principle.

SHARPLES
SUCTION-FEED
CREAM SEPARATOR

"Skims Clean at Any Speed"

Sharples is the pioneer American Separator—invented, perfected and preferred in America. It is the product of the greatest factory of its kind in the United States—and all American owned. Write for the interesting, profitable Sharples story and Sharples Book of Old Songs. It's free. Address nearest office, Dept. 31

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THE SHARPLES SEPARATOR CO., West Chester, Pa.

Sharples Milker—the ONLY Milker with a Squeeze

BRANCHES: CHICAGO SAN FRANCISCO TORONT
DC-32

SPRING HOLSTEIN SALES.

. L. Hughes, manager of the California Breeders' Sales and Pedigree pany, announces the following s:

Wednesday, April 9, E. R. Putz, on, will disperse at public sale entire dairy herd of 40 registed Holstein cows, heifers and and 40 high-grade Holstein and heifers. Both purebreds grades will be sold tuberculin ed and subject to retest by the r.

hursday, April 10, W. F. Mitr, Visalia, will sell at public auc- his entire milking herd of regred Holsteins, consisting of about cows and heifers. The sale will include about ten registered stein bulls, among them the fine d sire, Prince Hiske Walker. Mr. chell will retain for breeding anls all of the young heifers in the d, most of which are daughters rince Hiske Walker.

hursday, March 27, the Holstein eders' Guaranty Sale will be held the State Fair grounds, Sacrato. This sale is composed of indual stars selected by a committ- of four—F. L. Morris, James W. Alister, Jr., H. V. Bridgford, and L. Hughes. The great 37-pound Boweda, will be sold in this by Bridgford Company, and she the highest record cow ever of d on the Pacific Coast. A selecn of really sensational animals s made from the herds of Carnan Stock Farm, Hollywood Farm, Albert E. Smith, all of the State Washington. Some of the topchers among them are in calf to ge Segis and to Carnation King ia, the $106,000 bull.

LOS ANGELES COUNTY COW DEMONSTRATION.

well-attended and most interng cow demonstration was held the Los Angeles County Farm eau, January 23, at Elliott-Brant ncho, Owensmouth. F. H. Scribner, istant County Farm Advisor and a ry cattle judge of national fame, e a very instructive talk about at cows should be and why. He d a half dozen outstanding indiuals of the Elliott-Brant herd of istered Guernseys to make his nts clear and commented highly the cow Princess of Meadowok, who once held the largest ord in the West for the breed h 723 pounds of fat, and who r made 750 pounds in a year. Scribner also pronounced the sire, Brookmead's White Face, reat outstanding bull. He is d by Langwater Stars and Stripes is out of Dolly Dimple, who has the world's three-and-a-half- old record for nine years. It this herd which produced the that won the highest honors at Liberty Fair, scoring 98.5. It said that this was the highest milk ever produced.

J. Welch, owner of the Hidden ey Farm herd of registered rnseys in San Mateo county, has ntly had all of his animals over months old tuberculin tested and reactions occurred.





DAIRYMEN AND BREEDERS

You can be assured in coming to us for a young bull to head your herd that you can get one that will improve your herd regardless of its quality. Sons of King Korndyke Pontiac, Prince Gelsche Walker Korndyke and Sir Aaggie De Kol Acme from high record dams at attractive prices. Jane Garden Farm guarantee of health. Breeding qualities and satisfaction go with every animal we sell.

Jane Garden Farm

BAG BALM
MADE BY THE KOW-KURE PEOPLE

Makes the Milking Easy

If the teats and udder are healthy and comfortable the milking is easy for both cow and milker. No need to punish the cow and put up with reduced milk flow through sore or diseased conditions that can be so easily removed by using this great healing ointment.

Besides its wonderful soothing and healing effect on wounds, chaps, scratches, etc., Bag Balm has no equal in treating Caked Bag—so common at the calving period. It penetrates immediately and quickly brings about a normal, healthy condition of both teats and udder. Very useful in treating Bunches or any external hurt.

Druggists and Feed Dealers sell Bag Balm, in liberal 60c packages. Be sure to have it on hand always.

Free Booklet, "Dairy Wrinkles" sent on request.

Dairy Association Co.
LYNDONVILLE, VT.

Give the Lambs a Good Start

[Written for Pacific Rural Press by R. H. Whitten.]

Are you giving the young lambs proper attention? We told in an earlier article how to handle them at birth, and while well-nourished lambs require little care, still there are a few things that need to be done.

All lambs should be docked when they are from ten to fourteen days old. This adds much to their appearance and cleanliness and raises their selling price at the market. Also, with the ewe lambs that are kept in the flock, it makes the breeding easier and more certain.

Knives, chisels and patent docking irons are used. Excellent results are obtained when a hot docking iron is used, as it sears the arteries and prevents the loss of blood. The University Farm found that lambs docked with a hot iron gained one pound more during the following week than those that had their tails cut off.

Have someone hold the lamb with its rump resting on a block. Hold the hot iron in your right hand and the tail in your left, pushing the tail toward the body. This leaves loose skin back of the cut to close over it. Sever the tail about one inch from the body, measured on the under side of the tail.

All ram lambs that are to be marketed should be castrated, and it is best to do it at the same time that they are docked. It is a very simple operation and merely consists in cutting off the lower third of the scrotum and pulling the testicles out. Work the loose skin back, but pull the entire cord out and do not cut it off. Pour a little disinfectant, such as a Kreso solution, into the two holes from which the testicles have been removed and no bad results need be expected. Of course, it is understood that cleanliness will be practiced, and that the hands and knife will be disinfected.



Lambs that are docked look better, grow better, and bring better market prices.

YOUNG-LAMB TROUBLES.

Constipation is indicated by straining and distress, and may be remedied by a teaspoon of castor oil.

"Pinning" is a collection of sticky dung clinging to the wool. It should be scraped away so as to allow free passage.

White scours can best be cured by giving one-fourth ounce baking soda, one ounce sulphate of magnesia, and a pinch of ginger in a small quantity of flaxseed tea or gruel. Follow in about four hours with two ounces of linseed oil. Take the lamb away from the ewe and allow only a little milk, by milking the ewe nearly out each time before letting the lamb nurse.

Acute indigestion sometimes siezes young lambs, and is marked by great distress and frothing at the mouth. A tablespoon of castor oil will effect a cure in most cases.

Navel ill may be avoided by dipping the cord in a cup of 1-1000 bichloride of mercury solution soon after the lamb is born, and then dusting it with a healing powder so that it will dry clean.

Sore eyes are of rather common occurrence. The eyes appear covered with a milk scum, or in bad cases they become an angry red. In either case tears are apt to flow freely. An eye wash of 15 per cent argyrol will clear them up in a few applications. It should be put in the eyes once a day with an ordinary medicine dropper.

Scabs around the lips sometimes cause sore mouths. Rub the scabs off and apply a fairly strong solution of sheep dip—about 10 per cent.

Removing the Boar's Tusks

[Written for Pacific Rural Press.]

Armed with long, sharp tusks, a boar is capable of inflicting serious injury upon either man or beast, but when deprived of his tusks he becomes comparatively harmless. Consequently, no matter how gentle a boar may be, his tusks should be removed before any damage is done, because we never know what the quietest boar may do under provocation.

Most people think that it is a very difficult thing to do, while in reality it is neither difficult nor dangerous. The best way to keep the boar still is to snub him. Take a strong three-quarter-inch rope and make a slip noose in one end. Slip this noose over his upper jaw and work it back of the upper tusks. Pull the noose tight and then snub the rope to a firm post or tree. The boar will kick up a big fuss at first, but very quickly he will cease struggling and will merely pull back, thus holding himself steady.

One man should take a crowbar, and another a sharp cold chisel and a hammer. Place the sharp edge of the crowbar against a tusk near its base, and hold it firmly in position. Place the edge of the cold chisel on the opposite side of the tusk, directly across from and even with the edge of the crowbar, and a sharp blow with the hammer on the cold chisel will do the job.

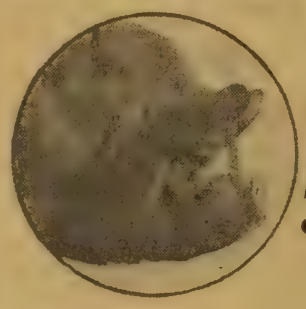
It is surprising what a light blow is required to remove a tusk in this manner. Generally it will snap off as smoothly as a piece of glass. However, it is a good idea to inspect the stub left in the mouth to see that there are no jagged ends protruding into the lips. The rough edges may be rasped off with an ordinary blacksmith's rasp.

Some breeders use a fine-tooth meat saw or a dehorning saw, but this method seems unnecessarily cruel. The tusks are often removed while the boar is serving a sow, at the time when he drops into a comatose state. Either a veterinarian's long-handled dental clippers or long-handled bolt cutters are used. A circular twist is given and off goes the tusk.

Never use wire instead of rope to hold a boar, as the jaw will surely be cut ,and permanent injury may result. It is not absolutely necessary to remove the upper tusks, as a boar cannot use them to injure persons or other animals. Some breeders remove them; others do not.

After the tusks are removed, two or more boars may be kept in the same pen or field. They will "fight it out" when first turned together, and a cool day should be selected. They should be watched carefully, and if one becomes overheated, they should be separated by running a panel between them and then running them into separate pens. As a result of the fight one boar will become "boss," and they will live peacefully together ever after.

BERKSHIRES FOR PROFIT



Annual Congress Guarantee Sale

University Farm, Davis, Cal., Thursday, Feb. 20th

50--Selected Bred SOWS, GILTS and BOARS--50

The Offering:

Following an established precedent, the Western Berkshire Congress offers for sale 50 head of carefully selected bred sows, gilts and boars. Every animal selected for this sale represents, to high degree, the most acceptable type of modern Berkshire—size, quality, vitality, bone and prolificacy being insisted upon. Every sow listed is guaranteed to be a breeder or purchase price refunded.

Berkshires are the profitable hog. They are money makers. There never was a better time to enter the hog business than NOW. The scrub must go, and this sale offers an opportunity to replace the low producing scrub with a profitable purebred at a reasonable price—your own price.

Remember, every bred sow sold is a guaranteed breeder and has been immunized from cholera.

The few boars to be offered are of the highest class and fit to head good herds or go into any kind of a herd and sire the kind of pigs that will be profitable. The blood lines are of the best, the type is right, the quality is first class and the price—your own.

Breed BERKSHIRES—The Standard Hog, the Hog of Quality, Style and Vitality

The Congress Meeting:

The Annual Meeting of the Western Berkshire Congress will be held the day preceding the sale. Matters of vital interest to the hog industry will be discussed by men competent to talk on every angle of the business.

A Fat Barrow Contest will demonstrate to all the reasons why the Berkshire is the Universal Breed.

A Carcass Contest will be conducted as a demonstration of the superior killing qualities of the Berkshire.

A Students' Judging Contest will bring out emphasis on the finer points of this Great Breed.

The Berkshire Dinner will be held the evening before the sale.

A 2-Day Berkshire Exposition

Meeting: Wednesday, February 19th. Sale: Thursday, February 20th, 1 o'clock.

Catalogs and other information may be secured by filing applications with the Secretary.

WESTERN BERKSHIRE CONGRESS

W. M. CARRUTHERS, President, Live Oak, Cal. HOMER HEWINS, Jr., Secretary, Calistoga, Cal.

COL. ORD L. LEACHMAN, Auctioneer



Retained After-birth

Cows can be made to clean easily thout using force.

When cows do not clean properly after ving, it indicates a germ infection which ikely to run through the entire herd and suit in Abortion and Barrenness.

The after-birth should be removed at once thout force by means of the B-K douche d the cow treated to prevent her becoming aborter or sterile. Authorities state that ile there is no absolute cure for abortion d sterility, nevertheless the infection can controlled by prompt treatment and the imal saved for successful breeding.

B-K is scientifically correct for this work. ed as a douche for the uterus, it quickly ngs the after-birth, dissolves the slimy uminous matter, kills the germs, stops charges and controls the infection. B-K es n it cause straining, but is soothing and als the tissues.

Send for "evidence" and free Bulletin No. "Contagious Abortion." If your dealer es not have B-K send us his name.

GENERAL LABORATORIES

3448 S. Dickinson St., Madison, Wis.

B-K B-K B-K B-K B-K B-K B-K

Grand Champion

BERKSHIRES



AMES RIVAL 70TH

e have in our herd the Grand Champion ar, Grand Champion Sow and First Prize nior Herd at State Fair.

rty-three litters this year averaged ten to e litter. Let us supply you with founda- n sows and boars to head your herd.

AMES MILLS CO.

Hamilton City : : California

TAMWORTHS

(The Bacon Hog)

Largest Herd in the State

DUROC-JERSEYS

ature Stock and Weanlings of both sexes. Sure to please.

SWINELAND FARM,

. O. Pearson, Prop. Woodland, Cal.

REAOAKS SPECIAL

Registered Big Type Poland-Chinas

Bred Sows and Gilts, 25c. per lb. F. O. B. Gilroy.

W. J. HANNA, GILROY, CAL.

HOADES & RHOADES

EXPERT LIVESTOCK AUCTIONEERS

urebred Stock Sales a Specialty

Sales Conducted in All Parts of California.

Ben A. Rhoades, Auctioneer

01-3-5 So. Main St., Los Angeles, Cal.



AUCTIONS

Sell your stock or implements at public auction. I can get big prices for you. Have cried successful sales in all parts of the State. Customers always satisfied. Write for terms and dates.

ORD L. LEACHMAN,

1044 Fifth St., Sacramento

HIGH AVERAGE AT GATEWOOD SALE.

[Written for Pacific Rural Press by Thos. F. McConnell.]

The Gatewood dispersal sale at Fresno, January 28, drew a large and enthusiastic crowd. Prof. J. I. Thompson, of the University Farm, gave an interesting opening talk comparing the price of market hogs nine years ago with those of the present time; also the prices obtained for purebred stock then and now. He recounted the great benefit the Poland China—a purely American breed of swine—had been to our livestock industry.

Of course, the sensation in the sale came when Kings Big Bone Leader, the grand champion boar at the State Fair last fall, was put up and after some lively bidding he was sold to Les McCracken of Ripon, who believes that the very best is none too good to have at the head of his herd.

Excellent prices were obtained throughout the sale, but no more than the stock deserved. The hogs were not in high condition, but in just excellent growing and breeding shape. From figures obtained after the sale, fifty-seven head brought an average of $106.84, which includes the top price and also the prices paid for ten September gilts. Leaving out the tail-enders and the two highest priced animals, thirty-six bred gilts brought an average of $117.43. The animals were widely distributed, going as far north as Paradise and as far south as Bakersfield.

The sale was cried Col. Cochran of Hanford, ably assisted by Col. Bell of Tulare, who is a coming auctioneer of livestock, as he keeps things huming all the time and does not allow interest to flag.

BARROW CONTEST AT BERKSHIRE MEETING.

The fat barrow and carcass killing contests to be held in connection with the annual meeting of the Western Berkshire Congress and sale at the University Farm, Davis, Wednesday and Thursday, February 20 and 21, is attracting considerable attention among hog men, and it is likely that the animals entered in the pen classes will make up a carload of well fitted stuff that will attract the packers.

Practically every breeder went over his Spring pigs and selected his best prospects for competition in this event, which will be held on the first day of the meeting. The breeders are working as energetically on these contests as they are on the sale, maintaining that the finished porker is the "best bet" of their breed. Prof. J. I. Thompson of the University Farm has been selected to judge the barrows, as well as to tie the ribbons on the five best breeding animals consigned to the guarantee sale on the 21st.

The annual election of officers of the Congress will be held on the afternoon of the 20th, and all Pacific Coast breeders are invited to attend.

DATES TO BREED BEEF COWS.

In order to have a uniform herd of calves, cows should be bred at a definite time of year with this point in view. For fall and early winter calves (November and December), cows should be bred during February and March. For spring calves (February and March), which in most cases is a more desirable date to have the calves dropped, the cows should be bred during May and June. Where milk for family use during winter months is not an important consideration, cows may be more cheaply wintered and calves escape flies and hot weather when dropped at that time. In all breeding operations purebred sires only should be used.

Breeders of purebred cattle who desire to grow calves for exhibition should breed their cows from the 1st to the 15th of December to produce calves of senior classification, and from the 1st to the 15th of April for calves of junior rating.

BERNSTEIN'S POLAND-CHINAS

Keep your Eye on

KINGS BIG LEADER

Sired by Kings Big Bone Leader, the $700 boar, and out of Belles Beauty, the $360 sow, a real herd header.

Four big, growthy Kings Big Bone Leader gilts and a great bred sow are some of the good things I am offering in the

KINGS COUNTY

POLAND-CHINA BREEDER'S SALE

On February 22, 1919

W. BERNSTEIN, - - - - HANFORD, CAL.

Grand Champion Herd of Hampshires

FOR SALE.

Brood Sows, litters at foot. Sows bred for fall litters. Young Boars and Gilts.

Best families.

Finest individuality and clean-cut markings.

Call or write.



Address F. V. GORDON or F. A. LANGDON, Llano Vista Ranch, Perris, Cal.



DIRECTOR JUNIOR, Grand Champion.

L. A. DENKER

BOQUET CANYON HERD

HAMPSHIRES

Won Grand Champion on a six-months-old pig—something unusual. Also Reserve Senior Champion Sow, Junior Champion Boar and Reserve Junior Champion Sow.

7 FIRSTS, 6 SECONDS, 4 THIRDS.

We offer choice bred sows and open March gilts that we will breed to any boar in our herd. Also brothers and half-brothers to our Grand Champion boar, Director Junior.

EVERY HOG GUARANTEED TO PLEASE.

Saugus, Cal.



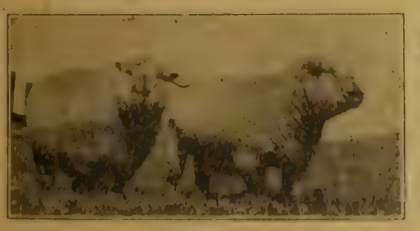
THE POPLARS RANCH

Registered Hampshire Swine

A limited number of three-months-old weanlings for sale. Am booking orders for future delivery of youngsters by Gen. Tipton. Have a few young boars sired by Duke's Allen, Grand Champion, 1917, Sacramento.

C. J. GILBERT, Lancaster, Cal.

Get Ready for Lambing Time



Prepare the Ewe for that critical period in her life—Lambing Time. How? By feeding Economy Stock Powder regularly. Why? Because it is a tonic, a laxative, a blood purifier and as an aid to digestion, cannot be improved upon.

Let Economy help you raise better Lambs and cut down your losses. Right now is the time to start. Write at once for literature and a Free Sample

Economy Hog & Cattle Powder Company

1016 HEARST BUILDING, SAN FRANCISCO, CALIF.

OAK KNOLL FARM

LAKEPORT CALIFORNIA

We have sold all our young boars and are now booking orders for March delivery. Highlander, the $1,000 Grand Champion Boar, heads our herd of

CHESTER WHITES

SAN FRANCISCO OFFICE, 601 BALBOA BLDG.

HAUSER'S DIGESTER TANKAGE

Gives Greatest VALUE for LEAST MONEY. IT MAKES THEM FAT.

HAUSER PACKING CO. LOS ANGELES

Livestock and Dairy Notes

Livestock breeders all over the State are invited to send on postal cards, notes regarding their sales, State and County Fair intentions, new stock, etc.

The Dairy.

Work will soon begin on the construction of the Fellerman Dried Milk Company's plant at Gridley.

C. D. Hayworth, Modesto, has recently sold a son of Lomas Altama Interest to W. C. Cornwell, Modesto.

Mrs. Phoebe Hearst of Pleasanton is founding a herd of registered Jerseys under the management of Charles A. Adams.

James Goodall of Keyes has sold to the Hearst Ranch at Pleasanton seven head of young Jersey cows of Sophie Tormentor blood.

The Henderson Company, Sacramento, reports the sale of a son of Supreme Glista Pietje to C. C. Pease, Kerman. Also, a son and two daughters of King Pontiac Segis Inka to J. J. Fulton, Orland.

Palo Alto Stock Farm, Palo Alto, has sold several bulls to Stanislaus county breeders, among them being Guernseys to H. J. Nelson and F. J. Hanneich; Holsteins to H. J. Kimmel, and Hanson, Lemos & Rogers.

F. W. Kiesel, owner of Jane Garden Farms, Sacramento, reports that the junior two-year-old Holstein, Anokia Walker, has made 21 pounds of butter in 7 days and Berta De Kol of Lynnewood has made 23.89 pounds.

A. W. Morris, Woodland, has gone to Chicago to represent the newly formed California Dairy Council at the meeting of the National Dairy Council, to be held there February 7. It is expected that some big plans will be put over.

Brock Bros. of Pacheco have sold a grandson of Dutchland Sir Korndyke Colantha to California State Prison, San Quentin, and two grandsons of Tirzah La Polka Pietertje Lad, one to Dominik Wiget, Meridian, the other to Joseph Lucas, La Fayette.

D. F. Conant, Modesto, has sold to Heitt Bros., Modesto, three Jersey cows as a foundation herd of registered Jerseys; also to William Sproule of Modesto a young bull by Pansy's Gertie's Lad, and to William Yeiser of Hughson a young bull by the same sire.

A. W. Morris & Sons, Woodland, have sold a son of Segis Pontiac De Kol Burke to Ed S. Ball, Willows; sons of King Mead to San Joaquin Valley Farm Lands Company, San Joaquin; C. O. Parkhurst, Dixon; E. E. Bunnell, Hood; jointly to A. E. Green, Hood, and G. W. Foulkes, Elk Grove.

E. E. Greenough of Sunshine Farm, Merced, has found that the best absorbent for cow corrals in winter time is milo or gyp corn stalks. They make solid floors during the rainy season and also catch all the droppings. If put in frequently, they will keep the yard clean and dry.

Dr. E. J. Weldon, secretary of Jane Garden Farms, Sacramento, reports the sale of a young bull to M. H. Whitaker, Dixon, that carries 75 per cent of the same blood as the $6,500 Higdon bull. Also, to Albert Lingee of Vernon a son of King Korndyke Pontiac out of K. P. Butterfly Beets.

Dr. C. L. Roadhouse of the University Farm is experimenting with a new milk condensing apparatus which accomplishes the condensing by hot air, to meet the demand for a low-priced apparatus to be used in condensing skim milk, which can be sold for ice cream making and for baking purposes.

J. H. Posty, Jr., of Atwater is one of the latest Holstein breeders to begin official testing and is delighted with the first record of 29.61 pounds of butter from 467.5 pounds of milk, with an average of 5.04 per cent fat made by Sylvia Burke Korndyke. Mr. Posty has a fine bull calf out of this cow, sired by the Higdon bull, Prince Walker of Riverside.

George Kounias, Modesto, reports that the Holstein cow, Dominitia Colantha De Kol, has made 26.61 lbs. of butter from 615.32 lbs. milk in 7 days and 106 lbs. butter from 2,431.11 lbs. milk in 30 days. Also, a junior three-year-old has made 28.32 lbs. butter, a two-year-old 16.41 lbs., and a junior yearling 15.91 lbs.

Ontario Blonde Pietje, owned by Jane Garden Farms, Sacramento, has recently made a record of over 33 pounds of butter in a week. She already had to her credit a record of 30.8 pounds as a junior four-year-old. At the last freshening she gave birth to a fine bull calf almost entirely white, sired by It, the McAlister bull.

E. E. Greenough of Sunshine Farm, Merced, is enthusiastic over the records being made by his herd of Jerseys. Duchess of Lorina has just made 430 pounds of fat in 9 months and 16 days on alfalfa hay alone, carrying a calf nearly the entire period. She freshened December 21 and is now making over 2 pounds per day.

F. W. Eleby, Modesto, has sold to the Hearst Ranch at Pleasanton the Jersey cows Ruby's Eminent Lily and Catherine of Belleview 4th, and three royally bred heifers. Mr. Eleby has also sold his well-known herd sire, King Polo of Bleakhouse, to George A. Mooré of Ripon to mate with his herd of cows bought from N. H. Locke Company.

Bridgford Company of Knightsen reports that the cow Mercedes Inka Hengerveld has made a record of over 32 pounds butter from 720 pounds of milk, and Countess Katie Hengerveld has made over 30 pounds from 694 pounds of milk. Neither of these cows was fitted for test, having been dry only a short time. Both are by sons of Hengerveld De Kol.

A. W. Morris & Sons, Woodland, report that Aralia De Kol Mead 2nd, at two years five months, has made a yearly record of 857.1 pounds butter from 18,758.6 pounds milk, which is a State record for her class. This heifer is a granddaughter of King Mead and Aralia De Kol, and her mother, Aralia De Kol Mead, has a record of 1215 pounds butter. The State senior two-year-old record is held by her sister, Aralia De Kol Pontiac Mead. Some family of heavy producers.

Adirondac Weitske Dairy Maid, owned by the Bridgford Company, Knightsen, recently made a record of 36.57 pounds of butter, but her owners thought that she could do still better, so kept her on test, and she has just increased her record to 37.22 pounds. A handsome son of this cow was sold in the last Tulare sale to D. D. Elmore, Tulare, and H. E. Cornwell of Modesto also has a son purchased at one of the Sacramento sales.

Ralph Watson, manager of the Henderson Company, Sacramento, reports that a daughter of their herd sire, King of the Black and Whites, has recently made a record of over 30 pounds, which it is believed gives King of the Black and Whites the honor of being the only bull of the breed who has sired a 30-pound daughter that is backed by three generations of 30-pound cows on both sides. The Henderson Company has a son of King of the Black and Whites as a junior herd sire.

Bridgford Company, Knightsen, have sold to J. H. Miller, Ripon, a very fine young bull to head his purebred herd. He is by the Bridgford herd sire, King Segis Alcartra Prilly, and out of a heifer that at the age of 25 months made 23.93 pounds of butter in 7 days and 96.85 pounds of milk in 30 days. She is from a daughter of King Segis Pou-

64 - HEREFORDS - 64
FOR SALE

30 registered heifers, two years old, bred to our herd bulls, Farris Standard 2nd (425030), Mystic Debonair (592515), Debonair 64th (616840), and due to drop their first calves this spring.

30 registered heifers, 12 to 16 months old—open.
4 good young bulls, now ready for service.
Will sell in lots to suit buyers.
We guarantee everything we sell to be right.

For particulars address,

NEVADA HEREFORD RANCH
JNO. H. CAZIER & SONS CO., PROPS.,
WELLS, NEVADA.



Veramont Stock Farm
Taylorsville, Cal.
Purebred HEREFORDS
Patrician 5th and Don Woodford 4th at head of Herd. Fine lot of young bulls for sale, also few cows and heifers.
Address H. M. BARNGROVER, = Santa Clara, Cal

CARRUTHERS FARMS
LIVE OAK, CALIFORNIA
Shorthorns and Berkshires
HOME OF THE CHAMPIONS
Ten splendid young Bulls for sale; also several heifers. We have on hand the best lot of young Berkshires we ever raised. Come and see them. Prices reasonable.

ORMONDALE SHORTHORNS
Are all heavy boned, and of Scotch and Scotch-topped breeding.
Suited for either the range grower or breeder.
EVERY ANIMAL POSITIVELY GUARANTEED.
Whether you buy or not, visit our ranch, 7 miles from Palo Alto on Woodside Road. We welcome inspection. Prices and pedigrees on application.
SHORTHORN CATTLE
DUROC-JERSEY SWINE
ORMONDALE CO. REDWOOD CITY, CAL. R. D. No. 1

BRIGHTON FARM SHORTHORNS
One three-year-old bull bred by H. R. Clay.
Three outstanding under-a-year bulls sired by Sir Type, a son of Cumberlands Type. A few under-a-year heifers of same breeding.
Also registered Berkshires of both sexes of best breeding.
H. L. & E. H. MURPHY Perkins, Sacramento Co., Cal.

The World's Largest Herd of Registered
HEREFORDS
The home of MISS RIALTO 2ND, NEVER defeated Grand Champion. Over 900 breeding cows, representing choicest blood lines. Great Bulls in service. Look up our records at the BIG livestock shows.
THE HEREFORD CORP. OF WYOMING, Box 876, Cheyenne, Wyo.
Wm. Cox, Herdsman. Raymond S. Husted, Vice-Pres., Gen. Mgr.

CHOICE HERD OF
SHORTHORNS
Headed by
"Princely Stamp"
Grand Champion of the West at Denver, 1918, also Liberty Fair at Los Angeles, and imported
"LOTHIAN MARMION"
The Kind You Want.
Will sell any quantity of stock—from a single animal to a carload.
Maxwell-Miller Cattle Co.,
STEAMBOAT SPRINGS, COLO.

Red Polled Cattle
15 head fine, purebred bulls and 10 heifers. 8 to 12 months of age. For further information address:
F. A. MECHAM ESTATE,
Petaluma, Cal.

lac Alcartra, the $50,000 bull, and by a son of King of the Black and Whites. Including the two-year-old record of his dam, the first 12 dams of this bull calf averaged 29.45 pounds of butter in 7 days.

M. H. Tichenor of the Palo Alto Stock Farm, Palo Alto, has recently brought out a carload of registered Holsteins from the East, which includes sisters and half-sisters of the dam of their great cow, Johanna Princess Mooie 2nd, who made the world's combined milk and butter record eight months after calving. Mr. Tichenor also secured the dam of this cow.

George E. Platt, for the Los Angeles Creamery Company; of which he is president, has purchased over a thousand acres in the heart of the San Fernando Valley, within the limits of the city of Los Angeles, and will convert it into one of the most complete dairy farms in the state. It is planned to carry 1000 high-class cows for the production of guaranteed milk for the Los Angeles market.

Beef Cattle.

J. H. Cazier & Sons of Wells, Nevada, have sold a Hereford bull and two heifers to E. S. Harriman of Northam, Nevada, who is going into the purebred livestock business. He already has a flock of registered Hampshire ewes.

A letter from Jos. E. Painter states that the Denver Livestock Show, just closed, was a splendid success. At the sales held in connection with the show the grand champion carload of steers sold for $395 per head. Mr. Painter says: "The one thing that somewhat disturbed the minds of the breeders was the excessive number of bulls which were for sale in the carlot division, there being no fewer than four thousand head, but the good ones sold readily in carlots from $300 to $600 per head, the bulk going around $275 per head, with the inferior and trashy ones bringing from $100 to $200 and some being hard to move at all. The de-

(Continued on Following Page)

LIVESTOCK DIRECTORY.

Rate in this directory 3c. per word each issue.

SWINE.

Poland-Chinas.

SOW BARGAINS—We are offering some exceptionally nice tried sows, bred and open gilts, at attractive prices. They are all sired by the defeated and world's grand champion Surbs and out of big type sows, which cost me $00 and over. Investigate before buying elsewhere. Rough's Greenfields, Arlington Station, Riverside, Cal.

FOR SALE—One extra good, big type, 1914 sow bred to Major Improved—half brother to 1917 Grand Champion. Two big Orange bred sows, bred to Major Improved. One April gilt, bred to above boar. Prices, $40, $50, and $75, registered, crated and transferred f o b. Gridley. N. M. Lester, Gridley, Cal.

NOW BOOKING ORDERS for spring pigs, either sex from my prize-winning, large type Poland-China hogs. Also will book a few orders for bred gilts, February and March farrow, and a few good, serviceable, aged sows. Hale L. Marsh, Modesto, Cal.

THE BEST IN THE WEST—California Gerstdale and President's Equal are my herd boars. Fall and spring boars now ready to serve—each one a corker. Dr. J. A. Crawshaw, Hanford, Cal.

HARTSOOK BIG TYPE POLANDS—A fine lot of young boars. Both bred and open gilts for sale. Toggenburg goats and Holstein bulls ready for service. From Hartsook, Lankershim, Cal.

ELDERSLY FARM—Big type Poland-Chinas of quality. Young stock from the breed's best big type sires for sale at reasonable prices. H. Ware, Live Oak, Cal.

WEANLING PIGS, both sexes, Gerstdale sows and Caldwell's Big Bob blood lines. Booking orders for spring. Forest View Ranch, Paradise, Cal.

OXBONE HERD offers March boars for sale from King's Big Bone Leader, grand champion at State Fair, 1918. Write F. E. Tipton, Cal.

30 SOWS and daughters of Big Bone Bob and I. B. A. Wonder sows for sale. Price right. N. K. Horan, Lockeford, Cal.

BIG TYPE POLAND-CHINAS—Stock from the best herds of the Middle West. N. Hauck, Hoon, Humboldt county, Cal.

20 HEAD of Big Bone Bob, Grand Model and I. B. A. Wonder Stock for sale. J. W. Lockefield, Acampo, Cal.

REGISTERED POLAND-CHINA SWINE—Prize winners. Finest stock in the State. M. Sweet, Hanford, Cal.

BIG-BONED POLAND-CHINAS—From Eastern prize-winners. D. H. Forney, Route G, Fresno.

POLAND-CHINA PIGS WITH RIBBONS. Prices right. Johnnie Glusing, Winton, Cal.

POLAND-CHINA PIGS—Bernstein, Trewhella and Ross blood. B. M. Harris, Tulare.

BEAOAKS RANCH herd of registered Poland-Chinas. W. J. Hanna, Gilroy.

BIG-BONED POLAND-CHINAS—Stock for sale. E. S. Myers, Riverdale, Cal.

LAKE SIDE STOCK FARM—Large, smooth and big boned Poland Chinas. Geo. V. Beckman & Sons, Lodi, Cal.

Berkshires.

BERKSHIRES IN PERRIS—They make money for me. Write for catalogue and prices. F. L. Hall, Perris, Cal.

BERKSHIRES—Sired by Star Leader, the $1,500 boar. Kounias Registered Stock Farm, Modesto.

FOR REAL GOOD BERKSHIRES write Frank B. Anderson, B. 724W, Sacramento, Cal.

HOPLAND STOCK FARM—Registered Berkshires. Prices on application. Hopland, Cal.

CARRUTHERS FARMS BERKSHIRES—Cholera immune. Live Oak, Cal.

REGISTERED BERKSHIRES—Write R. D. Hume, Dos Palos, Cal.

BERKSHIRES—Fair Oaks Ranch, Willits, California.

CASTLEVIEW GIANT TYPE BERKSHIRES are the thrifty, typey, quick-growing kind that will make larger profits for you. Prizes and Championship honors are awarded—by the greatest judges in America—only to animals possessing the essential qualities for economical meat production, viz.: heavy bone, good feet, broad strong backs, large hams and easy feeding qualities. Our grand champion herd includes Riverby Princess, grand champion sow of the world; Rookwood Lady 100th, 1917 grand champion of America; Mayfield Laurel 15th, 1917 grand champion of California. Bred sows, bred gilts and fine weaned pigs for sale. **Castleview Ranch** **Santa Rosa, Cal.**

MONEY-MAKING BERKSHIRES—The prolific, easy-feeding kind that make the highest priced pork from the lowest priced feed. They will increase your profits. Prices reasonable; satisfaction guaranteed. Write for free booklet, describing our world's reserve champion, Star Leader. Anchorage Farm, Orland, Cal.

$25.00—$35.00—$50.00
BARON DUKE 201ST
Omaha Grand National Champion
BOAR PIGS: 3, 5, and 6 months old, from 650-pound prize-winning sows. We will sell nothing that we wouldn't use ourselves.
SANDERCOCK LAND CO.
906 K St., Sacramento.
In charge of Natomas Land sales.

BERKSHIRES—GUERNSEYS
GRAPE WILD FARMS
A few fall boars left, by Royal Superbus; also a limited number of fall gilts. We have early spring pigs of both sexes, and we are breeding some top gilts for fall farrow. Prices upon application. A. B. Humphrey, Escalon, San Joaquin county, Cal.

CROLEY'S BALANCED HOG FEED—The cheapest feed to fatten hogs. Write Geo. H. Croley Co., Inc., Livestock Supplies, 8th and Townsend streets, San Francisco.

BERKSHIRES bred at Imperial Stock Farm are the kind that satisfy. Write us or call and be convinced. R. J. Merrill & Son, Morgan Hill, Cal.

MAPLEWOODE RANCH, Calistoga, Cal., offer some fine Berkshire fall and spring pigs of both sexes. Prices consistent with quality and breeding.

Chester Whites.

THE "BILLIKEN BRAND" of Chester Whites. The San Francisco fair has been called off, so I am offering some of the stock I had intended showing there. This offering will consist of 3 boars and 8 bred gilts and sows. Still have a few weaned fall pigs, both sexes. Everything cholera immune. C. B. Cunningham, Mills, Cal.

VIGOROUS CHESTERS—All ages. Prices right. The Melone Co., Oak Knoll Ranch, Napa, Cal.

Duroc-Jerseys.

DUROC-JERSEYS AT IRELAND—Home of Cherry Volunteer II. Grand Champion Boar at Riverside. Ireland's Orion Defender and Orion's King of Ireland are excellent sires in service. Booking orders for spring delivery. Ranch at Owensmouth. City office, 1219 Brockman Bldg., Los Angeles.

THE JOHNSON HERD of Duroc-Jerseys—Spring gilts and boars, sons and daughters of Johnson's Defender, the 1917 junior champion, for sale. Weaned boar pigs, $25. Frederick M. Johnson, Napa, Cal.

HAVING RENTED MY FARM I offer for sale 3 registered Duroc-Jersey sows and six open gilts and six weanling pigs, all good breeding. Wm. B. Allen, Box 200, Walnut Ave., Patterson, Cal.

WE WON MORE MONEY on Durocs at the State Fair than any other exhibitor. Why not buy some of this winning stock? June Acres Stock Farm, Davis, Cal.

DUROC-JERSEYS — Burke's Good Enuff, Golden Model, King's Colonel and Pathfinder blood. Derryfield Farm, National Bank Building, Sacramento.

DUROC WEANLINGS for the farmer. Ever feeders. 200 lbs at seven months. W. W. Everett, River Bend Farm, St. Helena, Cal.

OPEN GILTS, weanling pigs, either sex, at $20 each, out of mature sows. F. W. Gardner, Route 4, Box 735, Sacramento.

A FEW CHOICE BRED GILTS, spring boars and gilts of the best blood lines. H. P. Slocum & Sons, Willows.

BOUDIER DUROCS all sold out except some sow pigs weighing 100 lbs. apiece. H. E. Boudier, Napa.

HEAVY-BONED DUROCS—A few service boars for sale. Ormondale Co., Route 1, Redwood City, Cal.

YOUNG BOARS by "Ocks Chief" grand champion Indiana and Ohio. Sterling Smith, San Diego.

DUROCS—Defender, Clinton B. and Golden Model strain; the big type. Allen Thompson, Tulare.

REGISTERED DUROCS — All from prize-winning stock. W. P. Harkey, Gridley, Cal.

DUROC-JERSEYS—A few choice weanling boar pigs for sale. Cordel Bros., Loomis, Cal.

DUROCS—University Wonder and Advancer breeding. McDowell & Kendall, Lemoore.

Yorkshires.

LARGE YORKSHIRES—The ideal hog for the progressive farmer. Young stock for sale. A. L. Tubbs Co., Calistoga, Cal.

DAIRY CATTLE.

Holsteins.

A PRICE ON EVERY ANIMAL.
Herd free from tuberculosis. All sales subject to sixty days' retest. Sons of Finderne Soldene Valdessa, whose dam is not only a world record cow in seven-day division, but has two sisters holding world's records for yearly production.
Toyon Farms Association.
679 Mills Building, San Francisco.

HOLSTEIN HEIFERS—For sale, 20 high grade heifers, 1½ to 2 years old. Well marked, fine condition. Part of them bred to freshen this fall to Buttercup bull. C. L. Knestice, Rt. A, Box 236, Reedley, Cal.

HIGH-CLASS HOLSTEINS—I have for sale some sons of Sir Veeman Korndyke Pontiac from A. R. O. dams. Write for particulars or come see them. R. F. Guerin, Vigalia, Cal.

FANCY GRADE HOLSTEIN COWS and heifers from herd testing 100 per cent. Animals qualified for certified dairies. The Lewis Company, San Jose.

THE McCLOUD RIVER LUMBER CO., McCloud, Cal.—High-class thoroughbred Holstein bulls for sale. Write for prices and pedigrees.

PALO ALTO STOCK FARM, Palo Alto, breeders of registered Holsteins. Heifers and service bulls. Reasonable prices.

GLORIETTA STOCK FARM, WOODLAND, CAL.—Registered Holsteins. Special offering of fine heifers and young bulls.

CREAMCUP HERD — Registered Holsteins, Pontiac bull calves. M. Holdridge, Rt. A, B. 437, San Jose, Calif.

REGISTERED HOLSTEIN BULLS with world's record backing. Kounias' Registered Stock Farm, Modesto.

BREEDERS OF REGISTERED HOLSTEIN cattle and Berkshire pigs. Whittier State School, Whittier, Cal.

F. H. STENZEL, SAN LORENZO, CAL.—Breeder of Registered Holsteins. High test producers.

REGISTERED HOLSTEINS—A. W. Morris & Sons Corp., Importers and Breeders, Woodland, Cal.

REGISTERED HOLSTEINS—Best blood lines of the breed. R. L. Holmes, Modesto, Cal.

SUNNYBROOK RANCH, Willits, Cal.—Registered Holstein-Friesian bulls for sale.

GOTSHALL & MAGRUDER — Breeders of registered Holstein-Friesians. Ripon, Cal.

CHOICE HOLSTEIN bulls for sale. No females. Millbrae Dairy, Millbrae, Cal.

BREEDERS OF REGISTERED HOLSTEIN cattle. McAllister & Sons, Chino, Cal.

HOLSTEIN BULLS and bull calves from A. R. O. cows. C. A. Miller, Ripon.

REGISTERED HOLSTEIN CATTLE—E. E. Freeman, Route B, Modesto, Cal.

HENGERVELD DE KOL BLOOD. High producers. T. B. King, Visalia.

EL DORADO HERD OF HOLSTEINS — Alex. Whaley, Tulare, Cal.

Jerseys.

SUNSHINE FARM JERSEYS—Tuberculin tested. Production counts. E. E. Greenough, Merced.

YOUNG BULLS from Register of Merit cows. W. G. Gurnett, Orland, Cal.

Guernseys.

HIDDEN VALLEY FARM offers for sale 2 young Guernsey bulls, ready for service, out of high record advanced register dams. A. J. Welch, proprietor, Redwood City.

EDGEMOOR FARM GUERNSEYS — First in the show ring and in official records. Few animals of either sex for sale. Edgemoor Farm, Santee, Cal.

PALO ALTO STOCK FARM, Palo Alto—Breeders of registered Guernseys; both sexes; prices reasonable.

Ayrshires.

NORABEL FARM AYRSHIRES—Purebred young stock for sale at reasonable prices. Le Baron Estate Company, Valley Ford, Cal.

ELKHORN FARM AYRSHIRES—Choice young bulls at reasonable prices. J. H. Meyer, 140 Montgomery St., San Francisco, Cal.

AYRSHIRES—Registered; all ages. E. B. McFarland, 412 Claus Spreckels Building, San Francisco.

MILKING SHORTHORNS.

BREEDERS OF REGISTERED SHORTHORNS—Milk strain; choice young stock for sale. John Lynch Ranch, Box 321, Petaluma.

INNISFAIL DAIRY SHORTHORNS—Registered young bulls for sale. Alexander & Kellogg, Suisun, Cal.

BEEF CATTLE.

AM A SPECIALIST in registered beef cattle and familiar with the best herds in the country. If you need Shorthorns or Herefords, make use of my experience, save money and be satisfied. R. M. Dunlap, Hotel Land, Sacramento.

RANCHO SAN JULIAN SHORTHORNS — Purebred range bulls unregistered for sale. Estate Thos. B. Dibblee, Santa Barbara or Lompoc, Cal. John Troup, Supt.

ALAMO HERD REGISTERED HEREFORDS (founded by Governor Sparks). Herd and range bulls. Reasonable prices. W. D. Duke, Likely, Modoc county, Cal.

REGISTERED MILK AND BEEF SHORTHORNS, bulls and heifers for sale; catalogue free. Thomas Harrison, Santa Rosa Stock Farm, Santa Rosa, Cal.

REGISTERED YEARLING SHORTHORN Bulls—Heavy boned, thick-meated Scotch and Scotch-topped breeding. Ormondale Co., Route 1, Redwood City, Cal.

THE NEVADA HEREFORD RANCH, Jno. H. Cazier & Son Co., props., Wells, Nevada. Registered Hereford cattle. Breeding stock for sale.



REG. SHORTHORNS—Calves and yearlings for sale, both sexes, reds and roans. Choice Goods breeding. Fair Oaks Ranch, Willits, Cal.

JACK LONDON RANCH—Breeders of prize-winning beef Shorthorns. Glen Ellen, Cal. Eliza Shepard, Supt.

HOPLAND STOCK FARM—Registered Shorthorns. Prices on application. Hopland, Cal.

REGISTERED HEREFORDS—H. H. Gable, Diamond G Ranch, Esparto, Cal.

SIMON NEWMAN CO., breeders of Registered Herefords, Newman, Cal.

GEORGE CALLAHAN, Breeder of registered Herefords, Milton, Cal.

GEORGE WATTERSON—Breeder Registered Herefords, Bishop, Cal.

HEREFORDS—Mission Hereford Farm, Mission San Jose, Cal.

SHORTHORNS — Carruthers Farms, Live Oak, Cal.

SHEEP AND GOATS.

F. A. MECHAM ESTATE, Petaluma, Cal.—Breeders and importers of Shropshire, Rambouillets and American Merinos, both sexes. Also Red Polled cattle. Take electric car at Petaluma or Santa Rosa for Live Oak Ranch.

SHROPSHIRES FOR SALE—Ewe lambs and matured bucks from Iowa. Non-related. C. J. L. Stonebraker, Route A, Chico, Cal.

DORSETS AND ROMNEYS — Dorset ram lambs for sale. John E. Marble, South Pasadena, Cal.

BISHOP BROS., SAN RAMON, CAL.—Breeders and importers Shropshires.

KAUPKE BROS., WOODLAND, CAL.—Breeders, importers of Hampshire sheep.

CHAS. KIMBLE—Breeder and importer of Rambouillets. Hanford, Cal.

CALLA GROVE FARM, MANTECA, Cal.—Breeders and importers of Hampshire sheep.

HORSES AND MULES.

FOR SALE—Two imported Percheron stallions. Reasonable prices. Mary A. Hunter, Bradley, Cal.

FOR SALE—One Percheron stallion and one Mammoth Jack. Colony Holding Corporation, Atascadero, Cal.

MISCELLANEOUS.

BUTTE CITY RANCH—Shorthorns, Shropshires, Berkshires and Shetland ponies. Write for prices and descriptions before buying. Butte City Ranch, Box P, Butte City, Glenn county, Cal. W. T. Dwyer and W. S. Guilford, owners.

PLANT JERUSALEM ARTICHOKES—The cheapest all winter hog feeds. Will produce fifteen to twenty tons per acre. The hogs do the digging. Plant now. Tubers $5.00 per 100 lbs.; 1000 lbs. and over, 3½c. per pounds. Address: W. B. Kirk, Niles, Cal.

FOR SALE—About 70 head of No. 1 two-year-old dairy heifers, grade Holsteins, well marked. Some springers. To be sold all together or divided in equal lots. Priced to sell at $75 per head. A. T. Lewis, Box 54, Riverside, Fresno Co., Cal.

CROLEY'S BALANCED DAIRY FEED—The cheap milk producer; and Croley's Calf Meal, the best California calf raiser. Geo. H. Croley Co., Inc., Eighth and Townsend streets, San Francisco, Cal.

MY HAMPSHIRES are money makers. Stock for sale. Buy now. L. A. Denker, Saugus, Cal.

MULE-FOOT HOGS—Large type. H. T. Bailey, P. O. Box 37, Lodi, California. "The Blue Gums."

LIVESTOCK AND DAIRY NOTES.

(Continued from preceding page)

mand for heifers was never so strong. My brother sold a car of yearlings straight, without a cut, for $400; another car brought $600, another $500, and a carload of heifer calves about eight months old brought $435 per head. All of these were Herefords. The Hereford sale averaged nearly $1,100."

J. A. Bunting of Mission San Jose was recently offered $1,000 for his Hereford senior bull calf, which was second last year at the State Fair. This youngster has developed wonderfully since the fair and is destined to become a great individual. Mr. Bunting wisely turned this offer down.

O. M. Plummer, manager of the Pacific International Livestock Exhibition, to be held at Portland early next winter, has induced the American Shorthorn Breeders' Association to appropriate $5,000 for premiums for that breed. The amount will be divided between the Shorthorns, Milking Shorthorns and the fat classes.

Swine and Swinemen.

H. E. Boudier of Napa has sold Duroc boars to W. H. Welch, Redwood City, and George Murdick, Corning.

H. P. Slocum & Sons, Willows, have sold the registered Duroc boar, Uneeda Orion 1st, to Frank Tetreau, Red Bluff.

W. M. Carruthers, Live Oak, reports the sale of Berkshire boars to Mrs. B. Graham, Colusa; Mr. Wolthe, Yuba City, and the University Farm, Davis.

L. E. Danley of Atwater has purchased of E. Miner, Lodi, a yearling Poland-China boar and two bred gilts to start a registered herd. Mr. Danley's son will have charge of the hogs.

John Q. Martin of Atwater has four fine young registered Poland-China gilts of the Bernstein stock for which he was offered $460 when they were a year old and unbred. It pays to start right.

A. A. Jenkins of Tulare is finding the demand for registered Duroc-Jersey hogs heavy. During December he sold 5 registered sows—all to different men who are just beginning in the purebred business.

Anchorage Farm, Orland, reports the sale to the Pacific Meat Company of Seattle of a son, a grandson and three granddaughters of Star Leader and two granddaughters of Rival's Champion. Star Leader blood is in great demand.

Livestock Miscellaneous.

Fred H. Bixby, Long Beach, reports the sale of 16 mares from his Rancho El Cojo, Santa Barbara county. These mares were right out of pasture and averaged about $300 each.

Because the foot-and-mouth disease has broken out in England, the United States Bureau of Animal Industry has cancelled all permits for importation of cattle, sheep and swine from that country.

The Sacramento County Farm Bureau will hold a community sale February 12, at which all farmers in the county who have livestock, implements, tools, or what not, for sale are invited to bring them.

Merced county has more milk cattle than stock cattle, according to the Assessor's report of last July, figures being 69,954 milk cattle, 47,563 stock cattle, 15,600 calves, 12,600 hogs, 40,250 sheep, 23,500 lambs, 6000 goats, 7500 horses and 1950 mules.

A larger number of horses have been poisoned and a few have died at Oakdale recently, due to a fungus poisoning on alfalfa. Veterinarians say that the fungus growth develops when alfalfa is stacked too dry and that if the hay is afterwards spread out the fungi will die.

Eastern draft horse breeding associations are protesting against bringing back war horses from France, because they have been exposed to numerous diseases abroad and such an act might result in the spread of an epidemic in this country. Also, they claim that the horses are needed more on the other side than in this country.

The amount of snow in the high Sierras is reported only a little greater than last year at the same period, when the snowfall was the lightest known by the older settlers. Unless there are heavy snows unusually late in the season, the supply of water for irrigation promises to be light. Reports from all parts of the foothills are that the range country is suffering and there is a shortage of feed.

The Virden Packing Company of Sacramento is about to be capitalized at $5,000,000, of which $2,500,000 will be used for a packing house and $1,500,000 for union stockyards. Charles Verdin, prime mover in the enterprise, states that all of the banks at Sacramento are going to back his project, which represents a revival of the stockyards plan for West Sacramento two years ago, at which time matters were held in abeyance on account of the war. "The Union Stockyards," says Mr. Verdin, "will afford the first real open market for livestock in California."

PUREBRED BULLS EXCHANGED FOR SCRUBS.

[Written for Pacific Rural Press.]

California might well imitate Wisconsin in her "Better Wisconsin Campaign," which has been launched under the direction of the State College of Wisconsin, the U. S. Department of Agriculture and the Wisconsin Livestock Breeders' Association.

A drive is being focused on the scrub bull, and if it is successful thousands of these mongrel animals will be replaced by purebreds. The retreat of the inferior sires already has begun in seven counties, while authorities in other counties are making plans for the crusade. The first gun was fired in Fond du Lac county, where schoolhouse meetings were called by the county agent. At these meetings some of the leading breeders agreed to exchange purebred bulls for scrubs without additional cost, providing the new owners would use the pure-breds for two years. This was farsighted business. They secured probably 60 or 80 per cent of their pure-bred bulls' worth by the transaction, as they would lose in subsequently selling the scrubs for beef, but it meant better stock in the future.

A census of the cattle herds in the county was made, principally by the pupils in the rural schools, who secured the names of about 1,100 owners of scrub and grade bulls. To each of these a letter was written, outlining the trade offer and inviting the farmer to meet with the committee heading the county campaign to discuss the proposition. Many farmers availed themselves of the opportunity.

Wouldn't it pay the purebred breeders of California to make a similar proposition to the farmers of this State?

DESFORD BAN KER

(Imported)

This well-known **Shire Stallion** is for sale. He is sound and a proven sire.

This is probably the only opportunity there will be this season to secure a really high-class Shire Stallion, and is for sale because the owner is absolutely retiring from business.

Also a few imported mares and young stock for sale.

HENRY WHEATLEY, SALVADOR STOCK FARM, NAPA, CAL.

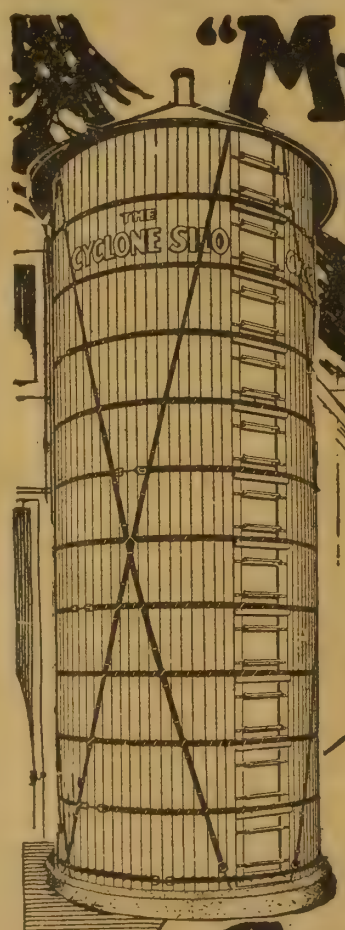
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Send for Sensible folder on feeding hogs

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Animal Food Dept. 704 Townsend St., San Francisco

"My Cyclone Silo has stood like a rock"!





The Cyclone Silo is built to withstand all kinds of climatic conditions—wet or dry—hot or cold—it cannot twist or get out of shape. Hundreds of them are standing straight and round after years of service. Cyclone patented hoops are flat and specially notched on each edge so that the heavy staples go over the hoops into the wood, fitting into these notches and holding each stave in place regardless of shrinkage or expansion. **Hoops need no tightening.**

Cyclone Silo has **trussed steel bracing** which makes it the strongest silo made. These steel brace rods are fastened to the top of the silo and imbedded in the concrete foundation. They are also securely fastened to the staves in the same manner as the hoops, thus it cannot lean or twist.

"CYCLONE" Will Last a Lifetime

Whether you are a dairyman or feeder, it will pay you to put up the most permanent silo. It will increase your profits immediately and double yor profits evenually.

SILO FEED BOOK—FREE

Henry North's Silo Feed Book contains 50 pages of the latest and most scientific information on silos and feeding. Free while they last. Also send for early buyers' discount.

NATIONAL TANK & PIPE CO.
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SILO FEED BOOK—FREE.

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Am interested in a ..... ton silo which will be strong and permanent. Please send me, without obligation, Henry North's Silo Feed Book; also early buyer's discount.

Name .....

Address .....

LIVESTOCK QUERIES

Subscribers wishing an immediate reply should send money order for $1. No charge or questions answered through this department. Inquirer must give full name and address.

Raisins for Hogs.

To the Editor: Please give me proper ration for hogs to include raisins that I have on hand. I re a little skim milk and am feed- mill run and alfalfa leaves.—B. F., Parlier.

[Answered by Prof. J. I. Thompson, University Farm, Davis.]

We have not fed raisins in a sufent number of experiments to e any conclusive results. I know, vever, of a number of cases where y are fed to growing pigs and od sows in conjunction with eat middlings, where the proporn is about two pounds of raisins one of middlings. If mill run is d, at least that much of it in portion to the raisins would not more than was needed to supply necessary protein, but should s combination be fed in connecn with alfalfa pasture a smaller ount of the middlings or of the l run could be used. Our experie leads us to conclude that the ieties of raisins differ enormously their feeding value; that some are atable and others are not. When fed raisins with barley, in equal ts, the feeding value was almost ual to that of barley alone, but en we fed raisins exclusively it k practically twice as many unds of them for a pound of gain was required of barley alone. ual parts of barley and raisins, h a protein supplement of skim k or tankage, and for breeding s perhaps some alfalfa hay in a k, should give the most satisfacy results.

Cure for Splint.

To the Editor: I have a horse h a splint about two inches long. there any cure for it?—M. C., ckton.

[Answered by Livestock Editor.]

f the splint is of long standing will be difficult to remove it. If s located toward the front of the e, so that it does not come in tact with the tendons, it will not se lameness and there is no need remove it, except that it is an sore. But if it is located in ut the center from front to back, will interfere with the tendons cause lameness. In this case should remove the horse's shoes, the hair and apply a blister de of 2 drams cantharides (Rusn), 1 dram euphoribia, 1½ ounces zonated lard. Rub this in thorhly for 10 or 15 minutes. Wait eral days until it has exhausted lf, then wash the spot with warm er and soap and apply lard daily bring the hair back in its natural or. One treatment may not reve the splint and it may be necary for you to repeat the blister.

Cow Has Lymphangitis.

To the Editor: I have a cow with nps on her fore legs. One became large as an egg and I opened it I found it full of pus. What treatnt should I use and will it be e to use the milk from this cow? J. G. L., Marysville.

[Answered by Livestock Editor.]

Your cow is affected with a form lymphangitis, which is an inlion of the lymphatic system with nold or germ. It is purely a local dition and will have no effect on the cow's milk. Treatment cons in opening the abscesses as fast they develop, but be sure to open m as low as possible to allow drainage. Wash out each cavity h a 10 per cent solution of forlin.

Cow Foams While Chewing Cud.

To the Editor: What causes white m when my cow is chewing her ?—A. R., San Anselmo.

[Answered by Dr. E. J. Creely, San Francisco.]

Your cow has stomatitis. It has an inflammation of the lining membrane, probably a wound or some foreign body between the molars. Examine the mouth carefully, removing the cause, and syringe twice daily in the back part of the mouth with two tablespoons of pure peroxide of hydrogen.

Law Regarding Stray Stock.

To the Editor: A stray heifer has remained on my place since last January. I tried to find her owner, but could not. A few days ago he came by and recognized her. I asked $1.50 per month for her keep, but he is only willing to pay about one-third of this. Can he take the heifer before he pays my bill?—A. E. N., Ripon.

[Answered by Livestock Editor.]

The opinion of our legal advisor is that you have a right to hold the heifer until the owner settles with you, and if he considers the charge unreasonable he must take the matter into the courts and have a different price set.

Give Name in Asking Questions.

We receive many queries which cannot be answered in our columns because the writers do not give their names. In publishing answers we use initials only, but in no case is a letter considered unless the full name and address of the writer accompanies it as a guarantee of good faith. So if you have sent in an anonymous question and it has not been answered, you will understand the reason. A full name will bring a full reply every time.

HOOKED TO DEATH!

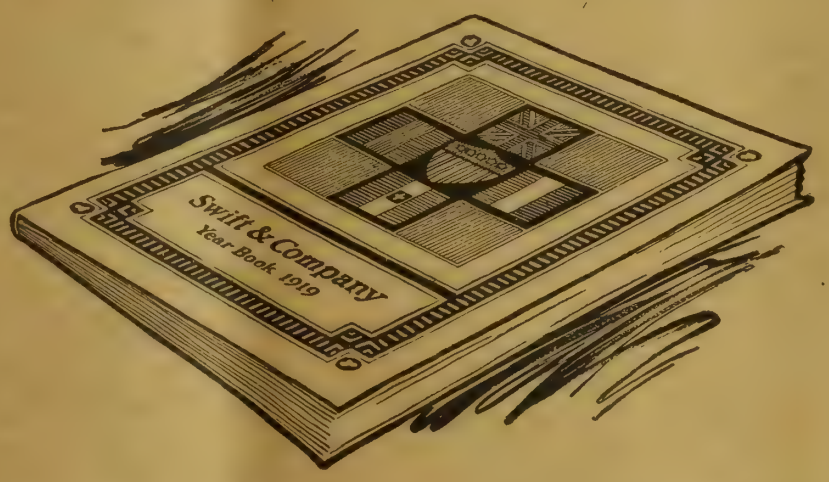
This may happen if your cattle have horns or they may injure each other and keep the whole herd excited. BE HUMANE. Prevent horns growing while calves are young. It means a contented and more profitable herd. Use



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Consult DR. DAVID ROBERTS about all animal ailments. Information free. Send for price list of medicines and get FREE copy of "The Cattle Specialist" with full information on Abortion in Cows.
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Calf Profits
Are you getting them? Calf profits mean more to you now than ever before.
Blatchford's Calf Meal
has been known since the year 1800 as the complete milk substitute. Costs less than half as much as milk—prevents scouring—promotes early maturity. Sold by dealers or direct from the makers.
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Send for a copy. Contains facts and figures that will give you a better understanding of the conditions that govern the sale of your cattle, hogs, and sheep. Write for your copy NOW—*it is free*

Do you understand clearly the things that determine the prices paid for your live stock?

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Poultry for Profit

[Written for Pacific Rural Press by Susan Swaysgood, Pomona.]

ONE WOMAN'S SUCCESS IN RAISING TURKEYS.

Mrs. W. M. Tennant of Corning sends to the Pacific Rural Press her method of feeding and caring for young turkeys and chickens, in the hope that it may help some other amateur. She says:

"I only had two turkey hens and a gobbler, but by breaking up the hens I managed to get about 113 eggs, which were set under common hens, except for one turk, who set and brought off 21 young poults. Out of all hatched, I raised 57 and kept seven hens and the gobbler to commence breeding from this year.

In preventing lice I sprinkled the nests three or four times during the 28 days of incubation, the last time being a day or two before they are due to hatch; but if they do get lice on them I rub a little olive oil on the head and neck and under the abdomen. [Dry Carbola, dusted over the whole body, would be better, as grease is not good for little turks.—Editor.]

"Now about feeding: I make a bread from a recipe I found in the Rural Press, using sour milk, saleratus, eggs tested out as infertile, charcoal middlings, cornmeal and such small grains as cracked wheat and small oatmeal. After mixing well I bake in a slow oven till thoroughly dried out; and when I feed it I mix it with hard-boiled egg and a little green onion all pounded together.

"As soon as my little turks are all hatched and able to stand, I put them in a roomy coop made from a dry goods box 18 inches high, 18 inches wide, and about 2½ feet long. The box is turned on its side, a little door made in the back, and wire nailed over the top. A board about 3 inches high is nailed across the front. A sack let down at night makes it all warm and cosy. Clean litter put in the first few nights helps to keep them warm, too. By keeping them in from wet grass and moving the coop around to catch the sunshine, the poults soon gather strength.

"For the first feed I let them pick up all the grit they will, then I feed a little hard-boiled egg mashed with grit, and place fresh water before them. The next day feed the bread mashed. [Ground in a food chopper is better.—Ed.] I give curd and bread for supper, and generally feed enough so that there is some left over for them to eat before I see them in the morning. As they get older, if there is no bread, they are fed moist mash, just crumbly, of sour milk and bran. [A little cornmeal should be added, or middlings; bran alone is a very thin diet.—Ed.] I really did not believe that you could feed young turkeys too much until one day, when it was necessary to stay away all day, I left them well supplied with feed. Next day two were off their feet. Not knowing what to do for them, I put them out in the sunshine and in two weeks they had all fallen lame and most of them died. [Should this happen again, give ten drops of tincture of nux vomica to a quart of drinking water and keep it up until they improve. This is a sovereign remedy for indigestion in young turks and chicks.—Ed.] I concluded that I had foundered my little turks.

"In feeding my poultry, they get all the green feed they can eat. I have plenty of grain, fresh water and clean roosts. Feed no mashes or soft feeds." [They don't need them where there is range, with plenty of greens and good, hard grain to go to sleep on.—Ed.]

BREEDING UP BY SELECTION.

To the Editor: Several years ago I started in with five dozen White Leghorn hens and by selection and breeding up I now have a flock of 400 hens and pullets. Last year I kept 100 hens and 300 pullets. Besides the eggs set to hatch 600 chicks, and what eggs we used in cooking, I sold a little over 5200 dozen eggs, or a little over 165 eggs per hen. The year before that I got 160, and the year before that 130. I believe that it pays to select, by the Hogan system, and also to use color in the legs, vent, eyes, beak, etc., in picking hens for breeding purposes. I have made nearly all my own dry mash, but I think the commercial mashes are good. I use them when I get short on material for making my own. I find barley and milo maize a good ration, but try to get them to eat more mash when feeding them than I do when feeding corn and wheat.—J. I. Blakely, Lemoore.

These experiences are good; they encourage others to do better. Too many poultrymen give up the ship instead of taking the trouble to select and cull out. All systems are good when rightly used, but if the caretaker does not use his own eyes none of them are good.

TURK HAS LEG-PICKING HABIT.

To the Editor: I have some young turkeys eight weeks old. The last week or so one of them has been picking its legs, making them bleed. We put vaseline and soot on it, but it did no good. Could you give me the cause of it, and tell me what to do?

If the hen has scalyleg, that is what ails the turks. Rub with sulphur and lard; also give a bare teaspoonful of salt in a quart of water—just once. Dont' repeat the dose under a week, anyway. It may be that one dose will do the work, but be sure not to repeat under one week.

TURKS WITH WEAK LEGS.

To the Editor: Please let me know a remedy for young turkeys that have got weak legs. I have been feeding them bread made from millrun and some corn meal mixed with buttermilk and some clabbered dry, and a little green onions. I had to keep them in the house this cold weather. Perhaps it was too quiet for them. —Mrs. J. H. H., Livermore, Cal.

Indigestion is the trouble. Give plenty of fine grit or ground oyster shell and ten drops of tincture nux vomica in a quart of drinking water until improvement sets in. Get them out on the ground as soon as possible.

PEAFOWL EGGS.

In response to inquiry for peafowl eggs, we will say that we are informed that such eggs may be obtained from the Kearney Farm, west of Fresno.

For general farm use the American breeds are probably the best.

DON'T CROWD THE BROODER.

I have raised 45 fine looking chicks. I used a brooder with a hen. She evidently was not a good mother, as she stepped on many of the chicks. I want to raise about 500 this spring. Do you recommend the little round brooder illustrated in your book? I think I would like to try the Orpingtons. Did you have the White or Buff? The little chicks last fall acted very queerly—gasped for breath and finally died. Do you think they got chilled?—A. D., Elk Grove.

The round brooder illustrated only accommodates 100 chicks. You crowded the fall chicks; that is why they did so poorly. Don't commit the same folly again. Get a brooder large enough, or get several. I do not sell any kind of Orpingtons now. Look in the advertising columns. You can get a round brooder for 300 chicks from the Victor Incubator Co., Decoto, Cal. I could not decide about the chicks not being weak or strong unless I saw them.

WANTS INFORMATION ON TURKEY RAISING.

I am thinking of trying my luck at turkey raising and would like some information on how to raise the little baby turkeys. Can you recommend a book on the subject?—Mrs. C. T. W., Orland.

Send $1 to the Pacific Rural Press for a copy of "California Poultry Practice."



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ANCONAS—SHEPPARD STRAIN DIRECT breeders $2.25. Hatching eggs—An $4.50 per 50. White Leghorns $6.00 100. A. S. Wilkinson, Winton Cal.

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HIGH GRADE BLACK MINORCA COCKERELS, $5.00 each. Eggs $2.00 per 15. Edward A. Hall, Route 1, Box 39, Watsonville, Cal.

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BRONZE TURKEY EGGS—Limited number for delivery in April. No more stock. Albert M. Hart, Clements, Cal.

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RHODE ISLAND RED EGGS for hatching. Mrs. Richard Holdridge, P. O. Box 282, Dixon, Cal.

LIGHT BRAHMA EGGS—13, $2.00. Stock for sale. J. Dolan, 146 Wyandotte, Stockton, Cal.

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Rabbits and Pigeons for Profit

[By Walter Hickling.]

SOME RABBITS.

According to the Bureau of Biological Survey, there are 200,000,000 wild rabbits killed every year. They are consumed in less than 60 days. This proves that about 1,000,000,000 hutch rabbits could be used every year for food. It is certainly one of the branches of the livestock industry that is still in its infancy.

BIG DEMAND.

There is an ever-increasing demand for high-class breeding stock in most of the leading varieties of rabbits and the demand is not likely to decrease for some time. At the recent San Francisco Rabbit Show $200 was offered for a high-class buck.

GOOD DEMAND AND PRICES FOR SQUABS.

C. R. King of King's Lofts, Haywards, the largest squab plant on the Pacific Coast, stated that he is getting 60c per pound for his squabs in the San Francisco market. A few days ago, on delivering 30 dozen squabs, he found the commission merchant with orders for 120 dozen.

CRACKED CORN FOR PIGEONS.

To the Editor: Is cracked corn good for the pigeons?—W. B., Oakland.

Cracked corn should not be fed to pigeons, for it is liable to cause sour crop and canker. Always feed whole corn.

GREEN FOOD FOR RABBITS.

To the Editor: Is it proper to feed greens to rabbits?—F. R. C., San Leandro.

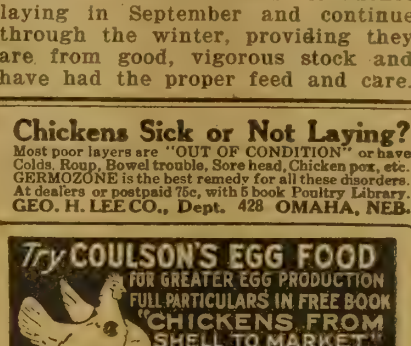
Yes, a good proportion of green feed can be fed to rabbits, along with alfalfa hay; but be sure it is fresh. Do not feed to young rabbits just out of the nest.

MARCH CHICKS MAKE FALL LAYERS.

To the Editor: What time should chicks be hatched to have pullets laying in November.—Mrs. I. R. D. R., Merced Falls.

March chicks should commence laying in September and continue through the winter, providing they are from good, vigorous stock and have had the proper feed and care.

Chickens Sick or Not Laying?
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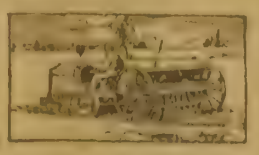
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—Exchange.

CHERRY, DAN, AND GINGER.

Cherry, Dan, and Ginger were three as polite and generally well-mannered dogs as ever lived, and that, too, in a family where there were a great many children. And any dog alive will tell you that it is sometimes very difficult to be perfectly polite and good-tempered where a lot of children are about. As they had grown up from puppyhood, they had gradually learned that even the kindest of human beings have perfectly absurd ideas about a great many things which it is wiser to humor them in.

It had taken Ginger a long time to remember that the library curtains were not considered by those in authority the best place in which to wrap greasy bones. He hoped some day to learn what they were allowed to drag on the floor for, if not to wrap bones in!

Dan's particular grievance was that, if beds were made to sleep in (or on), what particle of difference could it make whether you happened to be wet or dry when you jumped on them to snatch a few minutes' sleep, after a run and dip on a hot summer's day?

What Cherry was always asking was, "When one is told to be a 'good dog,' and not let tramps and beggars get into the house, how is one to tell that a miserable postman or grocer's boy is not to be barked at?"

But they had finally come to the conclusion that all these things had no real reason: they just were. Having arrived at this philosophic conclusion, it was not surprising that they meekly submitted to a new, and of course foolish, idea that suddenly struck the family. A large and, it must be admitted, exceedingly comfortable armchair was set apart for their particular use. No one else sat in it—it had a clean linen cover put on it three times a week, although no one would ever have suspected it—and apparently they were not expected to sit anywhere else. Certainly, they were not urged to do so; quite the contrary.

"Oh, well," said Dan, after they had mourned this new innovation, "let's be thankful they haven't taken it into their silly heads that dogs should be made to stand up forever!"

But, with the best of intentions, it was very hard to remember this new curtailment of their rights. More than once, when Ginger, wet and muddy, to be sure—he never denied that—had, with a wide and most engaging smile, attempted to make some room for his mistress on what was, he believed, known as the best sofa, had he been rewarded with a flick of the whip in place of the pat which his politeness surely merited.

Dan and Cherry had had similar humiliating experiences. They consoled themselves as best they could. The chair—their chair—was fairly comfortable, particularly for the one who got there first. The first two, to be sure, were always a little cramped. You see there was room for only two to spread out pleasantly on the seat, and the last to arrive had naturally to sit on top of the earlier comers. Their mistress tried to show them some ridiculous way to occupy it, so that they could all sit on the seat.

"I'd like to see three people as big as she in it just once!" said Ginger. "I suppose it could be done if I was willnig to let my legs stay on the floor, the way she does." One thing they had to congratulate each other on. The family seemed to have exhausted their inventive faculty for the time, and no more reforms were attempted that summer.

It was in the early autumn that an event occurred which brought things to a climax, and compelled the three friends to rebel openly. And, wonderful to relate, for once they were patted and laughed over and consoled.

One day the children's father brought a friend home to luncheon. He had arrived in the city unexpectedly, and, therefore, came quite informally. When he arrived at the house, he was ushered into the library, where stood the famous chair, spotless in a cover just that minute put on. It was large and comfortable; and the stranger, in blissful ignorance, proceeded to occupy it. In the meantime the children's father had gone in search of some of the family.

As it happened, Ginger, Cherry, and Dan had been having a most exhausting run, and had gone down to the pond to cool off. While fat Ginger was lying luxuriantly on his stomach in a nice muddy pool near the shore, and Cherry was pretending to fetch a stick, just for practice, Dan suddenly sprang for the shore, and started at a great pace for the house, which was some distance away.

The others needed no second warning. He was making for the best place in the chair; and, as he was the largest, if he got on the seat, they had to sit on him as best they could. They rushed after him.

They managed to reach the house about the same time; for someone had closed the front door, and Dan had lost a few precious moments in trying first to get in that way. What was their astonishment to find a man—and a strange man—sitting in their own chair. When, a few seconds later, the family reached the door to discover what on earth was happening, they found Dan and Cherry racing furiously around a very much puzzled and astonished gentleman, while Ginger, too much out of breath to bark, contented himself with howling, which is much easier when you understand it.

When the family had sufficiently recovered to restore peace and explain things to their guest—who promptly, with many apologies to the three friends, vacated their chair—the dogs were made so much of that they nearly wagged their tails off. But, even when lunch was announced, they did not stir, which was most unusual.

"A man who would do that," said Dan, "would dig up bones!" And they watched the visitor closely all during his stay.—Henry Dick.

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EVERYBODY'S LONESOME.

Way down deep within their hearts
Everybody's lonesome;
Far within their secret parts
Everybody's lonesome;
Makes no difference how they smile,
How they live or what their style;
Once in every little while
Everybody's lonesome.

People first in big affairs—
Even they are lonesome;
Maybe like to put on airs,
Just the same they're lonesome.
Men for whom existence blends
Every good; who gain all ends,
Still reach out their hands for friends;
Everybody's lonesome.

Women, silk-clad, jeweled fine,
Yes, they, too, are lonesome;
When their gems the brightest shine
They are just as lonesome.
Some must serve and some command,
All still seek with groping hand
Love and friends who understand;
Everybody's lonesome.

Though your gift of friendship's small,
Everybody's lonesome;
It may answer someone's call,
Someone who is lonesome;
Give, and give with might and main,
Give your hands, and join the chain,
And your gift will be your gain
Sometime, when you're lonesome.
—Detroit News.

AN OBSCURE CASE.

To the Editor: Some time ago a hen acted as though she had the canker. On examination I found that she was clear in the throat and nose. At times she looked all right. The next day it was the same thing all over again, so I killed her. On cutting her open I found her heart muchly enlarged, the upper part puffed and bluish; windpipe, lungs and liver normal. I would appreciate your opinion on this case.—H. G., Escalon.

Most likely the case commenced with a little congestion in the bronchial tubes, and the heart, in trying to help out, overdid and caused complications. Whenever the breathing of a fowl is affected, it is safe to look for a stoppage in the air tubes. It may be canker or congestion. In the latter case there is no remedy but hope and keeping the hen warm. Sometimes a dose of olive oil will help.

AN EMERGENCY SHELF.

In housekeeping, one of the greatest simple helps is a well-stocked emergency shelf. With this to fall back on, one is ready for any emergency.

This shelf should contain, besides a carefully selected assortment of quality foods, a number of prepared menus and the recipes to accompany them, so that in case of illness any member of the family can keep the meals going satisfactorily.

On this shelf there should be canned soups, fish, meat, vegetables, jams and jellies and a few packages of cookies and crackers.

When a package is used, it should be replaced at once, so that the shelf will be ready for the emergency that comes when least expected.

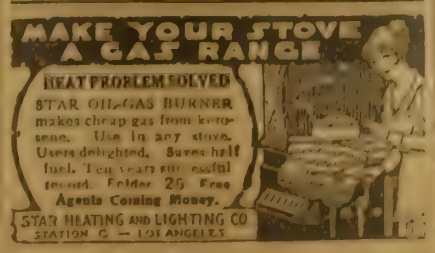
KITCHEN HELPS.

Use the old cut lemons to rub on the sink boards and kneading boards. They are wonderful bleachers.

Wipe the linoleum on the floor over with sour milk to restore its color and make it more durable.

To make your tinware practically rust-proof, grease thoroughly and put in the oven and bake for half an hour.

Aluminum paint, which may be purchased in very small cans, is excellent to use on rusty pipes, fixtures or springs on doors.



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than a scrap of paper -the Ghirardelli label

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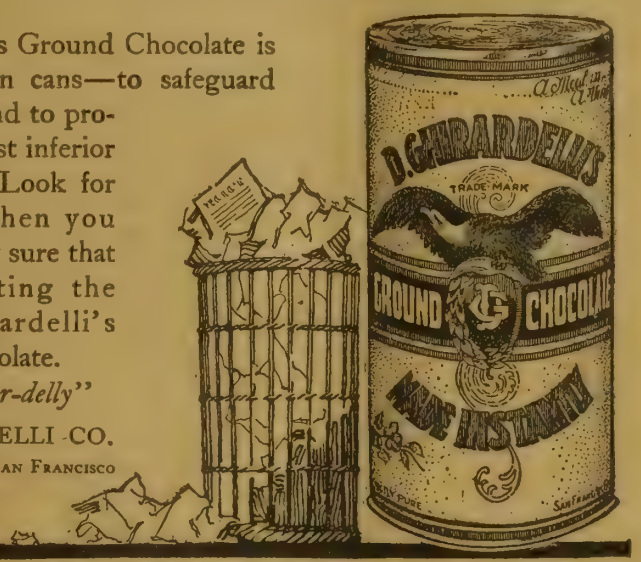
Always dependable —never disappoints!

At the store where you do your trading —in ½ lb., 1 lb. and 3 lb. cans.

Ghirardelli's Ground Chocolate is put up *only* in cans—to safeguard your health and to protect you against inferior substitutes. Look for the label. Then you will be doubly sure that you are getting the *original* Ghirardelli's Ground Chocolate.

"Say Gear-ar-delly"

D. GHIRARDELLI CO.
SINCE 1852 SAN FRANCISCO



Ghirardelli's Ground Chocolate

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A thing ceases to be "good enough" when the light of discovery exposes its imperfections and shows a new and better way. Failure to investigate and adopt a new method sometimes leaves us in the clutches of self-inflicted slavery of short or long duration, according to the time of our "awakening."

We talk about the good old wood fire, with its homelike roar and wonderful glow, but what about the wonderful, endless drudgery, dirt and muss? When you realize that you can retain all of the pleasing features, have a cleaner, hotter and more beautiful fire—for less money—eliminating entirely the accustomed drudgery—then is the awakening that is sure to be followed by freedom.

Let us tell you of our way—the discovery of "The Simplest Thing in the World" and the clean gas it makes from common kerosene—in that same stove without any changes being made.

We will gladly answer all questions and forward Circular "B" and drawing. Just describe the stove and mention size of firebox.

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and study the best way to get the results you want in your home grounds.

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PACIFIC RURAL PRESS, Publisher
525 Market St., San Francisco

Market Comment

Livestock in California.

The following figures are furnished the Rural Press by the field agents for California, Bureau of Crop Estimates, U. S. Department of Agriculture. It is interesting to note the following changes, in California, in farm animals, as compared with January 1, 1918: In numbers, horses have decreased 33,000, mules decreased 3000, milch cows decreased 36,000, other cattle decreased 51,000, sheep increased 167,000, and swine increased 29,000. In average value per head horses have decreased $7, mules have increased $10, milch cows have increased $6.50, other cattle have inoreased $6.10, sheep have increased $0.70, and swine have increased $0.50. The total value of all farm animals enumerated below is: January 1, 1919, $224,679,000; January 1, 1918, $216,762,000.

	Number	Price
Horses—		
1919	435,000	$91.00
1918	468,000	98.00
1917	468,000	97.00
1916	493,000	96.00
1915	503,000	100.00
Mules—		
1919	63,900	125.00
1918	66,000	115.00
1917	70,000	116.00
1916	70,000	110.00
1915	74,000	120.00
Milch Cows—		
1919	561,000	79.00
1918	597,000	72.50
1917	591,000	67.00
1916	568,000	69.00
1915	541,000	72.00
Other Cattle—		
1919	1,650,000	48.20
1918	1,701,000	42.10
1917	1,636,000	38.10
1916	1,558,000	36.30
1915	1,480,000	39.30
Sheep—		
1919	2,943,000	12.00
1918	2,776,000	11.30
1917	2,524,000	6.70
1916	2,450,000	5.00
1915	2,500,000	4.50
Swine—		
1919	1,003,000	18.00
1918	974,000	17.50
1917	994,000	10.10
1916	947,000	8.40
1915	877,000	10.50

The 1919 Wheat Price Guaranty.

The legislation now pending to continue the Food Administration Grain Corporation to maintain the 1919 wheat price guarantee, under which an appropriation of $1,250,000,000 for a working capital is asked, has been vigorously attacked in Congress—and to some extent in the public press. The measure has been denounced as an economic fallacy, running counter to the basic law of supply and demand. However, the emergency fully justified it and it is not likely that public sentiment will countenance the proposal to urge the Government to welch on its agreement with the wheat growers, now that the food emergency has passed. What lies beyond the 1919 wheat crop is pretty patent — American wheat-growing in competition with the world.

Lower Wool Prices Asked.

Clothing manufacturers are urging a readjustment of the prices on raw wool to enable them to compete with their foreign rivals. It is reported that the Government holds about 95 per cent of last year's wool crop, bought from growers at about 25 per cent above the world level of prices. There has been substantial increase in the number of sheep in the United States, according to the Government report of January 1, 1919, and it seems inevitable that the Government must now unload at a heavy decline in price values.

Ocean Rates on Cotton Reduced.

The announcement at New Orleans this week of the reduction in ocean rates on cotton to Liverpool caused prices to soar on that market. The old crop futures went up $10 a bale, or 200 points, the extreme limits allowed under the war rules still in effect regarding fluctuations in any one session. New rates on high density cotton from South Atlantic ports to Liverpool and United Kingdom ports were fixed at $1.25 per hundred pounds, January 28, by the Shipping Board, effective immediately. The old rate was $4.50 per hundred pounds.

THE MARKET REPORTS

Figures Given Are Independent and Reliable.
Prices Quoted as Paid to Producers.

SAN FRANCISCO

San Francisco, February 5, 1919.

WHEAT.

The following prices were announced by the Federal Grain Corporation last year and are still in effect. They are figured f. o. b. San Francisco, Los Angeles, Seattle, Tacoma and Portland and guarantee the grower a minimum of $2 f. o. b. shipping point:

Per bushel—	
No. 1 hard	$2.20
No. 2	2.17
No. 3	2.13
No. 1 soft	2.18
No. 2	2.15
No. 3	2.11
Club or Sonora, No. 1	2.16
do, No. 2	2.13
do, No. 3	2.09
Recleaned for seed, per ctl.—	
California Bluestem	$4.15@4.25
Early Baart	4.15@4.25

BARLEY.

The removal of export embargo on barley and other grains except wheat is expected to ease up the situation for the disposal of last year's crop. The State Market Director, who is in Washington, is said to have found a foreign market for about 100,000 of the 400,000 tons in this State, but so far neither of these facts has had a stimulating effect upon the local market, and barley, if anything, was weaker than the previous week. With the removal of restrictions an effort was made to establish a price on future barley in the exchange, but the difference between the price offered and that demanded makes such quotations valueless as an indication of the market.

Choice feed, per ctl	$2.17½@2.20

OATS.

Oats are in little demand except in small lots. The market for seed oats is over and that quotation is nominal.

Red feed, per ctl	$2.22½@2.30
Red for seed	2.60@2.75
Black for seed	Nominal
Recleaned Red or Black for seed	$3.15@3.20

CORN.

The corn market continued quiet, with no material change in quotations, which are nominal, and indicate what dealers think the grain worth rather than actual transactions.

California	$2.85
Egyptian, choice	$2.75@3.00
Milo	2.70@2.75

HAY.

Receipts of hay for the past week were 1054 tons, compared with 1106 of the previous week. The demand has been so light that the receipts were about double what was needed. Most of the receipts are being handled in the jobbing trade by those to whom they are consigned and consist mostly of their own holdings. Although some hay has been consigned for sale on owner's account, most of the dealers are refusing such consignments, not caring to place their own hay in competition with consigned hay. Many are predicting an early spring and consequent feed shortage, causing some owners to hold back for possible higher prices later.

Wheat, No. 1	$22.00@24.00
do, No. 2	16.00@20.00
Choice tame oat	21.00@23.50
Wild oat	16.00@18.00
Barley	16.00@18.00
Alfalfa	16.00@19.00
Stock	14.00@17.00
Barley straw	.50@ .80

FEEDSTUFFS.

Alfalfa meal was lower in sympathy with the cut in the price of alfalfa hay. Bran prices were advanced somewhat, but otherwise no changes in feedstuff prices are noted.

New alfalfa meal, per ton	$32.00@34.00
Coconut cake or meal	45.00@47.00
Whole yellow corn	73.00@75.00
Cracked corn	76.00@78.00
Linseed Oilcake Meal	78.00@80.00
Rolled barley	47.00@49.00
Rolled oats	53.00@54.00
Mill run	38.00@40.00
Bran	38.00@40.00
Fish meal, per 100 lbs	4.80@ 5.00

POTATOES, ONIONS, ETC.

Potatoes and onions are inclined to be weak at unchanged quotations. Potatoes are said to be in for a drop as soon as the northern potatoes are placed on this market. The growers have been holding these potatoes back in the hope of getting higher prices, but it is said that they will soon be on the market and that this competition will cause a drop all along the line. Celery is not arriving in quantity and the best of this description brought as high as $7.50 a crate this week. Mexican tomatoes are coming in in greater quantity and are finding a ready market. The rest of the vegetable market is dull.

String beans	25c
Lima beans	None
Carrots, per sack	$1.25@1.50
Rhubarb, San Jose, per box	2.00@3.00
do, Strawberry, per lb	10c
Pumpkins	$1.00@1.25
Cucumbers, hothouse, box of 30	2.50@3.00
Los Angeles, lugs	3.00
Eggplant, per lb	20@25c
Lettuce, per crate	$3.00@3.25
Celery, crate	5.00@7.50
Tomatoes, Southern, per crate	2.00@3.00
do, Mexican	3.00@3.50
Sprouts, per lb	8@10c
Potatoes—	
Fancy whites	$1.90@2.15
Choice	1.75@2.00
Sweets, per sack	3.00@3.50
Onions, Warehouse Stock—	
Yellows	1.65@2.00
Australian Browns	1.65@2.00
Garlic, new	25@35c
Green corn, Alameda, per sack	None
Okra, per box	None

BEANS.

The embargo on the export of beans was lifted at the same time the embargo on grains was withdrawn. As yet this has created no demand for California beans, and the market showed great weakness at lower prices on several descriptions. Some of the dealers feel that a demand for California beans will arise in the near future, but they assert that the prices must be such as will allow comparison with quotations from other bean centers.

Bayos, per ctl	$7.10@7.30
Blackeyes	4.75@5.00
Cranberry beans	6.75@6.90
Limas (south, recleaned)	9.25
Pinks	6.00@6.25
Mexican Reds	6.50@6.75
Tepary beans	3.50@4.25
Garbanzos	9.50@9.75
Large whites	7.25@7.50
Small whites	7.90@8.15

POULTRY.

Roosters are in excess on the market, owing to the large number arriving from the East. Considering these arrivals, the price has been well maintained, although it is below the best of last week. The demand for broilers has been for the heavier stock rather than the small broilers. Squabs are stronger and higher.

Turkeys, live, young spring, lb	34@36c
do, old	30c
do, dressed	40@42c
Broilers, 1½ to 2 lbs	45@50c
do, 1¼ lbs	45@48c
do, ¾ to 1¼ lbs	45@48c
Fryers	40c
Hens, extra, per lb., colored	35@36c
do, Leghorn	36@38c
Smooth young roosters, per lb. (3 lbs. and over)	33@36c
Old roosters, colored, per lb	21@23c
Geese, young, per lb	32@34c
do, old, per lb	30c
Squabs, per lb	65c
Ducks	29@31c
do, old	28c
Belgian hares	15@18c
Jack rabbits	$3.00@3.25

BUTTER.

Butter was must steadier this week than last, the range from the high to the low being only 2c, as compared with a 6c range last week. The market opened and closed at the top for the week. The Eastern market is also steady and the indications there are reported to be for a continued steady market. The drop of the past week or two has caused a demand to develop both here and in the East which has had a steadying effect. The receipts show a constant growth and more butter is going into storage at present prices than has been the case for some months. Following are exchange prices, with discounts deducted:

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extra	44½	43½	43	42½	43½	44½
Prime firsts	Nominal					
Firsts	Nominal					

EGGS.

Eggs continue to show weakness both on this market and in the East. Last Thursday some cars were shipped East "on spec" and a firmer tone prevailed for a day or two. On Saturday, however, they dropped from 4½c to 6½c, and after a slight recovery both extras and extra pullets closed at only a half cent above the bottom. Following are exchange prices, with discounts deducted:

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	45	45	40½	41	40	40½
Extra 1sts	81 Nom.	—	—	—	—	—
Firsts	Nominal					
Extra pullets	43½	43½	37	38	37	37½

CHEESE.

Cheese continues to show weakness. The receipts have been held back so that the demand just about takes care of them. Oregon cheese especially is being held back, the Oregon producers expecting a higher market for their goods. The prices given (except in the case of Monterey cheese, which is the street quotation less commission) are the exchange quotations, less the usual commission of 10 per cent:

Fancy California flats, per lb	23c
Firsts	20c
Oregon triplets, fancy	35½c
Oregon Y. A. fancy	36c
Monterey cheese	23@26c

FRESH FRUITS.

All apples were advanced 25c a box for the best. The demand continues excellent, and it is reported that large quantities are being shipped out of the State. Persimmons are now about off the market. Pears are unchanged.

California apples	$2.00@2.75
Northwest apples	2.00@3.50
Winter pears	2.00@3.50
Persimmons	None

CITRUS FRUIT.

Tangerines are somewhat weaker and are quoted 25c less than last week. Otherwise the citrus prices remain the same as last week: $4.50 continues the top price for oranges.

Oranges, navels	$3.00@4.50
Mandarins	1.75@2.25
Tangerines	2.75@3.25
Lemons, fancy	4.00@4.50
do, choice	3.50@4.00
do, standard	3.00@3.50
Lemonettes	2.00@3.00
Grapefruit	2.25@3.00

HONEY.

This is the dull season in honey and practically nothing is doing in this commodity.

DRIED FRUITS.

Nothing new developed in the dried fruit market this week. Very few apples and practically no other fruit remains in first hands and all sales now being made are those of brokers disposing of stock previously purchased.

LOS ANGELES

Los Angeles, February 4, 1919.

BUTTER.

Good rains here on the coast and mild weather in the Central West and East, and an increased production there compared with a year ago, and the government out of the market for new butter, caused lower prices the past week both east and west. Chicago was off 9c on extras up to Monday, and New York 4¾c. on extras for the same time. This had a sympathetic influence upon the market here and on the coast. San Francisco declined 2¾c. on fresh extras up to Monday, and here in Los Angeles the market on 'change for the same time broke 2c., carrying prices below last year's figures. But at this decline there was very good buying. Receipts for the week were 305.300 pounds, against 269,100 pounds the same week last year.

We quote—

California fresh extra creamery	46c
do, prime first	42c
do, first	41c
Same time last year—	
California extra creamery	49c
do, prime first	47c
do, first	46c

Daily quotations—

1919—	Tu.	Wed.	Thu.	Fri.	Sat.	Mon.
Extra	48	48	48	48	46	46
1918—						
Extra	51	52	50	50	49	49

EGGS.

The market the past week went to pieces both east and west. The declines in the Central West and East have been sensational since our last review, and the loss there was reflected here on the coast. A mild winter East and marked increase in the production, and receivers forcing all receipts into consumption, causing the break. Receipts here for the week were 8815 cases, against 9150 cases the same week last year. Under this showing the market here broke Wednesday of last week 7c. on extras, 5c on case count and four cents on pullets. These declines encouraged good buying Thursday and extras and case count advanced 2c.; since then a firm market was had on extras and case count up to Monday under a good consumptive and fair shipping demond. There was taken out of cold storage the past week 269 cases, reducing the holdings down to 162 cases. This exhaustion of storage supply failed to influence the market.

1919—	Tu.	Wed.	Thu.	Fri.	Sat.	Mon.
Extra	47	40	42	43	43	43
Case count	42	37	40	40	43	43
Pullets	44	40	40	40	40	40
1918—						
Extra	51	51	50	50	53	53
Case count	51	50	48	48	50	50
Pullets	50	50	48	48	51	51

POULTRY.

There was more doing in this market the past week than for some time. Local receipts were light and dealers had to bring in several cars of fowls from the East to piece out with. Broilers were in fair demand and steady, and fryers sold well and brought a little more money. Heavy hens were also 1c. higher and sold very well. Young roosters were hardly so firm but in very good demand. Turkeys and ducks steady and continue in very good demand.

We quote from growers:

Broilers, 1@1¼ lbs	40c
Broilers, 1½@1¾ lbs	43c
Fryers, 2 to 3 lbs	35c
Roasters (soft bone), 3 lbs. and up	30c
Stags and old roosters, per lb	20c
Hens	30@32c
Turkeys	33@36c
Ducks	30@32c
Geese	25c

VEGETABLES.

Good rains and milder weather had a rather bearish influence upon the market. Potatoes came in more freely and stocks were already good, hence a break in prices. Onions were in light supply and good demand. Cabbage was in only fair demand and a little lower. Cauliflower also sold a little lower. Local celery was firm and the best in fair demand, while Northern was higher and also sold very well. Sweet potatoes slow sale and weaker. Squash and pumpkins continue dull, but unchanged.

We quote from growers:

Peas, per lb	10@15c
Potatoes, northern, per cwt	$1.50@2.75
do, Idaho Russets, per cwt	1.70@1.80
Sweet potatoes, per cwt	2.25@2.75
Garlic, per lb	50c
Onions—	
Australian Brown, per cwt	$1.75@2.00
White Globe, per cwt	7.00
Cabbage, per 100 lbs	.90@1.00
Celery, local, per crate	4.00@7.00
Celery, northern, per crate	8.00@9.00
Cauliflower, standard crate	1.50@1.75
Hubbard squash, per cwt	$1.00
Banana squash, per cwt	1.00
Pumpkins, per cwt	50@75c

FRUITS.

This market holds up well. Apples

nue to make up the offerings of uous fruits. The supply on sale pretty good, yet not enough to in way depress the market.
quote from growers:

s:	
g Davids, Northwest pack	$2.75@3.00
k Twigs, Northwest pack	3.00
dwins, Northwest pack	2.75
te Pearmains, 4-tier	2.00@2.25
low Newtown Pippins,	
tier	2.25@2.50
tellow, 4-tier	2.00@2.25
tellow, 4½-tier	1.75@1.80
o, 3½-tier	1.85@2.00
athans, Northwestern pack	3.00@3.25
osap, loose, per lb	6@6½c
man beauties, Northwestern,	
er peck	3.00@3.25

BEANS.

e past week was another dull one is market. Holders reduced prices n whites, pinks and blackeyes, and n limas in an effort to move them. sales were very light and confined e local trade for home consumption.
quote from growers:

s, per cwt	$8.00
White, per cwt	7.00
White	7.00
per cwt	5.50
eyes, per cwt	3.50
y, per cwt	3.50

HAY.

A dull and sharply lower market was had the past week. Receipts were very fair, and buyers, encouraged by good rains and a declining butter market, held back. Hence receivers had to lower prices $1@$2 a ton, and even at this decline there was no life to the trade.

We quote f. o. b. Los Angeles:

Barley hay, per ton	$21.00@24.00
Oat hay, per ton	25.00@28.00
Alfalfa, northern, per ton	20.00@21.00
Alfalfa, local, per ton	21.00@23.00
Straw, per ton	9.00@10.00

COTTON.

A steadier though rather quiet market was had the past week. Manufacturers curtailing their purchases, and light Liverpool buying caused speculators to go slow and trading was light up to Saturday. Saturday March closed in New York at 22.72c. and May at 21.53c. In New Orleans March closed at 23.47c. and May at 21.87c. The current week opened in New York stronger under a report that most manufacturers in New England had granted a forty-eight-hour week and that there was now no danger of a general labor disturbance, and this caused a slight advance all round. March closed in New York Monday 23.84c. and May 22-74c. In New Orleans March 24.35c. and May 22.97c.

Special Citrus Market Report

Los Angeles, February 4, 1919.

e shipments of citrus fruits from ern California have slackened off ast two or three weeks owing to shipments from Florida to the ual distributing points in the East. to some little fear of frozen and ed fruit from the Southern Cali- area. Little frozen fruit has ed through, however, owing to the nce of the U. S. authorities, aided r State and county commissioners, e enforcement of the standardiza- ct. It should be said to the credit r local growers and shippers that heartily co-operated with this ef- It is estimated that about 20 per of the fruit brought to the packing s was discarded. Owing to the rains this week the packing s have temporarily closed down. s have held fairly well, $3.00 to having been received for choice navels, a few fancy lots going higher. It is believed that when the weather clears up, increased shipments will be made from Southern California. In the vicinity of Azusa it is reported that deputy sheriffs from Los Angeles are on guard in the citrus orchards, following the arrest of forty persons, mostly Russians, now on strike, who have attempted to intimidate Mexican pickers.

There has been an active demand in the East for all lemons arriving from California, and an advance of 50 cents per box was scored last week. But few frozen lemons were received, and they but slightly touched. Price, delivered, for prime fruit ranges from $4.65 to $5.25 a box.

Shipments of oranges this season total 7452 boxes, as compared with 5118 last season at the same date; lemons this season total 1829 boxes; last season to date 799 boxes.

Special Livestock Market Report

San Francisco, February 5, 1919.

TTLE—The cattle market situa- is strong. Good cattle are ex- y difficult to get, and the prime e commands a good premium over tions. Many of the cattle slaugh- are drawn from feeders' lots. Quo- s stand. Calves are plentiful and d demand.

——	
1, weighing 1000@1200 lbs	12¾@13c
, weighing 1200@1400 lbs	13@13½c
, second quality	11½@12c
, thin	9@10c
and heifers—	
]	9@10c
, second quality	8@9c
, common to thin	6@7c
and stags—	
d	6½@7½c
r	5½@6½c
n	4½@5½c
——	
htweight	11½@12c
ium	10½@11c
sy	8 @10c

EEP—Notwithstanding the report marked increase in the number of in the country and declining wool receipts of sheep by slaughterers ot over-plentiful, and the market is Good lambs are scarce.

s	14@14½c
ngs	12@12½c
wethers	11½@12c
ewes	8½@9¼c

GS—There is a free run of hogs to et, but the market is steady and rriving are easily taken care of. ange in quotations.

——	
d, grassfed, 100@150 lbs	16c
do, 150@250 lbs	16½c
do, 250@300 lbs	16c
do, 300@400 lbs	15½c

DRESSED MEATS.

No. 1	20@21c
second quality	19½@20c
and heifers	17½@18½c
s, as to size etc	18@21c
s, suckling	24@25c
yearlings	20@21c
wethers	18@20c
ewes	15@17c
	25c

Los Angeles, February 4, 1919.

TTLE—A steady market and fair ad was had the past week for all to choice cattle. There seems to scarcity of all kinds of cattle in district and prices are being held all last week's figures. Calves in demand and steady.

cwt. f. o. b. Los Angeles:	
steers, 1000@1100 lbs	$11.00@13.00
cows and heifers	9.50@10.50
cows and heifers	8.00@9.00
ers	6.00@6.50

EEP—A fair run of very good lings market continues. Killers all wanted w here for the fresh meat trade, but present prices are buying but few for curing.

cwt. f. o. b. Los Angeles:	
y, averging 205@250 lbs	$14.00@15.50
d, averaging 225@275 lbs	13.00@14.00
	10.00@16.50

gh docked 20 lbs., piggy sows 40 and stags, 40 per cent.

EEP—There seems to be a scarcity ood to choice lambs and lambs for d. Killers will have to reach out t what few are wanted, as but few are to be had in the nearby territory. They are still paying full quotations.

Per cwt. f. o. b. Los Angeles:

Prime wethers	$9.50@10.50
Prime ewes	8.50@9.50
Yearlings	10.00@11.00
Lambs	14.00@15.00

Portland, January 31, 1919.

The livestock market at the North Portland stockyards the past week was rather a draggy affair. Receipts have been comparatively light. Shippers seem to be holding their stuff back, not caring to take a chance on the bad weather holding up their shipments. Ninety-four cars of stock have been unloaded to date.

CATTLE—Market steady. Best steers, $12.50@13.25; good to choice steers, $11.00@12.50; medium to good steers, $9.00@11.00; fair to good steers, $8.50@9.50; common to fair steers, $7.50@8.50. Choice cows and heifers, $9.25@10.25; medium to good cows and heifers, $7.50@8.50; fair to medium cows and heifers, $5.75@6.75. Canners, $3.50@5.00. Bulls, $6.00@9.00. Calves, $9.00@13.00. Stockers and feeders, $7.00@9.00.

HOGS—Market fair. Prime mixed, $16.80@17.00; medium mixed, $16.50@16.75; rough heavies, $15.00@16.00. Pigs, $14.00@15.40. Bulk of sales, $16.80.

SHEEP—Market strong. Prime lambs, $13.75@14.50; fair to medium lambs, $9.00@11.00; yearlings, $10.00@11.50; wethers, $9.00@10.00; ewes, $6.00@8.00.

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REMANUFACTURED PIPE.

All sizes standard pipe and wrought iron screw casing. All kinds of fittings. Guaranteed good as new. Write for prices. **Weissbaum Pipe Works, 160 Eleventh street, San Francisco.**

PEAFOWLS—VERY TAME—for sale. 20 months old, $25 pair. Trio, $35. 8 months old $17.50 pair. Trio $24.50. Crating extra. Eggs in season, $1.00 each. Also Mammoth Spanish Jacks and Jennets. A. Everett, Moorpark, Cal.

FOR SALE—3 bottom power lift P. & O. tractor plow, $150. Double 6-ft. John Deere disc harrow, $100. 1 ton auto or boat trailer, $100. 8-ft. Dunham double pulverizer, $75. All practically new. Barker Bros., Los Angeles, Cal.

FOR SALE—1600 ft. of 11-inch No. 20 gauge riveted iron pipe, part of it used for one season, balance never used. 70 per cent off present market price for quick sale. A. H. McHenry, 519 Conford st., San Leandro, Cal.

ALL SIZES OF PIPE and tanks, new, second hand, riveted and screw; also second hand engines and boilers. Guaranteed. Prices right. Write for Price Book. 201 Howard St., San Francisco.

FOR SALE—Fourteen 30 gal. milk cans for relic; used but once. Like new. Guaranteed to be of best condition. Price $4 each. Address W. Lincoln, G. W. Carmel, Monterey Co., Cal.

SILO OF REDWOOD, 14 x 30, 2 doors, complete with roof, ladder, etc. Used one season only. Will sell cheap. Good for ensilage or grain. Write for description and price to G. M. Hockley, Los Gatos, Cal.

CABBAGE CUTTER—SIX KNIVES, capacity 10 tons per hour, perfect condition. Price $150. Also 1 potato digger. Price $150. Both for $250. Located at Brentwood, Contra Costa County, Cal.

BARGAIN—One second hand self-oiling Cleveland tractor. W. S. Hogan, 2014 Grant St., Berkeley, Cal.

CO-OPERATION (not operated for profit) reduces living expenses. Particulars and catalogue from Co-operative League, Commercial street, San Francisco.

COUNTRY LANDS.

30 ACRES—Half mile from State highway, three-quarters mile from point where local trains stop, and 3 and a half miles from Arbuckle. This place partially improved. 11 acres 6-year-old almonds, 1 acre 6-year-old fruit, and 5 acres 1-year-old Thompson Seedless. 13 acres to be planted to almonds this spring. Fine location. Will make a dandy home. Write us. Nelson Realty Company, pioneer dealers in almond land, Arbuckle, Calif., the Home of the Almond.

$6000 BUYS HOME-SITE with good income. Five-acre tract on State highway, one mile south of Gilroy depot. 2½ acres prunes, 2½ acres cots, 12 years old, in full bearing. Good stand alfalfa between trees. Good well, 4-inch centrifugal pump. Income 1918, $1500. Terms, half down, balance twenty-five per cent per year. Interest 6 per cent. J. E. Thomas, Gilroy, Cal.

FOR SALE—80 acres improved wheat ranch in Monterey county, 75 acres plow land. House, barn, engine-house and other buildings. Two good wells, windmill and tank-house. Small engine. One-quarter crop with place if sold quickly. Terms, $3600 cash, or not less than $2000 down. Address, Mrs. Ida L. Young Sanitarium, Napa Co., Cal.

FOR SALE—40-acre ranch, in good condition, 18½ acres bearing prunes, 5 acres almonds, 5 acres alfalfa, balance in other crops. Cement piping for irrigating. Electric pumping plant; abundance of water. Close to town. Good location. Address, Owner, Box 346, McFarland, Cal.

FOR SALE—The famous Bane Almond orchard at Orland. On account of labor conditions, as well as physical condition, I have concluded to sell my almond orchard, either in subdivisions of 10 acres, or as a whole. For particulars address P. D. Bane, Orland, Glenn Co., California.

FOR LEASE—Six acres Sonoma county. Houses for 2000 hens; equipped, brooder houses; incubators; barns. Good well, tank and engine. Box 1430, Pacific Rural Press.

DO YOU WANT a good small ranch—37 acres—under irrigation? Plenty of water. Good income property. For sale at a bargain. For particulars address J. B. Kroetch, Willows, Cal.

FOOT HILL RANCH for sale, 30 acres in cultivation, implements and stock, all for $3000. For particulars write to R. A. Winsor, Hornbrook, Cal.

FOR SALE—160 acres of first-class alfalfa land in the newly completed Cottonwood irrigation district. Roy Logan, R. F. D., Redding, Cal.

FOR SALE—Improved ranch with all implements and cattle. Address, Box 476, Placerville, Cal.

SEEDS AND PLANTS.

WALNUT SCIONS—All the standard and new varieties; Pecan and Pistache scions; Pistache seed; absolutely guaranteed. Send for list. Tribble Bros., Elk Grove, Cal.

FOR SALE—Budded Mission Olive Trees; ready for planting; buds selected from choicest trees; special price for large lots. D. C. McCallum, Oroville, Butte Co., Cal.

YOUR ALFALFA SEED should meet the needs of your soil and moisture conditions. One of the seven different kinds of Green Gold brand seed will yield heaviest and live longest because they are selected for particular conditions. Our illustrated booklet tells you all about each kind. Write for it now. Bomberger Seed Company, Desk B, 725 Tenth street, Modesto, Cal.

BUDDED AVOCADOS—Fuerte, Sharpless, Lyon, Dickinson, Blakeman, Puebla, Spinks, Taft Linda, Rey, Queen, Knight, and others. A fine stock of field-grown trees, $2.50 for one. $2.00 each by the 100. 25c per tree for packing. Newbery-Sherlock, 2202 East Colorado St., Pasadena.

TUSCAN AND PHILLIPS CLING PEACHES—extra heavy caliper, one year, 4/6 ft. J. H. Hale and other good varieties peach, plum, apple, and pear trees. Walnut and citrus fruits. Clean, healthy, vigorous; true-to-name. Grown under expert supervision. Los Nietos Valley Nursery, Downey, Calif.

EUREKA WALNUTS are the best grafted on Paradox roots. They resist blight. You are sure to get the real thing by placing your order with us. We graft Eurekas only. Geyer Brothers Walnut Nursery, 214 S. Almasor street, Alhambra, Cal.

NEW HARDY HYBRID ALFALFA—Biggest perpetual cropper. Best quality—hay or pasture. Wonderful constant stooler. Grows thick, permanent, profitable fields, etc. Investigate facts. J. L. Lawson, San Jose.

TREES! TREES!—Eureka and Placentia walnuts on black; a general assortment of high-grade nursery stock. A. R. Marshall's Nurseries, 1212 Ross street, Santa Ana, Cal.

ALFALFA SEED FOR SALE—Price reasonable. Price and sample sent on request. Freight prepaid. O. L. Devins, Dos Palos, Cal.

BERRY PLANTS—Blackberries, raspberries, strawberries, currants, and gooseberries. M. J. Moniz, Berry Specialists, Sebastopol, Cal.

GENUINE FRANQUETTE WALNUT GRAFTWOOD, 3c per foot. Ogden Bolton, Jr., Route 4, Box 447, Santa Rosa, Cal.

OREGON PLUM STRAWBERRIES—Plants $6 thousand, 75c per hundred. J. E. Dunn, Route 3, Sacramento, Cal.

BURBANK'S THORNLESS BLACKBERRY PLANTS—2 for 50c., 5 for $1.00, postpaid. H. Glas, Madera, Cal.

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No war prices.
Cash Nurseries, Sebastopol, Cal.

ASK FOR SNOW'S GRAFTING WAX—In use all over the State. If your grocer does not keep it, send to D. A. Snow, Route 1, Box 443, San Jose, Cal.

WANTED.

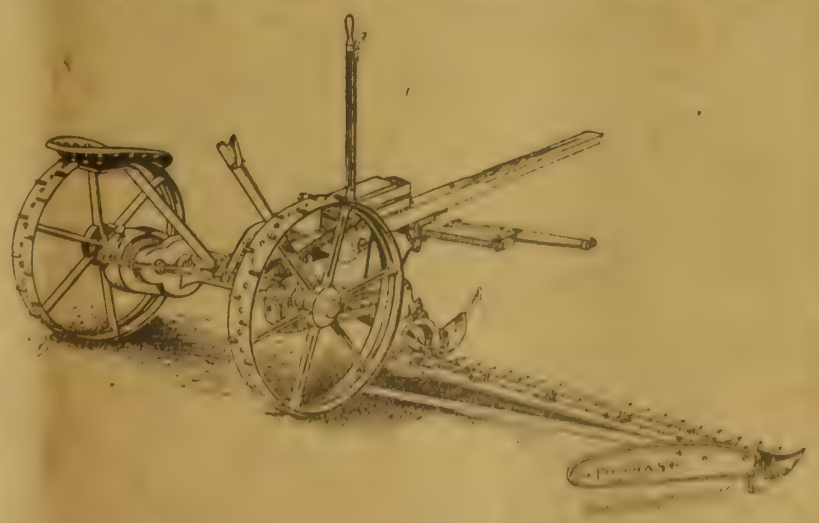
MIDDLE-AGED MAN, single, temperate, stout and healthy, qualified to manage any stock ranch or farm and will go any place. Handy with all kinds of tools and machinery. Willing to do any kind of work on farm stock ranch or barn. I have studied veterinary surgery and managed stock and farm work all my life. I can give bank references as to my honesty and responsibility. H. D. Brown, 1258 35th Ave., Oakland, Cal.

POSITION WANTED as manager of hog ranch on diversified farm. Experienced with registered stock, irrigated crops and deciduous fruits. Address: H. Duveneck, 1004 Paru St., Alameda, Cal.

START YOUR HAYING SEASON

with a mower that will do all you expect and more.

THOMAS 2-SPEED MOWER



A high speed and low speed cut for heavy and light work. A machine on which you can depend. Are you willing to learn the many other good things about Thomas Mowers? If so,

WRITE TODAY

Baker, Hamilton and Pacific Co.

SAN FRANCISCO, CAL.

Sacks

How many do *you need* next year?



YOU DON'T NEED a single sack for your next year's crop of grain. You don't need to hire a single sack sewer.

What about sacks—are they economical? Are they safe?

Vermin destroy sacked grain

If you leave sacked grain in the field you lose by rats, gophers, birds, bugs, rain and sun. You lose the grain—and in nine cases out of ten you lose the sacks, too. You usually have to re-sack the grain.

If you store your sacked grain in a warehouse, you lose by vermin, ants, mould, fire and theft. And here again about 40% of the grain must be re-sacked.

You lose a considerable quantity of grain just from plain carelessness in sack sewing—the string breaks, or the sack tears and out goes your grain. LOSS.

Sacks make other costs. There's twine, and wages for extra help.

You cannot get away from the fact that in using sacks you are suffering an actual and wholly unnecessary loss.

Calco Metal Grain Bins cost little—and last for years. They cut out the cost of sacks—completely. They absolutely eliminate costs of extra help and twine and sack sewers. Calco Bins pay for themselves quickly, and after that **they cost you nothing.** Sacks cost the same or more each year.

Write for this booklet

The booklet, "Calco Grain Bins," has an interesting chapter you should read—"One Farmer's Experience with Bulking Grain." The booklet is free. Write for it at once.

California Corrugated Culvert Co.

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417 Leroy Street

BERKELEY
406 Parker Street

AMERICAN ARMCO INGOT IRON

Calco Metal Grain Bin

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Vol. XCVII—No. 7 Forty-ninth Year

THE PACIFIC RURAL PRESS

AN FRANCISCO FEBRUARY 15, 1919 LOS ANGELES



To succeed with hogs one must love the work and the animals themselves. Notice that every animal in this group is headed toward the breeder. A pretty sure indication that he has won their good will.







Three different breeds but only one quality—the best. Convincing proof that California knows how to raise good hogs.

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R. H. WHITTEN - - - - - Livestock
JNO. J. FOX - - - - - Horticulture
SUSAN SWAYSGOOD - - - - Poultry

EDITORIALS

IN TWO SECTIONS.

WE ARE running in two sections this week—just as the glorious, old-fashioned express trains used to run in and out of California before Mr. McAdoo told everybody to stop gadding, stay at home and win the war. And Mr. McAdoo had very effective ways to compel his patriotic will, for he boosted the price of Pullmans above the reach of common people and put menus in the dining-cars which made memories of even wash-day dinners in the old farm kitchen seem alluring. However, the war has been won. Mr. McAdoo has become a California film plutocrat and "change is stamped on everything." We shall soon be reveling again in the joys of modern travel, with button-bursting feasts for everybody in the dining-cars and highly-colored stewards serving four o'clock teas to sweet old dowagers as they loll in their silks and diamonds—speeding across the plains and over the mountains to and from their palaces in California. Then again will the trains be running in two sections, because the traffic is so heavy. And that also is the reason why we are running this week's issue in two sections.

And this wonderful increase in our traffic in agricultural facts, fancies and business announcements seems to be the penalty for making a paper which people think it worth while to praise or to condemn—whichever pleases them more. They do not care to bother with agricultural printing which makes them neither glad nor mad but invites them only to traverse dreary mediocrities of fact and thought which they can read without encountering a fact or an idea which either delights or shocks them and can re-read without suspicion that they ever passed that way before. Such publications are like Mr. McAdoo's war-time car-dinners—not sweet enough to cause the meanest tooth to ache: not sour enough to give the slightest excuse for a post prandial pain-chaser. Both readers and advertising patrons seem to like our styles and ways better—and so the traffic is heavy on our line and we are running this week in two sections. And for this reason it becomes necessary to serve readers this week as much joy or grief as they received in a month when this journal was young, and it is pertinent to note that increased traffic makes cheaper rates to readers. We are in fact furnishing the receivers of this issue exactly four times the printed matter for exactly one-quarter of the price their fathers were glad to pay.

LIVESTOCK SECTION LEADS.

LOADING the animal industry in the first section of this week's train is not intended to have any particular significance. The date was given some time ago to a special hog jubilee number and so to keep our faith with the hog we put him on the locomotive pilot of the first section and all the rest of the beasts have to go with him—for we cannot have them lagging behind, eating up the field crops and breaking down the trees and vines in the second section. Of course, if the reader insists that there must be some hidden significance in putting livestock ahead, we may admit that we consider the animal industry of California fundamental and essential to the perpetuity of profit in all the other agricultural branches—fundamental also in the securing and supporting of the population of forty millions which California will some day have and essential to the pursuit of all the various industries and occupations which those forty millions of people will develop. Broadly speaking, and we have said it before, the groups of farm animals have the potentiality of making more of our diversified topography productive of food and clothing for man and of furnishing him more raw materials for his manufacture and commerce, than any other group of producing agencies can have. And thus it comes about that if California is to work up her minerals and metals, get the full value of her forests and keep her fertile valleys and foothills yielding fruits of every kind—all for the sake of her own teaming millions and to keep them busy making things for the rest of the world—she must also have millions of the best kinds of all classes of animals to help her do it. Perhaps then this is really the secret significance of the fact that the first time the Pacific Rural Press ever sent out a single issue in two sections, each fully equipped to run by itself, the first section should strike the main line with the lowing of cattle, the neighing of horses, the grunting of hogs and the ringing of wether bells—as this first bunch of 24 pages surely does.

WHY FUNDAMENTALS ARE COMFORTING.

THERE is another very good reason to hang on just now very tightly to fundamentals which insure the profitable expansion of the animal industry, because the current incidentals thereof are certainly somewhat disconcerting. We are just emerging from the spotlight of patriotic exhortation which excited everybody from the millionaire packer to the cowboy apprentice to do his best to make flesh and fat and milk to win the war and save the allies and their proteges from starvation and Bolshevism, and we have been hugging the conviction that it had been nobly done. Now comes, chiefly from Washington, such a hullabaloo of charges, counter-charges and criminations that one may have to doubt whether anybody has been doing a fair, patriotic business after all. Congressmen charge Mr. Hoover with lying-in with the packers: Mr. Hoover says he does not care for the packers except to save the farmers from ruin by getting their high cost of production out of their products: Mr. Heney is lambasting the packers for robbing the farmers of all their profits and self-constituted advocates of consumers are charging the farmers with profiteering and grabbing all there is in the business for themselves. And there you are: all that one can get out of the confusion is that the war has been won, that hungry belligerents and non-combatants are likely to be kept from starvation and that probably every manufacturer and producer, except perhaps those on the dairy end, have made money—which is always the case with those who have food to sell when there is a war on—and everybody is left in doubt whether the present hullabaloo is economic politics or political economics or what not! It is, however, bad for the stock business and is bringing it into disrepute both at home and abroad and the only comforting reflection about it is that it is only incidental and not fundamental and therefore temporary. There may, however, be some facts disclosed which will be of permanent value in getting production, manufacture and trade of animal products on a fairer basis of profit to all participants therein, when we pass along to more normal times.

RIGHT FUNDAMENTALS MAKE SUCCESS.

WE ARE not flabbergasted by the current warfare over incidentals. There is plenty in the economic and commercial conditions underlying the animal industries to fully demonstrate that these industries will be permanently profitable—for at least two reasons: first, wildness and haphazard are going out of the enterprises of production; second, the teeming millions of the world's congested, down-trodden and under-fed population are rising to fuller competence in consumption. And the permanent advantage of these two promising economic and commercial conditions are to be secured by two other attitudes and efforts now being widely assumed by those who have the future of the animal industries in their own hands, viz.: the wide interest and investment in securing more specially fit and capacious producing animals of all kinds and the producers' resolution to organize the industries so that both producers and consumers shall possess their commercial rights in the largely increased and improved products which will result. And while one can see these progressive movements advancing he can confidently believe that the fundamentals which make success are on their way toward certain realization. He can refuse to be upset in his thought and action by the hullabaloo of the gladiators over incidentals, because their sensations may really furnish munitions for the more important issues which are to be joined. And these more important issues will be adjusted so as to give producers their fair share in the output of the animal industries and it is the duty of producers to organize themselves to push these issues. And while they are being pushed there will be an incidental which will come through with the fundamentals and that is the installation and enduring influence of better politics—first in this country and ultimately in the world.

Good Positions for Live Wires

We can use a few more red-blooded, dead-in-earnest men in our circulation department, attending to renewals and getting new subscriptions. Might consider women also.

If you are a convincing talker and are not afraid of hard work, we can use you. No experience necessary. We give you proper training and bang-up support. Straight salary; permanent work; no investment required except that you must have an automobile.

Tell us a little about yourself and we'll tell you about this opportunity that you can't afford to overlook.

QUERIES AND REPLIES

By the Editor.

Inquirer Must Give Full Name and Address.

Hog Pasture on Alkali.

To the Editor: Can I get an alfalfa hog pasture on land containing alkali? The soil map says it is free from alkali, but it is there in considerable quantity. What is the best method to find out beyond a doubt if this soil will grow alfalfa or any other crop successfully? I am an Eastern tenderfoot.—C. R., Dinuba.

The easiest way to determine whether the land has too much alkali for the success of alfalfa is to try it. There is land which shows alkali on the surface on which alfalfa will grow, because in the process of irrigation the alkali is distributed and carried away by natural drainage. There are many other cases in which the alkali increases by irrigation and plants which will succeed well at first may fail later. This is due to the fact that the irrigation is followed by surface evaporation, drawing the alkali up because of underlying hardpan the undesirable salts are not carried away by drainage. The behavior of the land can be predicted by the growth of the grain or of alkali weeds which it shows you, also by the adaptation of its subsoil to drainage or otherwise, which you can tell by digging or boring. If the land has black alkali and hardpan, you can detect them by the fact that the water stands and is blackened during the rainy season. If the soil is deeper and the alkali mostly white, the land is apt to look better in the winter than in the summer. The land may be too alkaline for alfalfa and still give you quite a good Bermuda and salt grass pasture. If you really wish to know the very worst about the land, ask the neighbors round about what they think of it!

Concrete Stable Floors.

To the Editor: Are concrete stable floors desirable?—City Farmer, San Francisco.

Concrete floors are satisfactorily used for horse stables, provided the floor is ribbed or otherwise roughened in a way to reduce the danger of slipping. Some stable men have stall floors made that way; some use a wooden grating over the concrete in places where the horses have to stand for any length of time. Some soften the standing by plenty of sawdust or straw bedding.

Putting the Right Tune in Fortune

Is there a fortune in Hogs? No, most emphatically, no! This article tells why. But it also tells—well, read on and you'll find that it reveals some pretty good opportunities, after all.

[Written for Pacific Rural Press by R. H. Whitten.]

TWO MEN buy adjoining farms, equally good. They buy the same number of hogs of the same breed, equally good. In ten years one of the farmers is down and out. The other counts his wealth in six figures. Isn't this sufficient proof that there is not a fortune in hogs? For if they make men wealthy, why doesn't this first farmer get his share of success?

There are many ill-advised and misdirected slogans floating around nowadays, especially since the hog skin-dicates began besieging us with their snide talks, but the prize error was committed by the one who coined the expression, "Hogs will make a fortune for you."

I beg to differ with my friend the enemy. I state most emphatically that hogs will not make a fortune for you or anyone else. But to console those who might be caused unnecessary alarm by this bold and bald statement, let me say in the same breath that I believe hog raising offers an unequalled opportunity for a man to make money with his brains, enthusiasm, energy and perseverance. It provides one of the best fields in the world for the exercise of his faculties, but whether or not he succeeds depends upon the way he puts his faculties to work.

As one captain of industry has put it: "Success, honor, fame—magic words these, that make the fiery blood of ambition surge to your brain. But don't forget that they are effects, not causes—the reward for initiative, patience, industry. It is the inexorable law of compensation that he only wins the prize who pays the price."

Compensation! A big word, in that it embraces a universal law of nature. Our Mr. Fox will tell you that if you prune and spray a fruit tree properly the compensation for the perspiration and backache is more and better fruit. A railroad engineer will tell you that in straightening out the curves and reducing the grades the compensation for the skilful planning and hard work is greater tonnage and bigger earnings. And so the law of compensation runs through all affairs of the universe.

Success Depends Upon Skill.

Anyone can have what he is willing to pay for, but too many get a wrong impression of what the price is. In hog raising, for instance, too many beginners start out with the idea that if they get good stock their success is assured. They seem to think that if they simply turn these hogs loose to rustle on an alfalfa patch, at the end of the year they will have a big lot of hogs to sell at big prices, and will make a barrel of money.

But the real price that must be paid is not the coin put into stock. It is the skill and energy expended in feeding, breeding and caring for that stock. True, good stock is necessary, and the better the stock the greater the opportunity for success. But without proper care the best of stock will soon go backward, and no matter how good the stock, the profits from it will be determined by the skill employed in caring for it.

So, if you are looking for a way to make money without effort, don't take up hog raising. You'll not get out of it one bit more than you put in, and if you succeed you'll have to contribute a whole lot of painstaking effort. But if you will look upon hog raising as a serious business that must be learned by study and experience; that must be carried on by hard work and skilful effort; that will demand many a sacrifice and heartache; and that must be stuck to through thick and thin—why, you'll find yourself fully repaid for every ounce of effort put forth. You'll find hog raising the most profitable branch of the livestock industry.

Hog the Money-Making Cog.

The increasing cost of land, feed and labor make it necessary for farming to be a more scientific pursuit in which the cost of production, as well as the quality and quantity of product, be considered, and experiments prove that no other class of livestock offers as great returns upon the investment of time, money and brains as hogs.

No other line requires so little capital for the purchase of foundation stock, buildings and equipment. No other line gives returns so quickly. The sows can be used for breeding at an earlier age, and are more prolific than any other farm animals. The annual increase is 1000 per cent or more, and each crop of pigs can be ready for market within one year of the date of breeding the sow, while with beef cattle the annual increase is not over 75 per cent, and it requires nearly three years from the date a cow is bred to market her calf.

No other class of stock will give better results in the hands of the beginner; yet with no other animals will experience pay larger returns.

No other class of stock is less liable to disease, for while cholera has carried off many hogs in the past, they can be absolutely immuned for life, and other diseases to which hogs are subject are insignificant as compared to those of other farm animals.

No other farm animal can convert the farm crops into finished products of as high quality and constant value throughout the year. From 100 pounds of dry matter a sheep will produce about 2.6 pounds of edible meat and a steer 2.8 pounds, while a hog from this same amount of feed will produce 15.6 pounds of meat suitable for human food.

Furthermore, by taking care of the by-products, the hog turns waste into marketable products. He is the money-saving adjunct to the dairy by conserving the skim milk, buttermilk and whey. In following feeder cattle he saves the undigested food that passes through them, and in many cases makes the owner the only profit he gets out of feeding steers. He converts the table waste and kitchen slop into valuable feed products. He gathers up the fallen fruits in the orchard. He cuts his own hay, gathers his own grain, digs his own roots, and proves the best marketer for these crops that the farmer has. And in doing all this work he returns to the soil much valuable fertilizer, thus increasing his usefulness.



Even though hog raising is only in its infancy in California, we already have our high-class breeding establishments where the buildings and equipment compare favorably with those found in the Corn Belt.
By courtesy California Hog Book

Uncle Sam Strong for Hogs.

Am I spreading it on too thick? Then take it straight from the Government. The Department of Agriculture says: "No branch of livestock farming is more productive of satisfactory results than the raising of well-bred swine, if conducted with reasonable care. The hog is the most important animal to raise for meat and money. He requires less labor, less equipment, less capital. He makes greater gains from 100 pounds of concentrates, reproduces himself faster and in greater numbers, and gives a quicker turnover of money than any other farm animal except poultry. As a consumer of by-products and unmarketable materials he has no rival. He produces the greatest amount of meat and meat products, and also the most satisfactory meat for curing and for shipping long distances."

The Hog Is a Mint.

And Prof. F. D. Coburn, the leading American authority on hogs, says: "Hogs pay the taxes, clothe the family, send the children to school, and make possible the development of new homes. They have provided the food for the Anglo-Saxon race. Without them Chicago would be a prairie village, Kansas City a barren hill, and Omaha a ferry crossing. Take away the sow and our banks would close, and the wheels of commerce would cease to turn.

"The hog is a condenser. He is a manufacturer of hams, hash and head cheese, lard, illuminating oils, hair brushes, glue, buttons, bacon, bristles, fertilizers, fats, knife handles, whistles, soap, souse, side meat, saddle covers and sausage. He is a mint, and the grain of our country is the bullion he transmutes into golden coin.

"There is no branch of farming or stock husbandry which, conducted with a reasonable amount of horse sense and stayed with systematically, will do better by its proprietor and will more successfully keep the wolf and sheriff from his door than the rearing of well-bred swine."

Guess that about covers it, except that Prof. Coburn neglected to recommend putting the portrait of Mr. Hog on our coin of the realm in place of the eagle. But the arguments seem to prove that he is entitled to that place of distinction.

Profit Follows Pigs.

No joking, though, the hog is the backbone of the farmer's income. In farming, profit follows pigs as consistently as day follows night, and this is proved by Government statistics. Practically 50 per cent of the total farm values of the whole United States are found in ten States. In these same ten States over 50 per cent of the total value of hogs is found. Only one-third of the total value of poultry is in these ten States, and about one-third of the milk cow, cattle and horse values.

If you want further proof, look over the census statistics for years back and notice how the farm values of certain States decreased as less hogs were raised, while others increased because more hogs were raised. Notice, too, that the State which leads in hog production has more automobiles and greater bank deposits per capita, and more wealth per square mile, than any other State in the Union.

California Lagging Behind.

How does California stack up? Well, she looks like a piker. Illinois, which led all States in the Union for 1918 in the total value of farm crops, is only two-fifths as large as California, yet she produces six times as many hogs. And Iowa, which stood second, has as many hogs as are raised in all the Pacific Coast and Rocky Mountain States, together with all the Atlantic States north of Georgia. She has 466 hogs per 100 population, against 71 per 100 in the entire United States. No wonder she is the wealthiest State in the Union per farm and in farm homes.

Ideal Conditions in California.

Why shouldn't the tables be turned? Why shouldn't our farmers be made to realize more fully the possibilities of pork production? Why shouldn't it attract the serious attention of the better class of farmers, and even of far-seeing business men who can profitably turn from other pursuits to the raising of well-bred hogs?

For an industry to be on a sound basis, not only must there be a good demand for the product, but also it must be possible to produce it at a profit. A large production of grain per acre, and alfalfa pasture almost the year around, combined with a climate that permits farrowing almost every day in the year without artificially heated buildings—these are a few of the many factors which make it possible to raise hogs in California at a better margin of profit than in the Corn Belt.

"No community with large acres of alfalfa can afford to neglect swine," says Coburn, "and no community with high-class swine is poor."

So let's have high-class swine and lots of 'em.

The Better They're Bred the Better They Pay

Written for Pacific Rural Press by R. H. Whitten

SEVERAL years ago a man who is now a prominent breeder of registered hogs was put in charge of a ranch upon which were about 200 head of scrub hogs. A carlot of the best was picked out and fed heavily for 35 days, and when sold at 15 months of age they averaged only 167 pounds.

Another lot of 48 hogs was grain fed for 60 days and sold when 18 months old, averaging only 106 pounds, although they had been in good health and had received good feed all their lives.

Later 29 of the sows that were retained were bred to boars of similar type, but they tried in vain to raise litters, and at weaning time there were only 54 pigs, all of which inherited the qualities of their progenitors—long, straight noses and tails; narrow between the eyes and in the chest; in fact, narrow all over. They had a ravenous, roving disposition, and it almost required an animal cage to confine them.

So then he secured a registered boar of good type and character and bred 21 of the same sows to him. Seventeen farrowed, and at weaning time he had 119 shoats, all with smooth, even, growthy bodies. At 6 months they averaged 170 pounds, which is more than the best of the scrubs averaged at 18 months of age.

But this breeder was not satisfied, even with this progress. After several purebred crosses he was not able to bring his market hogs up to more than 300 pounds at one year, so he tried purebred brood sows as well as boars. The result was that the first season he marketed five carloads of yearlings at an average weight of 451.5 pounds, four carloads of which topped the market. A pig from one litter made the remarkable gain of 198 pounds in 60 consecutive days, and seven pigs in the litter attained an average weight of 618 pounds as long yearlings.

Purebreds Best for Pork Making.

The old belief that "pigs is pigs" is rapidly passing. Farmers used to think that purebred hogs excelled common stock only in show qualities, and that for utility purposes they had no additional value. But it has been proved that every fine point about a purebred has a vital connection with pork-making qualities, and after all is said about the uselessness of fancy points, the folly of fine pedigrees, and the absurdity of high-priced ancestors, the fact remains that the purebred hog is the common-sense hog for the business farmer, for he makes the greatest gain in the shortest time from the smallest amount of the cheapest feed; also he gives the largest proportion of the most valuable meat, with the least percentage of waste.

Why is it that a purebred is valuable for breeding while a grade is not? Because the first has its good points bred in it, and can be depended upon to transmit them to its offspring, while if the second has any good points it got them by chance, and there can be no certainty about the quality of its descendants. It is an established fact in breeding that "like begets like," but it does not necessarily follow that because certain features are prominent in the parents they will be in the offspring also, for the young partake quite as much of the characteristics of their ancestors for many generations back as they do of their parents. Consequently, not until breeding has been carried on long enough for desired qualities to become fixed characteristics can the reproduction of these qualities be depended upon.

Scrubs Don't Breed True.

To illustrate: Several years ago a man bought a ranch, and two scrub sows were included in the deal. In a short time one of the sows brought him a litter of 18 pigs, 9 of which he killed. Four months afterwards this sow brought him 14 more pigs, 5 of which he thought it advisable to kill. At the end of 11 months he sold the two litters for $308, after retaining one gilt for breeding purposes.

This occurred when prices were low, and naturally this farmer thought he had found a gold mine. He was thoroughly convinced of the advantages of scrub stock, and purchased 12 more brood sows of the same nondescript type, together with a common boar. But he got something he didn't bargain for, as only three of the sows proved good breeders. Not only that, but the litters of pigs were small, and despite the good feeding that the pigs received they simply would not grow satisfactorily. So instead of finding himself rich at the end of the next year, this farmer had actually lost over $1,000. But he learned his lesson, replaced his scrubs with purebreds, and is now making good money.

The reason his scrubs turned out so poorly is that a scrub hog possesses mixed blood, each strain warring for supremacy, and even though it may be a very good individual it is apt to reproduce the undesirable qualities of some of its scrub ancestry, to the detriment of its offspring.

Purebreds Breed with Certainty.

Now let's take another case to see what purebreds have done. Twenty years ago Mark Bassett began breeding registered hogs. He sold some for breeders, but culled very closely and did a very large business in marketing hogs. He studied the packers' requirements and developed a type that just suited them. And for many years Mr. Bassett has been able to get a premium for his fat hogs. In December he sold a carlot for 20 cents when hogs were bringing 18 cents, and in January he sold a carlot at the Farm Bureau sale for 1 cent more than the common hogs brought. These hogs were 8 months old, averaged 238 pounds, and were pronounced by the Western Meat Company's buyer to be just what the packers wanted in size, conformation and quality. They were as even as peas in a pod.

Why can purebreds be depended upon to breed so uniformly? Because for many generations back their original ancestors were selected because they were able to produce more dollars' worth of pork than the average hog of the time. Their offspring were carefully selected and mated, and this process of scientific breeding has been kept up until today when we buy a purebred animal we buy the result of generations of breeding and selection—we buy a long line of ancestors, every one of which approached the ideal for a quick-maturing, easy-feeding, market-topping hog. These qualities have become fixed characteristics, and we can depend upon the animal to transmit them to its offspring.

So you see a pedigree simply represents a method of keeping track of the parents of an animal, and keeping undesirable blood out. It is a guarantee of what is back of an animal—of what has contributed to its make-up. It is what enables the scientific hog breeder to carry on his work with certainty, when otherwise it would be only a game of chance.





Purebred hogs are bred for quick-growing, easy-feeding qualities, and make several times the gain that scrubs do on the same feed. Which kind do you prefer to raise?

Biggest Money in Purebreds.

Perhaps you are already using purebred boars on grade sows. Good! That's a whole lot better than raising scrubs. But why not take the next step and get registered females? Purebred hogs return enough more than grades to warrant keeping them for market purposes alone. Besides, no matter how fine the offspring may be from grade sows bred to registered boars, or how nearly they may approach purebreds in size, type, markings and production, they never can be registered and sold for high-class breeders at high prices.

Consider this matter seriously, for the difference between a grade and a purebred herd marks the difference between good success and great success. You can make good money with a grade herd if headed by a high-class registered boar, but why stop there? Why not make double the money from the same number of animals, with no more work? You can do it with purebreds.

The Government and the State Agricultural Colleges are impressing upon farmers the importance of breeding up. County advisors are conducting their "better sire" campaigns, and are urging farmers to give more attention to hogs rather than to specialize in other lines. Pig clubs are being organized among school children. The result is a big demand for high-class registered stock, not only for males but also for females, as many farmers are now buying purebred females after seeing what can be gained by using a purebred sire on grade stock, and realizing how much more profit can be made by having an exclusive purebred herd.

Money can hardly be invested where it will bring greater returns than in registered hogs. And there is no danger of the bottom ever falling out of the purebred industry either, for Government records reveal the astounding fact that only 3.58 per cent of the hogs in the United States are registered, while in some of the older European countries where breeding operations have been carried on for years under Government supervision the percentage of registered hogs runs as high as 50, and still the business is most profitable. Over a century ago this same question was raised in connection with the beef cattle industry in England, yet the business is more active today than it has ever been before, and bigger prices are being secured.

Big Local Demand for Breeders.

Answers to questionnaires which we recently sent out to over 200 prominent purebred breeders indicate that the demand for registered hogs in California is increasing faster than the supply. Forty-five per cent reported that they were entirely sold out; 39 per cent had only fall pigs for sale; and only 16 per cent had service boars and bred sows to sell. Those who were offering stock were nearly sold out, and it looks to us as though the demand this spring will be many times greater than the supply. Also we believe it will be years before this demand is satisfied. Even then the business will be a most profitable one, for the poorer animals can be marketed for pork at more profit than grades, and there will always be a good demand for the tops from other breeders who find it necessary to introduce new blood into their herds to avoid inbreeding.

Aim for Quality, Not Quantity.

But while the registered hog is the animal that puts the profit in farming, it must not be inferred that all registered hogs are good ones, and that in buying it is simply necessary to make sure that an animal has papers. Among all classes of registered stock we find culls, and unfortunately some breeders are not particular enough about culling. As a result many inferior animals are offered for breeders that ought to go to the block.

It is highly important to start with the best foundation stock obtainable, and if you haven't the means to buy a large number of good breeders, then get a high-class trio or even a pair, in preference to a large number of hogs of only ordinary quality. It may be a good thing if your pile is limited, for one of the most common mistakes of the beginner is to be too ambitious, and to make his start on too large a scale.

A young housewife once complained about a small piece of ice that had been left in response to her order for 50 pounds. "But, ma'am," the iceman replied, "notice the firm and excellent quality of it. In buying ice your motto should be, 'Not how much but how good.'" That should be the motto of every swine breeder. It isn't necessary to have a big herd in order to make big money. Look at the money John M. Bernstein of Hanford is making with one outstanding boar and a half-dozen top-notch sows—probably more than the average farmer with a hundred head is making. His oldest sow has produced sufficient pigs of good enough quality to sell for $2,000 in the past two years. Another sow, Fruitful Maid, has always farrowed 12 or 13 to the litter, and all corking good pigs, too. "The best farmer in Kentucky" is quoted in an Eastern farm paper as having made $2,000 in one year from 80 ewes. But shucks! he isn't in it with John Bernstein of California, who makes $1,000 per year from one sow for two years in succession.

You can do as well if you will start with as

(Continued on page 227)

This Is the Way We Feed Hogs

Compiled for Pacific Rural Press.

"America is composed of three classes of men," said the wisenheimer. "First, those who have succeeded, and second, those who have not."

"But how about the third class?" questioned the listener.

"Oh, they're the fellows who write articles for the magazines telling the second class how the first class did it."

The writer will have to own up that he is in the third class, for he gives no original ideas in this article. But he offers what he considers infinitely more valuable in the actual feeding methods of the most successful swine raisers in California.

On the theory that "everybody knows more than anybody," we sent out more than 200 questionnaires that we might gather together the experiences of practical hog men. We say "practical" to distinguish these men from those who produce gains irrespective of cost. The practical feeder is not always the man who secures the greatest growth in the shortest time; he is the one who gets the most profit out of feeding—who produces the growth at the least cost per pound. And he is the one who speaks all the way through this article.

In the first place, practically all of the successful feeders find that it is not profitable to carry pigs along at any stage of their existence on pasture alone; also that it is not profitable to attempt to raise or fatten them on grain alone. Prof. Thompson reports that the last lot of hogs fattened at the University Farm were given barley alone and in going from 120 to 225 pounds they required 5.75 pounds of barley to make one pound of gain. Another lot required 5.06 pounds barley and .11 pounds tankage. Another 4.97 pounds barley and 6.75 pounds skim milk.



Grain should supplement pasturage to provide the quickest route from pighood to pork.

These figures prove that, when labor and other items are counted in, there is not enough profit in feeding hogs grain alone, and it was gratifying to find that practically all who answered our questions pastured their hogs to reduce the amount of grain. That is, they had alfalfa pasture from March to December. For the balance of the year some provided pastures of vetch, rye, barley or rape, or combinations of these. Others fed pumpkins, beets and other root crops. Others simply fed alfalfa hay, chopped alfalfa or alfalfa meal. When the latter was used, it generally was mixed with the grain, and in most cases was soaked.

FEEDING GRAIN FOR BEST RESULTS.

For grain, of course barley, milo, kafir and gyp corn were most commonly used. In almost every case they were ground, rolled or cracked, and soaked if fed with skim milk. Otherwise they were fed dry.

For sows suckling pigs and for pigs up to 3 or 4 months, the most common ration was ground barley three or four parts and middlings or Sure-Milk one part. Most breeders stated that they could not procure middlings and were using Sure-Milk. Only one used bran.

For breeding stock above four months very few used mill feeds. Ground barley was most commonly used—generally alone. Some added oats, milo, kafir or gyp corn. Quite a number were feeding beans—generally some that has been damaged and were not salable. The beans were most often boiled or soaked. Milo in the head was fed by only one breeder, and corn on the cob by only one. Around Fresno many were feeding damaged raisins at the rate of a pound a day per hog.

When skim milk was used, three pounds were fed to one of grain. When skim milk was not available, tankage was most often substituted, 10 per cent being used for growing stock and 5 per cent for fatters. A semi-solid condensed butermilk was used by several in place of tankage. It was diluted and used with grain in the form of a slop the same as skim milk.

Fish meal was used by a few in place of tankage. Quite a number used coconut meal, but very few fed oilcake meal.

THE QUICK ROUTE TO THE PORK BARREL

For market stock more corn, milo, kafir and gyp corn were used than for breeders—milo being the most common—although ground barley was the most popular feed. Very little mill feed was used.

Ninety-four per cent of the breeders reported that they confined their hogs for finishing them off. Seventy-one per cent used self-feeders for their market hogs. Fourteen per cent used them for developing breeders, but nearly all stated that they watched the pigs carefully and either discontinued the self-feeders or used a filler of alfalfa meal with the grain, when they saw that the pigs were getting too fat.

When grain was hand-fed, most breeders used a 2 or 3 per cent ration—that is, 2 or 3 pounds for every 100 pounds of live weight of the hogs. When skim milk was accessible, a smaller grain ration was fed. The average estimate of the amount of grain necessary to make a pound of gain was 3 pounds—this in addition to skim milk and pasture.

We were surprised at the number who confined their hogs to finish them off. Prof. Thompson states that at the University Farm the fatters are not confined if pasture is available, and we believe that farmers will get better results if they change their methods. The hogs will not take on fat quite so rapidly when not confined, but if they have access to good pasturage less grain will be required, and the net cost per pound of gain will be reduced.

H. C. Shinn, formerly of Stratford, but now on a ranch near Tulare, is an advocate of good alfalfa pasture supplemented by a moderate grain ration right along, as against the method of putting the hogs in the fattening pen for the last four or six weeks. He gives his hogs a ration of 9 parts ground barley and 1 part tankage, feeding 8 pounds per day for every 100 pounds of hog. Hogs fed in this way average 210 pounds at 7 months, and the cost per 100 pounds of live weight with barley at $2.50 varies from $9.90 to $10.40. This is not guess work, but actual results as determined by weighing both feed and animals.

WORTH REMEMBERING.

Here are a few points gleaned from the different replies to our questionnaire that are well worth remembering:

The younger the pigs the more economical their gains, so it pays to push them along rapidly. Pigs under 50 pounds gain 16 per cent of their body weight weekly; under 100 pounds 7.4 per cent; under 200 pounds 5 per cent; and under 300 pounds only 3.8 per cent. A 50-pound pig uses only 18 per cent of

(Continued on page 225)

Do You Feed Hogs?

With the present feed prices the big essential for profit in hog raising is a proper feeding method. It is important that the ration be well balanced and contain in proper proportion the food elements necessary to rapid growth and development.

Digester Tankage

is a supplementary feed, designed to make up the protein deficiency in ordinary feed.

It develops bone and muscle in young pigs and makes them grow. It matures hogs for market two or three months earlier than grain alone, and makes the kind of pork that commands the top market price.

It fortifies and strengthens the system and enables hogs to resist disease.

Send for free booklet, "Protein for Profit."

Address,

Animal Food Dept.,

Western Meat Company

San Francisco = = California

This is Buzz

Winner of Boys' Pig Feeding Contest, Riverside. Raised on Globe A-1 Swine Feed exclusively. Six months, weight 240 pounds, actual cost to produce at the retail cost of feed, 10 cents a pound.



HOG FEED

is not a matter of price per ton of feed, but cost per pound of hog.

Globe A-1 Hog Feed with Buttermilk

Composed of choice ground grain products, tankage and PURE DRY BUTTERMILK. In test after test, made under all sorts of conditions, is proven to save from $6 to $10 on each hog in from four to six weeks' time. "It's the Dry Buttermilk does it."



Lactic Acid Bacteria.

Micro-photograph of lactic acid producing bacteria found in buttermilk, the germ of profit in swine raising.

Learn why it will pay you to feed Globe A-1 Swine Feed.

Send for the Fact Book.

Send for the Fact Book and learn why

Globe Mills

LOS ANGELES, CALIFORNIA.

The Popular Poland-Chinas

In the Poland-Chinas we can show you hogs that breed true to type and have uniform litters which require little culling. They have quiet dispositions and consequently take on fat readily. Great constitutional strength fortifies them against disease and enables them to make profitable gains under the most unfavorable conditions.



The sows are prolific, excellent sucklers, and quiet, careful mothers, raising a very high percentage of their pigs. The pigs are large at birth, strong and active, easy to rear, and will thrive with little care.

Poland-Chinas have fast-growing, easy-feeding qualities; are producers of meat of high quality, particularly hams and shoulders; reach market with little shrinkage, and dress out with little waste.

The boars are exceptionally good for crossing and grading up, imparting to their offspring the hardiness, docility and good feeding qualities that breeders like.

California Poland-China Breeders' Association: President, W. Bernstein, Hanford; secretary, Alex. D. McCarty, San Francisco.

POLAND-CHINAS.

H. D. McCune, Lemoore—Fourteen sows by President, President's Ideal, Long Nelson, My Choice, and Perfection Wonder 3rd. Herd boar, King's Massive Orange, bred by T. V. Purcell, Polo, Ill. Young stock, 55 head of fall pigs by King's Massive Orange.

Nelson's Dairy Farm, Walter S. G. Nelson, San Jose—Foundation sows by Chief Picture 2nd, Jumbo Equal and Nugget. Herd boar, Trewhitt's Giant by Jumbo Equal; also a young boar by My Choice. Demand for stock heavy; all sold out.

N. M. Lester, Gridley—Sows of Long Hadley, Big Bob, I B A Wonder and Major Improved, half-brother to the 1917 grand champion. A few service boars, bred gilts and fall pigs for sale.

Rough's Greenfields, W. H. Rough, Arlington Station, Riverside. Sows of high quality, representing the best blood lines. Herd headed by the world champion, Superba. An excellent assortment of stock for sale.

P. E. Mitchell, Atwater. Brood sows of A Wonder and Royal Chief breeding. Herd boars, Bob Big Bone by Big Bone Bob out of a sow by Major Hadley Wonder, and Jumbo Timm by Mouw's Long Smooth Jumbo out of a sow by Big Timm. Demand very heavy and practically everything sold except a five-months-old boar pig by King's Big Bone Leader.

F. E. Fay, Tipton. Sows of President, Hanford Boy, Jumbo Ben and Black Favorite breeding. Herd headed by Wondergerst by Big Jones. Some fine March boars for sale sired by King's Big Bone Leader.

M. Bassett & Son, Hanford. Brood sows of the "advanced" type, including many of the leading Pacific Coast prize winners. Herd headed until recently by Model Fellow, who has recently died. Other boars are King's Gerstdale Jones by Hancherdale Jones 1st, King's Timm by Severe's Big Timm, and Model Fellow, Jr., by Model Fellow. Classy stock of all ages for sale.

J. W. Wakefield, Acampo. A fine herd of stock of Big Bone Bob, Grand Model and I. B. A. Wonder breeding. Some fine fall gilts by Grand Model for sale.

Fred Hartsook, Lankershim. A choice collection of noted prize winning brood sows, including Big Knox Girl, King's Wonder Giantess, Big Beauty, Miss Giantess, Model Giantess, Wonder Giantess, Major Beauty, Model Beauty 2nd and Nelson Wonder A. Herd boar, I. B. A. Wonder, reserve grand champion at P. P. I. E. Demand heavy, but still have a choice assortment of stock for sale.

E. S. Myers, Riverdale. Nine high-class brood sows. Herd boar, President Junior, a son of the noted Bernstein boar, President. Will have some fine spring pigs for sale.

W. Bernstein, Hanford. Sows including some of the most noted prize winners on the coast, including Candy Kid and King's Rosebud. Herd boars, King's Jumbo Orphan by Jumbo Or-

Lendorris Ranch

Poland-Chinas

(BIG TYPE)

We are consigning to the Kings County Sale four fine gilts by President out of Hadley Queen, four daughters and one granddaughter of Lorraine B. (this great brood sow has farrowed 22 pigs in two litters and raised 20 of them); one gilt sired by our herd boar, Young Jumbo 28761; one boar sired by Kings Big Bone Leader, grand champion of California.

Further information gladly given.

W. L. HAAG & SON, HANFORD

J. A. CRAWSHAW, Hanford, Cal.

Breeder of

POLAND-CHINAS

My offering February 22 consists of four gilts by President's Equal, bred to California Gerstdale, and one Gerstdale gilt bred to Kings County Buster. This is the greatest out-crossing one could wish, and adds strength to the breed.

Try to get one of these if you contemplate raising Poland-Chinas. Choice boars and gilts sired by California Gerstdale at private treaty and at farmers' prices.

HORAN RANCH

Poland-Chinas

HERD BOARS

Big Bone Bob 281289
Major Hadley Wonder 242397
Clark's Wonder 233849.

One of the above was Grand Champion in 1917, and another is a son of a World's Champion.

A few bred gilts and service boars for sale. Satisfaction guaranteed.

N. K. HORAN, Lockeford, Calif.

Bred Sows and Gilts

Bred to Iowa Wonder and Model Jones. These are the two best boars I could buy. Their breeding is A-1.

W. D. TREWHITT, Hanford.

REAOAKS SPECIAL

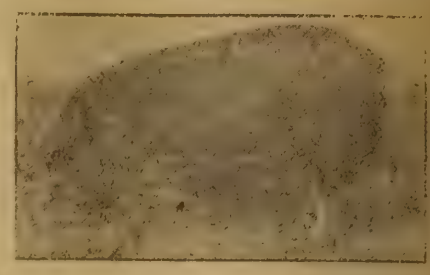
Registered Big Type **Poland-Chinas**

Bred Sows and Gilts, 25c. per lb. F. O. B. Gilroy.

W. J. HANNA, GILROY, CAL.

H. D. McCUNE'S POLAND-CHINAS

SIZE, BONE AND QUALITY



King's Massive Orange No. 303591 is my herd boar, by Purcell of Illinois, with the great sow, Peggy, having 3 litters aggregating 103 raised pigs to her credit, also other sows of large size, good bone, supreme quality, and great uniformity. A breeding herd excelled by none and equalled by few.

BUYERS AT THE KINGS COUNTY SALE, watch for Bessie Ideal and Ideal's Bessie March gilts. They have quality supreme, good bone, perfect conformation and breeding unexcelled. No bidder will make a mistake if he keeps his head nodding until he buys these gilts.

For further information and prices write:

H. D. McCUNE,

R. R. A, LEMOORE, CALIFORNIA.

BERNSTEIN'S POLAND-CHINAS

Keep your Eye on

KINGS BIG LEADER

Sired by Kings Big Bone Leader, the $700 boar, and out of Belles Beauty, the $360 sow, a real herd header.

Four big, growthy Kings Big Bone Leader gilts and a great bred sow are some of the good things I am offering in the

KINGS COUNTY

POLAND-CHINA BREEDER'S SALE

On February 22, 1919

W. BERNSTEIN, - - - - HANFORD, CAL.

BASSETT'S POLAND-CHINAS

ADVANCED TYPE—BIG AND SMOOTH WITH QUALITY.



MODEL FELLOW 552604

We are consigning to the Kings County Breeders' Sale ten young sows and two September yearling boars carrying the blood of Model Fellow, Orange King, Perfect Hustler, Golden Lad, Kings Gerstdale Jones and Kings Timm. They are from the tops of our herd and of THE VERY BEST BLOOD LINES.

Mark Bassett Hanford, Cal. A. L. Bassett

Poland-China Bred Sow Sale

45 Monster Brood Sows and Gilts With Quality

BRED TO

BUSTER DEFENDER

By Smooth Defender 2nd, out of Molly Buster 2nd. Best pig raised in 1918. Weighed 450 pounds at 11 months.

WONDER JONES

By Big Jones, the boar that made Gerstdale Jones famous, and out of Bob's Belle.

Also a few bred to W's Giant and Surprise Prospect, the sire of the $10,200 Col. Jack.

All sows insured for three months against death from any disease or accident except cholera, from which they are immune.

MARCH 6, AT 1 P M., AT MY FARM 4 MILES EAST OF ST. JOSEPH

WRITE FOR CATALOG.

G. E. SAMPSON Route 4 ST. JOSEPH, MO.

McCARTY & STARKWEATHER

BIG TYPE POLANDS

HERD BOARS—
Kansas King No. 282761
Sire King After All, by A Wonderful King.
King Jones Over No. 308397
Sire, King Jones, a litter mate of Gerstdale Jones.
BIG TYPE BLOOD ONLY.
HERD CHOLERA IMMUNE.

HERD SOWS
Sired by Kansas King
Rood's Choice, dam by Hather's Big Orphan
Big Bob Orange 3rd, dam by Long Model
Cantrall's Ideal, dam by Long Model.

IT WILL PAY YOU TO INSPECT THIS HERD BEFORE BUYING.

Riverina Farms, Paradise Road, Modesto, Cal.

ALEX D. McCARTY, 324 Ins. Exchange Bldg., San Francisco

phan; King of the Golden Gate, a line-bred big Orphan boar; and King's Big Leader by King's Big Bone Leader. Will consign some fine King's Big Bone Leader gilts to the Kings county sale.

Rossmead Farm, Fred D. Ross, Hanford. A fine lot of brood sows headed by Rossmead Big Bob, son of Caldwell's Big Bob, the 1125-pound grand champion at the National Swine Show, 1917. Demand heavy; all sold out.

Dimmick Bros., Lemoore. Herd of outstanding sows, including the 700-pound Stella Hunter. Herd boars, Model Wonder and California Smooth Jumbo. Six fine young bred sows will be offered at the Hanford sale.

C. A. Vaughn, Hanford. A select lot of brood sows, including the $300 Queen of San Joaquin. Herd boar, My Choice, a Mouw-bred boar. Will consign four bred sows to Hanford sale.

E. Miner, Lodi. Sows of the leading blood lines. Herd headed by the half-ton boar, Ursus Jr. Some choice stock for sale.

Hewitt & Hewitt, Dixon. A large herd of brood sows representing the best blood of Kings county. Herd headed by Chieftan, a son of President. Some outstanding individuals for sale.

W. H. Browning, Woodland — Forty sows of A Wonder, Chief Price, Giantess, Longfellow, Long Wonder, Ideal Meddler and Matchless Perfection breeding. Boars of Big Orange, Model Major and Superba blood lines.

Young & Clark, Lodi. Brood sows that have been consistent prize winners for years. Herd boars, Golden State King by Golden Gate King, and Long Big Bone Jr. by Big Bone Bob. A few fall boars and eight gilts by Big Bone Bob for sale.

T. N. Hale, Winton. A choice herd of brood sows headed by a son of Long Wonder out of Mary Queen. Demand heavy; all sold out.

R. W. Jickling, Elmira. Sows of Big Orphan, Big Orange, Big Knox, Big Bone, Big Surprise, Big Bob and Big Price breeding. Herd boar, Justa Bos of Big Bob Giantess and Hadley breeding. Twenty fall pigs for sale.

A. Buckand & Son, Fresno. A very select herd of brood sows headed by California Jumbo Buster by Buster Buster, and Blakesdale Jones by Gerstdale Jones. Classy young stock for sale.

J. K. Macomber, Tipton—Sows of the best Kings County blood lines. Herd boar, Chief Picture 2nd, sire of the junior and reserve grand champion at P.-P. I. E.

H. C. Shinn, Tulare—Starting on a new ranch with high-class stock. Will be heard from later.

Cloverdale Farm, Escondido, G. J. Bach, owner; G. R. Cloes, lessee—Fifty sows of Chief Price, Big Jumbo, Mouw's Smooth Jumbo and A Wonder breeding. Herd boars, Jumbo Model by Big Smooth Model, and Whitten's Big Bob by Big Bob. A few choice service boars and fall pigs for sale.

Winton Poland-China Farm, Johnnie Glusing, Winton—Sows by Hustler and Model Major. Herd boar, Long Dude by Blucher. A good service boar and a few fall pigs for sale.

Renwick Ranch, Mrs. Viola L. Renwick, Santa Barbara—Sows representing the most fashionable Eastern blood lines. Herd boars, El Profito by Big Long Jumbo, assisted by Defender's Model.

Walter C. Ficklin, Fresno—Seven sows of A Wonder, Joker and Sunnydale Chief breeding. Herd boar, Madera Model by King's Model. Three high-class bred gilts and sows for sale.

Nate Hauck, Aitón—Sows of Long Model, Blue Valley, A Wonder and Longfellow Jr. breeding. Herd boar, Cantrall's Ideal by Big Joe. A choice lot of fall boars and gilts for sale.

John M. Bernstein, Hanford—Five sows by Prince Hadley, Big Mastiff, Major Hadley Wonder and other noted sires. Herd boar, President by Woodrow out of Giantess F. Great demand for stock. Some toppy fall pigs for sale.

N. K. Horan, Lockeford — Sows sired by I B A Wonder, Model Giant and Grand Model. Herd boars, Big

SEVENTH Semi-Annual SALE

OF

Kings County Poland-China Breeders Association

SATURDAY, FEB'Y. 22nd, 1919

Kings County Fair Grounds
HANFORD, CALIF.

80 -- HEAD -- 80
BRED SOWS, GILTS and BOARS

To be sold without reserve from the best herds in Kings County.

Consignors.

M. Bassett,	J. A. Crawshaw,	W. S. Hubbard,
O. Dimmick,	C. G. DeRaad,	C. A. Vaughn,
H. D. McCune,	W. D. Trewhitt,	W. L. Haag,
J. M. Bernstein,	W. Bernstein,	F. D. Ross.

Auctioneer, COL. BEN A. RHOADES.

For catalog or information write

F. D. ROSS, Secretary, - HANFORD, CAL.

Waukeen Herd
Poland-Chinas

BIG TYPE

Have just placed at the head of my great herd of sows

KINGS BIG BONE LEADER

Grand Champion of California



The highest priced boar that ever went through a California auction sale.

For sale now:

A grandson of I. B. A. Wonder and of Major Hadley Wonder, also a few fall boar pigs.

Booking orders for spring pigs by Joe's King, a grandson of Caldwell's Big Bob.

Write or call and see them.

LES McCRACKEN, Proprietor
RIPON, CAL.

MITCHELL'S
POLAND-CHINAS

JUMBO TIMM 285693
Head of Herd.

Size, quality, prolificacy and constitution is my aim. Sows farrow in April. Booking orders for spring pigs.

P. E. MITCHELL
ATWATER, CALIFORNIA
R. R. 1, Box 180
Ranch 1½ miles N. of Station.

Winton Poland-China Ranch



Big Model Lady, 589288
Sire, Model Major Dam, Big Lady F.
Sow that topped females at the Gatewood sale. She will farrow a litter by King's Big Bone Leader, the $700 boar
Booking orders for pigs.

JOHN GLUSING
WINTON, CAL.
Ranch 2 miles north of station.

POLAND-CHINAS

The best blood of the hog belt. A few September pigs up to 140 days. Will have line-bred Big Bob pigs farrowing early in March.
R. W. JICKLING, Elmira.

Palm Ave. Stock Farm
BIG BONE TYPE
Poland-Chinas

Young Stock for Sale.
J. W. WAKEFIELD, ACAMPO, CALIF.

Big Type Poland-Chinas

Herd headed by Young Wonderful, son of I. B. A. Wonder, Reserve Champion P. P. I. E. Weanling pigs, both sexes, after March 1st.

R. P. FRISBY

R. D. 3, Napa, Cal.

Buckland Ranch Poland-Chinas

Weanlings and Fall Boars for sale, from California Jumbo Buster, and sows Ruby Big Bone, Long Lady, Miss Big Bone, Happy Maid, and Bonny Mae. For further information write or come and see them.

A. Buckland & Son

Route E, Box 126,
Fresno, California.

REAOAKS RANCH HERD Poland-Chinas

of the

BIG TYPE

"Two thousand pounds of pork per sow" is beaten by Reaoaks Ranch Herd now.

W. J. HANNA

Gilroy, - Cal.



Pioneer Herd of Poland-Chinas

Introducing Fresno Boy, a great son of the great Orange Boy, whose get has been consistent winners in the Middle West for three years past.

Fresno Boy will assist Fresno Sampson, he by Mc's Sampson, the International Great Champion in 1916. Our aim is size, prolificacy and feeding quality.

FRED GATEWOOD,

Route J Fresno, Cal.

Bone Bob, Major Hadley Wonder and Clark's Wonder. Three service boars, 15 bred gilts, 4 bred sows and 38 fall pigs for sale.

Forest View Farm, J. H. Cook, Paradise — Fourteen sows of Big Bone, A King, Caldwell's Big Bob, Smooth Price and Blue Valley Tecumseh breeding. Herd boars, Cook's Hancherdale Jones by Hancherdale Jones, and Big Ben's Wonder by Big Ben. Five service boars and 2 bred gilts for sale.

Riverina Farms, Modesto, owned by Alex. D. McCarty, San Francisco —Thirteen sows sired by Rood's Choice, Cantrall's Ideal, Big Bob Orange, Meritorious, I B A Wonder and other noted boars. Herd boars, Kansas King by King After All, and King Jones Over by King Jones. Big demand; all sold out.

Lendorris Ranch, W. L. Haag & Son, Hanford—Sows of Hadley and Giant Mammoth, President, and King's Big Bone Leader blood lines. Herd boars, Young Jumbo by Jumbo Bob, and Big Bone Len by King's Big Bone Leader. Big demand for stock; only 10 fall pigs for sale.

W. D. Trewhitt, Hanford—Twenty-four sows of Big Ben, Joe Wonder, Wonder Jumbo, My Choice and Jumbo Equal breeding. Herd boars, Iowa Wonder bred by C. H. Porter, Eagle Grove, Ia., and Model Jones bred by E. D. Frazier, Drexel, Mo. Ten bred gilts and 60 fall pigs for sale.

Reaoaks Ranch, W. J. Hanna, Gilroy—Twenty-six sows of Tecumseh Longfellow, Lady U. S. Chief, Black Giantess, Long Nelson, Up-to-Date, Chief's Beauty and Long Dude breeding. Herd boars, A Wonder 3rd, Dry Creek Wonder and H's Superba. Demand excellent. Some fine bred gilts and fall pigs for sale.

Sandyacre Farm, Hale I. Marsh, Modesto—Twenty sows of Big Bone, Blue Valley Giantess, A Wonder and Model Major breeding. Herd boars, Model Major, Big Model and Major Hadley Wonder 2nd. Demand very heavy; all sold out.

Lakeside Stock Farm, Geo. V. Beckman & Sons, Lodi—Sows of A Wonder, Chief Defender, and Golden Meddler breeding. Herd boars, Matchless Bob of U. C. by Big Bob Orange 3rd, and Lakeside Defender by Chief Defender's Choice. Sixteen bred gilts and 50 fall pigs being offered.

Palm Crest Ranch, N. C. Hansen, Coachella—Herd headed by Panama Silver and California Liberty Bob. Five bred gilts and 35 fall pigs for sale.

R. P. Frisby, Napa—Eight royally bred sows, one a daughter of the grand champion at 1917 State Fair. Herd boar, Young Wonderful by I B A Wonder. No young stock for sale.

Sunshine Ranch, B. M. Hargis, Tulare—Eight sows of high-class blood lines. Herd boar, Jumbo Ben of Big Ben breeding. All sold out except 3 fall boars.

J. H. Ware, Eldersly Farm, Live Oak—Seventeen sows of Big Timm and Chief Tecumseh breeding. Herd boars, Black Big Bone Wonder by Black Big Bone 2nd, and Eldersly Buster by Jumbo Model. Three service boars and about 60 head of young stock for sale.

D. H. Forney, Fresno—Ten sows of the leading blood lines. Herd boar, Hather's Giant Bob by Hather's Big Bob. Five bred gilts and 7 fall pigs for sale.

Dr. J. A. Crawshaw, Hanford—Fifteen sows of Longfellow Special, Ott's Big Orange, Storey's A Wonder, Jumbo's Equal and President's Equal breeding. Herd boars, Cal. Gerstdale and King's County Buster. Four service boars, 10 bred gilts and 3 fall pigs for sale.

E. R. Eichner, Selma—Seven sows of Giantess, King's Big Bone Leader and Young Jumbo breeding. Breeding sows to Bernstein's King of Golden Gate. All sold out except a few fall boars.

Les McCracken, Ripon—Thirty-one sows of Model Major, Major Hadley Wonder, I B A Wonder and Lodi Giant breeding. Herd boars, King's Big Bone Leader, grand champion at 1918 State Fair, and Joe's King by King Joe, out of a daughter of Caldwell's Big Bob. Demand very heavy and only 6 fall boars for sale.

Cloverdale Farm Big-Type Polands



Our foundation stock represents the best blood lines of the Corn Belt, including Big Bob, Big Timm, Big Jumbo, Chief Price, Mouw's Smooth Jumbo, and A Wonder breeding.

You can make big money with our big-type Poland-Chinas—the prolific, fast-growing, easy-feeding, money-making kind. We purchased the famous Whitten Ranch herd, including the great boars, Jumbo Model and Whitten's Big Bob, and have high-class stock for sale at farmers' prices. Tell us your wants.

Inquiries cheerfully answered.

CLOVERDALE FARM

Route 1 - - - Escondido, Cal.

Do you know

That our herd, headed by the great boar, El Profito, includes some of the finest animals of the breed to be found west of the Corn Belt?

REGISTERED BIG-TYPE POLAND-CHINAS

They have the size, bone, stretch, spring of ribs, heavy quarters, smoothness and mellowness found in easy-feeding, money-making hogs. Inspection or correspondence invited.

VIOLA L. RENWICK Santa Barbara, Cal.

HAUCK'S BIG POLAND-CHINAS

THE KIND THAT GET BIG QUICK.

This herd has produced some of the best breeding stock in the state, including "Model Fellow," at the head of Mr. M. Bassett's herd at Hanford.

Our present herd boar, "Cantrall's Ideal," by "Big Joe," is a litter brother to "Young Big Joe," that weighs 1050 lbs. every day, at the head of P. W. Young's herd at Prosper, Minn. Our brood sows are all large with quality enough to show, any of them will weigh 700 lbs. in condition.

Have a nice lot of fall pigs, boars, and gilts, weighing from 125 to 150 lbs. at 4 months, all sired by "Cantrall's Ideal. These pigs have good length, high backs, and lots of bone; some great prospects among them. Priced right.

NATE HAUCK, Alton, Humboldt Co., Cal.

Located on the N. W. P. R. R., 30 miles south of Eureka.

BIG TYPE POLAND-CHINAS

A few late farrowed boar pigs for sale.

E. R. EICHNER, SELMA, CAL.

Poland-Chinas

Our stock for sale is limited to a few fall boar pigs and eight head of gilts sired by the great Big Bone Bob and out of our prize-winning sows. Six head of bred gilts sired by Big Bone Bob and bred to Golden Gate King and Long Big Bone Jr., Junior Champion. Now booking orders for spring pigs from our Grand Champion Sow, Junior Champion Sow, 2nd prize sow, and 20 other grand sows from the East and of our own stock. The sows bred to as great boars as the breed affords.

We guarantee to please you or refund your money.

YOUNG & CLARK, LODI, CAL.

Eldersly Farm Big Type Poland-Chinas

Owing to very disastrous fire we are compelled to reduce our herd considerably. Write for description and prices.

J. H. WARE

Live Oak California

PRIZE WINNING

Poland-Chinas

Booking orders for spring pigs, bred gilts February and March farrow, and a few good boars of serviceable age.

HALE I. MARSH, MODESTO

BIG BONED

POLAND-CHINAS

YOUNG STOCK FOR SALE

E. S. Myers, Riverdale, Cal.

You Can Bank on the Duroc-Jersey

We, whose herds are listed here, will stake our last dollar on the dependable Duroc-Jersey. Everything regarded as of no cash value has been eliminated and there are no marked features for fanciers to haggle over. But every point which the discriminating buyer demands for a profit-making hog is found intensified in the Duroc.



The breed matures early and the sows breed young, farrow easily, and have large litters of very uniform pigs. The Duroc leads all other breeds in prolificacy, and don't forget that it's the extra pigs that make the extra profit.

From the standpoint of adaptability the Duroc has proved his value as a producer of cheap pork in California. As either a grazer in forage lots or for dry lot feeding he has made great gains for the feed consumed. His cutting yield and dressing out percentage are high, and his pork is of excellent quality.

Western Duroc-Jersey Breeders' Association: President, F. M. Johnson, Napa; secretary, J. E. Thorp, Lockeford.

DUROC-JERSEY.

Agua Mansa Ranch, F. M. Barney, Colton—Sows of Defender Model and Col. breeding. Expects to procure a high-class herd boar soon. Will have 30 spring pigs.

Rancho Rubio, Elmer Lamb, Ceres—Sows of Orion Cherry King, Pathfinder, Crimson Wonder and Golden Model breeding. Herd boar, Grand Wonder, a line-bred Golden Model boar. Demand greater than supply. No sales stock at present.

Albalen Ranch, H. S. White, Chino—Ten sows by Dreadnaught, Long Wonder, Grand Model 8th, Model Col. Cherry's Friend and Rivera Col. breeding. Herd boars, Rivera Col. by Medel Col. and Prince Orion by Cherry's Friend. A service boar, 3 sows and a few fall pigs for sale.

Liberty Ranch, L. W. Serrell, Van Nuys—Sows of Orion Cherry King strain. Expects to have a high-class herd boar soon. Only one young boar left for sale.

H. P. Slocum & Son, Willows, Uneeda Glenn Co. herd—Sows of Crimson Wonder, Golden Model, King's Col., Orion Cherry King, Ohio Chief, Invincible, Sensation, Grand Model, Illustrator and Chief Select blood lines. Herd boars, Uneeda Model Col. and Uneeda King's Col., both by King's Col.; Uneeda Wonder; Uneeda King Col. by King the Col.; Uneeda High Orion and Uneeda King of Orions. Greatest demand ever known. A few service boars, 5 bred gilts and 17 fall gilts for sale.

Ireland Ranch, Creamer & Ireland, Owensmouth; office at Los Angeles—Eleven sows of line-bred Defender and Orion Cherry King breeding. Herd boars, Cherry Volunteer 2nd, Orion King of Ireland and Ireland's Orion Defender. Demand heavy and all sold out except 12 fine fall boars.

Valley View Farms, W. T. Hollingshead & Sons, Orland—Sows of Orion Cherry King, Col. Golden Model, Crimson Wonder and Elberta breeding. Herd boars, Sammie's King's Col. and Valley View's Orion. Two service boars and 4 fall gilts for sale.

Evergreen Farm, W. P. Andrews, Modesto—Sows of Crimson Wonder and Good Enuff breeding. Herd boar, A's Crimson Monarch by Crimson Monarch 2nd. Two service boars and 6 fall pigs for sale.

Perkins & Company, Perkins—Four sows of high-class breeding. Herd boar, Ben Good Enuff. About 25 fall pigs for sale.

Mossdale Farm, J. E. Thorp, Lockeford—Ten sows of Long Wonder, Brookwater, Cherry King, Principal 4th and Defender breeding. Herd boars, Brookwater Fashion 2nd, a Cherry King boar; Brookwater Regulator, a Principal 4th boar, and Freddie You'll Do, a Johnson Defender boar. One service boar and a few fall pigs for sale.

Roc Stein Ranch, W. M. Way & Son, Modesto—Nine sows of Orion Cherry King's stock. Herd boar, Way's Crimson Monarch by Crimson Monarch 2nd. Demand heavy and all sold out except one service boar.

River Bend Farm, W. W. Everett, St. Helena—Sows of High Model, Defender, Orion's Pal, Educator, Radiant Model and Col. Gano breeding. Herd boars, River Bend's High Model by High Model, and Orion Defender of River Bend, a grandson of the $10,000 boar Defender. One service boar and 23 fall pigs for sale.

Jersey Queen Farm, L. J. Belknap, San Jose—Fifteen brood sows of Orion Cherry King breeding. Herd boar, Orion Model Jr. Four bred sows and 8 fall pigs for sale. Public sale March 18.

Rancho Del Sur, Donald H. Graham, Lancaster—Thirty-five sows of Golden Model, Crimson Wonder and Col. breeding. Herd boars, Orion's King Gano, junior and reserve grand champion at Liberty Fair, sired by Orion Cherry Prince; California Orion Cherry King by Orion Cherry King Jr., and Cherry King Del Sur by Cherry King Again. Two service boars, 6 bred sows and 6 fall boars for sale.

Golden Model Stock Farm, W. B. & E. W. Hewitt, Van Nuys—Sows of Golden Model breeding. Herd boar, Golden Cherry 5th, a Golden Model boar. All sold out except a yearling boar.

Derryfield Farm, George A. Spencer, Placerville—Ten sows of Golden Model, Model Col. Brook's Good Enuff and King's Col. breeding. Herd boars, Derryfield Col. by King's Col. 2nd, Derryfield Wonder Boy by Giant Col. and Derryfield's Col. B.

TWO FALL BOAR PIGS—ONE SPRING BOAR—FOR SALE. ALL PROMISING INDIVIDUALS.

DUROC HOL-HERD DUROC-JERSEYS

Herd headed by CAL. ORION KING, a 700-lb. Jr. Yearling prize winner with 11-inch bone. His pedigree—

Indianwold Orion Cherry King 88033 A . . . { Orion Cherry King 42475 A / Willeta J 81706 A

Orion Kingesso 7th 191698 A . . . . . { Joe Orion II 35527 A / Cherry Chief Col 3rd 147892 A

Also a son of MODEL-COLONEL in service.
My sows are ORION and DEFENDER blood lines.

HARVEY M. BERGLUND, DIXON, CAL.

SWINELAND

DUROC-JERSEYS

AND

TAMWORTHS

The Tamworth is the best bacon hog. They farrow and raise large litters. We have the largest herd in the state, headed by California A 21219.

Duroc-Jersey herd headed by Q's Model Colonel No. 223991.

Good Breeding Stock for sale at all times. We can supply your wants.

Write or call now.

W. O. Pearson, Prop.

R. F. D. No. 2 WOODLAND, CAL.

The Johnson Herd of DUROC-JERSEYS



Johnson's Defender, Jr. Champion 1917 State Fair.

WE HAVE FOR SALE

Eight Bred Gilts, daughters of Johnson's Defender. They are bred to the biggest Jr. Yearling in the State for April farrow. He is a grandson of Orion Cherry King and Joe Orion II.

Three Real Herd Boar Prospects. They are sons of Johnson's Defender and are 9, 10 and 11 months old. These boars are out of prize winning sows.

Johnson's Defender sired five of the Futurity winners at the last State Fair, including the winning gilt.

Frederick M. Johnson

Route 2, Box 87 Napa, California



DUROCS OF QUALITY

Grand Champion Boar at Liberty Fair, L. A.
T. P. Defender heads herd.
Service boars and young stock for sale out of prize-winning sows.
All stock guaranteed.
C. T. THOMPSON, Bishop, Cal.

Durocs

Herd now headed by
GOLDEN COL., No. 250437
a son of Critic B.

We believe in the best.

Write for price on choice fall boars, nearly ready for service.

Watch for our consignment to the July Bred Sow Sale.

Sturgeon Stock Ranch
Tulare = Cal.

Big-Type Duroc-Jerseys

Two service boars, farrowed Sept. and Oct., 1917, for sale. Orion Top Notcher 253999; Tagus Red Cross Defender 257709. Prices reasonable.

Also one bred gilt and several boars ready for spring service. All this stock is first-class, from prize-winning sires and dams, carrying the best blood lines in the state.

D. G. Cummins & Son
R. 1, Box 63, Visalia, Cal.
Ranch 1 m. S., 2 m. W. of Goshen.

Col. Chief 130303

Grand Champion, Fresno, 1918
HEADS OUR HERD OF

Duroc-Jerseys

He's a remarkable boar, large, smooth, and of extra good conformation. We are breeding to him picked sows resulting in a type of hog that is from the breeder's standpoint easy feeding and quick maturing, and from the packers' view a hog that will dress out a high percentage.

We are keeping our herd up to standard by Eastern importations.

The boar is more than half the herd, so buy the best. Young stock for sale.

W. J. FULGHAM & SONS,
Visalia, Cal.

by Col. B. 3rd. Two service boars and 20 fall pigs for sale.

Allen Thompson, Tulare—Twelve sows of Defender Golden Model, Critics, and Crimson Wonder breeding. Herd boars, Joe's Orion Cherry King 5th and Cherry Chief Dal 2nd. Excellent demand for stock. Five service boars and 20 bred sows and gilts for sale.

Jane Garden Farm, Fred W. Keisel, Sacramento—Sixty-five sows and gilts of Pathfinder, King's Col. and Fruit's Orion breeding. Herd boars, Trail Blazer by Pathfinder and King De Luxe by King's Col. Twenty fall gilts for sale.

H. P. Eakle, Woodland—Six sows of Good Enuff, Crimson Wonder and Pathfinder breeding. Herd boars, Oregon Defender by Defender, and Enterprise Model out of a second prize sow at the National Swine Show.

G. W. Emmons, Oakland, ranch at Danville—One hundred sows and gilts of the best blood lines of the breed. Herd boars, California Defender, Orion Cherry King and Orion's Golden Col. Thirty service boars, 100 bred gilts and 50 fall pigs for sale.

Durochol Ranch, Harvey M. Berglund, Dixon—Line-bred sows from Orion Cherry King and Joe Orion 2nd; also crossed with Johnson's Defender. Herd boars, Cal. Orion King by Indianwold's Orion Cherry King; W. B.'s Model of U. F. 3rd by Model Col., and Orion King Defender by Johnson's Defender. Two service boars and 2 boar pigs for sale.

Swineland, W. O. Pearson, Woodland—Ten sows of the leading blood lines. Herd boar, Q's Model Col. Demand heavy. Six service boars and 12 bred gilts for sale.

R. C. Sturgeon, Tulare — Nine classy sows of Critic and Defender breeding. Herd boar, Col. Golden Col. by Critic B. Ten service boars, 2 bred gilts and 10 fall boars for sale.

C. T. Thompson, Bishop—Eighteen sows of Old Defender, Buddy K 4th, Crimson Wonder and Model Queen breeding. Herd boar, Thompson's Pilot Defender, grand champion at the Los Angeles Liberty Fair; Cal. Keen 2nd by Cal. Keen and Crescent's Wonder by Crescent's Cottie. Very heavy demand. Two service boars and several fall pigs for sale.

A. A. Jenkins, Tulare—Sows of Defender-Perfection blood. Herd boars, Pawnee 2nd by Col. Wonder, and Orion's Model by Orion's Golden Col. Demand heavy and all sold out except 8 choice fall pigs.

Jack London Ranch, Eliza Shepard, Glen Ellen—Sows of Critic B., Cherry Chief, Defender and California Volunteer breeding. Herd boars, Heinie of Mossdale by Happy Heinie, Orion's Top Col. and London's Defender by Johnson's Defender. Demand excellent and nothing but young stock for sale.

Frederick M. Johnson, Napa — Eleven sows of Orion's Cherry King, Defender and King's Col. breeding. Herd boars, California Orion King of Orion Cherry King breeding, and Cherry Lady's Defender of Defender breeding. Demand the best ever. Three service boars, 8 bred gilts and 14 fall pigs for sale.

Greenwood Farm, H. C. Witherow, Live Oak — Eleven sows of Good Enuff and Crimson Wonder families, and several daughters of Model Col. Herd boars, Johnson's Defender Jr. by Johnson's Defender, Monarch Good Enuff by Crimson Monarch 2nd. Business brisk; all sold out and only offering the herd boar Monarch Good Enuff.

Elliott-Brant Rancho, Owensmouth. A select herd of sows purchased in the East by Prof. Thompson. Herd headed by Rancho's King Colonel Orion by King Orion, a grandson of Orion Cherry King; dam, King's Pride by King's Colonel. Have just sold to the Bellgrove Breeding Establishment, Virginia, for $1000 cash the junior champion Duroc boar at the 1918 State Fair.

Conejo Ranch, Newbury Park. A large herd of sows noted throughout the West for their prize winnings. Herd boar, Councilor, reserve grand champion at the California State Fair, 1917 and 1918. Foundation stock of the highest class for sale.

RANCHO DEL SUR DUROCS

Orion's King Gano, that wonderful champion pig I refused $2500.00 for, heads the herd.

Gilts bred to Orion's King Gano for April and May farrowing.



Orion's King Gano pigs are very long, deep and high up.

Weanlings $25.00.

Orion's King Gano.

Orion's King Gano, 265619, 1st Senior Pig, Junior and Reserve Grand Champion at Liberty Fair.

My 1st prize car lot 50 spring pigs at the Liberty Fair sold for 20½c., weighed 250 lbs., dressed 80%. The Duroc is the hog the packer wants.

SATISFACTION GUARANTEED ON ANY PURCHASE.

DONALD H. GRAHAM, Lancaster, Cal.

Duroc-Jersey Hogs At Ireland

We have for sale a number of young boars, farrowed in August and September, that are the best herd boar prospects we have ever seen. They are big type, stretchy, with good feet and legs, perfect backs, and every one has his tail in the right place. They will be ready for service in June. Sired by Cherry Volunteer 2d, Grand Champion at Riverside, 1918, and are full of Orion Cherry King and Defender blood. If you need a boar this spring, it will pay you to visit our ranch at Owensmouth, Cal., and reserve one of these boars. Mail inquiries cheerfully answered.

CREAMER & IRELAND, Owensmouth
City Office, 1219 Brockman Building
Los Angeles, California

Rancho Rubio Durocs

Nothing for sale at present, but see what I have for starting a new herd. The Junior Champion sow last state fair, sired by Pathfinder, and her dam a line bred Golden Model. I have a fine litter out of her by my Orion Cherry King boar. She is sixteen months old and would weigh over 600 in show condition. Two Orion Cherry King gilts, one Golden Model gilt, one granddaughter of Jo Orion 2nd, bred to a Crimson Wonder boar, and a Golden Model gilt bred to Orion's King Gano, Donald Graham's $2500 champion boar. Watch for my ad. next summer and fall.

ELMER LAMB, CERES, CAL.



UNEEDA QUEEN MODEL,
Grand Champion State Fair, 1918.

Uneeda Glenn County Herd of

Duroc-Jersey Hogs

KEY HERD OF PACIFIC COAST

Won at Sacramento:
Grand Champion Sow, Senior Champion Sow, Junior Champion Boar, seven Firsts, 23 other prizes.

PIGS BY NOTED SIRES
High Orion, the world's record-breaking sire, Great Wonder, Grand Champion Iowa; King Orion Cherry, First Prize Indiana and Ohio, and other best boars of the breed. Get some of their pigs. Few bred sows and gilts left.

H. P. SLOCUM & SON
WILLOWS, CAL.

REGISTERED DUROC-JERSEYS

More Duroc-Jersey Hogs are raised than any one other breed of hogs. This alone speaks for the red hog. We can supply you with weanling pigs, either sex, and gilts from 7 to 9 months. Our herd boar has the blood of Ohio Chief, Defender, Crimson Wonder, Jack's Friend, Joe Orion, etc.

THE GARDINER RANCH
Route 4, Box 735 Sacramento, Cal.

Imperial Herd of Duroc-Jerseys



Herd is headed by Joe's Orion Cherry King 5th No. 114553

Assisted by Cherry Chief Pal 2nd No. 135055. I have listed fifteen head of fall gilts for the next consignment sale of the Tulare County Breeders' Association, which will be held some time in June. Have a few fall boars and bred sows for sale now.

ALLEN THOMPSON
RT. "A," TULARE, CAL.



Imperial Lady Wonder 6th 650766.

Chinowth's Big Type Duroc-Jerseys

HERD BOAR

Joe's Orion Cherry King 5th 114553

Sire breeding in the Orion Cherry Kings, which have three grand championships to their credit at the National Swine Show. Young boars for sale, and booking orders for spring pigs. JOE N. CHINOWTH, Visalia, Calif.

Borge's Duroc-Jerseys Herd Boar

RUSSELL ORION BOY 265993; Sire Fruits Orion 204779; Dam, Golden Wonder 466830

This wonderful young boar is at the head of my unequalled bunch of sows and gilts due to farrow this spring. Now booking orders for this spring farrow. Herd immunized.

Jack Borge

DOS PALOS, CALIFORNIA

Forest View Ranch

REGISTERED

POLAND-CHINAS

BIG TYPE

Herd headed by Cook's Hancherdale Jones and Big Ben's Wonder. Sows rich in the blood of Big Bone, A King, Caldwell's Big Bob, Smooth Price, and Blue Valley Tecumseh. A few fall boars by a Caldwell's Big Bob Boar. Booking orders for spring pigs.

J. H. COOK, Proprietor
PARADISE (Butte Co.) CALIF.

June Acres Stock Farm, V. F. Dolcini, Davis. Select herd of prize-winning brood sows. Herd sires, Model Colonel, a grandson of King Colonel, Great Wonder's Model 3rd by Great Wonder, and University Wonder out of Bessie Wonder. Choice prize-winning stock for sale.

F. W. Gardiner, Sacramento. Herd strong in the blood of Taxpayer 13th, Burke's Good-Enuff and King's Colonel strains. High class stock of different ages for sale.

J. C. Craig, Owensmouth. Twenty-five brood sows of the leading blood lines. Herd boar, Cherry Chief Critic, out of Cherry Chief Lady, senior and grand champion sow at the 1917 State Fair. Bred sows and fall pigs for sale.

Jack Borge, Los Banos. Fourteen sows of prize winning strains, headed by Russell Orion by Fruit's Orion and out of Golden Wonder. Will move to Dos Palos shortly.

Dixon & Dixon, Lone Palm Farm, Hughson. A herd of excellent foundation blood from the Orion Model and Betty 2nd strains developed in the Elmer Lamb herd. Choice stock for sale.

Peters, Lamson & Walker, Winsor Ranch, Bonita. Forty sows sired by Great Wonder, Grand Model, Cherry Chief, Cherry's Friend, Grand Model Supreme, Grand Model 8th, Top Sensation, Grand Model Again, Great Model and Grand Golden Model. Herd boars, Grand Golden Model by Grand Model, grand champion of Iowa, and Great Model by the 955-pound Iowa grand champion Great Wonder. Five service boars, a few bred gilts and 40 fall pigs for sale.

H. E. Boudier, Napa. Sows of Crimson Wonder and Colonel breeding. Herd boar, H. F. Colonel, 2nd prize winner at 1916 State Fair. Some classy young stock for sale.

W. J. Hackett, Leonard Farm, Ceres. A select herd representing the leading eastern blood lines. Demand very heavy; entirely sold out.

Hilcrest Farm, H. E. Spires, Manager, Caruthers. Brood sows of the most fashionable strains. Herd boar, Hilcrest Wonder. Some choice fall pigs for sale.

W. J. Fulgham & Sons, Visalia. A select herd of sows imported from the East. Herd boar, Colonel Chief, grand champion of 1918 Fresno Fair. Toppy young stock for sale.

Joe N. Chinowth, Visalia—Sows of the leading blood lines. Herd boar, Joe's Orion Cherry King 5th, strong in Orion Cherry King breeding. Young boars for sale. Booking orders for spring pigs.

D. G. Cummins & Son, Visalia—Sows and boars carrying the best blood lines in the State. Two service boars, one bred gilt and choice young stock for sale. Several boars ready for spring service.

KINGS COUNTY POLAND-CHINAS GIVE SATISFACTION.

"I bought her sister at the sale a year ago and she did so well that I just had to have this one," said a buyer at the last Hanford sale as one of the best sows was struck off to him.

That's the secret of the success of the Kings county breeders. They put up for sale only such animals as they would want in their own herds; the buyers are more than satisfied, and they not only come back and buy again, but they tell all of their neighbors and friends, who also come and buy.

The seventh semi-annual sale will be held at Hanford Saturday, February 22, and Mr. McConnell, our field representative, who has inspected the consignments of the different breeders, says that the quality is superb. Eighty head, mostly bred sows and gilts, with a few boars, will be offered—good from first to last. They represent the best blood lines of the breed, and they are outstanding individuals—big, stretchy, heavy-boned, mellow hogs of the quick-growing, easy-feeding kind.

You can't celebrate Washington's birthday in a more profitable way than by attending this sale. But take your check-book along, for to see the stock is to buy.

DUROC-JERSEYS AT AUCTION

ENTIRE HERD—ALL REGISTERED.

Cream of the breed. Large type, mammoth sows, senior yearlings, 7 feet long, over 36 inches tall. Mammoth Boar, Orion Cherry King, 2 years old, weight 900 lbs. The finest lot of gilts you want to look at. Blue Ribbons and Purple. No better ever offered on the Coast. Young Boars ready for service, big bone, typey fellows. Orion Cherry King and Colonel strains. Come and get them at your own price. Terms cash, or its equivalent paper.

MARCH 18, 1:00 P. M. SHARP.

GARDEN CITY SANITARIUM
SAN JOSE

One mile from depot on street car line.

HILCREST FARMS

REGISTERED HOLSTEIN-FRIESIAN CATTLE
and
DUROC-JERSEY SWINE.
Young stock for sale.
Address, H. E. SPIRES, Manager, Route 1, Box 130, Caruthers, Cal.

DUROC BOARS

—By—

GREAT WONDER,

Out of Grand Model dam, and by

GREAT MODEL,

Out of some of our greatest producing big type dams.

M. C. Allen, R. M. Allen, Winsor Ranch, Bonita, Cal. Peters, Lamson & Walker

Valley View Farms Durocs

Two March boars, one a grandson of King's Col. Dam: Junior Champion sow of Glenn county, 1917. One son of Bates Orion King, dam importer from Iowa last spring. They are real ones. Price, $60 each. Get your order in early or you may get left. We are also booking orders for March pigs for spring delivery.
W. T. HOLLINGSHEAD & SONS, Orland, Cal.

LEONARD FARM
Pure Bred Duroc Swine
and
Registered Jersey Cattle
W. J. HACKETT, Ceres, Calif.

SHIPPING DRESSED HOGS.

One of our subscribers asks if dressed hogs may be shipped to market. He mentions that he cannot profitably ship less than a carlot on foot, and that if he has a smaller number and sells them alive he is left at the mercy of the local buyer. He thinks that he could eliminate the buyer's profit by dressing the hogs and shipping them to market himself.

The answer is that it is not permissible to ship dressed hogs to any slaughtering house operating under Government inspection, because one of the rules at such plants is that a Government representative must be on hand at the time the animals are killed to inspect them for tuberculosis and other diseases.

Some concerns are under Government inspection, while others are not. Also, some of the larger packing houses which conduct their main plants under Government inspection have branches where there is no inspection. To illustrate: The Western Meat Company's main plant in San Francisco is under Government inspection, and they could not receive dressed hogs at this plant. But they have branches in other cities that are not inspected, and dressed animals of any kind could be sent to them, provided the requirements of the local health boards were met.

It would be well to write to a slaughtering house in advance and find out what the local requirements are.

DAIRY-MEN AND BREEDERS

We are breeding the Large Type Easy Feeding Durocs. Our boars in service are Trailblazer, by Pathfinder; dam, Proud Lucille II.

King's De Luxe, by King's Col; dam, Golden Peach.

Our brood sows are by Pathfinder, Fruit's Orion, Uneeda Crimson Wonder, and Robert I Am Good Enuff 2nd.

No aged stuff to sell, but we are taking orders for spring pigs of either sex.

Jane Garden Farm
SACRAMENTO CALIF
FRED W KIESEL PROP'R. DR E J WELDON SEC'T. C W YOUNG SUP'T.

Greenwood Durocs

are bred for plenty of size and bone, with lots of quality and deep flesh, but most important they are bred to

Reproduce Their Kind.

Blood of the Best Durocs in the West

Johnson's Defender, Jr.

A son of two California champions and himself a State Fair winner, heads herd. Special—A Yearling Son of the 1917 California Grand Champion boar, and out of a daughter of the 1916 champion. A real herd header for some one, at $125.00.

H. C. Witherow, Live Oak, Cal.

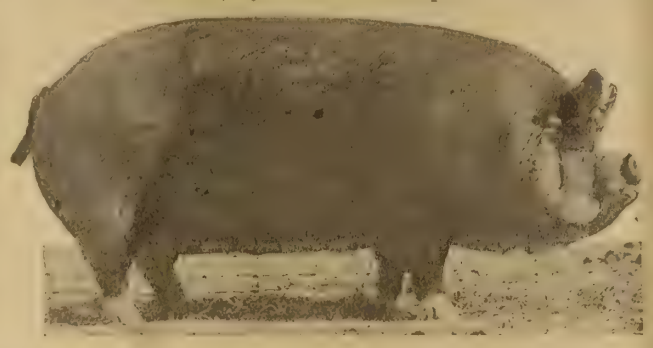
McDOWELL & KENDALL
LEMOORE, CALIFORNIA.
Breeders of purebred
Duroc-Jersey Swine
Booking orders for Spring Pigs.

FOR SALE

Registered Duroc-Jerseys.
Young Gilts, 4 months old.
D. FRICOT, Angels Camp.

Berkshires Bred for Business

The impression that the Berkshire is a fancy hog or a rich man's hog is not founded upon fact, for the results of experiments at agricultural colleges and his winnings in the barrow classes at the International prove that he is an economical producer of pork and is well adapted to practical farm conditions found in California.



The lively, hustling Berkshire pigs develop rapidly into hardy, strong limbed shoats. These shoats are splendid grazers, converting forage crops into good, solid flesh at small cost.

The carcass of a Berkshire is better marbled with fat and lean than that of any other breed, hence the superiority of Berkshire hams and bacon. As beef and mutton become scarcer the demand for choice hams and bacon grows more insistent, and we breeders claim that Berkshires are the logical meat producers of the future.

Western Berkshire Congress: President, W. M. Carruthers; secretary, Homer Hewins Jr., Calistoga.

BERKSHIRES.

Butte City Ranch, Butte City—Sows of Grand Leader 2nd, Fashion, Longfellow, Lord Premier, Masterpiece, Panama Lee and Princess blood lines. Herd boars, Iowana Champion Peer 2nd by Rival's Champion, Butte City Amos by Grand Leader 2nd, Superior Lustre by Superior, and Butte City Onward, a son of Onward by Epochal. Will hold first annual farm sale March 1, including 30 Berkshires with other livestock.

Frank B. Anderson, Sacramento—Sows of Beauty's Prince 9th, Symboleer 5th and Masterpiece breeding. Herd boars, Ideal Royal Lee by Matchless Lee's Rival 3rd; Columbia's Leader by Grand Leader 2nd; Patrick Ames by Ames Rival. Four service boars, 10 bred gilts and sows and 25 fall pigs for sale.

Anchorage Farm, Orland — One hundred and ten sows and gilts of Star Leader, Rival's Champion Best, Panama Lee and other noted blood lines. Herd boars, Star Leader, junior and reserve champion of the world, and Anchorage Leader 2nd, a splendid son of Star Leader. Demand excellent, particularly from farmers. Ten service boars, 52 bred gilts and a large number of fall pigs for sale. Have just purchased Maplewoode Royal Prince 3rd, junior champion and first senior boar pig at 1918 State Fair.

Geo. M. York, Modesto—Sows of Ring Leader 20th, Lord Premier's Successor, Grand Leader 2nd, Artful Belle and Premier Leader breeding. Herd boar, Ring Leader 20th by Grand Leader 2nd. Two service boars, 12 open gilts and 20 fall pigs being offered.

R. B. Hume, Dos Palos—Starting with three very fine sows. Herd boar, Ring Leader's Duke 3rd by Ring Leader 20th.

Fair Oaks Ranch, Wm. T. Chapple, Willits—Sows of Rival's Champion, Berryton Brummell C. and Lord Premier breeding. Herd boars, Anchorage Leader, a grandson of Grand Leader 2nd and Royal Rival 6th by Rival's Matchless Baron. Nothing for sale until the spring litters.

Brighton Farm, H. L. & E. H. Murphy, Perkins—Seven sows of Rival's Champion, Masterpiece, Lord Premier and Baron Premier 50th breeding. Herd boars, Murphy's Rival by Ames Rival 100th and Wilsonia King Laurel, son of Laurel Champion. Three bred gilts for sale.

River Garden Farm, E. H. Whiting, Ukiah—Six sows of Duke's Value 15th, Rival's Champion and Rival's Majestic. Herd boar, Ukiah Lee by Winona Lee Champion. Four service boars and 12 fall pigs for sale.

Imperial Stock Farm, R. J. Merrill & Son, Morgan Hill—Sows of Rival's Champion Best blood lines. Herd boar, Winona Champion 13th by Laurel Champion. Demand excellent. Two service boars and one October boar pig for sale.

Castleview Ranch, J. Francis O'Connor, Santa Rosa — Eighteen sows of Grand Leader 2nd and Rival's Champion Best breeding. Herd boars, Mayfield Rookwood 2nd by Bandmaster, and Prince Rival 9th by Ames Rival 102nd. Demand remarkably good. All sold out except 20 fall pigs.

H. C. Muddox & Son, Sacramento —Twenty sows of Laurel Champion, Mayfield Brookwood and Grand Leader breeding. Herd boars, Ames Rival 102nd, junior champion at the P. P. I. E., and Rincon Leader. Nineteen fall boars and gilts for sale.

Twin Oaks Ranch, C. H. Holder, Linne — Twenty sows of Superior, Grand Leader 2nd, Baron Duke 201st, Star Leader and Laurel Champion breeding. Herd boar, Sensational Successor 3rd, a line-bred Premier's Successor boar. Four service boars, 12 bred gilts and 15 fall pigs for sale.

Maplewoode Ranch, E. M. Holje, owner; Homer Hewins, Jr., manager, Calistoga — Twenty sows of Romford Grand Leader and Rival's Champion breeding. Herd boars, Winona Royal Champion 5th by Laurel Champion, Maplewoode Leader by Grand Leader 2nd, and Remoh Epochal by Epochal. Very heavy demand. All sold out.

Carruthers Farms, W. M. Carruthers, Live Oak—Forty sows of Rival's Champion Best and Baron Matchless 50th breeding. Herd boar, Ames Rival 100th, assisted by three young boars, one a son of Superbus and another a son of Epochal. Have just added three grand sows sired by Lord of England. About 200 head of young stock for sale.

A. B. Humphrey, Grapewild Farm, Escalon—About 40 sows and gilts of the leading prize winning strains. Herd boars, Big Leader and Grapewild Farm Leader by Grand Leader 2nd; Majestic King, grand champion at State Fair, 1916 Grapewild Emblem, grand champion at Liberty Fair. Three service boars, 10 fall boars and 40 fall gilts for sale.

A GUARANTEE SALE OF BERKSHIRES.

Berkshires will predominate at the University of California Farm at Davis on Wednesday and Thursday, February 19 and 20, when the Western Berkshire Congress holds its fourth annual meeting and sale, attracting enthusiasts of this breed from all sections of the Pacific Coast. Homer Hewins, Jr., secretary of the Congress, gives an outline of the two-day session in his letter to the breeders, which is in part as follows:

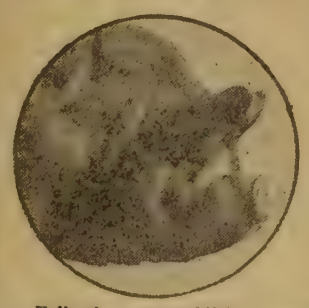
"The Western Berkshire Congress will hold its fourth annual meeting and guarantee sale at University Farm, Davis, Cal., February 19 and 20, 1919. This promises to be the biggest event of the kind ever held in the West and you are invited to attend.

"Wednesday there will be a students' judging contest, in which all the sale animals will be judged by the students for prizes. Fat barrows in pens and as individuals will also be judged.

"Wednesday night there will be a banquet and good fellowship meeting.

"Thursday is sale day and establishes a new record for hog sales,

Berkshires for Profit



Annual Congress Guarantee Sale

University Farm, Davis, Cal., Thursday, February 20th

50 Selected Bred SOWS, GILTS and BOARS 50

THE OFFERING:

Following an established precedent, the Western Berkshire Congress offers for sale 50 head of carefully selected bred sows, gilts, and boars. Every animal selected for this sale represents, to high degree, the most acceptable type of modern Berkshire—size, quality, vitality, bone, and prolificacy being insisted upon. Every sow listed is guaranteed to be a breeder or purchase price refunded.

Berkshires are the profitable hog. They are money makers. There never was a better time to enter the hog business than NOW. The scrub must go, and this sale offers an opportunity to replace the low producing scrub with a profitable purebred at a reasonable price—your own price.

Remember, every bred sow sold is a guaranteed breeder.

The few boars to be offered are of the highest class and fit to head good herds or go into any kind of a herd and sire the kind of pigs that will be profitable. The blood lines are of the best, the type is right, the quality is first class and the price—your own.

BREED BERKSHIRES

The Standard Hog, the Hog of Quality, Style and Vitality

THE CONGRESS MEETING:

The Annual Meeting of the Western Berkshire Congress will be held the day preceding the sale. Matters of vital interest to the hog industry will be discussed by men competent to talk on every angle of the business.

A Fat Barrow Contest will demonstrate to all the reasons why the Berkshire is the Universal Breed.

A Carcass Contest will be conducted as a demonstration of the superior killing qualities of the Berkshire.

A Students' Judging Contest will bring out emphasis on the finer points of this Great Breed.

The Berkshire Dinner will be held the evening before the sale.

A 2-DAY BERKSHIRE EXPOSITION

Meeting: Wednesday, February 19th. Sale: Thursday, February 20th, 1 o'clock. Catalogs and other information may be secured by filing applications with the Secretary.

Western Berkshire Congress

W. M. CARRUTHERS, President, Live Oak, Cal.
HOMER HEWINS, Jr., Secretary, Calistoga, Cal.
COL. ORD L. LEACHMAN, Auctioneer

Carruthers Farms

LIVE OAK CALIFORNIA

Have just bought three great

BERKSHIRE SOWS

Sired by **Lord of England**, the great English boar owned by Mr. Gossard. These sows will be bred to **Ames Rival 100**, Carruthers Farms head herd boar. We expect something remarkable from this cross.

Young sow and boar pigs for sale at reasonable prices.

Brighton Farm Herds

Will sell two brood sows in the Davis sale both bred to Murphy's Rival, a choice son of Ames Rival 100th

No. 1 Forest Grove Duchess 11th 238187. Sire Ames Rival 98th. Dam Rookwood Duchess 11th.

No. 2 Rookwood Lady 13th 217306.

We also have a choice lot of registered Shorthorn bulls and Heifers We would be pleased to have you come and see what we have to offer.

H. L. & E. H. MURPHY

Six miles East of Sacramento **PERKINS, CAL.**

Imperial Stock Farm Berkshires

We now offer two extra choice typey boars, of April farrow. They have long bodies, and nicely arched backs, with very heavy bone, like their sire, Winona Champion 13th, he having a 10½-in. bone. Write for further description and price on these. Reservations now being made for spring farrowings. All stock absolutely guaranteed. Money back if not satisfied.

R. J. MERRILL & SON, MORGAN HILL, CAL.

cop. 1 R. R.

SECTION TWO—PAGES 233 TO 256 AGRICULTURAL AND HORTICULTURAL

Vol. XCVII—No. 7 Forty-ninth Year

THE PACIFIC RURAL PRESS

SAN FRANCISCO FEBRUARY 15, 1919 LOS ANGELES

Great Automobile Show Worth While

Written for Pacific Rural Press by R. E. Hodges

A BLAZE OF LIGHTS and life characterized the opening of the Third Annual Pacific Automobile Show in San Francisco in the evening of February 6, 1919. Great crowds took leisurely and more or less thorough inspection of some 200 spick-and-span automobiles, over half a hundred motor trucks of thirty-two different makes, among which were distributed half a dozen of the newer makes of tractors and a good many trailers of several makes and sizes, and about half a hundred exhibits of automobile "go-with-ems" upstairs. The beauty of the scene is not over-exploited in the newspapers, but that was beyond our sober business of seeing what was there, and what changes were apparent.

Trucks Command Increased Attention.

We remember two years ago that practically no space was provided for motor trucks, and the few exhibited were set on the street near the automobile show entrance. This year the large basement space set aside for trucks, auto-truck attachments, trailers, and the few tractors was packed with latest models beyond the limit of convenience for inspection. There were trucks of all sizes but not of all types of drives. There was an absolute absence of the chain drive, whose passing is a benefit to the industry in more ways than one. Of the thirty-two makes, thirteen have the internal gear drives, and keen was the competition among exhibitors to convince interested visitors as to the merits of these and the worm gears, which are also very popular. Each has advantages. May the scrap continue merrily until the best one wins! Two makes of trucks which drive through all four wheels proved of greatest interest at the show.



A few of the automobiles just before the Third Pacific Automobile Show opened February 6.

Popularity of inexpensive devices for converting sound-hearted automobiles of disreputable appearance into motor trucks was evidenced by several designs. These fill a great need, especially with the man who is not sure he can afford a truck but is willing to put a little money into it. These truck attachments are no harm to the regular truck trade, for they are of greatest service in convincing people that real trucks are necessary to their business.

Various Improved Trailers.

Another feature of this show is the number and variety of truck and automobile trailers. While it is notorious that truck users load far beyond capacity and generally get away with it, the trailer has an important function in increasing the load that one man may take to town at one trip. When the load is of light bulky material or of livestock, the extra floor space afforded by trailers makes a great convenience. When only a cow or a small load of produce or a bulky piece of machinery is to be taken to town, it is much more convenient to load it into a trailer than into the automobile, and good speed can be made on the road. Indeed, such speed is often made that it endangers other vehicles on the highway. With rough roads, many trailers swing back and forth across the track and it is a wonder more of them are not tipped over. Probably with this in mind, several of the four-wheel trailers are equipped with automobile-type steering apparatus on the front wheels, which are turned automatically. An extension of the same principle is seen on some of the trailers whose rear wheels also are automatically steered around corners by crossed-reaches or other devices which prevent their cutting corners.

Greater Grip for Tractors.

A tractor driving through all four wheels has been much talked about but seldom exhibited in this State. It is at the Automobile Show big as life and ready to prove that it has double the traction of any other wheel tractor with wheels of the same diameter and width. Another tractor increases its grip on the earth by successively placing shoes flat on the ground as the wheel turns around. Another has two circles of such shoes on each wheel and can lay three shoes flat on the ground at once on each wheel. Still another has long legs around the rim of each wheel in two circles, the legs setting V shaped to each other to let clods drop off easily. One runs on a single track balanced by two wheels in front.

Accessories New and Scarce, but Good.

Accessory displays are not so extensive as last year and there is a disappointing absence of standard supplies. There are many new more or less untried devices and the exhibit is made of added delight by the artistic array of numerous auto-camping outfits designed to roll up in a little bundle and to roll out into commodious furnished apartments.

(Concluded on page 248)

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W. H. SCHRADER - - Advertising Manager

ONE DOLLAR PER YEAR IN ADVANCE

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SUSAN SWAYSGOOD - - - - Poultry

EDITORIALS

THE BEST OF THE SEASON.

THE wettest storm of the season, counting both its depth and breadth, has come since our last issue—piling up snow in the mountains for next summer's irrigation, sending a good run-off into public-service reservoirs and infiltrating water into the subsoil for every plant grower's use in his cropping for 1919. As we write on Tuesday the storm is still on and the observers, who deal with the earthly aspects of meteorology, cannot yet see the end of it. It is not unusual for February to develop a lot of water-power and it is a legislative year, which is another condition favoring cloud-activity. It would not be surprising if February should move a resolution for the transfer of the State Capital to Berkeley or some drier place than Sacramento, for it used to be the case, whenever the river rose to a certain mark on the piles of the Sacramento water-front, that the Legislature started to build an ark! That fact is, however, of no importance now, for henceforth Sacramento will be so dry that even Noah himself will find no chance for a post-diluvial escapade. It is, however, important to remember that February is often quite wet enough to insure a good year's cropping and has done enough already to wash the drouth-dust out of the eyes of the most timorous planter. It is, therefore, timely to push sowing and planting as fast as the soil allows. The nurseries should at once be cleared out of the moderate supply of trees which they provided for this year's planting, for not only shall we need all the fruit which new plantings will insure, but we shall need planted-land to meet the demand of the throngs of investors who will soon be coming to buy homes and will be ready to pay well for the time they can save by not waiting to break up raw land. And we believe the same will be true of good land well put in with alfalfa, this and next month. A lot of alfalfa has been torn up to monkey with beans, roots and other "war crops," and that is not so bad from the point of view of rotation, though it has too often proven rotten from the point of view of getting one's money back. Much land should now go back to alfalfa—especially as there promises to be plenty of water in the streams and in the wells next summer. Now that the war is over, war-farming should also be forgotten and rational investment in permanent improvement development should be resumed. That is the line of capital-moving which a good February should promote.

LEGISLATIVE MATTERS.

A CONCRETE illustration of the advantage which we prophesied in our forecast of Mr. Hodges' work at Sacramento is to be found in the discussion of the lowly but important subject of dirt in hay, which he has stirred up in our columns. Many subscribers have expressed themselves very pointedly on both the undesirability and the unavoidability of getting a part of the ranch into the hay bale. Readers generally are now better informed than ever before through the testimony on the subject which we have published in the issue of February 1 and this one. Such an understanding ought to help greatly toward a rational adjustment of the matter when the Legislature gets its other leg out of bed, as it will soon be doing. The same contribution toward better laws can be realized in other directions if readers will pay attention to the paragraphs on proposed laws which our staff writers are setting forth in current issues. Why not go to all these subjects as the hay buyers and hay makers went to their special problem? If there is any one thing more than another which makes us editorially tired it is to have a lot of readers who persist in acting just as they do in church—letting us preach to them sitting in the pews with an angelic expression of paradisiacal anticipation and then going out on the steps and cussing the sermon to the limits of the rules of the Marquis of Queensbury! It is, of course, necessary to do that in church because the preacher cannot come through in an atmosphere of flying hymn books, but it is not necessary to receive our preaching that way, for if we cannot work a machine gun from our pulpit we will give up the job. Therefore, we say, if there is anything you favor or disfavor in these proposed laws, stand up and shoot. Of course, we do not agree to print everything we receive: no editor can do that, but we will go as far as we can without sacrificing our judgment and self-respect and the protection of our pages against over-inflation by hot air or against being swamped with cold water. So if the reader desires reasonable and fair enactments by the Legislature it is his duty to tell us what, in his conviction and experience, is reasonable and fair.

BARLEY STILL BANNED.

THE satisfaction expressed in our last issue over the telegraphed report from the East that Market Commissioner Weinstock and Mr. Horst had not only secured the lifting of the embargo from barley exports, but had found a Danish customer for our surplus, was a little premature. It seems that the barley is still tangled up in red tape because the Government manager of railways will not allow rail shipment of barley to New Orleans and because there are no ships to float it through the canal. We probably do not know all there is to be known and perhaps the war-time regulation against overland barley shipment may be soon cancelled, but it surely does not make barley-holders who have long needed to sell and barley-buyers who wish to ship, any too patient with Government railroading to find themselves discriminated against in this way. It is some time since President Wilson declared that the winning of the war would be followed by taking the harness off the industries of the country and probably the various administrators intend to do it, but it is a harness of so many buckles and toggles that it seems hard to get the poor beasts loose. In the case of every industrial unharnessing there seems to be a neck-strap or two which will not let go. There is quite a chance that some special products might be drowned in despondency before anyone can be found with a jack-knife to cut a strap. California producers have surely had their share of trouble and they have tried hard to suffer in silence because patriotic reasons for it were alleged, but these have not always been very clearly demonstrated. Many bean growers, for example, will find their discontent very pointedly set forth by F. S. Wrinch, a San Joaquin Valley bean grower, who writes like a philosopher on another page of this issue—in a strain of leguminous lugubriosity, as it were.

DO WE NEED MORE REGULATION?

THERE seems to be a growing disposition among our Eastern editorial associates to increase the mead of credit to Mr. Hoover for his attitude of fairness and appreciation for producers in his administration of food affairs, and this is a tribute to his service in which we heartily concur. Californians generally will attribute the same motives and actions to Ralph Merritt and will earnestly praise the public services of both these Californians, who have worked so well together toward ends of inestimable value. It should of course be remembered that they had little or nothing to do with purchases for the army and navy of this country—transactions which have had more influence in fixing prices than perhaps any other. Government administration is a very complex machine and a man in the Government service may have many "wicked partners" without knowing it, and they may make a lot of trouble by being unreasonable and arbitrary—without being worse than that perhaps. Knowing this, we are not at all attracted to approval of the latest phase of price-fixing which comes from Washington in these words:

Stabilization of prices through Government intervention in the basic commodity markets as a means of removing threatened industrial and business stagnation with its attendant unemployment has been recommended to President Wilson by a conference of Cabinet officers and industrial leaders who have studied the situation. The plan proposed is the appointment of a representative committee to investigate production costs and recommend prices at which the Government, through various departments, would do its purchasing. Producers, consumers and labor representatives would be asked to co-operate in determining the prices.

We are not denouncing this particular scheme for the foregoing, which is all we know about it, and does not constitute sufficient basis for definite impeachment, but it has the old familiar aspect of nearly all the transactions at Washington which have gone wrong for farmers. The farmer has a two-thirds majority against him in the simple statement of the case and he has stood just there, or worse, all through the era of price-fixing. And it has usually been worse, for in most cases producers as such have not been included at all. Bureaucrats, consumers and labor representatives have generally done the business for the farmer, and, when that seemed too crowded, bureaucrats and labor representatives have fixed up things for both producers and consumers. Why not give the farmer a fair chance? Why not drive him into the arena with an equal number of representatives of other interests? Labor representatives are at least nine-tenths in the consumers' interest and should be tolled off that way in seeking equality of representation. But it has generally appeared that equality of representation is the very last thing sought for!

QUERIES AND REPLIES

By the Editor.

Inquirer Must Give Full Name and Address.

Walnut on Pecan?

To the Editor: Is it feasible to graft English walnuts upon pecans? We have five well-grown pecan trees which bore a fair crop of nuts this year, but the nuts do not mature here. We have concluded that this climate is too cold for them, but dislike to lose the growth of the trees if it is possible to graft them over successfully.—E. G. H., Fulton.

Some claim that the tree is held back by insufficient summer heat, but our notion is that your autumn climate is probably too warm, not too cold, for the pecan. In the central coast valleys the trees have behaved as you described for the last forty years or more. Fall frosts being very light or absent, the trees proceed with their vegetation. They seem to need a sharp fall frost to remind them of the desirability of maturing processes. In the whole bay district the tree seems to be worthless except as an ornamental. We have no record of the success of the walnut on the pecan. Perhaps some reader has tried it.

Treating Root-Knots.

To the Editor: Referring to almond trees affected with "root-knot" or "crown-gall," is there any stated or proper time to apply Bordeaux paste to the above mentioned diseases? The trees are four to six years old.—A. F., Arbuckle.

It is probably safest for the tree and most convenient to the grower to remove the knots and apply the paste while the tree is dormant—that is now. There is, however, nothing known to us which would prevent us from rescuing a young tree from a root knot whenever we discovered its presence.

Growing Peanuts.

To the Editor: I wish to plant ten acres of peanuts. In what month would you advise to plant? What distance should I make the hills apart? Should I hull the peanuts or not? How many pounds does it take to plant an acre?—F. P., Red Bluff.

Plant after frost danger is over and the ground becomes warm—the proper time to plant corn. Plant single nuts or kernels 18 inches apart in rows

The Tribulations of a Malaga Grower

Consolation Through Pacific Rural Press by Prof. F. T. Bioletti

PURPLE MILDEW.

To the Editor: For several years I have been bothered in my Malaga vineyard with what we call "purple mildew." Each year has shown an increase. In 1918 it was quite bad. It is on the fruit alone. The grape berry has sometimes little specks all over it; sometimes they are larger and often they completely cover the berry. Sometimes one bunch on a vine is affected and the rest good; sometimes all on one side of the vine are bad, the other side good. It is not confined to one part of the vineyard, but is scattered all over it. Sometimes it resembles in part what are known here as "sun-kissed" Malagas. Sulphur does it no good. We have not found anything that will check or in any way control it. If 1919 shows proportionate increase as other years, it will do a great deal of damage. So far as my observation goes, the vine and foliage look just as good as the unaffected vine. I would like to find a remedy.

DISTANCES FOR MALAGAS.

I would also like to ask a few more questions. My Malagas are eleven years old and were planted 8x8 square, or 64 square feet to each vine. I have been thinking lately of taking out every third row of vines—which would be 8 feet in the rows; one space the other way 8 feet, the next 16 feet, and so on, alternating. My thought is to take out the weaker vines first, a few each year. This will, I think, make the other vines stronger and better, producing more and a better quality of fruit. Making this change would, when completed, be to the acre equivalent to 8x12 planting or 96 square feet to the vine. Of course, it would not be as nice as an 8x12 planting. It is the best thing I know to do. What do you think of it? Or have you a suggestion?

EMPERORS WITH CUTTINGS.

Rooted Emperors are hard to get and I know where I can get plenty of good cuttings from a heavy producing vineyard, the quality and color fine. So I am thinking of planting the cuttings right where I want the vine to grow, 8x12, in the vineyard and keep them well watered. Will they not make as good vines? I see no reason why they should not, though some tell me they will not.

Would you advise planting base cuttings taken from the end of the vine where it has been severed from the parent stock, or lateral cuttings from branches growing out from the main vine or branch? How early could they be planted out in the vineyard? I have a good pumping plant to give them plenty of water.

How about intercropping the Emperor vineyard just planted? What would be most profitable?

Reedley. Vine Grower.

COMMENTS BY PROF. BIOLETTI.

Complying with the request of the Pacific Rural Press to answer your questions, I would submit these notes:

The disease you describe as "purple mildew" is one of the forms of what is usually called "Spanish" or "black mildew." The cause in all cases is not thoroughly understood, but there is strong evidence that it is not a fungous or parasitic disease. In some cases, at least, it appears to be due to an excess of alkali in some layer of the soil. This can be removed by underdrainage and washing out of the alkali by heavy surface irrigation. The Viticultural Commission at Sacramento has been making an investigation of the black mildew for a year or two and might be able to give you some information if you will address Mr. E. M. Sheehan, secretary of the Viticultural Commission, Sacramento.

WIDER SPACING IN OLD VINEYARD.

Your supposition that your Malaga vines are too close together is probably correct. The Malaga does well only on good fertile soil and in such situations it grows very vigorously and requires abundant room. Eight by eight is much too close. Your method of taking out every third row, however, does not strike me as best, as it will make cultivation difficult. One of the reasons that 8x8 is too narrow is the difficulty of passing between the vines without injuring them. If you modify your vineyard in the way that you suggest, you still have to pass through eight-foot spaces whichever way you cultivate. The method I would adopt would be, first, if I desired to maintain the ordinary vase form of pruning and cross cultivation, take out every other diagonal row. This would leave the vines a little over 11x11 feet, giving an area of 128 square feet to each vine, and just half the number of vines to the acre. It might be well under some conditions, especially if the vines are still young, to remove every other row in such a way as to leave the vines standing in the avenue system; that is to say, eight feet apart in rows sixteen feet apart. This would give the same number of vines to the acre and will allow cultivation only in one direction. In such a case the vines should be trellised. This method I should advise only in cases of very fertile soil and if the vines make an exceptionally vigorous growth.

EMPERORS FOR CUTTINGS.

If your soil is in good quality and in good condition, there is no reason why you could not start a vineyard very well by using Emperor cuttings. If you choose the cuttings with great care, plant them properly, there is no reason why they should not be successful. Irrigate them if necessary. In choosing the cuttings, take them from vines which have made a moderate growth and which are well ripened. As a rule, it is best to take them from a vineyard which has not borne too heavy a crop. After a heavy crop, vines very often fail to ripen their wood well and the cuttings are liable to fail or to make weak vines. All you need to be sure of is that they are really Emperor vines you get the cuttings from.

Whether you use base cuttings or lateral cuttings does not matter, providing they are of moderate thickness, well ripened, and with joints of medium length. The cuttings should be firm, heavy and with light-colored pith. If the growth is excessively long and vigorous, the laterals often make the best cuttings. If of moderate growth, one or two cuttings can be taken from near the base of the canes.

The earlier the cuttings are planted the better, after the first of February.

It is an excellent idea to grow an intermediate crop in a young vineyard for the first year, providing there is sufficient water available for both the crop and the vines. The usual crops are beans and corn.

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three feet apart and cover two or three inches. It is not absolutely necessary to hull the nuts, but you generally get a better stand by removing the shell and not removing the inner skin. It takes from 30 to 50 pounds of nuts to plant an acre. But do not plant ten acres until you learn more about growing them. Half an acre is plenty to get wise on. Do not plant any unless you have a soft, fine loamy soil which will keep reasonably moist through the summer. It takes a long season to make the crop and irregular moisture is destructive to the thrift of the plants.

Peach Blight.

To the Editor: How may I unmistakably detect peach blight at this time of the year and what treatment would you advise for it at this time?—C. N. P., Ontario.

Peach blight usually reveals itself at this time of the year by well defined circular pustules on the tender bark of the wood which grew last summer, and from which gum exudes. The proper treatment is to spray well with a fungicide in November or early December before such activity of the fungus on the bark takes place. Our mild, moist winter air favors such invasion and it results, when such spots are abundant enough, in the killing of the twigs after the leaves have tried in vain to unfold upon them. If you have clean new growth now you probably have no blight. If you have it in delayed activity it will be killed by the lime-sulphur or Bordeaux mixture which you will soon be using for curl leaf.

Peanuts Half Pops.

To the Editor: Why are so many of my peanuts not filled? I planted our back lot, which is rather sandy, to peanuts and they grew and blossomed profusely, but at harvesting I found over half the nuts were entirely empty, although the shells were well formed and of a good size. Some hills contained as many as 134 nuts. I covered the blossoms with earth and wonder if I covered them before they were pollenized.—C. S., Atwater.

Perhaps so, but we are not sure that that is the whole cause of the "pops." Covering the blossoms is not only useless but in one careful experiment with covering and not covering, the covered plot yielded one-quarter less good nuts. Therefore, stop covering, either before or after you think them pollinized. Keep the ground mellow and let the plant bury its own spike. How do you suppose the first peanut ever learned to be a peanut if dusky aborigines kept standing around to throw dirt on it?

Fertilizing Young Citrus Trees.

To the Editor: Kindly let me know what kind of commercial fertilizer you recommend for oranges and lemons, how much and how to apply it. In former years I have applied stable manure, mixed with withered leaves, with fairly good results. The soil is reddish and not very rich.—H. J., Los Gatos.

If you still have stable manure nothing is better for your trees. Apply it now in a mulch four to six inches deep under the trees extending a little beyond the outer reach of the branches; let the rains leach the solubles into the soil and plow or spade the residue into the soil in a few weeks. If you have no stable manure, get a "complete fertilizer" from a dealer and use from four to six pounds to tree, scattering it evenly over the same area indicated for stable manure, and cultivate the same way—digging or plowing under all the green stuff that grows—the amount being notably increased by the fertilizer.

Trimming Up Walnut Seedlings.

To the Editor: Hybrid walnuts, planted in place last year, have produced vigorous yearling trees, which in time I intend to top-graft. These trees show lots of branches, the largest in some instances arising from below the surface. Would you advise removing these lower branches?—R. L. M., San Francisco.

We should remove cleanly all branches which start below about three feet from the ground and graft later into main branches above that point.

Negligible Tree-Hoppers.

To the Editor: I send bark taken from my two-year old pear trees, which are covered with blisters, and each blister contains an egg of some sort. What are they and do they do any further injury except to blister the bark, and will an oil spray kill them?—C. R. B., Sunnyvale.

The little pin head "blisters" are made by a small tree-hopper which lives upon the foliage, but never become abundant enough to do noticeable harm to anything. An oil or a distillate spray would kill the eggs, but they are actually not worth the cost of killing them.

Walnuts on Black Roots.

To the Editor: Can English walnut trees grafted on black walnut roots be grown profitably on land with a two to three-foot topsoil and a clay subsoil, if properly cultivated and irrigated? Would it be advisable to blast the ground before planting?—Subscriber, Los Angeles.

Yes, if the top soil is good or fertilized as may be required for thrifty growth. Blasting is desirable if properly done to shatter and not make pot-holes.

Bluegum Fence Posts.

To the Editor: Kindly tell me about common bluegum eucalyptus wood for fence posts. What is its durability as compared to redwood or oak?—M. D. A., Williams.

Its durability is perhaps least of all woods available for posts. Redwood is most durable and oak somewhere between the two.

Cluster-Bloom of Tuskena.

To the Editor: What is the cause of my Tuscan cling peaches setting in clusters of from four to ten in each cluster? I have peaches of several other varieties, but none set in clusters except Tuscan.—J. R. W., Sacramento.

We have always put it up as a bad habit of the variety. Can anyone give a better interpretation of it?

California Weather Record

The following rainfall and temperature record is furnished the Pacific Rural Press by the United States Department of Agriculture Weather Bureau at San Francisco for the week ending at 5 p. m., February 11, 1919.

Station	Rainfall Data: Past Week	Rainfall Data: Seasonal To Date	Rainfall Data: Normal To Date	Temperature Data: Max'm	Temperature Data: Min'm
Eureka			31.25		
Red Bluff	2.80	20.80	15.33	62	42
Sacramento	4.92	18.21	12.01	62	44
San Francisco	5.77	19.70	14.08	60	47
San Jose	2.84	12.98	10.07	66	44
Fresno	.58	4.80	5.77	70	36
San Luis Obispo	3.41	12.89	12.07	64	46
Los Angeles	.18	5.67	9.30	64	48
San Diego	.49	5.81	6.04	64	48
Winnemucca	.52	4.57	4.35	66	28
Reno	1.96	7.66	6.34	60	32
Tonopah	.04		4.82	46	24

SNOW ON GROUND, FEBRUARY 10, 1919: Huntington Lake, 25 inches; Cascada, bare; Mc Cloud, 2 inches; Summit, 92 inches; Emigrant Gap, 5 inches; Squirrel Inn, 1 inch; Sierraville, 6 inches; Inskip, 24 inches.

Early Plowing and the Cover Crop

[Written for Pacific Rural Press by John J. Fox.]

We spoke in a former article of the amount of moisture evaporated or "transpired" through the foliage of trees and through the heavy overgrowth of a cover crop as soon as the warm weather commences. And the hotter the weather and the heavier the cover crop, the more rapidly does the evaporation take place. A man in a temperate moist climate can easily go all day without water and get along. But put him out in the desert on a summer's day for 24 hours without water and the result would probably be delirium. A tree can only gather moisture from the soil in the summer time in most California districts. It must be stored there either by rainfall or irrigation, and then carefully conserved by a cultivation. If it runs short of moisture the leaves soon begin to show distress. They lose their luster, become listless and droopy, curve up at the edges and lose color, as we noticed everywhere in our prune and almond orchards last year. Those yellow leaves dropped off, many of them in July, thus reducing evaporative surface, and where conditions were very bad, some trees were more than half bare by the end of August, resulting in a large amount of dead wood in the upper limbs, also many trees which will never recover.

HOW RAPID IS EVAPORATION.

Even in a humid climate an acre of trees is said to transpire through the leaves from 10 to 12 acre inches of water during the season. If this estimate is true in England, how much more would be relatively lost in California? A cover-crop is said to "blow off" as much as 16 inches if it is allowed to mature. The head and the root of a tree have to be kept in even balance by complying with the conditions they demand—chiefly an even condition of moisture throughout the season and a heading of the tree with common sense and judgment.

Well, I hear someone say, "If left to Nature the tree would take care of itself and adjust itself to conditions,"—the way the Indians take care of their chickens. But it is not profitable. Of a favorable year your trees would be a mass of suckers—of a dry year half the wood would die back and the fruit would be small. To get the best results in the fruit orchard and to be successful the grower must use Brains with a big B, and employ brawn in immediate action.

In a recent article we were shown modern methods of pruning young trees up to four years for early maturing.

PRUNING MATURE TREES.

But mature trees have to be pruned according to the size and quality of the crop they can mature. And that again depends on the steady and even supply of moisture that can be supplied throughout the season, as well as the quality of the soil. Once the soil dries out thoroughly in the spring it is difficult except on very sandy soils and ample water under your own control to get that condition back again. The way to conserve moisture is not to let that cover crop tempt you to let it grow a week or ten days too long. Try it out. Notice the difference in the amount of June drop or of dead twigs. Last year there was more June drop in deciduous fruits than had ever happened before in any man's memory that the writer asked. It was the second dry season and many a man put off plowing his orchard waiting for more rain, until some of the land became as hard as a bone and never was plowed. And they show the results today. We must fertilize. We must raise cover crops generally to do it. But we must remember that water is King in California and its careful conservation is the very first thing to be considered in an orchard.

FRUIT AND VEGETABLE STANDARDIZATION ACTS.

Senate Bill No. 364, introduced by Senator Jones, is an Act to establish a standard for the packing and marketing of apples, fixing penalties for the violation of its provisions, and providing for its enforcement, etc. This Act provides two new sections to the existing Act, numbered 9a and 13a. These sections give the apple inspector the power to enter and inspect any place in the State

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NET CONTAINER ACT.

Assembly Bill No. 172, introduced by Mr. Collins, is to amend Sections 3 and 5 of an Act entitled, "An Act to provide for the indicating of the net quantity of foodstuffs, etc., when sold or offered—for sale in containers, etc.—and renders more explicit the designation required on a package of the net quantity, weight, measure, etc., of the foodstuff or other commodity contained therein—an important detail if the Act is to prove effective.

Assembly Bill No. 173, introduced by Mr. Collins, provide twelve amendments and adds one new Section to the existing Act governing the State Department of Weights and Measures. The amendment to Section 2 is amended to raise the annual salary of the Superintendent of Weights and Measures from $3600 to $5000 a year. Section 3 is amendment to raise the salary of a deputy (who is appointed by the State Superintendent) from $150 a month to $3000 a year, also empowers the Superintendent to appoint additional deputies from time to time to serve as sealers of weights and measures at the request of counties, and to be paid by such counties and not by the State. Under the new Section 6, the Superintendent may establish a net weight measure or count and prescribe such tolerances for same as he may deem necessary — any person violating such standards and tolerances will be guilty of a misdemeanor.

Section 16 provides for sealers to receive $175 a month and traveling expenses. This sealer may employ a deputy or deputies when necessary to be compensated at the rate of $150 a month. The appointment of a county or city sealer is made practically compulsory, and he may appoint what deputies he deems necessary.

Section 17 provides that in counties of the second class whose charters provide for a department of weights and measures, the appointment of a sealer and the number of his deputies provided said sealer receive for compensation $3000 a year and his chief deputy to receive $2400 a year, other deputies to receive $1800 a year.

Counties from first to thirty-fifth classes shall have a deputy appointed by the State Superintendent of Weights and Measures to counties or groups of counties. Section 23 provides schools of instruction whereby sealers shall be instructed in the duties of their office under salary and expenses.

Section 32 provides the penalties for anyone contravening the law. Section 39a provides that "Actual traveling expenses within the meaning of this Act shall include cost of traveling, meals, housing and such other expenses necessary in the proper enforcement of law"—a matter that is most essential.

PRACTICAL PRUNING IS DEMONSTRATED.

To the Editor: On Friday, January 24, County Horticultural Advisor C. C. Staunton gave a demonstration of the new system of pruning young trees, described on page 104 of your issue of January 25. This demonstration was held at D. D. Gage's "Golden Hill Farm," about two miles east of Paso Robles, and was attended by about seventy-five people, all of whom were interested in and enthusiastic about the new methods of pruning. Commissioner Staunton answered the many questions that were raised, and made the demonstration a real and tangible help.—H. G. M., Paso Robles.

Don't Forget LEONARD COATES NURSERY
Morganhill, California
Eucalyptus trees should be planted now.

STANISLAUS GROWN TREES
APRICOTS, ALMONDS, PEACHES, PEARS,
SPECIAL PRICE ON ASPARAGUS.
STANISLAUS NURSERY CO., MODESTO.

Tree Protectors

THAT REALLY PROTECT
Fitted with galvanized wire ties that go all the way round the tree.
Prices per Thousand.
10 in. long, 7 in. wide..$9.00
12 in. long, 7 in. wide.. 9.50
14 in. long, 7 in. wide..10.50
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See your nurseryman or write us for discounts and free samples.
ANGELO & SON, Bay and Mason Streets San Francisco
Dealers—Write us today for our Sales Proposition.



Fruit-Fog Brings Bigger Profits!

Thoroughness is of utmost importance in citrus spraying. The habits of such troublesome pests as white fly, purple scale, rust mite and red spider render their control difficult. Natural agencies, such as predacious insects and fungi cannot be relied upon. Fruit-fog, the scientifically atomized super-spray, reaches all of these pests, no matter where located, on leaf, fruit or twig. It makes the brightest fruit and highest grades—just the kind that brings big profits.

HAYES FRUIT-FOG SPRAYERS

Fruit-Fog Sprayers are the highest type of spraying apparatus. The high pressure maintained and the scientific Hayes nozzle are absolutely essential to produce Fruit-Fog.

Each Fruit-Fog outfit is built to highest mechanical standards of finest material. Each is tested to 500 lbs. pressure and guaranteed to maintain 300 lbs. working pressure at full rated capacity.


Ask Mr. Favor,

Mr. E. H. Favor is a nationally famous authority on fruit growing and spraying. For many years he was editor of one of our leading fruit papers and was actively associated with two state experiment stations. Mr. Favor's experience is at your command. If you have any orchard problem, just "Ask Mr. Favor." He will write to you personally.

Equipment With Fairbanks Morse Engine

A uniform, dependable power plant is necessary to efficient power service. Hayes Fruit-Fog outfits are equipped with the famous "Z" engine made by Fairbanks, Morse & Co. This power plant was selected by our experts after every desirable make on the market was carefully tested.

Nation Wide Service

Over 30 years pump experience is behind Hayes spraying apparatus. Fairbanks Morse is a nationally accepted guaranty of quality and economy.

This combination offers you not only the World's best spraying equipment, but a national service that is of utmost importance.

We maintain stocks and parts for sprayers and engines at 24 points. No matter where you are expert service is only a few hours from you. This is a feature of utmost importance.

New Spraying Manual

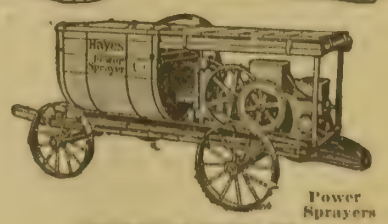
Mr. E. H. Favor, our scientific horticulturist, has just completed a new manual of spraying. We believe it is one of the most valuable books ever offered the fruit grower. We will mail you a copy and include our big catalog of Sprayers upon receipt of 10c (stamps or coin) and the coupon. You should not neglect this chance to get Mr. Favors new manual. Write us today.

HAYES PUMP & PLANTER CO.
Dept. E, Galva, Ill.

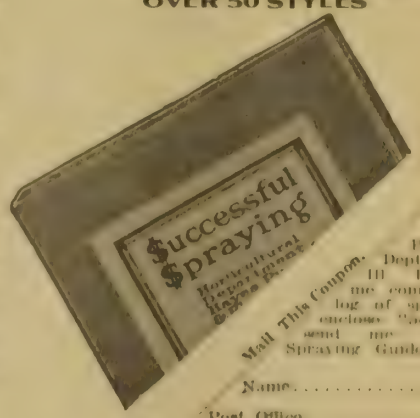
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FRUIT-FOG GUN
World's fastest spraying apparatus. The only gun which combines great speed with the thoroughness of Fruit-Fog. One man handles capacity of big power sprayers. Does four days' work in one. Simple twist shoots long spray to top of tallest trees or wide spray for close-up work. Half turn of handle opens wide or shuts off tight. Prevents usual waste of solution between trees. Mechanically perfect and fully guaranteed.—Price, $10.00.


Large Hand Sprayers


Power Sprayers

OVER 50 STYLES



Mail This Coupon. Hayes Pump & Planter Co., Dept. E, Galva, Ill. Please send me complete catalog of sprayers. I enclose 10c. Please send me 120 page Spraying Guide.

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Post Office.....
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O own.....Fruit Trees.....

Here and There in the Fruit Business

[Written for Pacific Rural Press.]

Melvin Grape Growers' Association.

Two hundred and nine carloads of grapes were shipped in 1918 by the Melvin Grape Growers' Association, according to Manager Jack McFarlane. The total returns on this fruit were $202,164, the total sales being $375,548. The principal variety was Malaga. The net average returns on these grapes were 98 cents per crate or $70 a ton net to the grower. This co-operative association is affiliated with the California Fruit Exchange. The saving on packing and selling through co-operative work, as compared with usual commercial rates, amounted to $13,581 for the season. At the annual meeting at Clovis, January 20, a dividend of $9,008 on the packing and selling operation of the season of 1917 was distributed. The association was organized in 1916 with a membership of 32 and a total shipment of 69 cars. There are now 118 members.

Pears Increasing in El Dorado Co.

Placerville reports the arrival of several carloads of nursery trees, chiefly pears, consigned to ranchers and fruit packers for distribution, through whom there is said to be an active demand. The trees have been largely delivered so far in the Fruit Ridge District, north of Placerville, and owners have started to lay out for planting wherever water for irrigation is available. The Earl Fruit Company, Placerville Fruit Growers, Producers' Fruit Company and Pioneer Fruit Company are all keeping open throughout the winter to accommodate growers in the handling of necessary orchard supplies. A pear show is to be held in Placerville next August.

Red Spider on Almonds.

A. L. Rutherford of Modesto has an almond tree 17 years old that for two or three years after coming into bearing dropped off its foliage early in the fall, as almonds do that are not kept clean. He began spraying for the red spider, using lime-sulphur, winter strength, in February, and has kept it up every year ever since. It now holds its foliage till late fall and the nuts are 25 per cent larger than when the tree was young. Without leaves a tree cannot store plant food, and the longer the leaves can be kept on the trees in fresh condition the more vigorous and profitable the tree—no matter what variety.

Cost of Squirrels.

Who lost any peaches, almonds or other fruit last year to the ground squirrels? Now is the time to go after them. Your Horticultural Commissioners are busy and help in every way possible. Last year, on the Sperry experimental farm, two hills of squirrels were overlooked and in consequence an acre of grain around each set of holes was destroyed. The average for the field was 12 sacks of wheat. At, say, $4.50 per sack this amounted to $50 an acre. Can you afford to support the ground squirrel at that price?

Fruit Transportation to Be Regular.

War-time restrictions on transportation schedules for fruit are soon to be removed as traffic conditions become normal, according to C. M. Secrest of the Pacific Fruit Express Co. "Priority orders are forgotten now, and there will be nothing to prevent the railroads giving us express service for perishable goods." Last year perishable shipments to the Atlantic seaboard, it is said, were delayed from seven to ten days, causing much fruit to arrive at its destination in poor condition.

Arbuckle's Almond Acreage.

Arbuckle claims she will be the largest almond growing section in the world at the end of this winter's planting. Preparations have been made to set out 1000 acres of trees this winter, which will bring the Arbuckle almond acreage up to 7000 acres. Paso Robles put up a thousand acres last week. Who holds a royal flush? Paso Robles, your hand is called. What have you got?

Berry Buyers Busy.

An increased acreage in strawberries is reported from San Joaquin county. Buyers are already in the fields and are said to be competing, offering good prices for a crop still three months away. The closing price of last year was 11 cents a pound. In view of a possible increasing demand, growers are expecting good prices, as canning capacity has been largely increased during the dormant season.

The Women's Land Army.

It may be wanted again this year. For, according to the Central California Berry Growers' Association, which controls 90 per cent of the strawberry acreage, a full crop this season will mean 20,000 chests more than the output of last season. The girls did good work last year and should be a unit to be counted on permanently.

A Dainty Peach Package.

The California Peach Growers (Inc.) are putting out a very attractive package of "practically peeled" peaches. The carton contains a net weight of 11 ounces of large golden halves of peaches that are nice to eat cured, just as they are a confection in appearance and flavor. On the outside of the carton there are half a dozen recipes for cooking and using them.

A Good Investment.

One man poisoned approximately 2000 prairie dogs (the counterpart of our ground squirrel) in one day on a 320-acre field in northern Arizona, 1641 of the animals being counted in the open while the rest died in their holes. The total expense of the killing amounted to $9.79, or more than ten rodents for a cent!

Escondido Planting Peaches.

The opening of a fruit cannery at Escondido, San Diego county, is giving quite an impetus to orchard planting. Peaches have been well proven in this district, but acreage did not greatly increase because of distance from markets. Assemblyman W. A. Doran is one who is planting Hales and cling varieties.

Bags from Banana Stalks.

A company has been incorporated at Honolulu for the purpose of manufacturing fiber bags from the stalks of banana plants. It is proposed to utilize the pulp remaining after the fiber has been extracted for the manufacture of paper.



Get going right with a jimmy pipe!

You'll have a streak of smokeluck that'll put a lot of happiness in your life if you'll start in with a jimmy pipe or makin's cigarettes and some Prince Albert tobacco.

You never will get real top notch smoke enjoyment until you can call a pipe your pal, *then*, to get pipe pleasure at its best you land square on that two-fisted-man-tobacco, Prince Albert!

Quality makes Prince Albert so different, so appealing all along the smoke line. Men who never before could smoke a pipe and men who've smoked pipes for years all testify to the delight it hands out! P. A. meets the universal taste. *That's why it's the national joy smoke!* And, it can't bite or parch. Both are cut out by our exclusive patented process!

Right now it's time to turn over a new leaf. You take a tip and get out your old jimmy pipe or the papers and land on some P. A. *for what ails your particular smokeappetite!*

You buy Prince Albert everywhere tobacco is sold. Toppy red bags, tidy red tins, handsome pound and half-pound tin humidors—and —that classy, practical pound crystal glass humidor with sponge moistener top that keeps the tobacco in such perfect condition.

R. J. Reynolds Tobacco Company, Winston-Salem, N. C.

Power—Power—Power

Fertilizer is to the tree what gasoline is to the engine. If you want small returns, feed little; if you want BIG RETURNS, feed liberally.

90 per cent of the non-paying groves are the UNFERTILIZED groves. Feed your trees into the dividend-paying class by using

HAUSERS ORGANIC FERTILIZERS

Built for California conditions.
Send for booklet, "Fertilizer Efficiency"—tells you why.

HAUSER PACKING COMPANY
Los Angeles California

100,000 SEED BED STOCK 50,000

Washington Navels, Valencia Late Oranges, Eureka and Lisbon Lemon and Marsh Seedless Grapefruit Trees

from carefully selected trees as to quality and production. The main consideration in buying citrus trees is to have them not only true to name, but true to the strain and type from which they are budded. The few cents more that you pay for our trees is money well spent and will be returned to you a thousand-fold every year during the life of your grove.

WALKER HUBBARD NURSERIES
First National Bank Building San Fernando, California

Clean Potato Seed

Hundreds of potato growers are availing themselves of the opportunity to get clean potato seed that has been dipped in a solution of corrosive sublimate by

Aggeler & Musser Seed Company
620 South Spring Street, Los Angeles, California.
Write for their 1919 Catalog.

Chestnuts and Chinquapins

To the Editor: I am sending some burs. Please tell me what kind of a tree they grow on. When we got this place two years ago the real estate man called it a chestnut tree, but the burs never fill. Can we graft it? The tree is probably over twenty years old. The main part of the tree looks healthy, although some of the large upper limbs have died this fall. The tree stands near the well and tool house—so it probably gets plenty of moisture. Can we graft to a chestnut, and when is the best time? And would it be better to top and graft lower down? If we cannot graft to a chestnut can it be grafted to some other kind that will bear nuts? J. M. R., San Jose.

Your tree is a chestnut. Why the burs do not fill cannot be confidently stated. It is a fact that solitary chestnuts frequently bear only empty burs. Theoretically this should not be the case, for the chestnut produces both staminate and pistillate blossoms, but even so, sterility may and frequently does occur. Nor is it sure that bunches of trees will come through with crops. An experienced grafter of old trees can work in other varieties for you, but chestnut grafting is not as easy as some other kinds, and it is our conviction that you should put your tree in good condition for thrift by sawing out dead woods, painting over all wounds and keeping the tree for shade and ornament so long as it is handsome. Only chestnuts and chinquapins can be grafted on the chestnut.

As you sent only burs, we were in doubt whether your tree was a true chestnut or a chinquapin. We submitted the question to Dr. W. L. Jepson of the University of California and secured the following statement, which all readers can apply to trees about which they may be in doubt:

The genus Castenea or chestnut has deciduous leaves, a six-celled ovary, six stigmas, and a bur which ripens in one season and is therefore borne on one-year wood.

This genus not only includes the Italian chestnut and the American chestnut, but also the Eastern chinquapin, Castanea pumiia.

The genus Castonopsis includes the remainder of the chinquapins, and has evergreen leaves, a three-celled ovary, usually three stigmas, and a bur which ripens in two years and is thus borne on two-year wood.

The matter of distinguishing the two genera is not so simple when the material is botanically incomplete, but no one who stands before the trees need have any doubts, if he can recognize the characters stated.

FORESTALLING THE PEACH-ROOT BORER.

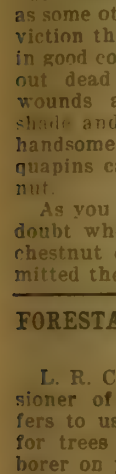
L. R. Cody, Horticultural Commissioner of Santa Clara county, prefers to use the crude oil whitewash for trees as a repellent to the root borer on young trees. He has found distinct "sunburn" injury under the bark where young trees have been treated with asphaltum above ground, though the rougher bark on old trees stands it all right. This Government formula No. 1 for crude oil whitewash is as follows:

Fifty pounds of stone lime (in a barrel), slaked with from 10 to 15 gallons of warm water. While the lime is boiling, slowly pour in six gallons of heavy crude oil. Stir and add water to make a heavy paste and paint that on. This must be used the same day as it is mixed and not used if kept over. Mr. Cody says the cost of borer work in the orchards—that is, the safeguarding work and elimination—does not exceed $1.50 per acre.

ALMONDS AT OAKDALE.

The N. J. Lund almond orchard at Oakdale consists of 100 acres of Nonpareils, Texas Prolific, Drake's Seedling and I. X. L. trees ten years old. They are yielding an average of about 1,500 pounds to the acre. This orchard is said to yield consistently since coming into bearing, showing a good distribution of the varieties for pollenization.

County Horticultural Commissioner H. J. Ryan of Los Angeles county has prepared an index card showing in detail the condition of every citrus grove in his county.



BOLTON ORCHARD HEATER



Largest stock of Surface Irrigation Pipe and Pipe Equipement on the Pacific Coast

The U. S. Department of Agriculture estimates the annual loss by frost at $75,000,000. It may hit you next. The Bolton Orchard Heater

Prevents Frost Damage

Safest and surest frost prevention method known. Coal and wood heaters take too long to generate required heat. The Bolton beats Jack Frost to it, generates heat rapidly, maintains the temperature above the freezing point. This is important.

Send for Booklet B-1

Tells you all about frost prevention. Filled with valuable information for the grower.

W. R. Ames Company,
8th and Irwin Street, San Francisco, Cal.



THE ABOVE Picture is of a Five Year Old Peach Orchard that is Making Our Customer Well-to-do. ¶ That is the Only Advertising We Know How to do Well. ¶ To Grow Good Trees and Serve Our Customers Well is Our Aim and Performance.

¶ Thirty Years of Constant Service to California Orchardists and Vineyardists is Our Proof of Reliability. ¶ Each Season's Increase in Business Given Us is Our Assurance of Appreciation. ¶ We are Operating the Largest Growing Plant of Commercial Varieties of Fruit Trees, Etc., in California, Beyond Any Question.

¶ Price Catalog on Application.

Established 1888

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Capital 100,000

TREES THAT GROW AND BEAR TRUE TO NAME

MAIN OFFICE, TULARE & O STREETS, FRESNO CITY

WM. T. KIRKMAN JR., Pres. and Mgr.

Pears and Plums of Commerce

There are some very old pear trees —an irregular block—on quince root in the 300-acre fruit orchards of the A. Block Fruit Company near San Jose. They are planted only eight feet apart on the diamond, and are probably dwarfed from this cause. They are about fifty years old and still bear regularly. In conversation with the acting superintendent he said that the Beurre Hardy bears well in one solid block without pollination.

The Comice bears well on an average, though more irregularly. There are no failures, but a heavy crop is generally followed by a light one. Cross pollination seems to remedy this. The Forelle gives the highest priced pears of all, but is a shy bearer. These trees were old. A block of Hardys, thirty years old, nearby, averaged seven boxes to the tree per year. The Winter Nelis pays well. This tree is cut pretty hard in pruning every alternate year with a light pruning. There are sometimes three successive good crops from the Winter Nelis, but it has its off years.

Of the plums, the Santa Rosa is a favorite, produces and pays well. Others are the American Blue, formerly the German prune; Giant, Black Diamond, Burbank, Chinese prune, etc.

ORCHARD MANAGEMENT.

Pruning is put under way as early as possible, and much of it was completed when we were there early in January. They like to have their oil sprays completed by the end of January. We were told that a part of the heavier ground here had been badly infested with morning glory, but by regular and persistent cultivation and use of the weed-cutter throughout the summer it was pretty well under control. We noticed that a heavy cover-crop of mullen grain and other weeds had been mowed and left, as it was getting too rank to handle properly when the time came to plow.

In spring work they plow to one row and away from the next, so as to leave no dead furrows and keep their ground level. A horse plow is used to strike out and this is followed by a tractor with disc plows.

The disc plow is preferred because there are so many high roots and they are not injured by the disc as they would be by the share. Also, any surface feeding roots are cut cleanly off instead of being mangled. This large orchard company shipped over two carloads of fruit a day during the fruit season.

The Evaporator is a Coming Factor

"The fruit evaporator is the coming thing for the dried fruit man," said H. C. Dunlap, Managing Director of the California Prune and Apricot Growers' Association, in a recent interview. It makes for quality—which includes color, weight and consistency —as well as protection. With an evaporator and proper green grading, fruit can be cured to an even nicety which is practically impossible by sun-drying, where some of the fruit is dried to a chip and other fruit on the same tray not ready to take off. A uniformity of curing will insure safety in storage. The evaporator will expedite the time consumed in harvest. It will lessen the number of trays needed in any one equipment. It will obviate the using of large areas of productive fruit land which must be kept as drying ground and will save much labor in hand-picking, turning, spreading and stacking. Therefore, it will also probably be a cheaper method than sun-drying when properly devloped. Any poor drying year when the season is held up there is always a certain positive loss in quality through arrested curing, that results in some loss of weight.

With regard to pears, apricots and peaches, a practically perfect color can be obtained in the right evaporator that is only possible in certain locations under the sun-drying system; i. e., where fruit cures in the stack. But even here, the field system has not the security of protection from the elements that is offered by an evaporating system.

In future years science will have to take a hand—when artificial evaporation of fruit becomes the rule, and a qualified man be on hand at the large plants to determine the amount of moisture contained in every charge before it is drawn. Even here a simple test will probably be evolved. A number of small evaporators will, no doubt, spring up this year—are already being constructed. The proper degrees of heat for every phase of the prune curing operation are by no means scientifically established yet, though much has already been done. The University of California is working steadily on evaporator problems, not only for fruit, but for dehydrating vegetables and other things as well, on a commercial scale.

RED SPIDER ON ALMONDS.

O. Bertinsen and brothers of Arbuckle, who have forty acres of almonds, put a cardboard collar around each of their trees to protect them from squirrels, which came in from surrounding unpoisoned territory. On removing the collars this fall they found that where the cardboard overlapped there were thousands of red spider eggs laid on the covered strips where the carboard had overlapped. Mr. Bertinsen uses lime-sulphur as a spray in February and the same material (summer strength) in his later sprays for red spider. He says it beats all other forms in control of red spider. After the visitation of the pest experienced last year at the expense of our almond and prune trees, considerable activity is planned to fight it this year. And the time to do the best work is before its ravages are apparent. The ounce of prevention counts.

TOP DRESSING TALKS
No. 3

Can you drill *Arcadian* Sulphate of Ammonia? Why, certainly



ARCADIAN SULPHATE OF AMMONIA

ARCADIAN Sulphate of Ammonia has been kiln-dried and ground so that it will spread easily in a drill or distributor at the rate of 100 pounds per acre or less if desired.

Each particle of fertilizer falls on its allotted inch of ground and each plant gets an equal share. This results in an even start, uniform growth, and proper ripening of the whole crop at one time. It is the modern machine against hand labor again, and the machine wins every time. Try it and see.

For sale by Hawaiian Fertilizer Co., Limited, San Francisco
Pacific Bone Coal & Fertilizing Co., San Francisco and Los Angeles
Pacific Guano & Fertilizer Co., San Francisco and Los Angeles

For information as to application, write The Barrett Company Agricultural Department

510 First National Bank Building, Berkeley, Cal.

THORNLESS Vigorous, prolific, delicious. Let us tell you about this BLACKBERRY
EKSTEIN NURSERIES
MODESTO, CAL.

TREES

—with roots such as these

are grown only on our foothill soil and location. Hardy-of selected parentage-well-grown-absolutely reliable-and free from root-knot and diseases common to other localities.

We know we can meet your requirements. Our stock of trees is complete. Submit today a list of your wants for special quotations. Remember, behind each tree is our guarantee.

Those who wait will be disappointed. Write now—right now!

J. E. Bergtholdt
Secy. and Mgr.

Why take chances on your trees when we have made it easy for you? Get the right start. Send for our book "California Fruits"—full of practical, dollar-making information. It is based on 30 years' experience as nurserymen and orchardists, for we operate 1000 acres of orchard of our own. Send for this book today—it's *free!*

SILVA-BERGTHOLDT CO.
BOX H NEWCASTLE, CALIFORNIA

—the foundation of SUCCESS in your fruit growing

Bees and Pear Blight

To the Editor: I have recently heard this statement: "The bark, skin, or hide of anything is a perfect protection against the entrance of disease germs—providing it is not broken."

Being interested in the control of pear blight, I have wondered if even the blossom, where blight starts in the spring, would not be perfectly protected by its skin, if insects did not tear or break through the blossom.

Last spring, when blight was bad, I noticed more bumblebees on the apple and pear blossoms than any other insects. I remember being told that bumblebees have a short proboscis, and in order to get at the honey of a flower they tear the honey cup open. If this is so, is it not allowable to spray to poison bees on pear and apple blossoms? If one could use a spray material that would both kill the bees and disinfect the blossoms?

I once heard a story of a superintendent of a famous tourist hotel, who complained to an apiarist that the bees annoyed his guests and he must take his apiary away. "I tell you what you do," said the bee man, "if my bees come into your flower gardens and annoy your millionaire guests, you just shoot them. I won't say a word; shoot them." I think if spraying the blossoms will help control the blight, the bee men ought to be just as fair as that—J. A. B., Paradise.

It is not true that a whole hide is sufficient protection. Pear blight germs have been demonstrated to be able to enter through the natural breathing pores of the leaf tissue, and when they get into the honey cup of the blossom, from the proboscis of the bee which has been previously dipping into blight exudation, they pass readily through the loose-celled tissue which yields the honey. It is not necessary to have a wound through which to gain entrance. If, however, you poisoned the bees you might prevent the deposit of germs in the honey cup, if you killed them before they got to it, but what would you gain by that? If you ruled out the bees you would probably have no pears or apples, and for what purpose would the tree be saved? Besides, if you poison the bees of an owner disposed to prosecute you, you might have damages to pay. A number of States have laws against spraying blooming trees while they are attracting bees, and a damage suit in this State might be won on the basis of such laws. You had better shoot—not spray.—Editor.

THAT MYSTERIOUS GRAPE DISEASE.

Grape shrivel and black measles have killed tweny-year-old vines in three years, if not attended to! This is the affirmation of George Schuler of the Schuler Vineyard Company of Lodi. He says the only way to combat it is to cut off the affected growth when it first makes its appearance, when the leaves show that scorched appearance. Mr. Schuler has 100 acres of wine grapes and 70 acres of table grapes.

Forty acres of grapes are interplanted now with peaches, plums, almonds and cherries. The vineyards are bordered all round with olives—Mission, Manzanillo, Serillano and a few Obliza.



An Orchard is a Good Investment.

Write today for this

TREE Catalogue

and learn how to plant and grow trees successfully

THIS book answers in a satisfactory manner many questions which you may want to know. For instance, if you are going to plant plums, what kind? Early varieties of peaches bring good returns, but an assortment of peaches ripening from May to November is in many cases preferable.

While the Tilton apricot is the canners' favorite, there are others equally good. Some trees grow and bear best in the warm interior valleys, while others do better at a higher altitude along the foothills.

Growing almonds has become very profitable. Do you know whether your locality is suited to almond culture? If you are in doubt as to what trees would do best on your land, write to us, describing as fully as possible all of the conditions, and we will be glad to advise you.

Send for our Illustrated Catalogue and Price List. Contains 104 pages of real valuable information for fruit growers. Free on request.

Fresno Nursery Co.
P. O. Box 615-P Fresno, Calif.

ATTENTION, TREE PLANTERS

We have only a few trees left—the best of our stock—and as we are anxious to close them out as soon as possible we are making special prices on the following varieties:

Beurre Anjou on French and Jap Root;
Comice and Winter Nelis on French;
Bartlett on French and Jap, 3 to 4 ft.;
Almonds, all varieties, on almond root;
Royal and Moorpark Apricot on Myron Root;
French Prune on Peach;
Cherries on Mazzard.

WRITE FOR SPECIAL PRICE LIST

UNITED FRUIT CO. - - NEWCASTLE

PIPE

For Every Purpose NEW Threads & Couplings Hot Asphaltum Dipped

New and Used Screw Casing

Fittings and Valves Special Fittings Made to Order

TESTED AND GUARANTEED.

PACIFIC PIPE CO.

MAIN AND HOWARD STS. SAN FRANCISCO, CAL.



"They're All Planted!"

"And now I'm off to finish draining that swamp. I couldn't have done it without dynamite. That's not the whole story either. Dynamite not only blasts holes for the trees *quicker* than you can dig them by hand but it does it *better*. Trees planted in blasted holes take hold sooner—grow better—bear fuller—and begin to bring returns years ahead of those planted in the old fashioned way.

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can do for you what it is doing for me. Sign the coupon printed below and mail it to the Hercules Powder Co. and they will send you their 68 page illustrated book 'Progressive Cultivation.' This book tells you all about the different uses of dynamite on the farm and in the orchard; how to plant your young trees, cultivate your old orchards by blasting between the rows, drain your swamps and reclaim your waste lands. It's helped me to put money in the bank this year. *Send for it today and let it help you.*"

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Gentlemen: Please send me a copy of "Progressive Cultivation."

I am interested in dynamite for .....

Name .....

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What About Potatoes!

Up to January 27 California shipped 8,822 carloads of potatoes this season, Idaho 4,680, Washington 1,012, Nevada 565, and Oregon 407, as reported by the San Francisco office of the U. S. Bureau of Markets. Though potato prices weakened about ten cents per hundredweight throughout the United States in the week ending February 3, Stockton prices remained at $1.85 to $2.10, as they had been. This is remarkably higher than first-market prices anywhere else in United States, being about double Idaho and Colorado growers' prices. Stockton Burbanks are also notably higher than any other potatoes in the consuming markets. During the week they declined five cents at Los Angeles to $2.35, while Idaho Russets lost 20 cents to a range of $1.75 to $1.80 on the same market. Potatoes moved heavily from Idaho during the week, 245 carloads having been shipped, as against 112 from California points, 51 from Washington, and 31 from Oregon.

Seed potatoes are moving slow. Considerably reduced acreage is being planted in the early-potato districts of United States, and later deliveries from the seed-producing districts of the North are not being ordered in normal quantities, although, or because, prices for seed have been declining.

Last season's overwhelming acreage and crops, coupled with high costs of production, have caused markets to be weak for several months and less money has been made by growers than they expected. This discouragement is likely to reduce the total potato planting during the season ahead, and so adjust the supply to the market that profitable levels will be maintained for the 1919 crop.

Smothering Morning Glory

To the Editor: Perhaps your readers would appreciate an easy way to get rid of morning glory. Here is the way I have treated it and destroyed every vine on the place where it was so thick that nothing else would grow:

First sow your morning glory field to wheat, which you will harvest early in July. Then plow the land dry to a good depth (say six to eight inches) and let it stand until the last of August or the first of September. Then irrigate well and work to a good seedbed and sow alfalfa. By this time the morning glory is dormant and the alfalfa will get an early start and root down. So, unless your ground is very dry, it will pull through the following summer without irrigation—the tap roots going down to moisture and the surface roots will take up all the moisture from the morning glory and every vine will die. Then irrigate your alfalfa and your morning glory is gone, or plow it up and plant to anything else.—Nux, Sacramento.

Write a Letter or Postal Card to

Fancher Creek Nurseries

409 Holland Building

Fresno, California

and we will send you a copy of our new 1919 ninety-six page profusely illustrated Catalogue and Practical Planters' Guide combined.

This book tells a lot of interesting, valuable and helpful things about old and new varieties of deciduous and citrus trees, shrubs, evergreens, palms, vines and roses.

A Real Hand Book

of information for the Horticulturist. Totally different from the usual nursery catalogue—chapters on Planting, Pruning, Irrigation and other important details.

It is sent free on request.



Soil and Other Factors in Relation to Crop Production

Limiting Factor in Crop Production The economic production of the many food crops is governed directly by soil fertility. In itself, soil fertility is affected by so many factors and conditions that the greatest care should be exercised in attempting to apply too generally results secured locally or merely in one or two seasons. The limiting factors in soil fertility are many. Crop production may be directly influenced by the amount and distribution of rainfall; by the range of atmospheric and soil temperature; by adequate or inadequate aeration of the soil; by the texture as affecting root distribution; by the soil reaction; by the amounts and proportions of different salts, as well as the amount of total and available plant food.

Dominant Factors Vary From Season to Season Moreover, the limiting factor may not be the same from season to season. Soil reaction may be a limiting factor at one time; lack of moisture at another time; lack of available phosphorus at still another time and so on indefinitely, for the soil is a populous community of living things.

Temporary Results and Permanent Results Hence, in drawing conclusions as to the value of any method of soil treatment a distinction should be made between results which may be temporary in chraacter and those that would be of a permanent nature. This fact may be best illustrated by the attitude of practical farmers in different countries toward the use of lime or of land plaster or of acid phosphate or of other soil amendments or of fertilizers.

Rational and Irrational Use of Lime In the case of lime, the excessive use of this material created a prejudice against it in many places in Europe and in North America. The injurious effect of over-liming may have been due to excessive oxidation of the organic matter in the soil or due to the toxic effect of magnesia in burned and slaked lime. As time went on the injuries or undesirable effects of over-liming disappeared and farmers in the given locality again came to feel that liming was necessary and desirable.

Rational and Irrational Use of Land Plaster One may trace, therefore, a constantly changing attitude toward the use and value of lime from one generation of farmers to another in any locality in the old world and in the new. It is well known that land plaster was regarded as a valuable fertilizer toward the end of the eighteenth century and in the early part of the nineteenth century. Later on its use was given up because it failed to give uniformly satisfactory results.

Prejudice Against Use of Phosphates There is a prejudice in certain localities against the use of acid phosphate, as there is a prejudice in certain localities against the use of other commercial fertilizers. The prejudice against any single fertilizer is readily understood by persons who are familiar with the principles of soil fertility.

Use and Abuse of Phosphates The practical farmer who secures profitable returns from the use of any material frequently attempts to continue the application of this material until it ceases to be profitable. The use and abuse of acid phosphate is an excellent illustration of this fact. It is well known that in general farming phosphoric acid is likely to be the limiting factor in production in so far as plant food is concerned. Hence, acid phosphate or other phosphatic fertilizers will for a time increase crop production by supplying a larger quantity of the plant food constituent present in least amounts, but as time goes on the use of available phosphorus merely hastens the depletion of the supply of available nitrogen or of available potassium, and the productive power of the soil begins to decline. In time, therefore, farmers begin to feel that acid phosphate has injured their soil. Low grade commercial fertilizers, containing small amounts of nitrogen and potash, will produce practically the same undesirable results.

It is evident, however, that such undesirable results are not due to the rational use of available phosphoric acid, but to the unbalanced, single use of this constituent. The use of nitrogenous or potassic fertilizers alone is certain, sooner or later, to cause a lowering of crop production, if care be not taken to provide all of the plant food constituents in adequate amounts, for such use is irrational.

Acid and Basic Residues In a similar way it is recognized by students of soils that fertilizer materials which may leave acid or basic residues in the soil might produce results that are desirable or undesirable from the farmers' standpoint. In so far as the results obtained are permanent or extending over a long period of time they are desirable wherever or whenever they are co-ordinated with larger yields and larger profits to the land owners. If, on the other hand, larger yields and profits may be obtained for one or two seasons, or for a few years only, at the cost of more or less permanent soil deterioration, they may not be so desirable after all.

Physiologically Acid Salts In a case of certain excessively basic soils, applications of certain mineral forms of Commercial Nitrogen, for instance—if losses of Ammonia as gas could be avoided at the time of application to such soils—might seem temporarily the most desirable source of nitrogen, since these salts are physiologically acid and their use might lessen afterward the accumulation of carbonates or bicarbonates. Were the use of such physiological acid salts to be continued for some years, undesirable results might appear.

Aside from the possibility of the soil actually becoming acid, there remains the danger of creating an excessive proportion of sulphates among the soil compounds.

If, on the other hand, basic materials like certain forms of commercial lime or Nitrate of Soda or Lime Nitrogen are used, basic residues might accumulate in the soil to an undesirable extent, but when such substances are used rationally and with common sense no such undesirable accumulation need occur.

One should, therefore, be extremely cautious in advocating any fertilizer practice not founded on the broad understanding of the principles of soil fertility. Especial care should be taken not to advise growers to adopt any one-sided method of fertilizing in great excess with salts physiologically acid in nature which might give profitable returns for a short time, but might ultimately entail serious injury to the crop producing power of the soil.

DR. WM. S. MYERS,

CHILEAN NITRATE COMMITTEE,

25 Madison Avenue, New York.

Agricultural Notes

Between 50,000 and 65,000 acres will be in wheat this year in San Joaquin county, according to Acting Farm Advior J. W. Adriance.

The Natomas Consolidated has increased its wheat acreage this year to about 21,000 acres north of Sacramento. The work consumed nearly three months of running with Caterpillars and tractors.

P. J. Prien, formerly chief agriculturist employed by the sugar company at Hamilton City, has presented a beet experiment proposition to the Sacramento Chamber of Commerce on river lands lying north and south of the city.

Beets will be canned at the Libby, McNeill & Libby cannery at Selma this year. These will be handled before the rush of apricots and peaches and will follow the canning of spinach, which commences the end of February.

Return of railroads to private ownership and legislation to permit centralization of traffic control under such private ownership was favored by delegates to the American Fruit and Vegetable Shippers' Association at a Chicago convention.

El Dorado county proposes to plant a large acreage to Sudan grass this year where old vineyards once held sway. Sudan grass has been tried out here without irrigation and has given satisfactory results, so as to encourage further plantings for hay and stock feed.

An administration bill appropriating $1,250,000,000 to enable the Government to carry out its guarantee to the farmer of $2.20 a bushel for the 1919 wheat crop has been transmitted to the chairmen of the Senate and House agricultural committees by the Food Administration.

The Northwest yield of wheat for 1919 is estimated at approximately 300,000,000 bushels. Organized opposition to the plan of the Federal Food Administration for the Government to buy and sell the 1918 and 1919 wheat crops was started in Chicago by leaders of the Board of Trade.

The Oakdale and South San Joaquin Irrigation Districts have added 5000 acres of producing lands to their area since organization. Oakdale district now has 74,246 acres and the South San Joaquin district 71,001 acres. The two local districts are among the oldest in the State. The original ditch still in use was begun in 1853. The first use of water was at Knights Ferry in 1855 and it has been used continuously ever since.

Top Dress with Nitrate of Soda

Feed the Crop; not Bacteria

Every form of Nitrogen fertilizer, except Nitrate, must be broken down by bacteria and changed into Nitrate before it can become available, always resulting in costly *Nitrogen* losses.

Nitrate of Soda

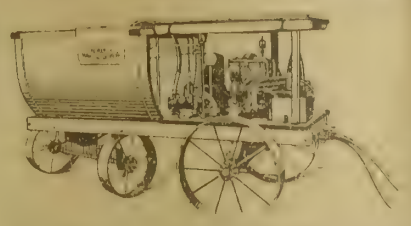
is *already nitrated!* — the quickest, surest, most economical source of Nitrogen for use on all crops.

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Oregon-grown, selected strains. A car of genuine British Queen from California certified strain. Two cars Snow, Burbank, Wonder, and other varieties.
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THE FAMOUS HARDIE JUNIOR



The Famous Hardie Junior is a real power sprayer. It has sufficient capacity for two lines of hose. It has plenty of power for high pressure effective spraying. It is little in first cost, weight and upkeep. It is big in real value, engine power, pump capacity and ability to do successful spraying. We believe this is the greatest small power sprayer ever manufactured, and placed on the market with phenomenal success in every fruit section in United States and vouched by thousands who own the Famous Hardie Jr. Equipped with 1½ h. p. engine, battery ignition, 150-gallon tank with mechanical agitator, capacity of 4 gallons per minute with a steady working pressure of 200 pounds, and two 25-ft. of the best spray hose, fitted with spray rods and nozzles; 4-inch tire truck with pole or shaft.

All For $300. Delivered anywhere in this State

If truck is not needed, deduct $55.00.

These prices are subject to change without notice. The wise buyer will place his order now.

This low price is made possible by big production.

If you are interested in other types and sizes of the HARDIE POWER SPRAYER, write us for the big spray catalog, and learn why we can offer more spray pump value than any other spray pump manufacturer.

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is a wonderful fertilizer for **ALFALFA**
Excellent, also, for Fruit Trees, Vines, etc.
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Ettersburg No. 80, 84, 89 and 121 and Eurisko, Trebler, Ossie, Nor-j, Fantastic, and Fendalemo, the cream of 30 years of strawberry breeding. All originated by the undersigned, mostly from wild species. Big strong plants, 25 of any variety for $1.00; 100 in one to four varieties $3.00, delivered free by mail. Order early as stock is limited. Descriptive catalog for the asking.

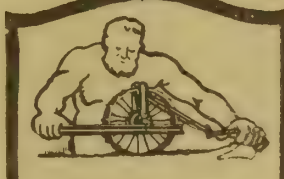
ALBERT F. ETTER
Ettersburg - California

See That Hitch!

THE Nilson Patented Lever Hitch is the greatest improvement in Tractor Design in recent years.

By hitching the plows to a swinging drawbar attached considerably above the rear axle, the pull of the plows is automatically converted into downward pressure, thus giving the drive wheels "GRIP" or traction, without a pound of useless weight.

It enables us to build a tractor with BIG TRACTION, LIGHT WEIGHT, FUEL ECONOMY.



The Lever Hitch carries the pull of the plows up over the drive wheel. The harder the pull, the better the wheel grips the ground. Note great width of driving wheel surface.

Found Only On

The Nilson

Because of the Lever Hitch the Nilson Junior, weighing only 5,000 pounds, has 3,000 pounds drawbar pull at plowing speed, while the Nilson Senior, weighing only 6,400 pounds has 4,000 pounds drawbar pull at plowing speed.

Nilson Tractors employ three driving wheels keyed on the same axle, making in effect a WIDE DRUM DRIVE. They do not pack the soil. They stay ON TOP.

It is the Lever Hitch and Drum Drive that enable the Nilson to easily outclass other tractors—even those equipped with the same Waukesha Motor used in the Nilson.

Nilson Tractors have been thoroughly tried out, and have "made good".
See them demonstrated in the field.

Write or Wire Us for your dealer's name.

NILSON TRACTOR COMPANY
2628 University Ave. S. E. Minneapolis, Minn.

Arrow Points to Lever Hitch



Farmers Want Reasonable Hay Law

FRUIT GROWERS WANT CLEAN HAY.

To the Editor: In this, which is a fruit district, there are hundreds of people who do not raise hay or grain, and every one would agree that something should be done in the way of protection from having to pay for so much trash in hay we buy. There are honest people among those who sell grain and hay to users and dealers, but evidently there are a great many who are not, judging from the amount of dirt, rocks, mold, rot, foul seeds, and sticks we buy. But trash in baled hay is not the only objection. Much of grain hay and alfalfa, too, is left too long before being cut and contains a large per cent of fibre.—G. L., Auburn.

NEED LAW WITHOUT TAG WEIGHTS.

To the Editor: I have been baling hay for six years, so let me say something about your hay bill. It is impossible to put up grain hay without some dirt in it; some will have a little, while other lots will have a good deal in it. I have baled on all kinds of fields. There should be a penalty against wilfully putting in dirt, but the dirt that just naturally finds its way in brings its own penalty to the producer. You never find a dealer paying for dirt. He either pays a lower price for the dirty hay or he samples a few bales and docks the whole lot accordingly. Then he sells it to the consumer without saying a word. That's the penalty for the consumer buying small lots. The man who buys a ton or two can examine his hay and does it too.

As for tags. Hay should never be tagged. All the laws in Christendom will not avail to make tag weights correct. On our press we tag, giving each bale three to eight pounds allowance for shrinkage, and at that the hay that went into warehouses after exposure in the field for three or four months, had shrunk so it did not weigh out by seven pounds per bale, while another lot not weighed into warehouse until December overran tag weights by two to four pounds. The dealer never buys by tag weight and seldom sells by it. More often he sells at so much per bale, though the bales may vary by 50 pounds. And as for designating which crop of alfalfa is in the bale—nonsense. My second crop may be better than Jones' third crop and vice versa. Some men cut the second crop in June, some cut it six weeks later. The buyer should judge his alfalfa by the color and the number of leaves. If the color is good and the leaves are all there, then the finer stemmed and softer stemmed is the best whether it is the first or fifth crop. Be your own judge in buying alfalfa; but when you buy grain hay put it up to the dealer; if he says he don't know, you can set him down as being a fool or a member of the Ananias Club, but don't foist unnecessary laws on the farmer and the hay baler; we have plenty of work to do as it is.—E. W. Doane, Merced.

LIVERYMAN BOUGHT DIRT IN HAY.

To the Editor: I wish to voice my approval of your fight for legislation compelling the production and marketing of only clean hay. For 23 years I have been a heavy hay buyer. Before engaging in the garage business, I conducted a large livery and feed stable and bought an average of 300 tons of hay per year. If I could be reimbursed now for the tons of dirt and rocks I have paid for in this hay, I am sure I could retire a capitalist. Why cannot hay be handled under the pure food and drugs act?—R. N. Tunstall, Guerneville.

GRAVELLY HAY UNAVOIDABLE.

To the Editor: As for the hay proposition, I would say I should be glad to have a law that would strain the dirt from baled hay from now on, as I shall be a buyer instead of a seller. But it will take a mighty fine law to do it. I tried cutting some for seed oats. Had the boy rake it in very small winrows and then we shocked it with pitchforks with all care. We threshed it with the rig I wrote you about using for sudan grass, and the rocks knocked all the concave teeth out. What little hay I raise and put in the barn loose is full of clods and rocks. I bought 20 tons of hay and I expect there is 25 pounds of dirt to the bale. But I can't kick except where balers put it in on purpose, which I have seen them do.—J. W. Richman.

BOUGHT DIRT IN HAY.

To the Editor: I am most heartily in favor of a hay baling law, as I have been a victim of 20 to 50 pounds of dirt per bale. The law should hold the grower and baler equally responsible.—L. L. Carmean, Morgan Hill.

HAY WEIGHTED WITH DIRT.

To the Editor: As I ordered 10 tons of hay at $26 per ton, and found it weighted with dirt, I am very reasonably in favor of legislation which will protect myself and others from this kind of fraud.—Henry Hickman, Sebastopol.

SAYS HAY WAS DREADFUL.

To the Editor: I am in favor of a law to prevent hay balers from putting so much dirt in hay. My hay this year was something dreadful.—J. J. Jones, Morgan Hill.

ALAS FOR HUMAN DEPRAVITY.

To the Editor: When dirt in unusual quantities is found in baled hay, there is often a divided responsibility due to the fact that this generation of men has not yet had enough experience in crookedness to realize that it doesn't pay. The honest (?) farmer hopes to profit by putting one over on the buyer. The press owner is not averse to a share in the transaction. The laborer who mans the press and is paid by the ton would rather throw in a clod than to throw it out. What the purchaser of the hay does to his customers I do not know, but probably the whole outfit is a happy combination of dog eat dog. No doubt this is as fit a subject for legislation as many others. Is that a high order of intelligence which refuses to do

Wanted--General Farmer

Want a first-class, industrious, married man who understands general farming; wife to cook for 3 or 4 men. Give age, experience and references.

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How big is a leak?

THERE'S ONE THING SURE ABOUT A LEAK—IT NEVER GETS SMALLER. It leaks more—never less.

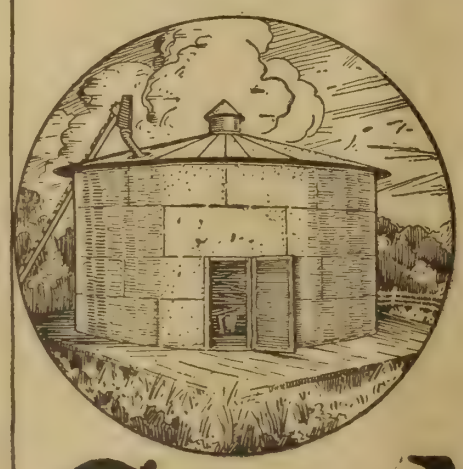
One big milling concern in California has found that it has to resack about 15% of grain shipped to it in sacks—because of bad leaks.

On shipments of 100 tons of sacked grain, at this rate, a leak is 15 tons big.

In your own fields the leaks in sacks costs more than you think. Every rat—a leak maker—costs you $1.50 a year. Rain causes leaks in sacks. Weak sacks—many are *weak*—leak quickly. Bad sewing causes leaks.

Stop Losing Grain with Leaky Sacks

Handle your grain in bulk. Calco Metal Grain Bins do not leak—they save costs of sacks, rat-feed, loss by rain, stop the thief and keep away the fire.



Calco Grain Bins cost just once—when you buy. They pay for themselves quickly and then—cost nothing.

Mills and railroads prefer to handle grain in bulk. They are equipped for it now. It costs less—saves more.

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CALCO Metal Grain Bin

ight voluntarily, but which does ight under compulsion and salaries he compeller in the bargain? If awmakers can make purveyors of irt at hay prices to pay the cost of ompulsion, I would say go to it.—. J. Harbison, Vacaville.

IRTLESS HAY PRACTICALLY IMPOSSIBLE

To the Editor: In response to our article on Selling Adobe at the Price of Hay, will say that it seems o me an absolute fallacy to propose such a bill to become law. I farm 400 acres of adobe hill land and here are years when my hay contains much dirt. It could not be helped under any circumstances, especially when the seedbed is cloddy and when dry years come so there is not enough rain to pack the ground. Dirt cannot be kept out of hay unless you put more expense on handling than it would be worth. When you rake hay from the swath on a steep hill, the fine dirt gathers in hay. Next, when the hay is bunched into shocks with bunching rake and when you drag the shocks to press, every time you handle the hay some fine dirt works in. The opinion most consumers have of dirt in hay is that it is put there to weigh. The baler usually bales what the farmer puts in the stack or shocks. I firmly believe that the present system of baling cannot be improved upon without causing both the farmer and the baler too much expense. If hay dealers would be careful in buying, they could keep a lot of dirty hay off the market. The dealer can plainly see dirt in hay and so can the consumer. In my opinion, it is just a matter of buying what you want.—H. L. Kamp, Danville.

REASONABLE TOLERANCE NEEDED.

[All honest sellers and all buyers would like hay kept reasonably free from dirt. If it can be done, it will help the hay market for sellers, it will give confidence to those who buy by mail or telephone; and the great mass of farmers who use hay but do not grow it, will be well pleased. If existing methods of seedbed preparation and hay-making are inadequate, perhaps better methods and machinery would be used when necessity becomes the mother of invention. The law proposed should permit reasonable tolerances which ought to vary according to favorable or unfavorable seasons for clod-mashing.—Ed.]

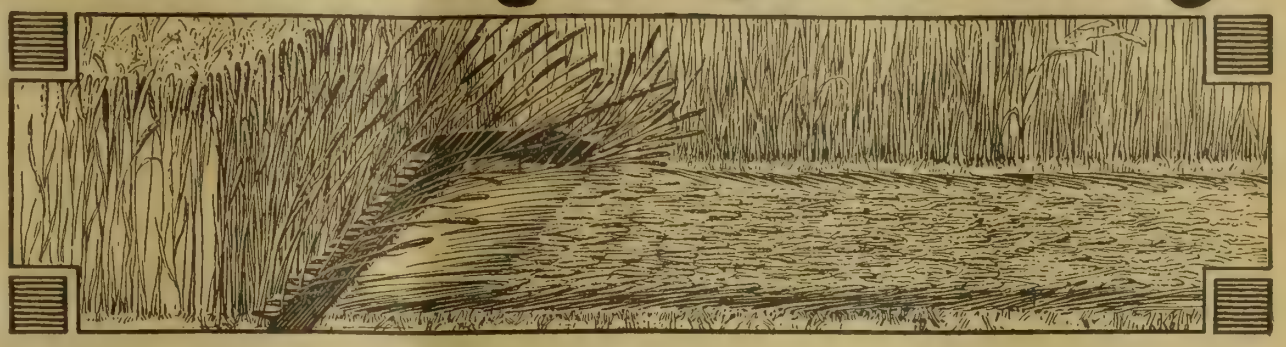
NOVEL IRRIGATION SYSTEM.

[Written for Pacific Rural Press by Chas. F. Barnum.]

A creek, a swamp, and four reservoirs furnish and store water for 180 acres in an irregular little valley operated by the Rowland Land and Cattle Company of Los Angeles. All the reservoirs are made by damming natural land gullies or ravines. Let us number the reservoirs 1, 2, 3 and 4. Number one is a creek in which a dam of black dirt 22 feet wide is used. Number two is a gully of higher elevation and is filled by pump from number one. It is much smaller and is used only in midsummer for the highest points of a walnut orchard. Number three is "all velvet," being like number two, but the same elevation as number one, and filled by a 12-inch pipe from the spillway of number one. Number four is the lowest of all and was dammed with concrete at a cost of about $1000. It catches the drainage of what was once a swampy area and it also takes the overflows from numbers two and three. It and number one supply water for alfalfa which is used to winter-feed some fine Durham cattle. Numbers two and three irrigate about 50 acres of walnut and orange land. Why are not more of the little creeks in our hills dammed to make the winter and spring flood waters useful through the summer!

The 100,000 pounds of seed cotton of the Egyptian long-staple variety listed for the cotton pool formed by the cotton growers at Fresno recently being added to by various amounts of seed cotton from other growers through the Fresno county Farm Bureau.

$4.00 to $10.00 More Per Ton for Your Hay



THERE is frequently a difference of from $4 to $10 per ton between choice hay and hay that grades No. 3. It is to your interest to raise the best grade of hay possible. You can do this by applying the Dain System of air-curing hay. This requires only the use of the Dain System Rake.

When the mower passes over the field the heads of the hay fall back, as shown in the illustration above. You can follow the mower closely with the Dain System Rake—turn the hay while the leaves are still active, delivering it in medium-size windrows on clean, dried-out stubble. Raking against the heads places the bulk of the leaves on the inside where they cannot sun-scorch, and the stems on the outside, insuring thorough evaporation of moisture.

By adjusting the angle of the teeth the density of the windrow is controlled, allowing free circulation of air. *And the Dain System Rake has the widest range of tooth adjustment.*

It is an easy rake to operate. You can put machine in and out of gear, change the angle of the teeth and raise or lower the raking head with levers that are accessible from the seat.

The Dain System Rake has unusual capacity. This is made possible by the high steel arch and an exclusive feature—*the inclined frame,* which is highest at the point where the windrow is largest.

The Dain System Rake is enabling thousands of farmers to make hay that grades high. Get this extra profit out of your hay land by employing the Dain System of air-curing hay.

JOHN DEERE DAIN SYSTEM RAKE

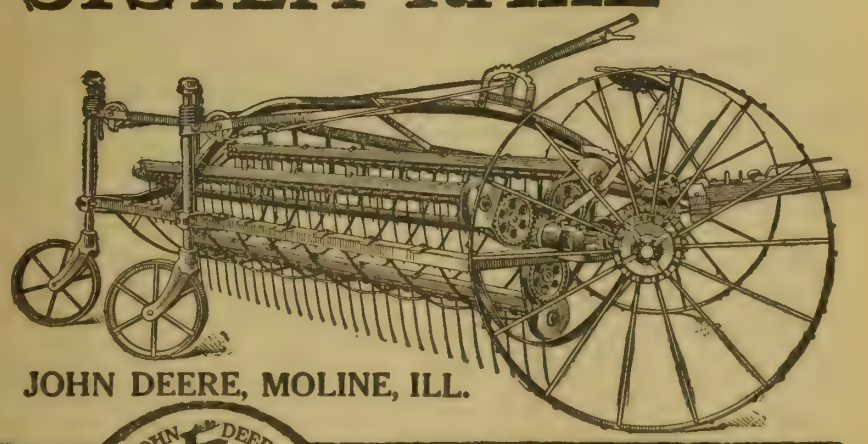
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A Visalia Bean-Grower Presents His Side

[Communicated by F. L. Wrinch, Visalia.]

In the paragraphs and article on the bean situation appearing in the Pacific Rural Press of January 25 and February 1, one looks in vain for any person holding a brief for the crop which in 1917 held second place in value among the agricultural products of the State of California. In a first class journal published mainly in the interest of the producer one naturally expects to see at least a fair presentation of the growers' position. In one of the paragraphs referred to, entitled: "Bean Growers Not Neglected," your writer on markets remarks that the bean situation is stated "in the main correctly" in the article entitled "The Bean Situation — An Explanation," published in the same issue. Your market writer is naturally familiar with crop and market statistics, and has files of reports in his own office to refer to.

THE EXPLANATION FAILS TO EXPLAIN.

In the first place we are not going to question the statement that the beans purchased by the Government for army and navy consumption have been American grown beans, although, as Californians producing over 50 per cent of the beans grown in the United States, we do resent the fact that in an earlier reported government purchase of 90,000,000 pounds, 60,000,000 pounds were purchased in the East and only 30,000,000 on the Coast. The "explanation" weakens very much in the reasons given for the purchase of immense quantities of foreign beans for the Allies. These orders, the administration man states, were placed when it was feared that the American crop was largely ruined by rain in California, and who could tell that the same would not happen to the Michigan crop? The other reason for these importations, stated by Mr. H. Clay Miller elsewhere is on account of lower prices of the foreign beans.

UNNECESSARY WASTE.

In reference to the first point: Why such precipitate haste in placing those orders? They knew that the American farmer, naturally fairly resourceful, was exerting every effort and sparing no expense in order to save the crop, under pressure from every Government source. Those early foreign orders were for 1917 beans, which had been in the warehouses for many months; they might have stayed there a week or two longer quite safely, and no private interest could have cornered the supply on account of Government restrictions. To be charitable, we have to attribute this action to panic in the Government purchasing department and an Allied department supporting them spending millions in gathering information to avert just such panics.

COMPARATIVE PRICES ON FOREIGN AND HOME-GROWN BEANS.

In reference to the second point; In the United States Bureau of Markets, November 27, 1918, at a time when many of these beans were being imported, Kotenashis are quoted at $7.75. To this must be added 94c for freight, and to those staying in the United States 42c duty. On the same date home grown small whites, the corresponding bean, is quoted in Los Angeles at $9 to $9.25. Chimagauzuras, a speckled bean, which may be classed with the Colorado Pinto, is quoted at $5.50. Add the freight to that. The Colorado Pinto is quoted on the same date at $6. These are fair examples of the relative prices on beans grown in the United States and those imported from Japan. The price explanation seems also to fail in providing a good reason for the importations.

IF LEGITIMATE, IS IT FAIR?

At the close of the article, our administration man says: "Some of the foreign beans are brought in by importers as they always have been and distributed here. It is a legitimate business." This statement may pass without editorial comment, but is it legitimate business when the Government has urged the farmer to produce every possible ounce of food, and he has spent his last dollar on the production of a staple crop? Is it legitimate business for the same Government to place an embargo on the free export of the crop to the market for which it was in large part produced, then to allow practically unrestricted importation of foreign produce, depressing the domestic market further; then to step in and make purchases in that depressed market for its own and foreign demands at prices governed, as Mr. Miller says, by "the law of supply and demand"? If that be legitimate business, then as the Pacific Rural Press heads its paragraph in "Market Comments," "Bean Growers Have Not Been Neglected."

THE MENACE OF UNRESTRICTED BEAN IMPORTATION.

Mr. Miller states that the Government will need 5000 tons of beans a month for the army and navy and 65 per cent of these will be purchased in California. What hope does that hold out for the growers who have their capital tied up in the bean warehouses when, as the Government Bureau of Markets shows considerably over 6000 tons of foreign beans were imported into the United States in January. And there is no reason to believe that this month will not see an even larger quantity admitted through our ports as the quantity has been increasing month by month. We hoped for some legitimate profit from our last season's crop which was grown under the most arduous and exacting conditions, for the most part with unskilled and less reliable labor. Now many of us would be only too glad to get our actual expenses out of the crop, which in this part of the San Joaquin I estimate at about six cents a pound, the crop raised being for the most part blackeyes and teparies. Indeed, many of us would be very much gratified to save five cents a pound out of the wreck. I have asked Mr. Miller if his office could not advise the agents who are buying for the millions who have nothing much left from the scourge of war, save their appetites, that there are many perfectly good beans grown in the United States which can be purchased at lower prices than any quotations which I have seen in the U. S. Bureau of Markets reports for foreign beans.

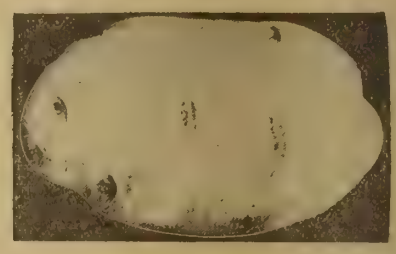
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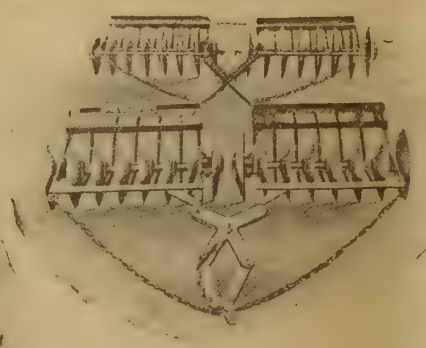
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The small cut shows the Automatic Double-Disc Harrow, automatically straightened. To accomplish this, the tractor is backed up until the hook on the draw chains can be placed in the hole on the front end of the adjusting swivel; then, by going ahead about 18 inches, the disc is drawn straight. To set for working position again, pull out the hook and go ahead. This can all be done by the driver from the seat of most tractors.

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this is the most important development made in the manufacture of farm tools to date. This is the **only Automatic Double-Disc Harrow** on the market. It was designed and built in our own shops, completely; we are, therefore, the **originators** and have it **fully covered by patents.** In the development of this, our latest triumph in **Disc Harrows,** we have not only maintained the great strength and durability as originally designed, but have added two additional most valuable features, namely, our **Automatic Shifting Device;** controlled by the operator from the seat of his tractor, and a **greater flexibility,** so desirable in a **tractor Disc Harrow,** but not found in other makes.

This Harrow is built in all sizes from 5 to 12 feet, inclusive.

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Field and Garden Suggestions

[Written for Pacific Rural Press.]

irst Crop Alfalfa Siloed.

To the Editor: Last spring you ad an article about siloing first rop alfalfa without chopping it. Vill you tell us again how it was one?—L. M. F., Ripon.

The alfalfa was weedy and the eason wet when the first of it was iloed without chopping several ears ago. It could not have made ood hay, but it made "ideal" feed or young stock and dairy cows, specially when fed with hay or traw. The alfalfa was put in fresh- y cut by use of a Jackson hayfork nd a little derrick on top of the ilo. It was spread and tramped by wo men and never molded or spoil- d. Some of it was left in several ears because the silos were filled ith corn in the fall before all the lfalfa was fed out. The silos are f 300 tons capacity and 40 feet igh. The height provided pressure hich helped prevent spoilage. Per- aps lower silos would not be so uccessful. We do not know wheth- r more tonnage could have been ut in if it had been chopped as is he case with hay. In using it here was no particular difficulty in itching it out with forks. The ractice is still continued on this ar.h.

Silage Making and Crops.

To the Editor: Is an under- ground silo practical? If so, must t have drainage to drain silage juice r may it be cemented watertight? s sorghum cane as good for silage s Indian corn?—J. B. D., Patter- on.

There are very few underground ilos, and they are better than no ilo at all. They are used where heapness is more of a necessity han convenience. They ought to e cemted water-tight to keep silage 'juices" in and ground water out. lorghum cane makes pretty fair ilage if allowed to get as mature s possible without losing the leaves n handling. It is considerably in- erior to Indian corn, not only in uality but in yield. Ask your local banker to help you put up a real silo and grow a crop of one of the grain sorghums or Indian corn. Get it soon enough to save your first crop of alfalfa by siloing it. If you have stock to feed, the banker will very probably make it possible; be- cause silo users usually build up bank accounts.

Tomato Contracts $20 and Up.

To the Editor: The cannery is contracting tomatoes here for $20 per ton in the field, and if the price goes higher growers are to get the benefit. Can the Tomato Growers' Association do better? Where would they send mine to?—H., Walnut Creek, Contra Costa county.

The California Tomato Growers' Association is sending out blanks as they did last year to get growers' estimates of their costs of production. When these have come in, they will be summarized, and a price will be set for the sale of members' crops which will allow a reasonable profit. Secretary S. Fujii says yours will be sent to Martinez or Berkeley. Do you want to sell at the other fellow's price or at your own?

Some Intensive Farming!

Here are figures on intensive farming furnished by W. P. Brown: J. E. Cloes of Stanislaus county planted two acres to cantaloupes and sold the crop for $1100. He planted five acres to beans and harvested 125 sacks. After harvesting three tons of oat hay from less than an acre, he planted cantaloupes and sold the crop for $100.

Give the Boys Beans.

The California Boys' Agricultural Clubs are developing beans that bear 185 pods to the plant, while the average number on an ordinary plant is 40. Some club members have found plants bearing as high as 460 pods, according to field reports received by the United States Department of Agriculture.

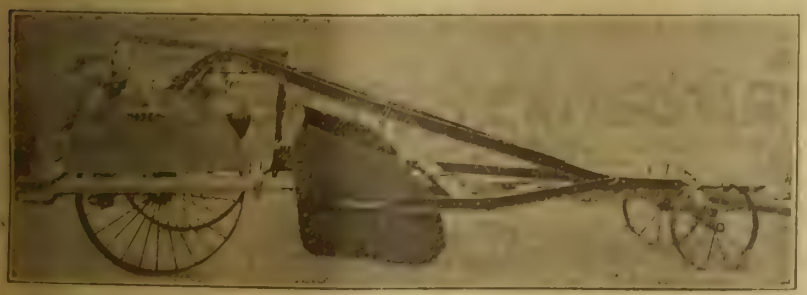
The demand for selected bean seed has increased to such an extent that 25 club members in Salinas Valley will soon make a regular business of selling this seed to farmers. Seed selection from high yielding plants and propagation only from such selected seeds over a period of years is bound to give results. Long life to the California Boys' Agricultural Clubs.

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A Schmeiser Leveler

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send for our latest catalog, J-600, which is full of interesting information on Labor Saving Devices and machines for moving the earth.

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encourage other fairymen to follow suit.

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Mechanical Power on the Farm

Users of tractors, engines, pumping plants, motor trucks, automobiles, electric motors, and other mechanical farm power are invited to make this department an exchange of their experiences and troubles.

HORSEPOWER AND DRAWBAR PULL.

To the Editor: A certain light four-cylinder tractor is rated at 1800 pounds pull at the drawbar with the engine turning 1000 r. p. m. What does this mean in terms of horsepower and how is it figured?—S. M. A., Milpitas.

The revolutions per minute of the engine do not help in figuring the horsepower, but the speed of the tractor itself, would. Suppose that the tractor pulls 1800 pounds at two and one-half miles per hour speed. This would be the equivalent of 12 mechanical horsepower. A mechanical horsepower is the energy required to lift 33,000 pounds a foot off the earth in a minute. For practical purposes, the drawbar pull in pounds is considered equivalent to the lifting of an equal number of pounds, and the rated horsepower with a given pull depends on the speed at which the pull is made. It takes an extra good horse to develop a full horsepower all day, which would be 150 pounds pull at two and one-half miles per hour. In a pinch a horse may develop four or five horsepower for a short time.

TRACTOR SCHOOL AT CHICO.

Plans have been made to hold sessions of the State tractor school in Chico from February 17 to March 8. Registration will be open first to men living on farms who wish to secure a technical knowledge of tractor operation; second, to boys over 16 years of age whose homes are on farms; third, to men and boys over 16 who work on farms; and fourth, to women physically able and who are desirous of learning to operate tractors. The day session will last six hours and the night school for two hours and a quarter each evening. The first two weeks of the course will consist of class work, lectures and practice in taking apart and repairing tractor, automobile and other gas engines. The third week will consist of actual field demonstrations of various tractors, when students will have an opportunity to drive under the direction of instructors. A registration fee of $2 per student will be charged, as there will be no room for those who do not mean business.

PUMPS TO DISTANT TANK.

To the Editor: I have a well 24 feet deep with a 1½-inch rotary pump already installed. Wish to put a tank on a hill about 400 feet away. Its top will be about 40 feet above surface of ground at well. Will the rotary pump do the work or would a centrifugal pump give better results?—S. H. J.

A rotary pump will push water through a pipe such as you propose, with a little less power than would a centrifugal, according to N. C. Jessee of Butte county, who works a good bit on various pumps. However, at the present cost of pipe, a tower might be cheaper and more convenient than piping to the top of the hill, and would save on the power required to overcome the pipe friction. Your 40-foot lift plus the friction of 400 feet of two-inch pipe would require about one and one-half horsepower more than is needed to lift the water to the surface. Smaller pipe would require too much power.

TRACTORS OR COWS?

To the Editor: Last fall the University of California offered certain short courses to farmers. The instructions in Tractors brought out nearly 200 students, while the course in Market Milk Production only drew four applicants. How do you account for this? Does not it show that the dairy business appeal is on the decline owing to the financial difficulties of the milk producers of late? Or perhaps it is not as stylish to milk a cow as it is to ride an iron horse.—A. M. S., Milpitas.

There is more romance and poetry and music in riding an iron horse than in milking cows.

GREAT AUTOMOBILE SHOW WORTH WHILE.

(Continued from first page)

Many of last year's exhibitions did not come again—space costs about $1 per square foot.

AUTOMOBILES IN SPLENDOR.

The dazzling show of automobiles in the big auditorium and corridors surrounding it is of intense interest not alone to those who own or hope to own one of the many luxurious vehicles shown, but also to the hopeless one who would at least linger in the vicinity of such splendor a little while.

We did not note any remarkable departures from designs of a year ago in the mechanical features of autos on display. Auto factories have been too busy on war work. But there is a notable advance in the luxurious impressions of the high-sided, low-topped bodies which suggest more one's home apartments than merely a vehicle of conveyance. Running boards on some models are replaced by simple step-platforms. Two or three entire machines are dressed in leather instead of enamel, and the hoods of a large number of models are so commodious and high that they probably never get warm from the engine. Considerable angularity of hood and body is reappearing with much loss of general beauty.

The sleeve valve types of engines are there, one machine has a dozen cylinders, another has a wheel base of 16 feet centers. Two Liberty motors, a model of the British Whippet tanks, and other features give varied interest to the show.

The most common trouble with spark coils is that they get full of moisture or get moisture on the surfaces of their containers which short circuits part or all of the current. They may continue to give a spark if not too wet, but it will be too weak.

THE SMALLEST GAS ENGIE.

To the Editor: I want a li[gh]t-weight engine of perhaps ½-h. p. to cut vines apart ahead of my t[o]n cutter. I remember a sort of c[lo]ck spring device, four inches wide, u[se]d back East, to be wound up by a l[ar]ge lever. Do Pacific Rural Press r[ea]ders know where I can get as l[ig]ht power as this?—E. L., Winton.

The smallest gas engine we h[ave] located is 1 h. p., and we have r[e]ferred your name to the dealers. It is doubtful if ½ h. p. gas en[gi]ne would be practicable, but you w[ill] lose much gas by using the la[rg]er size, and you will find it han[dy] for other odd jobs. We do not k[no]w of such a clockspring device.

USES TORCH ON MANIFOL[D]

To the Editor: I want to ad[d a] word about starting a cold gas t[ra]ctor. Get a gasoline torch and w[ar]m the manifold before trying to s[tart] the engine. Then your priming [will] be all the gasoline you will n[eed]. We have tried several methods [and] this is the best we have ever fo[und] on our two 75 h. p. Best engine[s].—Gibson Bros., Chico.

An Important Engine Announcement

IN announcing to the farmers of America our new 1½ H.P. "Z"—which successfully uses

KEROSENE

—we complete a *line* of kerosene engines—1½ H.P. to 15 H.P.—which merits the most critical investigation. When over 200,000 farmers back their judgment by buying over fifteen million dollars worth of engines—bearing this name plate—it quite firmly establishes the one answer for all farm engine needs.

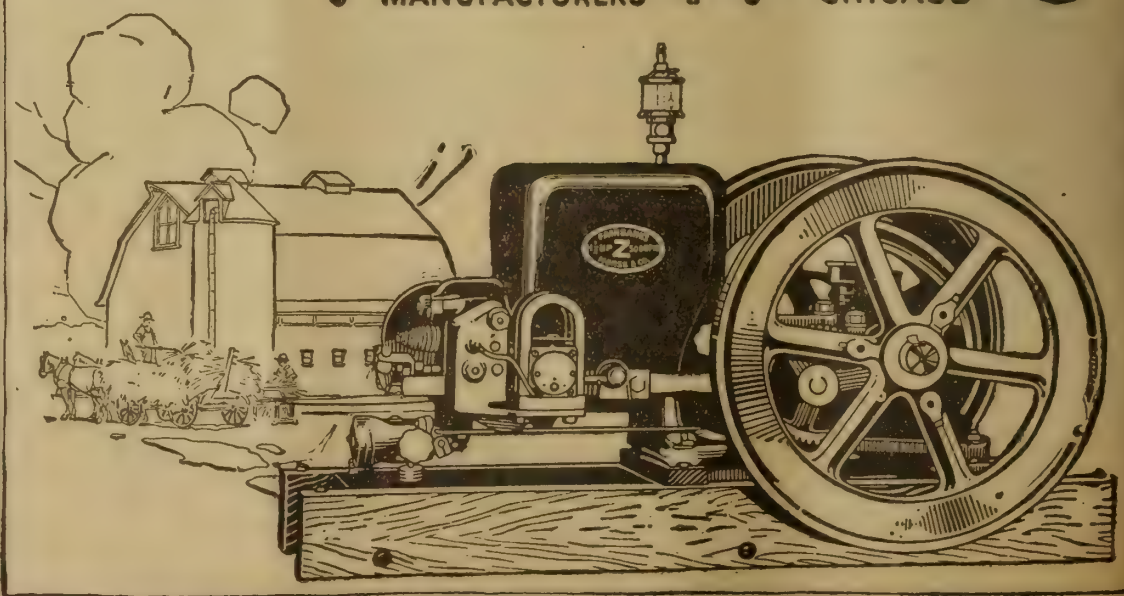
There's a "Z" engine dealer near you—have him tell you why he adds his name to ours in backing the "Z," after comparing it with all others.

Throttling Governor—Built-in Oscillating Magneto.

Prices—1½ H.P. $61.00—3 H.P. $100.00 — 6 H.P. $179.00 — F.O.B. Factory

Also runs on Distillate Coal Oil Tops or Gasoline

Fairbanks, Morse & Co.
MANUFACTURERS CHICAGO



ATE MARKETS. CO-OPERATION. OR BOTH?

[Written for Pacific Rural Press.]

The State Market Commission Act 1915 is proposed to be revised th a few minor changes, and the 17 State Market Act would be re-aled if the bill introduced by Sen-or W. E. Brown of Los Angeles be-mes law. Senator Brown sponsor-the original 1915 Act through the nate, and he still believes that the al commission markets then pro-ied for but never established uld be a great help in keeping the fits of farm produce distributors wn to a reasonable margin. The I contemplates a State Market mmission of three directors who ll establish a commission market some local California city and sell kinds of farm and fishery prod-e on a self-supporting basis, which uld automatically regulate the siness of all other commission en. When one such market has en made self-sustaining, others are be established. Market informa-n shall be gathered and published. e directors are to get $5000 a ar each, and $100,000 is appro-iated to put the enterprise on its et.

SCOURAGES CO-OPERATIVE MARKETING

The bill would, inferentially at ast, put a stop to the present mar-et director's activities in helping oducers to co-operate. Senator rown has a consumer's somewhat isinformed viewpoint in that he be-eves co-operation of producers has en instrumental in raising prices consumers. It may be pointed out at the reverse has been true and ust necessarily continue. The eadying of markets by the wider ore regular distribution of food oducts, due to control of market-g by producers' organizations, and e insurance of a living price for ch crop, has led to tremendous in-reases in acreage devoted to organ-ed farm industries. These crops ust be moved each year before the ext one comes on, as fully demon-rated by years of grievious exper-nce with holdovers. Therefore, the owers' associations must name ices that will move the entire in-reased crop each year, and must stribute it more widely than ever fore. Thus is the price stabilized hile greatly increased quantities of od are produced and consuming arkets are regularly supplied. rices do not skyrocket due to gluts certain markets while other mar-ets are bare. The supply does not, it used to, decrease to starvation oint one year because growers suf-red great financial loss the pre-ous year. For these reasons we lieve that consumers should join oducers to encourage co-operative arketing of farm products. If the ate Market Commission can aid co-eration, give it every power to do , as provided in Senator Scott's ll. If commission produce markets nder State jurisdiction would re-uce the great spread between con-mers' and producers' prices, as we lieve it would, let us boost Mr. rown's bill, with an amendment at will permit encouragement by e State Market Commission of co-erative marketing organizations.

LOSS FROM WILDFIRE.

Fire burned over 333,000 acres in alifornia during the year 1918, as ported by the State Forester, in-uding 1,546 forest, brush, grass and ain fires. It also destroyed timber, od and improvements valued at over million and a half dollars. The rgest fire was in Humboldt county, here thirty square miles of redwood nd tan oak were burned. Wheat, arley and hay, valued at over $268,-00, were burned. That the loss was ot several times as great was due the efforts of the rural fire fight-g and motor reserve companies, hich valuable organizations should come a permanent unit in our pub-e equipment.

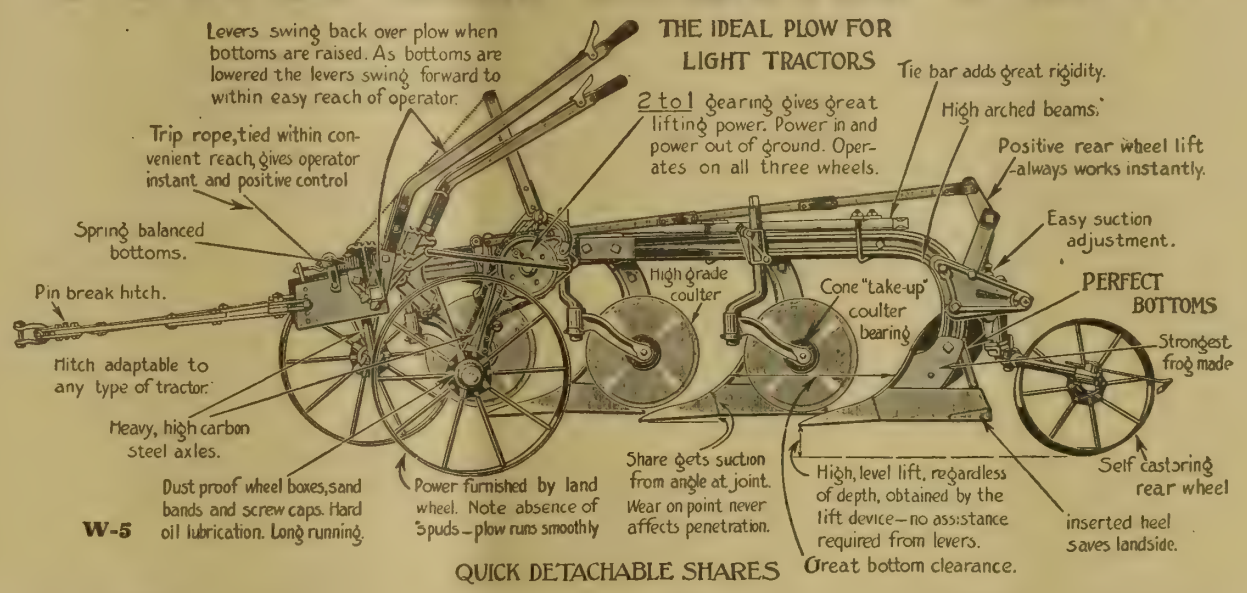
Soil pollution has been found the reat cause of spreading hookworm, ccording to Dr. William Cort of he California State Board of Health. anitary conditions are being im-roved.

The Tractor Plow with a Matchless Field Record

P&O

The Proven Favorite with Tractor Plowmen

Little Genius Power Lift Tractor Plow



The P&O Little Genius is built for use with all types of light tractors. It is made in two and three furrow with 12 or 14 inch bottoms, and four furrow with 14 inch bottoms. A sturdy, steady plow that will give 100 per cent efficiency.

Write for catalog, "P&O Tractor Plows."

The P&O Line embraces all kinds of Light Draft Tillage Implements—Plows, Harrows, Corn Planters and Cultivators. Sold exclusively through retail implement dealers.

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Dixon & Griswold, Los Angeles



Better Seed Beds

The surest and cheapest way to increase yields is to plant the crops in better seed beds. Whatever your soil, you can put it into top-notch condition for planting with an

"Acme" Pulverizing Harrow

The driver rides. A boy or slight woman can do a man's work. Sizes: 1-horse to 4-horse. Hitch a large size to the tractor. Order early and be sure of having your "Acme" when needed.
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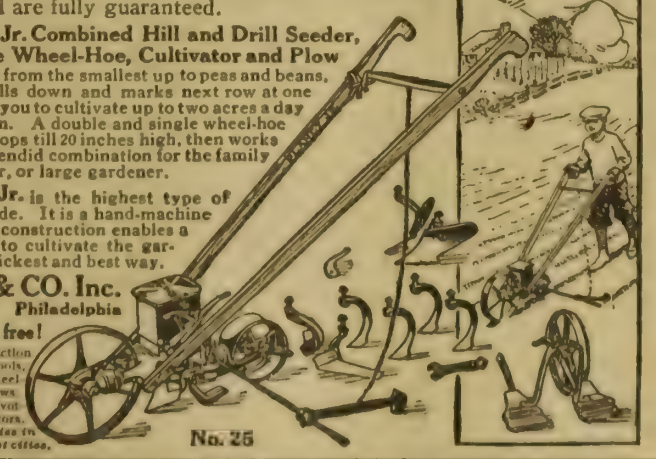
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Distributors

Poultry for Profit

[Written for Pacific Rural Press by Susan Swaysgood, Pomona.]

FEEDING AND CARE OF PIGEONS.

[For Pacific Rural Press by Walter Hickling.]

One of the most important things about the pigeon industry is the right kind of feed and its proper feeding. To get good results, pigeons should be fed a variety of grains—the more the better. Pigeons can exist on one variety of grain, but will not feed their young well under such conditions. The following is a good formula: 40 pounds of Egyptian, milo maize or kafir corn, 30 pounds hard wheat, 15 pounds whole white and yellow corn, 10 pounds peas and 5 pounds hempseed or millet.

One of the best systems is to feed the pigeons all they will eat twice daily, morning and evening. For small breeders it is best and cheapest to buy a prepared pigeon feed, as they will get a good mixture at a less cost than they can buy the separate grains and mix them. In buying grain always be sure that it is of the best quality, well cured and without must or mold. Matured pigeons do not show the effects of poor grain so readily, but it is liable to kill the young squabs. It is very important to have fresh water before the birds at all times. At least twice a week in the summer and once a week in winter the birds should be given a pan of water for bathing. Pigeons need a good grit and this should contain granite grit, oyster shells, charcoal, Venetian red and salt.

Nesting material, such as tobacco stems, alfalfa or any other material on the same order should be kept before the birds at all times. In molting season a good tonic made of equal parts of copperas and gentian root should be given, putting a tablespoon of this in a gallon of water twice a week.

The most common diseases found among pigeons are going light and canker. Going light is fatal in most instances if not treated in time. Symptoms: Inactive, falling off in weight and no appetite. Treat the birds by removing from the flock, pull out all the tail feathers, give five drops of codliver oil daily and feed hempseed.

Canker: A disease that is caused by damp, musty grain, inbreeding, poor ventilation or bad water. The symptom is a white cheese-like formation in mouth, growing until birds can hardly breathe. Treatment: Cauterize with chemically pure bluestone twice daily. The above remedy will do for an occasional case of canker, but when it runs through the whole flock you had better look to your feed and water.

$90 PER MONTH FROM 107 DOES.

During 1918 Mrs. S. D. Thompson, San Leandro, has made a profit of $90 per month from 107 does. She markets her stock at eight weeks of age, weighing 3 pounds each. The total weight of rabbit meat sold during the year was 7700 pounds, for which she received on the average 20c per pound.

A GOOD POULTRY MASH.

To the Editor: Is the following a good poultry mash when used in conjunction with 100 pounds of wheat, 30 pounds of bran, 20 pounds of rolled barley, 20 pounds of middlings, 20 pounds of coconut meal, 10 pounds of alfalfa meal, 5 pounds of dry skim milk, 6 pounds of bone meal, 3 pounds of charcoal, ½ pound of salt? How much grain and mash should be fed to 100 hens? What is the nutritive ratio?—C. P. F., Ferndale.

[Answered by W. Hickling.]

The nutritive ratio is as follows:

		Whites	Yolks
100 lbs.	wheat	147	237
30 lbs.	bran	61.2	48
20 lbs.	rolled barley	24.6	47.4
20 lbs.	middlings	46	36
20 lbs.	coconut meal	52.8	41.8
10 lbs.	alfalfa meal	17.5	14.2
5 lbs.	dry skim milk	40	4
6 lbs.	bone meal	24	1.8
		413.1	430.2
100 lbs.	cracked corn equals	130	220

At least one-third mixed greens should be fed with the above. If this is not done, the large amount of oil contained in the mixture would keep the hens in a continuous partial molt. To produce a maximum yield of eggs, hens should be given all they can eat.

A $60,000 corporation has been formed at Kansas City, Mo., and is known as the American Rabbits Products Company. This company will make a specialty of the utility rabbits. This country can stand many such firms as this.

Egyptian long-staple cotton has been selling in the Salt River Valley, Arizona, for 56 cents a pound, with a few sales made at 59 cents, according to Frank Devine of the U. S. Bureau of Markets.

Poultry Breeders' Directory

GIANT BRONZE TURKEYS—Gold Nugget Strain. Prove their superiority by winning Gold Special Sweepstakes for best turkeys at the following great shows: Arizona State Fair, 1916; Texas State Fair, 1917; California State Fair, 1917-1918; Los Angeles Show, 1917-1918; Pacific Coast Land and Industrial Exposition, Oakland, 1918. An unequaled record. Large turkeys can be raised at practically the same cost as small ones. Toms for sale that will increase size and improve any flock. I am the originator of the Gold Nugget Strain. J. Will Blackman, 607 East Third St., Los Angeles, Cal.

SULLIVAN'S FAMOUS BUFF ORPINGTONS—Want the best? Write Sullivans. Specialists. Oldest flock on Pacific Coast. Line bred for 20 years. Said by Walter Hogan, originator of "Hogan System," best layers of this variety he ever handled. Have won thousands gold and silver special prizes, cups and ribbons—more than all competitors combined, on the Pacific Coast. Eggs, $3.00, $5.00, $12.00, and $15.00. Breeding stock. Write for prices. Mr. & Mrs. W. S. Sullivan, 100 Market Road, Agnew, Santa Clara Co., Cal. Telephone S J 5205, R. 5.

"BEST CHICKS I EVER BOUGHT." "Greatest layers we ever had." Why? Bred 20 years to lay 200-290 eggs yearly. Brown, White, Buff Leghorns; Barred, White Rocks; Reds; Anconas; Minorcas; Orpingtons; ducks, turkeys; clearing customers $5. Valuable circular with proof free. Chicks. Half booked to April. Reasonable. 40,000 egg hatcheries full now. Many repeat orders, monthly, yearly. Breeders. Pullets. J. Beeson, Pasadena, Cal.

WHITE LEGHORNS are the most profitable breed of poultry. If you are in the business for profit, you will eventually have them. Early broilers; early layers; early **profits**; we sell only **White Leghorn Baby Chix from** heavy laying **Hoganized** hens. Safe delivery of full count live chix guaranteed. Prices per 100: February, $15; March, $14; April, $12.50. The Pioneer Hatchery, 408 Sixth street, Petaluma, Cal.

BARRED PLYMOUTH ROCKS—Champion prize winners and wonderful layers. Choice cockerels, hens and pullets for sale. Hatching eggs from twelve grand matings. I have made a specialty of Barred Rocks for over twenty years. That's why I win at all leading shows. "Nothing Better In Poultry" than Vodden's Barred Rocks. Catalog free. Chas. H. Vodden, Box 396, Los Gatos, Cal.

BABY CHICKS—We specialize this season on money-making White Leghorns—hatching from stock with high records that are unimpeachable. Also Brown Leghorns, Anconas, Minorcas, Rocks, Reds, Orpingtons, and White Wyandottes. Especially interesting circular with price list ready January 1st. B. W. Archibald, Soquel, Santa Cruz Co., Cal.

GOLDCROFT BUFF ORPINGTONS fulfill every standard and utility requirement. Won San Jose show first, second, third, pullet and cockerel. Eggs, $5.00 and $3.00 from winning pens; $2.00 from general flock; $12.00 per hundred. Stock for sale. Samuel Abrams, Los Altos, Cal.

PEERLESS WHITE WYANDOTTES—Our 200-egg strain, bred for years for show qualities and high egg production. 50 cockerels, 100 pullets for sale. Trios and mated yards. Eggs for hatching. Catalogue free. J. W. Atkinson, Box B, 130 Willard St., San Jose, Cal.

BABY CHICKS EVERY WEEK—Order early and get the date you want. White and Brown Leghorns, Rhode Island Reds, Barred Rocks, Anconas. Also hatching eggs. Safe delivery guaranteed. Write for circular. Stubble Poultry Ranch and Hatchery, Palo Alto.

FINEST HATCHERY IN THE WORLD—CHICKS, White Leghorns, Rhode Island Settings—1000's—hatched right in our $60,000 brick and concrete hatchery from our Hoganized heavy layers. Stock,—eggs. Pebbleside Poultry Farm, Sunnyvale, California.

SPRING CHIX—White and Barred Rocks, Rhode Island Reds, Buff Orpingtons, Black Minorcas, and White Leghorns from Hoganized stock, bred to lay. Satisfaction and safe delivery guaranteed. Tobener Poultry Ranch, Washington Ave., San Jose, Cal.

RHODE ISLAND RED CHIX or eggs from our Hoganized standard and utility breeding combined. Prices no higher than ordinary stock. Buff Orpington eggs or chix from prize winners. Munier Poultry Yards and Hatchery, Cupertino, Cal.

S. C. RHODE ISLAND REDS EXCLUSIVELY—"Pacific Coast Aristocrats." Hoganized flock. Booking orders for day-old chix and hatching eggs. Order early. Rosedale Poultry Farm, Motor A, Box 200A, Ceres, Cal.

SANTA CLARA VALLEY HATCHERY has the chicks for you from six different standard breeds all bred for egg yielders. Can furnish references from my old customers if desired. Lincoln Ave., San Jose, Cal.

S. C. WHITE LEGHORN EGGS for sale, from heavy-laying, prize-winning strain, headed by males from 280-egg stock, range raised. Setting, $1.50. Hundred, $8.00. Mrs. Sanders Hayes, Longvale, Cal.

BABY CHIX R. I. REDS

My specialty. Bred for eggs, size, color. Hens on free range means strong chix. 16c each; 15c in 1000 lots. Denton Poultry Yards, Box 360, Campbell, Cal.

RAISE CHICKENS, rabbits and pigeons on half acres with city conveniences. Market at the door. Profits by intensive cultivation will surprise you. Write for information. F. R. Caldwell, Broadmoor, San Leandro.

BABY CHICKS—Hatched from our S. C. White Leghorns, a result of many years' careful selection and breeding. San Jose Poultry Yards, Fifteenth and Margaret streets, San Jose, Cal.

BABY CHICKS—Hatched from our own stock in our own hatchery. Hens are of S. C. White Leghorn utility stock, bred for commercial laying. H. A. George, Route 2, Box 29, Petaluma.

FOR SALE—Bourbon Red turkeys and eggs for hatching, $5.00 per setting of 13 eggs. Book your orders early. Albert E. Balmer, Alhambra Valley, Martinez, Cal.

WHITE WYANDOTTES—Eggs for hatching from our heavy laying prize-winning stock. Baby chix. Choice breeding cockerels. R. W. Stawetski, Route B, San Jose, Cal.

BABY CHICKS—from Hoganized breeders, 180 egg type and up. White Orpingtons and Sicilian Buttercups. Order early for future delivery. M. S. Woodhams, San Mateo, Cal.

FOR SALE—Two 400-egg Cyphers Incubators, latest model, used two seasons, $40 each. One 240-egg Cyphers, $20. All in good condition. J. H. Goodier, Paradise, California.

BLACK LANGSHANS—Crabtree's Imperial Strain. Winners everywhere. 250-egg type. Choice hatching eggs, $3, $4, and $5 setting. Jas. Crabtree, 1836 57th Ave., Oakland.

MODEL POULTRY FARM—White Leghorn specialists. Our fifteenth year. Baby chix and hatching eggs for sale. Our prices are right. W. C. Smith, Prop., Corning, Cal.

BARRED PLYMOUTH ROCK EGGS for sale. Good range flock headed by cockerels from 260 to 290-egg stock. $1.50 per setting. Mrs. J. A. Vassar, Laytonville, Cal.

SELECTED S. C. W. Leghorn and Barred Rock eggs for hatching. Hens typed to lay 200 to 260 per year each. $7 per 100. $2 for 15. Jay Maxwell, Madera, Cal.

EASTMAN'S "BRED-TO-LAY" Hoganized and trapnested Barred Plymouth Rocks. Baby chicks. Eggs; cockerels. Fairmead Poultry Farm, Fairmead, Cal.

BABY CHICKS—Booking orders for spring deliveries. White and Brown Leghorns, Rhode Island Reds, Barred Rocks. E. W. Ohlen, Campbell, Cal.

SUPER QUALITY WHITE LEGHORN CHICKS—Hatches March 6th and every 10 days thereafter. Newton Poultry Farm, Los Gatos.

EGG BRED—Buff, Brown, White Leghorns, Golden Campines, Dark Cornish. Winners wherever shown. Send for circular. Percy Ward, 3142 Ward St., Fruitvale.

ANCONAS—Sheppard strain direct. Hatching eggs, $4.00 per 50; $2.00 per 15, plus postage. White Leghorn, $6.00 per hundred. A. S. Wilkinson, Winton, Cal.

BABY CHICKS (White Leghorns) shipped on approval before remitting. No weak ones charged for. Schellville Hatchery, Schellville, Cal.

BABY CHICKS—(White Leghorns) from good laying strain of Hoganized and trapnested stock. Rose Hill Hatchery, Turlock, Cal.

DON'T FAIL to order now if you want early chicks from our Hoganized S. C. White Leghorns. Tupman Poultry Farm, Ceres, Cal.

FOR SALE—White Leghorn chicks from heavy laying stock. Hatched right. Prices right. Madera Hatchery, Madera, Cal.

CHICKENS, DUCKS, GEESE, GUINEAS, Pea Fowl, Pigeons. Wm. A. French, 545 W. Park St., Stockton, Cal. Stamps.

BUFF ORPINGTONS, BUFF DUCKS, BOURBON RED TURKEYS—The Ferris Ranch, R. 2, B. 144D, Pomona, Cal.

FOR THE BEST laying strain of White Plymouth Rocks and Rhode Island Reds, write W. H. Carpenter, Oakley, Cal.

BRONZE TURKEY EGGS—Limited number for delivery in April. No more stock. Albert M. Hart, Clements, Cal.

HIGH GRADE BLACK MINORCAS—Eggs, $2.00 per 15. Edward A. Hall, Route 1, Box 39, Watsonville, Cal.

RHODE ISLAND RED EGGS for hatching. Mrs. Richard Holdridge, P. O. Box 282, Dixon, Cal.

LIGHT BRAHMA EGGS—13, $2.00. Stock for sale. J. Dolan, 146 Wyandotte, Stockton, Cal.

RABBITS.

FLEMISH GIANTS of fine quality, around 15 to 17 lbs. at maturity and in marketable condition. Stock I had selected for personal use until changing conditions required closing. Ask closing prices. S. Arms, Byron, Cal.

STEEL GRAY FLEMISH, NEW ZEALANDS—Breeding does and bucks. Prices reasonable. Golden State Rabbitry, 2522 Hopkins St., Oakland.

NEW ZEALAND REDS—Pedigreed, registered and utility stock. Write your wants. E. Peppin, 86 Cambridge, San Leandro.

NEW ZEALAND REDS—Extra fine colored bucks and does. All ages. C. Jones, 1230 College Ave., Alameda.

NEW ZEALAND REDS—First-class utility breeding stock and young for sale. F. R. Caldwell, Broadmoor, San Leandro.

DR. B. HEARN, VETERINARIAN—Breeder New Zealand and Flemish Giant Rabbits. R. R. 2, Porterville, Cal.

MONEY IN RABBITS—We are now paying $6 per pair for all you can raise. Send stamp for particulars. H. E. Gibson Co., Arcadia, California.

R. & S. RABBITRY, 2922 35th Ave., Oakland. Fine utility Flemish and New Zealands. Stamp for reply.



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Now Best Time to Plant

Should return from $1,000 to $1,500 per acre first year. If interested in Rhubarb or Berries, write for special prices.

J. B. WAGNER, Rhubarb and Berry Specialist, Pasadena, California.

That Single Plowing—Go Light

More mechanical harm is being done to trees of all ages in the opera- n of single plowing than by almost anything else. In the endeavor to t close to the trees with the plow, whole branches are sometimes enched off or broken, or scarred throughout their length—especially ıere loose chain harness is used. Or a large chunk of bark is ripped off e tree by share-point and landside and left exposed to the attacks of rers or the spores of wood rot fungus. How often are men careful ough to go and paint these wounds over with asphaltum? Or again—d still more often—unless the single plow is run very carefully and very allow, the point is going to rip a large snag out of a lateral root, which er becomes infected with crown-gall or wood rot. There is no neces- y for plowing so close to the tree as the feeding roots are not there. it is only necessary to get the grass out of the way and the cultivator d disk do that pretty well later. No one but a careful man with a eady, level-headed, painstaking horse should be allowed to do this ork, for it is kind of irritating for both man and beast—that last round. e all like to cross our work and knock down those centers with the rrow, but for the above reasons it pays better to leave a little more id cut them down with the disk.

Chickens, Rabbits and Pigeons

[By Walter Hickling.]

visit to the Peralta Pigeon pany, Fruitvale, was rewarded an eight-ounce can of their t product, "Squab De Luxe," a -class squab meat prepared in gravy. Under the Peralta label also put out squab tamales and on soup.

. H. Lamb, Fruitvale, is dispos- of his Buff and Partridge Co- s and intends to keep only the t and Dark Brahmas.

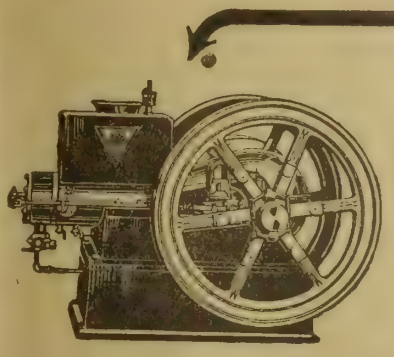
r. Frost, San Leandro, is adding buildings to his poultry plant intends to increase his flock of te Leghorns to 1000 birds.

. C. Howe, San Leandro, has just pleted one of the largest rab- bitries in this section. This plant will house 200 breeding does and their young. He intends to start a mail order business in dressed rab- bits.

On account of the price of squabs going to 65 cents per pound in the San Francisco market and $1 per pound in New York, H. W. Barnett reports an exceptional demand from all over the country for breeding stock.

Miss C. B. Carrington of Haywards is finding the demand for hatching eggs heavy. She has been selling on the average two cases of hatch- ing eggs per day.

At the annual meeting of the Ala- meda County Poultry Association, the following officers were elected for the year: Percy Ward, presi- dent; C. G. Hinds, secretary; W. J. McCamman, recording secretary.



Pumping Equipment

ALPHA ENGINES

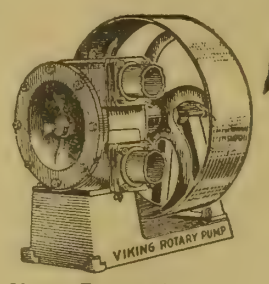
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Have the quality and stamina to develop full power economically, season after season without that rapid deterioration common to engines of lighter construction or less efficient design. Buy it—the Alpha is the easiest starting, most per- fectly balanced engine made.

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20 to 100 Gallons per Minute

The ideal pump for irrigation. Excels in efficiency due to low speed and positive discharge. Will pump against any head up to 150 feet. High efficiency reduces power costs —no churning of water or wasted power with the Viking.



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Power and Quality Guaranteed

The Waterloo Boy is built to sustain the long standing reputation of its makers. It is a tractor without any make- shifts or deceptions; all our claims for it are fully sustained by its performances in the hands of users.

You can rely on full rated 12-25 horse power from the Waterloo Boy 2-speed, valve-in-head motor, continuously, evenly, with no vibration. Our own patented inbuilt kerosene manifold insures low operating cost; latest type magneto and carburetor eliminate starting troubles; automatic lubrication and dust-proof gears prevent wear; steel-cut, case-hardened gears give necessary transmission strength; large, wide wheels carry the tractor easily over soft ground without packing the soil; one lever and foot pedal control operation.

Our illustrated catalog gives other points of construction details which commend the Waterloo Boy to all tractor buyers—also many field scenes which will interest you. Sent free on request.

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THIS Tractor Book tells all about *special abilities* of Bean TrackPULL Tractor in *orchards* and *vineyards*.

This great little 6-H.P. machine, designed by builders of special orchard and vineyard machinery for 34 years, combines a wealth of experience in one most efficient de- sign to meet definite orchard and vineyard needs.

Don't buy tractor built for *gen- eral* use which may prove merely an expense, no matter what the pur- chase price.

Tractor designed to *do your kind of work* is the cheapest by far in *service-costs* per year.

Bean TrackPULL turns about- face in 10-foot circle with *full* power—tools deep in soil. You turn right back in same row.

Built low to go under lowest branches. Great traction permits



light weight, low fuel expense, and best work in soft soil.

Bean TrackPULL Tractor will be as famous as noted Bean Power Sprayer when as many are in use

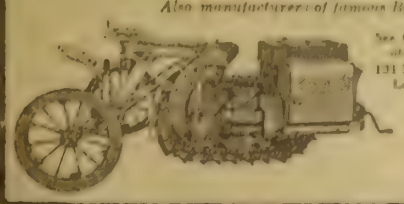
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New "After-the-War" Proposition

We have a new "After-the-War" proposition which includes a special ... a factory guarantee against ... work of 90 days without expense for repair parts. This guarantee bond is ... purchase of a BEAN.

A reduction in price is also effective ... and guaranteed up until ... 1919.

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See this Tractor at either of our Branch Houses 131 S. Los Angeles Street Los Angeles, Cal., or Fresno, Cal.

Bean Spray Pump Co.

THE HOME CIRCLE

LET THERE BE LIGHT!

Black with the blackness of hell and despair
Village and village and village lay there;
Never a candle and never a lamp—
For hundred miles of the enemies' camp.

Trains of munitions that creak with their loads,
Supplies, horses, soldiers engulfed by the roads;
An ambulance crawling, a password, and then
Through the shell-shattered houses the marching of men.

Black with the blackness of wounds and of death
The villages huddled there holding their breath;
Black—till there rang this new order to "Cease"—
"It is over!—all over!—the war!—there is peace!

Come, dance on the ruins—Look, No Man's Land there,
"Verboten" for years, is a world's thoroughfare;
And village and village, remember the night,
But turn it to day—and let there be light.

The sorrow unburied, destruction—how much!
Four hundred long miles for the taper to touch!
The shades are undrawn, the lamps shining bright;
It is dawn in the darkness; again There Is Light!

—Ruth Wright Kauffman.

ON THE FIRST DAY OF SCHOOL.

Ernestine Page and Margery Douglass were five years old, and they were going to school for the first time. For months they had looked forward to this day, and now it was actually here!

Mrs. Douglass was obliged to be away from home that morning, so she had arranged with Mrs. Page to take charge of Margery when she accompanied Ernestine to school. But before the hour came a telegram arrived for Ernestine's mother, saying that Aunt Anne was sick and wanted to see her at once.

"I am sorry it has happened so," Mrs. Page said; "but I saw the teacher yesterday, so it will not make much difference. You and Margery won't mind going alone, for it is only a little way."

Ernestine looked troubled until Margery ran in and said she wasn't afraid. Then things seemed bright again.

They started off happily; but, when they came to the corner of the street where the school building stood, and saw so many children, Ernestine pulled back.

"Oh, I don't dare!" she gasped.

"I don't, too!" confessed Margery, and her lip quivered.

The next minute they were running in the opposite direction.

"What shall we do?" almost sobbed Ernestine. "We can't go home, 'cause mamma's gone by this time—she had her things on, and there isn't anybody there!"

"And my house is all locked up!" Margery added dolefully.

They kept on, now and then turning to look back at the streams of boys and girls still pouring toward the school-house. After a while the school-bell stopped.

"We can't go now anyway," said Margery.

"No, it's too late," was the relieved answer.

They stopped at a small park, to admire the cannas and geraniums; then they walked slowly on.

"We can take a long walk, and go home when it's 'most noon," they agreed.

But, when the whistles blew for five minutes of twelve, they did not know which way to take.

"Maybe we're lost," suggested Ernestine, a little frightened.

"I guess not," was the cheerful response; "but I'm hungry!"

"So'm I," and Ernestine's voice was quivery.

"Why don't you go home to dinner, little girls, if you are hungry?"

It was a pleasant-faced lady who spoke. She was going up the steps of a house. The children did not need much urging to tell their story, and then they were invited inside and given some crackers and milk to eat. The lady learned where they lived, and then she went to the telephone in the next room.

"Oh, she's tellin' the p'liceman to come and arrest us, I guess," whispered Margery, "'cause we didn't go to school! Let's run 'fore she catches us!" And stealthily the two sped through the kitchen and out of the back door.

How they ran up the street! They never stopped till the house was out of sight. All the afternoon they walked and walked, never coming to the home street.

Suddenly Ernestine cried, "Oh, there's Aunt Julia's house!"

Hand in hand they ran, until they were safe in the arms of the astonished auntie, for she lived two miles away from her niece's home.

The next day they went to school, Mamma Page making sure that they were seated at their little desks before she left them.—Emma C. Dowd in the Sunday School Times.

THE SOCK DARNERS.

To all of us who have knitted socks without ceasing during the period of the war, the article in the February Red Cross magazine, on "The Saga of the Socks," will be interesting and enlightening. There have been so many rumors as to what became of worn socks that we will be glad to know from an official source that the Red Cross employed the peasant women of France to mend the worn out socks of the American army. The army paid four cents a pair for the work and supplied the wool and the Red Cross records show that in three months employment was found for 688 women, with a weekly pay roll of $1,300.

They salvaged them in southern France—a hugeous heap of socks,
With heels and toes a-gaping so your grandma'd throw a fit.
They weren't in nifty silks and lisles, with hand-embroidered clocks,
But just the gray, old-fashioned kind that grandma used to knit.
For it's tramp, tramp the boys are marching,
(A thing which rips the toughest woolen socks),
And it's knit, you women, knit for the boy who does his bit
While you harken to the Saga of the Socks.

CARE OF CHILDREN'S TEETH.

The idea that the child's first teeth are so temporary that they do not need to be cared for was prevalent some years ago, but now intelligent mothers realize that they must be carefully looked after if the child's health is to be safeguarded.

If the first teeth are defective, serious stomach trouble may develop, due to a lack of mastication, and if they are pulled too early, the jaw does not develop sufficiently to accomodate the second set of teeth and crowding and irregular teeth is the result.

The greatest menace to the health though, is the presence of decayed teeth in the mouth, with the constant drainage of pus into the system with the food.

The early and constant habit of using a tooth brush should be taught every child and regular visits to a dentist should not be omitted.





PUBLIC HEALTH NURSING.

In the comparison of health between city and country boys, it is interesting to note that 4 per cent more city boys than country boys were rejected in the draft because of physical disqualifications.

The death rate is lower in the country than in the city, according to the Department of the Census, but country children are more likely to fall victims to children's epidemics than the boys and girls in cities and a greater number of babies under one year die in the country than in towns.

This is due to a lack of skilled medical attention and nursing care. In many remote districts, mothers and babies undergo unnecessary suffering because they lack the health facilities common in large cities.

To correct this there has been an effort made to have Congress aid in the extension of the U. S. Public Health Service. Secretary Houston also states that country districts must have the advantages of modern hospitals and nursing.

The health problems of the farmer and his family are many and they cannot be adequately met without the aid of the public health nurse. The great value of the public health nurse to the rural community lies in the fact that she is at work all the time. No single family could afford to have a skilled person at hand to give help whenever it is needed, but a county or a group of people can easily afford to co-operate in employing a public health nurse.

By being constantly at work in the homes of the district, the nurse is able not only to help cure sickness, but to teach methods of keeping well.

The national organization for Public Health Nursing, with headquarters at 156 Fifth avenue, New York, is anxious to advise communities and assist them in procuring nurses, if they so desire.

TO KEEP YOU GUESSING.

Read these riddles aloud to the family, withholding the answers, and see how many can answer them:

What is the proper length for ladies' skirt? A little above two feet.

What fashionable game do frogs play at—besides leap-frog? Croaky.

What word is it which, by changing a single letter, becomes its own opposite? United; untied.

What three words did Adam use when he introduced himself to Eve, which read backward and forward the same? "Madam, I'm Adam!"

At what time of the day was Adam born? A little before Eve!

What did Adam and Eve do when they were expelled from Eden? They raised Cain!

What is that which is put on the table and cut, but never eaten? A pack of cards.

Do you know what the oldest piece of furniture in the world is? The multiplication table!

Which is the greatest number, six dozen dozen or half a dozen dozen? Why, six dozen dozen, of course; six dozen dozen being 864, and a half-a-dozen dozen 72.

Why is twice 10 like twice 11? Because twice 10 are 20, and twice 11 are 22 (too).

A room with eight corners had a cat in each corner, seven cats before each cat, and a cat on every cat's tail. What was the total number of cats? Eight cats.

WEIGHT AND APPETITE.

According to scientific investigations, the more weight one gains the more food it takes to maintain that weight. This makes the problem of reducing one's weight by dieting more difficult, for the system craves more food as the weight increases and it is a craving that is difficult to overcome in some cases.

In attempting to reduce, fattening foods should be eliminated as much as possible, but hearty foods should not be dispensed with, just reduced in quantity.

The summer time is the best time for reducing on account of the great number of satisfying foods, both vegetables and fruits, that are not fat producing.

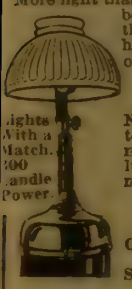
MORE LIGHT THAN 20 OIL LAMPS

AT LAST—the light of lights—A beautiful lamp that lights with common matches just like oil lamp, but makes and burns its own gas from common gasoline, giving a brilliant, steady, restful, white light of 300 candle power.

MOST BRILLIANT LIGHT MADE

Brighter than the brightest electricity. More light than 20 oil lamps. Cheapest and best light made. Costs less than one-third of a cent per hour. Safer than the safest oil lamp. The

COLEMAN QUICK-LITE



No wicks to trim—no globes to wash. No dirt, no grease, no glare or flicker. Absolutely safe. Fuel can't spill—no danger even if tipped over. —will last a lifetime.

Write or office for Catalog 21-R. P.

COLE LITE & SALES CO.
216-18-20 East 41st St.
Showrooms 324 S. Hill St., Los Angeles.

WAS $100—NOW $57

Here is the famous Oliver Typewriter offering you a saving of $43. The $57 Oliver is our identical $100 model, brand new, never used. Not second-hand nor rebuilt. The same as used by many of the biggest concerns. Over 700,000 sold. We send an Oliver for Free Trial. Not one cent down. If you want to keep it, pay us at the rate of $3 per month until the $57 is paid. This is the greatest typewriter bargain in the world.



Write today for our new book, "The Typewriter on the Farm."

The Oliver Typewriter Co.
3792 Oliver Typewriter Bldg.
Chicago, Ill. (11.07)



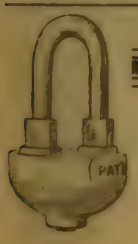
CHILDS' GIANT KOCHIA has taken its place everywhere as the greatest floral favorite. It rivals the best Ferns or Palms in decorative effects and is equally valuable for garden or pots, a pyramid of dense feathery green foliage all summer; in fall, a dark claret red till Christmas. Easiest of all plants to grow anywhere. Pkt. 20c.

HOW TO COOK VEGETABLES, a booklet giving 666 receipts for cooking, canning and preserving vegetables of all kinds, 10c.

FOR 20 cts. we will mail sample packet Kochia seed, Cook Book, New Matchless Lettuce, Two Pound Tomato, and Chinese Woolflower.

CATALOG free. All flower and vegetable seeds, bulbs, plants, and berries. We grow the finest Gladioli, Dahlias, Cannas, Irises, Peonies, Perennials, Shrubs Vines, Ferns, Roses, Sweet Peas, Asters, Pansies, Beets, Beans, Cabbage, Onions, Tomatoes, Corn, etc. Prize strains and sterling novelties.

JOHN LEWIS CHILDS, Inc., Floral Park, N. Y.



Spoilers—

Without even a blush, we frankly acknowledge that we have successfully "spoiled" thousands of families but there is wonderful satisfaction in listening to the voluntary testimonials that come to us by word of mouth—people who feel they simply have to come in and tell us how delighted they are with our burner—that they could not possibly do without it and that we have not told half of its wonders and comfort!

It is this "advertising" that money cannot buy—the good word of the users—that is responsible for the tremendous growth of our business in three short years.

Would you learn of that which means endless comfort, pleasure that cannot properly be expressed in words? Then investigate, make inquiries regarding "The Simplest Thing in the World"—We will lend "First Aid" by sending Circular "B" and drawing if you will but ask for it. Tell us of your heating or cooking problems. Describe the stove and give its size. All questions cheerfully and promptly answered.

THE BURNER MAILED ANYWHERE—$5.00.

COMPLETE ONE-BURNER OUTFIT, $9.85, EXPRESS COLLECT.

PREMIER BURNER CO., 346 SO. SPRING STREET LOS ANGELES, CAL.



Are You Enjoying Real Heating Comfort?

IS every room in your house comfortably warm no matter how cold the weather? Or are you still enduring the inconveniences and discomforts of stoves or other inefficient, fuel wasting heating systems?

Do you know that the Mueller Pipeless Furnace will heat comfortably every room in your house through one register and will save you *one-third* to *one-half* on fuel? Don't let another day pass without finding out about this most remarkable and efficient of all heating systems. Learn how simple and safe it is to operate. No tearing up of floors or walls to install—no pipes to heat cellar—no cellar too small for it. Burns hard or soft coal, coke, lignite, wood, or gas.

The Mueller Pipless is the only furnace which scientifically controls the circulation of warm and cool air, making a one-register heating system thoroughly practicable and efficient. It is guaranteed to heat to a comfortable temperature every room in your house.

SEND TODAY FOR THIS BOOK—FREE

It will tell you all about the Mueller Pipeless—give you valuable information about heating. Write for it TODAY.

L. J. MUELLER FURNACE CO., 231 Reed Street
MILWAUKEE, WISCONSIN
Makers of Heating Systems of All Kinds Since 1857

Distributing points at St. Louis and Kansas City, Mo; Omaha, Neb; Minneapolis, Minn; Aberdeen, S.D; San Francisco, Cal; Seattle, Wash.



MUELLER PIPELESS FURNACE

To Producers and Consumers of the California Grain-fed HOG:

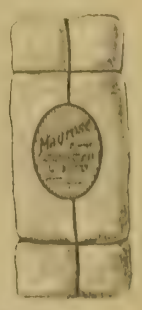
It is just about two years ago since we first started our advertising campaign to

give the California Pig a chance

We were confident that California grain-fed pork is equal in quality to grain-fed pork produced anywhere else. From the hogs we received we selected the best from which to cut our



MAYROSE
brand
HAMS
and
BACON



We unhesitatingly urged you Consumers to buy these smoked meats, and we never ceased our efforts to encourage you Producers to raise better and still better hogs, second in quality to none. The results of this campaign have been most gratifying to Consumers, to Producers and to ourselves.

The California grain-fed hog has MADE GOOD—Let us ALL keep up the good work!

WESTERN MEAT COMPANY
SAN FRANCISCO

Classified Advertisements

Rate in this directory 3c. per word each issue.

MISCELLANEOUS.

REMANUFACTURED PIPE. All sizes standard pipe and wrought iron screw casing. All kinds of fittings. Guaranteed good as new. Write for prices. **Weissbaum Pipe Works**, 160 Eleventh street, San Francisco.

PEAFOWLS—VERY TAME—for sale. 20 months old, $25 pair. Trio, $35. 8 months old, $17.50 pair. Trio, $24.50. Crating extra. Eggs in season, $1.00 each. Also Mammoth Spanish Jacks and Jennets. A. Everett, Moorpark, Cal.

FOR SALE—3-bottom power lift P. & O. tractor plow, $150. Double 6-ft. John Deere disc harrow, $100. 1-ton auto or truck trailer, $100. 8-ft. Dunham double pulverizer, $75. All practically new. Barker, Fortuna, Cal.

FOR SALE—1600 ft. of 11-inch No. 20 gauge galvanized iron pipe, part of it used for one irrigation, balance never used; 20 per cent off present market price for quick sale. A. H. McHuron, 519 California St., San Francisco.

ALL SIZES OF PIPE and screw casing, both new and second-hand, dipped and undipped. Guaranteed. Prices right. Shecter Pipe Works, 304 Howard St., San Francisco.

FOR SALE—Fourteen 50-gal. oak wine barrels, used but once, like new. Guaranteed to be in fine condition. Price, $4.25 each f. o. b. Watsonville. G. W. Cornell, Watsonville, Cal.

MADE OF REDWOOD, Hawley's Perforated wooden well casing, the best and cheapest well screen made. Send for descriptive circular. G. M. Hawley, La Mesa, California.

HAVE YOU SEEN THE PERFECT SILO?—Be sure to write us for description and prices of the best and cheapest silo on the market. The Lewis Co., Dept. C, San Jose, Cal.

CABBAGE CUTTER—SIX KNIVES—Slices vegetables rapidly. Excellent for potato chips. Prepaid, $1.00; three for $2.00. Lusher Brothers, Elkhart, Indiana

FULLY EQUIPPED CHEESE FACTORY at Woodbridge, Cal. Located in center of dairying district. For sale or rent. Inquire. Ralph C. Clark, Lodi, Cal

CO-OPERATION (not operated for profit) reduces living expenses. Particulars and catalogue from Co-operative League, Commercial street, San Francisco.

CLEVELAND TRACTOR—Best of condition. Must sell to get larger machine. Price, $1000. P. Peterson, R. D. 1, Box 47, Fairfield.

WANTED TO BUY—Guinea pigs, birds, dogs, and animals of all kinds. Buker's Bird Store, 1184 Market St., San Francisco

BARGAIN—One second-hand and one new Cleveland tractor. W. B. Knapp, 2074 Center St., Berkeley, Cal.

COUNTRY LANDS.

40 ACRES irrigated by the fertile waters of the "Orland Project." Easy to level. Half in crop. Living water all summer. Mostly creek bottom sandy loam. 60 rods to highway, 40 rods to railway station. Good school; pure water. Young bearing orange grove. Nothing better for alfalfa, figs, olives, almonds, prunes, or apricots. $175 per acre. One-third cash; balance 7 years time. Would divide the land to suit. Hall T. Brown, Box 398, Orland, Cal.

$6000 BUYS HOME-SITE with good income. Five-acre tract on State highway, one mile south of Gilroy depot. 2½ acres prunes, 2½ acres cots, 12 years old, in full bearing. Good stand alfalfa between trees. Good well, 4-inch centrifugal pump. Income 1918, $1500. Terms, half down, balance twenty-five per cent per year. Interest 6 per cent. J. E. Thomas, Gilroy, Cal.

FOR SALE—The famous Bane Almond orchard at Orland. On account of labor conditions, as well as physical condition, I have concluded to sell my almond orchard, either in subdivisions of 10 acres, or as a whole. For particulars address P. D. Bane, Orland, Glenn Co., California.

FOR SALE OR RENT—3000 acres of good, level land in Fish Lake Valley, Mono Co., Cal. Good for alfalfa, beets, potatoes, hogs, cattle, bees. Part for sale at $10 to $25 per acre; part to rent at your own terms. For particulars address, H. Varnell, Watsonville, Calif.

FOR LEASE—Six acres Sonoma county. Houses for 2000 hens; equipped brooder houses; incubators; barns. Good well, tank and engine. Box 1430, Pacific Rural Press.

FOOT HILL RANCH for sale, 30 acres in cultivation, implements and stock, all for $3000. For particulars write to R. A. Winsor, Hornbrook, Cal.

FOR SALE in Klamath Co., Oregon, 600 acres good, level, unimproved land, good for alfalfa, grain, or stock. Price, $10.00 per acre. Address, W. H. Johnson, 22 Maple Ave., Watsonville, Calif.

FOR SALE—Improved ranch with all implements and cattle. Address, Box 476, Placerville, Cal.

SEEDS AND PLANTS.

YOUR ALFALFA SEED should meet the needs of your soil and moisture conditions. One of the seven different kinds of Green Gold brand seed will yield heaviest and live longest because they are selected for particular conditions. Our illustrated booklet tells you all about each kind. Write for it now. Bomberger Seed Company, Desk B, 725 Tenth street, Modesto, Cal.

POSITIVELY THORNLESS Mammoth Blackberry found native at Mountain Pass Ranch. Prolific, berries mammoth, sweet, practically seedless. Bound to supersede all other blackberries. Well-rooted year-old plants, ½ dozen, $1.50. Supply limited. Dealers write for price per 100. G. S. Wills, Box 125, Jamestown, Cal.

TUSCAN AND PHILLIPS CLING PEACHES—extra heavy caliper, one year, 4/6 ft. J. H. Hale and other good varieties peach, plum, apple, and pear trees. Walnut and citrus fruits. Clean, healthy, vigorous, true-to-name. Grown under expert supervision. Los Nietos Valley Nursery, Downey, Calif.

BUDDED AVOCADOS—Fuerte, Sharpless, Lyon, Dickinson, Blakeman, Puebla, Spinks, Taft Linda, Rey, Queen, Knight, and others. A fine stock of field-grown trees, $2.50 for one, $2.00 each by the 100. 25c per tree for packing. Newbery-Sherlock, 2202 East Colorado St., Pasadena.

GENUINE FRANQUETTE WALNUT GRAFTWOOD, 3c per foot. Ogden Bolton, Jr., Route 4, Box 447, Santa Rosa, Cal.

THE MARKET REPORTS

Figures Given Are Independent and Reliable.
Prices Quoted as Paid to Producers.

SAN FRANCISCO

San Francisco, February 11, 1919.

WHEAT.

The following prices were announced by the Federal Grain Corporation last year and are still in effect. They are figured f. o. b. San Francisco, Los Angeles, Seattle, Tacoma and Portland and guarantee the grower a minimum of $2 f. o. b. shipping point:

Per bushel—	
No. 1 hard	$2.20
No. 2	2.17
No. 3	2.13
No. 1 soft	2.18
No. 2	2.15
No. 3	2.11
Club or Sonora, No. 1	2.16
do, No. 2	2.13
do, No. 3	2.09
Recleaned for seed, per ctl.—	
California Bluestem	$4.15@4.25
Early Baart	4.15@4.25

BARLEY.

The holders of barley are getting impatient to realize on their grain and are offering it at a lower figure. Some dealers are talking of a $1.95 rate, but that is generally conceded to be too low, even as a bid price at the present time. However, if shipping facilities are provided in the near future barley may go even below that figure.

Choice feed, per ctl	$2.05@2.10

OATS.

While there is no change in the quotations of oats the market is weak with practically no demand.

Red feed, per ctl	$2.22½@2.30
Red for seed	2.60@2.75
Black for seed	Nominal
Recleaned Red or Black for seed	$3.15@3.20

CORN.

Corn is weaker with no activity. Some damaged stock has been on the market and sold at lower prices for chicken feed.

California	$2.70@2.75
Egyptian, choice	$2.75@3.00
Milo	2.70@2.75

POTATOES, ONIONS, ETC.

Trade in all vegetables this week has been very light. Potatoes and onions have about maintained last week's levels but both, especially potatoes, are showing weakness, and lower prices are predicted. Carrots are plentiful and sell at a lower level. The recent rains have greatly affected the arrivals of vegetables to this market and at the same time have greatly decreased the demand.

String beans	25c
Lima beans	None
Carrots, per sack	$1.00@1.25
Rhubarb, San Jose, per box	2.00@3.00
do, Strawberry, per lb	8@10c
Pumpkins	None
Cucumbers, hothouse, box of 30	2.50@3.00
Los Angeles, lugs	3.00
Eggplant, per lb	20@25c
Lettuce, per crate	$3.00@3.25
Celery, crate	5.00@7.50
Tomatoes, Southern, per crate	2.00@3.00
do, Mexican	3.00@3.50
Sprouts, per lb	8@10c
Potatoes—	
Fancy whites	$1.90@2.15
Choice	1.75@2.00
Sweets, per sack	3.00@3.50
Onions, Warehouse Stock—	
Yellows	1.65@2.00
Australian Browns	1.65@2.00
Garlic, new	25@35c
Green corn, Alameda, per sack	None
Okra, per box	None

BEANS.

The local bean market seems to be all shot to pieces. There is almost no demand at all and the lowering of prices does not seem to stir up the buyers. The most radical change for the week was a drop of one dollar in limas, but even this change failed to stimulate business. The Government is not buying in this market at present, and no other big buyer is developing, notwithstanding the falling market.

Bayos, per ctl	$7.10@7.30
Blackeyes	4.50@4.75
Cranberry beans	6.50@6.75
Limas (south, recleaned)	8.25
Pinks	5.75@5.90
Mexican Reds	6.25@6.50
Tepary beans	3.50@4.25
Garbanzos	9.50@9.75
Large whites	7.00@7.25
Small whites	7.75@7.90

POULTRY.

Receipts from outside have been ample to keep the market supplied, especially with roosters. Hens have not been plentiful and a good demand strengthened this description. Broilers are lower, and ducks somewhat higher. The rest of the market steady.

Turkeys, live, young spring, lb	34@36c
do, old	36c
do, dressed	40@42c
Broilers, 1½ to 2 lbs	42@45c
do, 1¼ lbs	40@45c
do, ¾ to 1¼ lbs	40@45c
Fryers	40c
Hens, extra, per lb., colored	36@38c
do, Leghorn	38@38c
Smooth young roosters, per lb. (3 lbs. and over)	33@38c
Old roosters, colored, per lb	21@23c
Geese, young, per lb	32@34c
do, old, per lb	30c
Squabs, per lb	65c
Ducks	30@32c
do, old	29c
Belgian hares	15@18c
Jack rabbits	$3.00@3.25

BUTTER.

Storm conditions have caused lighter receipts of butter in this market and the price has advanced three cents over the close of last week. At the same time the Eastern butter markets are firm with good receipts. So far as known no butter has been shipped to the Eastern market this week, although shipments to points both north and south have been made from San Francisco. Another feature which brought strength to the local market was a large contract closed with the Navy department for butter. This latter may have a steadying effect on the local mar-

EUREKA WALNUTS are the best grafted on Paradox roots. They resist blight. You are sure to get the real thing by placing your order with us. We graft Eurekas only. Geyer Brothers Walnut Nursery, 214 S. Almasor street, Alhambra, Cal.

NEW HARDY HYBRID ALFALFA—Biggest perpetual cropper. Best quality—hay or pasture. Wonderful constant stooler. Grows thick, permanent, profitable fields, etc. Investigate facts. J. L. Lawson, San Jose.

FOR SALE—About one ton of nice Sudan Grass Seed at 17½c. per pound, f. o. b. Modesto. Also about a ton of Black Amber Sorghum at $3.75 per hundred, f. o. b. Modesto. C. F. De Witt, Box 427, Modesto, Cal.

TREES! TREES!—Eureka and Placentia walnuts on black; a general assortment of high-grade nursery stock. A. R. Marshall's Nurseries, 1212 Ross street, Santa Ana, Cal.

WALNUT SCIONS—All the standard and new varieties; Pecan and Pistache scions; Pistache seed; absolutely guaranteed. Send for list. Tribble Bros., Elk Grove, Cal.

FOR SALE—Budded Mission Olive Trees; ready for planting; buds selected from choicest trees; special price for large lots. D. C. McCallum, Oroville, Butte Co., Cal.

BUY YOUR SUDAN GRASS SEED early, while the price is right and you can choose from a lot of tested seed. For prices write, C. B. Tawney, Ripon, Cal.

BERRY PLANTS—Blackberries, raspberries, strawberries, currants, and gooseberries. M. J. Moniz, Berry Specialists, Sebastopol, Cal.

ONION PLANTS, California Red, 75c. per 1000. Now is the time to plant. Monroe, The Tree Man, Orland, Cal.

OREGON PLUM STRAWBERRIES—Plants $6 thousand, 75c per hundred. J. E. Dunn, Route 3, Sacramento, Cal.

BURBANK'S THORNLESS BLACKBERRY PLANTS—2 for 50c., 5 for $1.00, postpaid. H. Glas, Madera, Cal.

TREES, TREES, TREES.
No war prices.
Cash Nurseries, Sebastopol, Cal.

ASK FOR SNOW'S GRAFTING WAX—In use all over the State. If your grocer does not keep it, send to D. A. Snow, Route 1, Box 443, San Jose, Cal.

WANTED.

AGENTS FOR THE INCOME TAX BOOKKEEPER—Government requirements and extensive newspaper publicity create demand; something entirely new; so simple a child can keep it. Every farmer, merchant and professional man needs our book, which retails at $3.50. Practically a self-seller, makes a friend and booster of every buyer; big profits to agents, $15.00 to $30.00 per day; sample copy to agents on receipt of $2.00 with privilege of returning. Address, The Income Tax Bookkeeper, 321-323 Monadnock Bldg., San Francisco, Cal.

POSITION WANTED as manager of hog ranch on diversified farm. Experienced with registered stock, irrigated crops and deciduous fruits. Address: H. Duveneck, 1004 Paru St., Alameda, Cal.

EXPERIENCED DAIRYMAN. Also had milking machine experience (five in family), will soon be open to engagement, shares or wages basis. Box 1450, Pacific Rural Press.

FARMER WITH FAMILY wants position of trust. Experienced in all kinds of ranch work. Young orchards especially. Address, Box 1460, Pacific Rural Press.

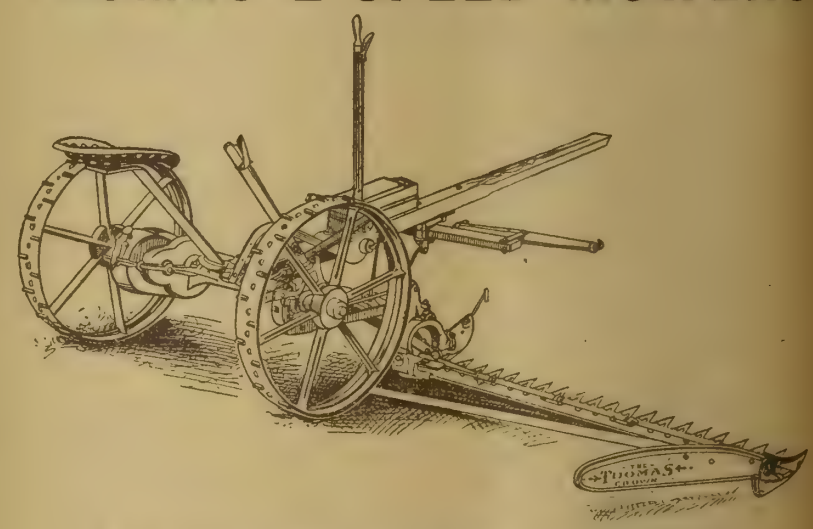
WANTED—Man with rig or auto sell Rawleigh's Products. Established demand—Large Profits. Healthy, pleasant, permanent. Give age, occupation, references. W. T. Rawleigh Co., Oakland, Calif.

WANTED—Married man, experienced in dairy work and use of milking machines. Address, Sunnybrook Ranch, Willits, Cal.

WANTED—Married man with experience to raise Mammoth Bronze Turkeys. Geo A. Smith & Son, Corcoran, Cal.

WANTED—Good married farmer. To board one other man. Write for particulars to Box 136, Morgan Hill, Cal.

FOR UP-TO-DATE FARMERS
THOMAS 2-SPEED MOWERS



YOUR HEARTS DESIRE

Let us tell you about the next Mower you will buy. The 2-Speeds take care of both the heavy and light work-

Thomas 2-Speed Mowers have many other distinct features that will make you discard your old mower for one that meets all your requirements.

Why Not Write Us Now?

Baker, Hamilton and Pacific Co.

SAN FRANCISCO, CAL.

Federal Farm Loans

Long Term *Low Rate*

All loans made on an amortization plan whereby the borrower repays the principal gradually with each interest payment.

Over three thousand satisfied borrowers in this district. It will pay you to investigate.

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Federal Land Bank of Berkeley

Berkeley, Cal.

...t until receipts are larger, as they will ... with advancing spring. Following are ...change prices with discounts deducted:

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
...xtra	45½	46	48	47	47½	
...me first....	Nominal					
...rsts.....	Nominal					

EGGS.

Eggs have been steady and somewhat ... under increased receipts, which have ...en held up somewhat on account of the ...rm of Monday. The Eastern market ...s has been firm, but the dominant fea... of the local market for the week was ...contract, as in the case of butter, for ...e navy. However, eggs cannot continue ... their present price after the laying ...ason is fairly under way in the East, ...nd the predictions of an early Eastern ...ening would indicate lower prices here ...thin a short time. Following are ex...ange prices, with discounts deducted:

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
...xtras	40½	40½	41	41	41½	
...xtra 1sts ....81 Nom.	—	—	—	—		
...irsts.....	Nominal					
...xtra pullets.	37	37	37½	37½	38	

CHEESE.

The cheese market has been somewhat ...ull, but prices of the California product ...ve stiffened somewhat in sympathy with ...he increased price on butter. The Oregon ...escription and Monterey have remained ...nchanged. The prices given (except in ...he case of Monterey, which is the street ...otation less commission) are the ex...hange quotations less the usual 10 per ...ent commission.

...ancy California flats, per lb.....24c
...Firsts 22½c
...Oregon triplets, fancy 35½c
...Oregon Y. A. fancy.....36c
...Monterey cheese .....23@26c

FRESH FRUITS.

Apples are strong at last week's prices. ...Like the entire street the fresh fruit ...market was adversely affected by the ...heavy rain, but there was no weakening ...in prices.

...California apples .....$2.00@2.75
...Northwest apples ..... 2.00@3.50
...Winter pears ..... 2.00@3.50
...Persimmons .....None

CITRUS FRUIT.

Quotations for citrus fruits were unchanged this week, but there was an indication to softness in the market as the stormy weather held up buying. If this lack of demand continues with the clearing up of the weather it will be followed by a break in prices.

...Oranges, navels .....$3.00@4.50
...Mandarins ..... 1.75@2.25
...Tangerines ..... 2.75@3.25
...Lemons, fancy ..... 4.00@4.50
...do, choice ..... 3.50@4.00
...do, standard ..... 3.00@3.50
...Lemonettes ..... 2.00@3.00
...Grapefruit ..... 2.25@3.00

HONEY.

The honey situation remains unchanged.

DRIED FRUITS.

The market as a whole is quiet. Some dried apples still in first hands were bought at 15 to 15½c, the highest price paid this season. A good export demand brought out this bid, but the amount of fruit still in growers' hands is now practically exhausted.

LOS ANGELES

Los Angeles, February 10, 1919.

BUTTER.

The low prices established last week stimulated the demand, and with the ...ower buying came higher prices. Receipts were the best for some time, yet they were all wanted. The arrivals for the week were 349,200 pounds against 249,100 pounds the same week last year. The Eastern markets were ½@1c higher, and San Francisco made a good advance during the week, all of which had a sympathetic influence upon the market here. Stocks of butter are light, all of which encouraged buying. Extras were advanced 1c up to Saturday and are now 2c above prices this time last year.

We quote—
...California fresh extra creamery 50c
...do, prime first 48c
...do, first 47c

Same time last year—
California fresh extra creamery.....48c
...do, prime first 46c
...do, first 45c

Daily quotations:

1919	Tu.	Wed.	Thu.	Fri.	Sat.	Mon.
Extra	46	46	48	48	50	
1918—						
Extra	48	48	48	48	48	48

EGGS.

There was a further break in the market the past week and less doing on the ...change. Receipts were good and so ... the demand, but with lower market... again both East and West and the Eastern and Northern markets cut off by the low prices in them, buyers were enabled to force a lower market. Receipts for the week were 9405 cases against 11,675 cases the same time last year. The cold storage stocks have been exhausted, leaving the market entirely to fresh eggs. This helped, and the last half of the week the market braced up a little and a good home consumption and nearby demand was had.

Daily quotations:

1919—	Tu.	Wed.	Thu.	Fri.	Sat.	Mon.
Extra	39	39	39	41	41	
Case count ...	38	38	39	39	39	
Pullets	38	38	38	38	38	38
1918—						
Extra	53	50	50	49	40	40
Case count ...	50	49	49	46	37	39
Pullets	51	48	48	46	38	

POULTRY.

Receipts were fairly good the past week and the demand was hardly so strong. Broilers and hens were in fair demand and steady. Fryers scarce and firm. Turkeys lower but selling fairly well at the prices. Ducks steady and in fair request.

We quote from growers:
Broilers, 1@1¼ lbs.....40c
Broilers, 1½@1¾ lbs.....43c
Fryers, 2 to 3 lbs.....35c
Roasters (soft bone), 3 lbs. and up....30c
Stags and old roosters, per lb.....20c
Hens .....30@32c
Turkeys .....33@35c
Ducks .....30@32c
Geese 28c

VEGETABLES.

Potatoes continue to come in freely, and Idaho reached the lowest point of the season and sales slow. Burbank were also weak and slow of sale in sympathy. Sweet potatoes were slow of sale and weak. Onions continue scarce. The best is in fair demand. Cabbage is dull and a little lower. Cauliflower was also slow of sale and brought less money. Squash and pumpkins steady but slow. Celery in fair demand and steady.

We quote from growers:
Peas, per lb.....10@15c
Potatoes, northern, per cwt.....$1.80@2.15
do, Idaho Russets, per cwt..... 1.60@1.65
Sweet potatoes, per cwt..... 2.25@2.75
Garlic, per lb.....50c
Onions—
Australian Brown, per cwt....$1.75@2.00
White Globe, per cwt..... 7.00
Cabbage, per 100 lbs..... .75@85c
Celery, local, per crate..... 4.00@7.00
Celery, northern, per crate..... 8.00@9.00
Cauliflower, standard crate..... 1.25@1.50
Hubbard squash, per cwt.....$1.00
Banana squash, per cwt..... 1.00
Pumpkins, per cwt.....50@75c

FRUITS.

The deciduous fruit market last week was again confined to apples. They were in good supply and demand. The best of them were held firm. Buyers seem to give apples the preference this year over oranges, owing to the fear of getting frosted fruit.

We quote from growers:
Apples—
King Davids, Northwest pack..$2.75@3.00
Black Twigs, Northwest pack.....3.00
Baldwins, Northwest pack..... 2.75
White Pearmains, 4-tier ..... 2.00@2.25
Yellow Newtown Pippins, 4-tier ..... 2.25@2.50
Bellefleur, 4-tier ..... 2.00@2.25
Bellefleur, 4½-tier ..... 1.75@1.80
do, 3½-tier ..... 1.85@2.00
Jonathans, Northwestern pack. 3.00@3.25
Winesap, loose, per lb.....6@6½c
Roman beauties, Northwestern, per peck ..... 3.00@3.25

HAY.

The market the past week was again dull. Receipts were good while buyers held back and bought sparingly, only taking such lots as needed for immediate use.

We quote f. o. b. Los Angeles:
Barley hay, per ton.....$21.00@24.00
Oat hay, per ton ..... 25.00@28.00
Alfalfa, northern, per ton..... 20.00@21.00
Alfalfa, local, per ton..... 21.00@23.00
Straw, per ton ..... 9.00@10.00

BEANS.

The past week was another one of intense dullness. Stocks are large and no demand even at the decline noticed last week. A few are being taken for home consumption and none otherwise. The fact that the embargo on the exports of beans has been lifted has as yet had no influence upon the market here.

We quote from growers:
Limas, per cwt.....$8.00
Large White, per cwt..... 7.00
Small White 7.00
Pink, per cwt..... 5.50
Blackeyes, per cwt..... 3.50
Tepary, per cwt..... 3.50

COTTON.

There was a further break in the market the past week. Continued bad troubles and many of the Eastern mills holding out of the market and others buying sparingly developed a very bearish situation and by Saturday March in New York sold down to 21.04 and May 20.66. In New Orleans March closed at 21.65 and May 20.36.

Special Citrus Market Report

Los Angeles, February 11, 1919.

The labor situation is still critical in the orchards and has affected the shipments of fruit. 200 cars less being shipped this week than the week previous. This has helped the market situation, which is showing a better tone. Prices on free from-frost navels, delivered, range from $3.75 to $4.50 in Eastern markets. Cash quotations on separator fruit are $2.50 and $3.50 on free from-frost fruit. The Florida fruit is being cleaned up, the number of cars of oranges to date totaling 11,088 and grapefruit 4881 cars. It is estimated that about 7000 cars of Navels will leave the State after February 1, 2000 cars of miscellaneous varieties and 13,500 cars of Valencias.

The lemon market remains unchanged. The demand is strong, and delivered prices are on the $3.50 to $4.50 basis. Only 8000 boxes of foreign lemons are available.

The total shipments of oranges to date this season are 8229 cars, last season to date 5467 cars. Lemon shipments total 2092 cars as compared with 881 to date last season.

HORTICULTURAL JOTTINGS.

The largest fig tree in the State is on Mrs. Mary Partridge's ranch at Knight's Ferry.

On the old Paradise place, five miles west of Modesto, there is a large pear tree which is said to have yielded a ton and a half of pears in one year.

State Forester G. M. Homans says that unanimous approval is expressed of the project for a State nursery to encourage tree planting, also for the precautionary measures proposed for the protection of forests and grain fields against fire.

W. T. Sneed of Oak Knoll was spraying his prune trees last week with lime and lye—the latter about one pound to the tank. The trees were completely whitened to the ends of the twigs and should be benefited by a treatment which will tend to cut off moss and lichen and prevent sunscald.

C. E. Sullivan has been appointed farm advisor of Sutter county to succeed J. E. Stiles, who recently resigned to go farming. Mr. Sullivan, who is a graduate of the University of California Farm, was formerly advisor in Imperial county before entering the officers' training camp at Fort Scott, Ark.

Bank by Mail

"It is safe, convenient and insures absolute privacy. There is a sense of satisfaction and pride in having a savings account in a strong San Francisco bank. You can start an account with as little as one dollar—Your interest will be compounded semi-annually.

"Write or visit the bank and I will explain the superior service this bank gives to out-of-town depositors."

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Cashier

French American Bank of Savings
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WALKING TRACTOR

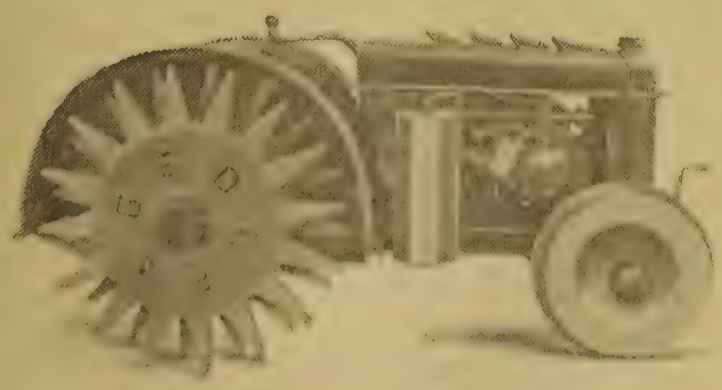
TO pull as steadily in hard ground as in soft, a tractor must have traction without slippage.

The Fageol Walking Tractor with 64 legs secures traction in the same natural way as does a team of like weight with eight legs.

Steady, constant pull of the Fageol in all soils makes for lowest possible operation costs.

An illustrated Booklet descriptive of the Fageol sent upon request. Write for it.

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Overland cars have the reputation of making close friends. In fact, Overland cars are conspicuous everywhere there are up-to-date farms with modern equipment. What stronger recommendation could be asked for, than the fact that more than 115,000 owners vouch for the complete satisfaction of Overland Model 90 cars? The steadily growing public appreciation of Overland is evidenced in the demand of this season. See the Willys-Overland dealer now.

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Model Ninety *Five passenger Touring Car* *$985 f. o. b. Toledo*

Grand Champion BERKSHIRES



AMES RIVAL 70TH

We have in our herd the Grand Champion Boar, Grand Champion Sow and First Prize Senior Herd at State Fair.

Forty-three litters this year averaged ten to the litter. Let us supply you with foundation sows and boars to head your herd.

JAMES MILLS CO.
Hamilton City : : California

CASTLEVIEW BERKSHIRES

We are now booking orders for spring pigs from our magnificent 600-lb. Sows, Riverby Princess, Grand Champion Sow of the world, and Rookwood Lady 100th, Grand Champion Sow of America.

Castleview Ranch
P. O. Box 56, Santa Rosa, Cal.

Ring Leader 20,
239090
THE GREAT BERKSHIRE SIRE
Considered by competent judges to more closely resemble Grand Leader 2nd, than any boar yet produced.
Write for picture. Stock for sale.
GEO. M. YORK, Modesto, Cal.

ALL GONE
The demand for
Berkshires
has exceeded the supply, and we are entirely sold out. Orders accepted for spring pigs.
MAPLEWOODE RANCH,
E. M. HOLJE, Owner CALISTOGA,
HOMER HEWINS, Mgr. CALIF.

R. B. HUME DOS PALOS, CALIFORNIA.
Breeder of
Berkshire Swine
Herd headed by King Leader's Duke 3rd.

as it is a guarantee sale, and 'guarantee' means just that. Each animal sold is guaranteed to be as represented and for 60 days from the sale date the Congress guarantees the purchaser of any animal that proves not to be as represented either a refund of his money or an exchange with the seller for an animal equally good.

"A secret committee will pass upon the merits of each consignment and animals that are not desirable will not be sold."

SWINE BREEDERS' ASSOCIATION ACTIVE.

[Written for Pacific Rural Press by Frank B. Anderson, Director.]

Under the able direction of President C. B. Cunningham of Mills, the California Swine Breeders' Association is endeavoring to get the swine growers together so that they can work out the problems for the betterment of their business, just as has been done by various other agricultural interests in California.

While this campaign of organization has been progressing, the association has instituted a movement to secure a pure feed law for California, such as has been adopted by a number of other States. With the co-operation of the other livestock and poultry interests of the State, such a measure is now before the California Legislature, as is related elsewhere in this issue. Every effort will be made to have this pure feed law passed, for it will bring great benefits not only to the swine interests but to the other branches of the livestock industry.

The association hopes soon to have the State organized in such manner as will bring about the stabilization of the pork market and assure the grower of a reasonable profit on his production, thereby stimulating the growing of market hogs in California, which can fill the domestic pork barrel to overflowing and take care of a large trade in South America and the Orient.

Through his being a member of the Livestock Commission of the Federal Food Administration for California, President Cunningham has been able to be of valuable assistance to the swine growers, gathering information which will materially assist in solving the pork production problems for some time to come.

The directorate of this association is made up of hog men representing the different breeds of swine as well as the various sections of the State, each director having supervision of the organization units in several counties adjoining his own. Much of the active work of the association has been conducted by Prof. J. I. Thompson of the Animal Husbandry Department of the University Farm, Davis, and his recognized position of authority on swine matters has been of great assistance to the growers. The directors are as follows: A. D. McCarty, San Francisco (also vice-president); M. Bassett, Hanford; W. S. Guilford, Butte City; Elmer Lamb, Ceres; Frank B. Anderson, Sacramento; R. K. Walker, Bonita, and H. H. Braly, Newbury Park.

UNIQUE HOG INSURANCE.

G. E. Sampson of St. Joseph, Mo., has a novel plan of insuring sows purchased at his sales. He has a livestock insurance company insure each animal for three months against death from any accident or disease except cholera, from which the hogs are immune. In case of death three-fourths of the purchase price is refunded by the company. Mr. Sampson pays for the policies himself. This ought to prove an inducement to purchasers whose bank rolls are limited.

A. M. Bibens of Modesto has purchased from E. C. Schroeder of Minnesota a young bull sired by Ormsby Jane King, the latter being out of a twice 40-pound cow.

ANCHORAGE FARM

will consign to the

Western Berkshire Congress Sale

a daughter of

The Worlds Champion

Star Leader

Send for illustrated Booklet and Price List of stock for sale
Anchorage Farm, Orland, Cal.

BERKSHIRES Herd Boar
ANCHORAGE LEADER V 246295
Son of Star Leader, world's reserve grand champion Berkshire. We are booking orders for spring pigs.
Also registered SHORTHORNS. Young stock of both sexes.
FAIR OAKS RANCH, Willits, Cal.

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High Protein Tankage

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—at less cost to you.
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HAUSER'S DIGESTER TANKAGE

Gives Greatest VALUE for LEAST MONEY. IT MAKES THEM FAT.
HAUSER PACKING CO. LOS ANGELES

DESFORD BANKER
(Imported)
This well-known Shire Stallion is for sale. He is sound and a proven sire.
This is probably the only opportunity there will be this season to secure a really high-class Shire Stallion, and is for sale because the owner is absolutely retiring from business.
Also a few imported mares and young stock for sale.
HENRY WHEATLEY, SALVADOR STOCK FARM,
NAPA, CAL.

POLAND-CHINA NOTES.

(Continued.)

C. G. DeRaad, Lemoore. A high-class lot of brood sows, representing the leading prize winning blood lines. Will sell eight gilts and one brood sow at the Hanford sale, four gilts bred to President 2nd and a sow to California Wonder.

R. J. Yates, Orland. Fifty sows of Big Orphan, Defender and A Wonder breeding. Herd boars, Long Jumbo, Yates Big Orphan and King Hadley. Some grand stock for sale.

Santa Anita Rancho, Santa Anita. Large herd of brood sows of medium type breeding headed by Banker's Boy Junior and reserve champion at the P. P. I. E. Stock of all ages for sale.

Fred Gatewood, Fresno. Sows of the best corn-belt breeding. Herd boars, Fresno Sampson, the noted Nebraska-bred boar, by Mc's Sampson, and Fresno Boy, a great son of Orange Boy. Gilts bred for spring farrow for sale.

W. J. Hanna of Reaoaks Ranch, Gilroy, is selling his big type Poland-Chinas like hot cakes and reports the following sales: Robert Easton, San Miguel, the herd boar Dry Creek Wonder; Mrs. K. C. Henderson, Capitola, 2 bred sows, 3 gilts; Filice & Berelli Canning Company, Gilroy, 2 sows and 13 pigs; James Bell, Gilroy, 2 sows and litters and a young boar; Earl McHenry, Salinas, 1 gilt and 1 boar; Grant Wills, Gilroy, 1 bred gilt; John Linderleaf, Gilroy, 2 bred gilts; John Luder, Gilroy, 2 gilts; A. Milne, Gilroy, 1 boar; G. Bellati, Belmont, 1 boar; John Ravera, Belmont, 4 gilts; Thomas Thomson, Gilroy, 1 boar; K. L. Evans, Gilroy, 1 gilt; B. F. Patterson, Lockwood, 1 bred sow; Major Skeel, San Juan Bautista, 1 bred sow; Dr. Henry Cross Ranch, Paicines, 7 gilts.

BERKSHIRE NOTES.

(Continued)

W. F. Sandercock, Natamario Rancho, Sacramento. Twenty-two brood sows including many of the leading prize winners of the Pacific Coast. Herd headed by Baron Duke 201st, grand champion of 1917 National Swine Show; Rincon's Rival 2nd and Winona Lee Champion 6th, a son of Laurel Champion. A good assortment of high class stock for sale.

Rose Crest Farm, F. L. Hall, Perris. Large herd of toppy brood sows, including many prize winners and champions. Strong in the blood of Rival Champion's Best. Herd boar, Ames Rival 118th, rich in the blood of the great boar Masterpiece. Fine herd-building stock for sale.

James Mills Orchard Corporation, Hamilton City. One hundred and fifty classy brood sows representing the leading blood lines and including many prize winners. Herd headed by Ames Rival 70th, grand champion at 1918 State Fair. Herd headers, foundation sows and young stock for sale.

A. J. Middlecamp, Colusa. Just started a registered Berkshire herd with a boar and sows purchased from the James Mills Orchard Corporation. Will have stock for sale later.

T. Weisendenger, San Francisco. Has recently leased a ranch on the Natomas project and stocked it with 50 high class Berkshires purchased largely from the Castleview Ranch, Santa Rosa.

George M. York of Modesto is willing to stake his last dollar on his great Berkshire herd header, Ring Leader 20th—the boar that was recommended to go East to take the place of his sire, Grand Leader 2nd, when that boar died. Mr. York has been fitting this boar for the San Francisco show and is greatly disappointed that the show will not be held, as he expected to make a great clean up.

PUMPKINS GOOD FOR HOGS.

Most assuredly, pumpkins are good for hogs. The results of several experiments show that it took 273 pounds of grain, together with 376 pounds of raw pumpkins, to produce 100 pounds of gain on market hogs, while it is estimated at our University Farm that it is now requiring 5¾ pounds of last year's barley to produce a pound of gain. So you see a big saving in grain is effected by using pumpkins. Do not remove the seeds, as they are rich in nutrients, but on the other hand do not feed too liberally or the seeds will cause digestive disturbances on account of their richness.

DAIRYMEN'S GUIDEPOSTS.

Select better sires.

Use precaution against tuberculosis and contagious abortion.

Test every cow and weed out the boarders.

Improve your barns and equipment.

Use the best available feed.

Raise all good heifer calves to maturity.

BOYS TEACH FATHERS BETTER HOG RAISING.

Some of the boys in pig clubs are showing their fathers how rapid and economical gains can be made in raising pigs. Under the direction of one local county agent boys have been able to almost double the results obtained by their fathers within the same length of time and feeding pigs of the same litter. The boys used self-feeders and the fathers did not, and the pigs which were allowed to select their own feed made gains of 2 pounds a day. The club members are proving, beyond question, the merits of the self-feeder, and hog raisers in the county of many years' experience are beginning to copy the boys' methods. As a result of the club work, many fathers and sons are now planning to go into partnership and raise purebred hogs.

CHESTER WHITES.

James Little, Wasco. High-class imported sows mated to the herd boar Ohio Boy, purchased in the East. A fine lot of boars ready for service.

Melone Company, Oak Knoll Ranch, Napa. High-class brood sows of popular blood lines. Vigorous stock of all ages for sale.

REAL GOOD BERKSHIRES

Rich in the blood of Grand Leader 2nd, Ames Rival, Beauty's Prince 9th, Masterpiece and other great representatives of the breed.

A few service boars, bred gilts and sows, and some fine fall pigs for sale.

Will have some good ones in the Berkshire Congress Sale at Davis, February 20. Look them up.

FRANK B. ANDERSON P. O. Box 724 SACRAMENTO, CAL.

THE Chief Characteristic OF Grapewild Farm Berkshire Herd is BONE and FEET

Without these TWO PRINCIPAL ESSENTIALS no animal can maintain the superiority of quick maturity claimed for the Berkshire breed. They must have the bone and feet of a strong frame to stand the feeding strain required to produce a 250-POUND ANIMAL in 250 days. In other words, a reasonable size for

Practical Pork Production

GRAPEWILD FARMS HERD, both sows and boars, have been built up around these two points—STRONG BONES AND FEET.

We are sold out closely at present on gilts and sows, but we have young fast-growing stock on hand which we will price within the reach of farmers.

The Berkshire is the farmer's hog and we are anxious to supply his needs.

GRAPEWILD FARMS
A. B. HUMPHREY, Prop.
ESCALON, CALIF.

ATTENTION!

A practical demonstration of the claims made for Berkshires as being an easy-feeding, quick-maturing, all-around farmer's hog will be shown at the Fat Barrow Show of the Western Berkshire Congress at the University Farm at Davis, February 19-20.

The Good Sense Work Suit

JUST look at this picture—you can see comfort and ease in every line of these **Lee Union-Alls.** So practical! So convenient! So economical! Don't wait. You need **Lee Union-Alls** now. Ask your dealer. Write for descriptive booklet. Address Department 2202.

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Hampshires Forging to the Front

Hampshires are forging their way the front by sheer force of merit. ey are of good size, active graz- . and very prolific. The sows ke kind mothers and good suck- s. The pigs grow rapidly, ma- e quickly and have excellent feed- g qualities. The packers regard e flesh highly, particularly on ac- unt of the large proportion of n meat; in fact, Thos. E. Wilson, noted Chicago packer, has se- ted the Hampshire as the breed to se on his own farm.

Hampshires first came into promi- nce in 1901, when a barrow was de grand champion at the Inter-



ional. Since then they have won arge number of prizes over other eds, and at the last show they n the carlot lot championship with head of 14-months-old hogs aver- ng 391 pounds each.

Ortega Underhill Rancho, Francis Underhill, Santa Barbara—One ndred brood sows of Gen. Allen, n. Tipton, Blythedale Jim and er prominent blood lines. Herd rs, Gen. Tipton's Masterpiece by n. Tipton, Exalted Ruler by Ex- ed Lad. Gen. Allen's Counterpart Gen. Allen, Admiral Blythedale Blythedale Jim, and other boars ed by the leading Eastern prize nner. Stock of all ages. Next y will hold a public sale, which probably will be the largest ever held on the Coast.

Ira Hart, Dos Palos—Herd boar, Fire King; best sow, Monitta. Fine lot of young stock.

Llano Vista Ranch, Gordon & Langdon, Perris. A large herd of brood sows strong in the blood of Sioux Queen. Herd boars, Gold Mine, General Tipton Again, Langdon's Choice and The Harvester. Bred sows and gilts, service boars and young stock for sale.

L. A. Denker, Bouquet Canyon Herd, Saugus. Sows of leading Eastern blood lines. Herd headed by Direct Junior, grand champion at 1918 State Fair. Bred sows and gilts, service boars, and some classy young stock for sale.

Poplars Ranch, C. J. Gilbert, Lancaster. Sows of the leading families, including many California prize winners. Herd boar, The Harvester Again by The Harvester. Toppy young stock for sale.

Conejo Ranch, Newbury Park. Large herd of sows, including the grand champion and reserve grand champion at 1918 State Fair. Herd headed by Liberty, reserve grand champion boar at Liberty Fair. High class foundation stock for sale.

Roy Dawson, Gardena. Sows of the type that put the "ham" on Hampshire. Herd boar, Oro and Amboy. Money making stock for sale.

Yorkshires Great for Bacon

The large Yorkshire hog is valued particularly for bacon production, where a long side abounding in lean meat and a light shoulder and neck are especially desirable.

Although the Yorkshire grows rapidly and develops bone and muscle more readily than it develops fat, it is capable of giving as good results from the feed consumed as any other breed. It will reach desirable market weight for the bacon trade as quickly as any other breed, and for quality of bacon it can hardly be surpassed.

Large Yorkshire sows are very prolific, and are excellent nurses. The boars are exceptionally prepotent and stamp their character and color on their progeny to a marked degree.

LARGE YORKSHIRES.



A. L. Tubbs Co., Calistoga—Eight sows of the leading blood lines. Herd boars, Lake Park King, the California State champion, and Montelena Prince 2nd by Oak Lodge View 91st. Three bred sows and 25 fall pigs for sale.

H. C. Muddox & Son, Sacramento—Twenty sows of fashionable blood lines. Herd boar, Riverina Pilot. Twenty-two fall gilts for sale.

TAMWORTHS ECONOMICAL

For bacon the Tamworth stands high, as it produces a grade of bacon carrying a large proportion of lean to fat, and fine in grain. Also it produces a bacon carcass at an early age, and compares very favorably with other breeds as an economical producer of meat.

The sows are good mothers, being prolific and good nurses. The boars are very prepotent, and, being large and of strong bone, the Tamworth is popular for crossing upon finer and fatter breeds.

Swineland, W. O. Pearson, Woodland—A high-class collection of brood sows representing the best blood lines of the breed. Herd boar, Cal. A. Some toppy service boars and bred gilts for sale.



GRAIN BINS

Made of Corrugated sheet metal—several hundred per cent stronger than smooth metal



ROUND CULVERT

Made of genuine Open Hearth Iron or Kentucky Copper bearing Metal

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Lock-seamed under tremendous pressure. Built heavy and strong

WELL CASING

We make all types of well casing for water wells — casing that fits smoothly and evenly.



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SHEET METAL PRODUCTS

With the enlarged facilities afforded by our recently completed factory in Oakland, we are now perfectly equipped to take care of the rapidly growing demand for Madewell Sheet Metal Products.

Madewell Surface Pipe (formerly made in Gilroy) is already well known throughout the irrigating sections of the State as the best of its kind, and the entire Madewell line is built to the same high standard of quality and permanence.

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It explains the many uses for sheet metal products, and describes the Madewell line in detail. Use the coupon.

MADEWELL PIPE & CULVERT WORKS,
E. 12th St. & 25th Ave., Oakland, Cal.

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E. 12th St. & 25th Ave., Oakland, Cal.

Gentlemen: Please send me a copy of your catalog A.
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MONTELENA HERD

OF LARGE

YORKSHIRES



LAKE PARK KING 25211

Grand Champion Boar—California State Fair, 1917.

Due to the ever increasing popularity of the breed, Yorkshire breeders are almost entirely sold out, and it would behoove the prospective purchaser to place his order soon.

We are only able to offer at the present time a very exceptional lot of fall pigs, some sired by "Lake Park King," others by "Montelena Prince 2d." They are out of such sows at "Deer Creek Nena 8th," present Grand Champion sow of the state, who has averaged a fraction over 17 pigs per litter for nine consecutive litters; "Riverina Nena 9th," one of her best daughters, and "Lake Park Lady Frost 20th," the Top Sow at the Thomas H. Canfield sale last year.

We solicit your correspondence

A. L. TUBBS CO.

CALISTOGA - - CAL.

Associations for Immunizing Hogs

[Written for Pacific Rural Press.]

Here's the best suggestion that has been received by our livestock department in months. J. M. De Vilbiss, the Duroc-Jersey breeder of Patterson, had a little spare time early in the winter and did some field work for us. In visiting different farms he found a good many cases of cholera. It was generally where a farmer had just a few brood sows, and rather than pay a qualified veterinarian to come a long distance and treat just a few pigs, the farmer decided to chance it.

So Mr. DeVilbiss suggests that farmers in different localities join together and twice a year, soon after the spring and fall crops of pigs are weaned, have a good veterinarian come and give all of the pigs the simultaneous treatment, thus making them immune for life. The first time around it would be necessary to treat the sows also, and after that the whole herd would be immune, for pigs that are nursing immune sows do not contract cholera, so they may be considered immune until weaned.

This is a capital idea, even though it is at variance with the recommendations of some of our Animal Industry experts. They recommend immunization only when there is cholera in the neighborhood. That may have been good advice years ago when serum was first introduced, for many failures were then recorded. Some serums were lacking in effectiveness, and many complications arose after their use. But with the modern sterilized, germ-free serum there are no bad results if it is properly administered, especially with young pigs. As a rule they show no effects from it, and their growth is not interrupted.

Booklets and articles on cholera are full of instructions for protecting a herd against cholera. Farmers are told that they must not visit their neighbors; they must not let their dogs run loose, or allow any other dogs on their premises; they must not keep pigeons, and must kill all seen on their lands; they must not let their hogs drink from streams running through other ranches; they must not borrow or loan farm implements; they must not allow any visitors to set foot inside of any hog field or pen—at least not without first disinfecting his shoes.

But suppose a prospective purchaser comes. Is he going to buy a pig without being allowed to jump over the fence and observe that pig from every angle? Or is he going to submit to disinfecting his shoes without taking offense? Perhaps he'll keep his mouth shut, but it's ten to one that he will leave in disgust and buy elsewhere if any such restrictions are imposed upon him. Have the herd immune and he can go among the animals as much as he desires without any bad results, even though his shoes are alive with cholera germs.

Besides, over 90 per cent of the buyers of registered stock now insist upon animals immuned against cholera, and if a purebred breeder expects to sell much stock he must comply with this demand of the trade.

And with grade herds raised only for market purposes the fact that all hogs are immunized at the big establishments where thousands are raised and fed out annually is pretty good proof that it pays.

Valuable property should be insured against loss. Everyone agrees nowadays that fire insurance is a good thing—a wise and necessary investment. Then why not cholera insurance? It's the same principle. And the chances of losing hogs from cholera are much greater than those of losing buildings by fire.

So we say, in every locality where there are several farmers, each of whom is not raising enough hogs to justify engaging a veterinarian to immunize his own herd alone, let them get together, hire the best veterinarian obtainable, purchase the best serum and virus on the market, and give the simultaneous treatment to every hog they own. After that, have the veterinarian come about every June and December and immunize all of the new crop of pigs.

This will take the risk out of hog raising just as surely as we took the toot out of the Teutons. It will save the farmers many a sleepless night, and will enable them to play a safe game instead of being at the mercy of fate.

Underhill Developing Hampshire Herd

The raising of hogs is a business worthy of the highest order of ability, and it is gratifying to notice the number of prominent men who are taking it up—men who have achieved success in other lines, and who see in hog raising an opportunity for good profit as well as a pleasant vocation.

A short time ago we discovered that a prominent Californian had gone into the game and had started the foundation of what promises to be one of the greatest herds of Hampshire hogs in America. We were reading the Hampshire breed publication, which gives a record by States each month of all breeders registering hogs, and the number registered by each. There were 126 registered by California breeders, and 100 of these were registered by one man—Francis T. Underhill of Santa Barbara.

Think of it—100 head registered in one month! Of course, we knew of Mr. Underhill as a landscape designer and a man of means, but we did not know that he was engaged in swine breeding or had ever been interested in livestock. So we began investigating and found that during the period from 25 to 35 years ago he was a large and successful exhibitor of Holstein and Hereford cattle, Clydesdale and trotting horses, and that he held annual sales at Sacramento.

Since those days Mr. Underhill has been devoting all of his time to his professional work, but about a year ago a very serious illness brought a recommendation from his physician that he have some interest outside of his regular line. Being a lover of blooded stock, and owning property particularly adapted to swine raising, he decided to breed hogs. He had no preference as to breeds, but made exhaustive investigations and selected the Hampshire, not because of any fancy, but simply because he believed that the most money could be made with this breed.

Mr. Underhill determined that some day he would have one of the best herds in America, and realizing that to do this he must start with foundation stock of the very best individuality and blood lines, he corresponded with the leading Eastern breeders and finally secured over one hundred sows and gilts from as near the purple as possible.

In selecting boars he picked out the sires that had proved themselves most representative, and secured herd headers that would bring the blood of these sires to the front. He decided to concentrate his breeding on the blood lines of Gen. Allen, Gen. Tipton and Blythedale Jim, and secured a worthy son of each. He also purchased enough sows of similar blood lines so that scientific line-breeding can be practiced.

Seventy-eight of the females in the herd are either daughters or granddaughters of grand champions at the leading shows, and the balance are by noted boars, most of which are prize winners.

The best was bought, regardless of price. Mr. Underhill paid $1,000 each for Gen. Tipton's Masterpiece, Exalted Ruler and High Tone Lady, and $600 for Tipton Missie, grand champion at the Denver National Show last year. The balance of the herd cost from $150 to $300 each. It is planned to keep all promising females until a herd of 250 top-notch brood sows is built up.

The science of breeding has been a study of Mr. Underhill's for over thirty-five years and he expects to derive much interest from experimental work along biological lines, as well as to accomplish something of real benefit to the swine industry in general and to the Hampshire breed in particular. He certainly has made the right start. The stock will be found at the Ortega Underhill Ranch, Santa Barbara, and the herd will be known as the O. U. R. registered Hampshires. Long may they live and prosper!

O--U--R

Registered Hampshires

We expect to hold a sale of bred sows and gilts, and a few young boars some time in July next. Mr. E. C. Stone, the popular Secretary of the Hampshire Association, will arrange the details, and will be present in person.

The sows will be bred to the following boars, all fine individuals, unsurpassed in blood lines, and sons or grandsons of the breed's most distinguished sires:

Gen. Tipton's Masterpiece, by Gen. Tipton (1677), Grand Champion in every state from New York to Missouri.
Exalted Ruler, by Exalted Lad, Grand Champion Iowa, 1918.
Tipton Senator, by Young Senator, himself a great winner by the famous Grand Champion, The Senator.
Gen. Allen's Counterpart, by Gen. Allen (1061), undefeated Grand Champion, now thirteen years old.
Rod, Jr. Champion Missouri, 1918, by Lieutenant Messenger.
Admiral Blythedale, by Blythedale Jim (2117), (Sire of Lookout); Dam, Scottish Girl, 19th Lookout, 1st boar to bring $5000.
O. U. R. Aeronaut, by Blythedale Jim; Dam, Flora.
O. U. R. Aristocrat, by Blythedale Jim; Dam, Lady May.
Admiral Wickware, grandson of Grand Champion Wickware Favorite.
O. U. R. Apache, by undefeated Grand Champion Hawkeye Lad.
O. U. R. Alderman, son of Champion Peerless Boy, by undefeated Grand Champion Messenger Boy.
Prince Mose, by Grand Champion Mose Messenger.
Admiral Tipton, by Gen. Tipton's Masterpiece; Dam, Tipton Missie, Grand Champion Denver, 1917.

The dams of these boars are all royally bred.

Hampshires to the Front

The Hampshire breed has come to the front so rapidly of late, that we have made a great effort to bring to California some of the very best blood obtainable, believing that the achievements of the breed merit the consideration of every practical farmer.

Our sale will be held at the ranch in Montecito, four miles from Santa Barbara.

Ortega Underhill Rancho

SANTA BARBARA, CAL.

FRANCIS T. UNDERHILL, Proprietor. THOMAS T. DINSMORE, Manager.

Grand Champion Herd of Hampshires

FOR SALE.

Brood Sows, litters at foot. Sows bred for fall litters. Young Boars and Gilts.

Best families.

Finest individuality and clean-cut markings.

Call or write.



Address F. V. GORDON or F. A. LANGDON, Llano Vista Ranch, Perris, Cal.



DIRECTOR JUNIOR, Grand Champion.

BOQUET CANYON HERD

HAMPSHIRES

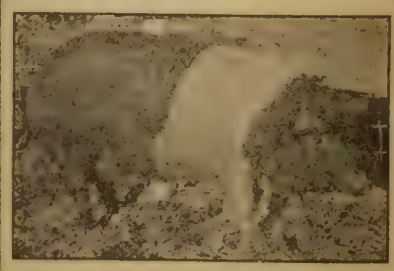
Won Grand Champion on a six-months-old pig—something unusual. Also Reserve Senior Champion Sow, Junior Champion Boar and Reserve Junior Champion Sow.

7 FIRSTS, 6 SECONDS, 4 THIRDS.

We offer choice bred sows and open March gilts that we will breed to any boar in our herd. Also brothers and half-brothers to our Grand Champion boar, Director Junior.

EVERY HOG GUARANTEED TO PLEASE.

L. A. DENKER - Saugus, Cal.



THE POPLARS RANCH

Registered Hampshire Swine

A limited number of three-months-old weanlings for sale. Am booking orders for future delivery of youngsters by Gen. Tipton. Have a few young boars sired by Duke's Allen, Grand Champion, 1917, Sacramento.

C. J. GILBERT, Lancaster, Cal.

GRIZZLY ✝ BEAR ✝ RANCH

WHY CHESTER WHITES?

Because most prolific and winners of the highest honors in the carcass contest at Chicago International, 1918, which proves them BEST for home, butchers' block, or packer. Three bred gilts bred to FOREST PRINCE, 51715, First Senior Boar pig, Junior Champion, and Reserved Grand Champion, 1918, and one service boar, for sale; all prize winners, and produce of ESTER, First Aged Sow, and Reserve Senior Champion.

MRS. L. M. YORE, EAST AUBURN, CALIFORNIA.

The Chester White Will Start You Right

Unexcelled in prolificacy and percentage of pigs raised; unequalled in disposition and in adapting themselves to their environment; a breed that will mature to the most desirable market condition at the earliest age with the least feed, and will supply the highest class pork with the least waste—these are the claims that we make for the Chester Whites.

The sows are the best of mothers and big milkers. The pigs grow quickly and can be fattened easily at any age. They produce a wonderfully fine carcass with sweet and tender meat.

Chester Whites have captured a



large number of the most coveted prizes at the International, especially in the dressing out classes. They are becoming more and more popular in California every day.

CHESTER WHITES.

Oak Knoll Farm, Lea Bleakmore, Lakeport; San Francisco office, Balboa Building—One hundred sows of Combination, Wonder and St. Elmo lines. Herd boar, Highlander, the $1,000 champion at the 1918 State Fair, sired by Wm. A., undefeated champion at international shows. Fifty bred gilts and sows and 25 fall pigs for sale.

Billiken Ranch, C. B. Cunningham, Mills—Twenty sows of Wonder, Combination, St. Elmo, Chickasaw, Chief, Lenora, Juniatta blood lines. Herd boars, Billiken by Wm. A., and Wildwood Boy by Wildwood Prince. Demand good and constantly increasing. Sold out of everything except 2 service boars.

Cedarhurst Ranches, C. H. Lyons, Sacramento — Six sows of Tarzan, California Prince 2nd, Prince Brendel and Iowa Boy breeding. Herd boars, Tarzan by W. Earl, and Highland Boy by Benito Boy. Herd boar, Tarzan, and 8 fall boars for sale.

Grizzly Bear Ranch, Mrs. L. M. Yore, East Auburn—Sows of Missouri Lad, Iowa Boy, and Woodview Earl breeding. Herd boars, Teddy and Forest Prince, the latter junior and reserve grand champion at the 1918 State Fair. Demand very heavy; only 1 service boar and 3 bred gilts for sale.

THIS IS THE WAY WE FEED HOGS.

(Continued from page 213)

his feed for maintenance, leaving 82 per cent for gains. A 100-pound pig has left for gains 75 per cent, and a 200-pound pig only 64 per cent of the feed he consumes.

Grain is partially wasted when fed alone. You can produce one-fourth more pork from a given amount of grain if it is supplemented with skim milk, tankage, fish meal or a similar feed.

The weight of pigs at birth can be almost doubled by feeding pregnant sows well.

Barley should not be fed whole unless it is soaked. But it will be worth 10 to 15 per cent more if ground or rolled.

The packers prefer hogs running from 175 to 225 pounds. Fortunately this is the most economical weight at which to dispose of them, as up to this point the gains are made the cheapest.

The last cutting of alfalfa is best for hog hay, because it is not so woody and more food value is found in the leaves. It should be cut early. Experiments showed that when fed with grain one ton of early cut alfalfa produced 868 pounds of pork, while one ton cut late produced only 333 pounds.

P. E. Mitchell of Atwater is enlarging his herd of Poland-Chinas by the purchase of two young herd boars, one sired by Big Bone Bob and out of a sow by Major Hadley Wonder, the other by Mouw's Long Smooth Jumbo and out of a sow by Big Timm.

Two hundred acres of spinach are growing on the old Woodbridge ranch on the Crow's Landing road, west of Modesto.

The Billiken Herd
of
Chester Whites

None better anywhere in the West.

Herd Boars

"Billiken," Grand Champion State Fair. Conceded to be the best Chester Boar that ever came to California.

"Wildwood Boy," of Wildwood Prince-Wonder blood lines. A great, big, long, deep-bodied hog, pronounced to be the largest and heaviest Chester boar in the state.

"Bonnie Model," sired by a Combination - St. Elmo boar and out of the 1916 Cal. Grand Champion sow.

Herd Sows

The sows are those nice, big, smooth, stretchey kind, with lots of bone and plenty of quality throughout.

Have recently added some bred sows from Iowa of the extreme big type, so popular there now, and of entirely new blood lines. Will book a limited number of orders for spring pigs to be delivered at weaning time.

C. B. CUNNINGHAM,
Mills, Sacramento Co., Cal.

PUREBRED CHESTER WHITE

August Farrowed Boars, $27, $30, and $33.50—sired by "Tarzan" No. 54537, and "Highland Boy" No. 51791—on mature, rangy dams. Would sell "Tarzan," head of herd, for only $75 (about 10c. lb.). Is a grand breeder and only 3 years old, but cannot breed him to his daughters. Could make him weigh 1000 lbs. or more.

CEDARHURST RANCHES
R. D. No. 2, Sacramento, Cal.

H. T. BAILEY
"The Blue Gums"
LODI, CALIFORNIA.
Large Type Mulefoot Hogs

NEW HARNESS

is cheaper than second-hand, dollar for dollar of cost. Come in and see what we have to offer you in HERCULES HARNESS and Horse Collars. Our own make and fully guaranteed.

Stallion collars made to order.

W. DAVIS & SONS

California's Pioneer Harness Manufacturers
336 Market St., SAN FRANCISCO, CAL.
Catalogue of Harness, Saddlery, Trunks and Traveling Bags sent free on request.

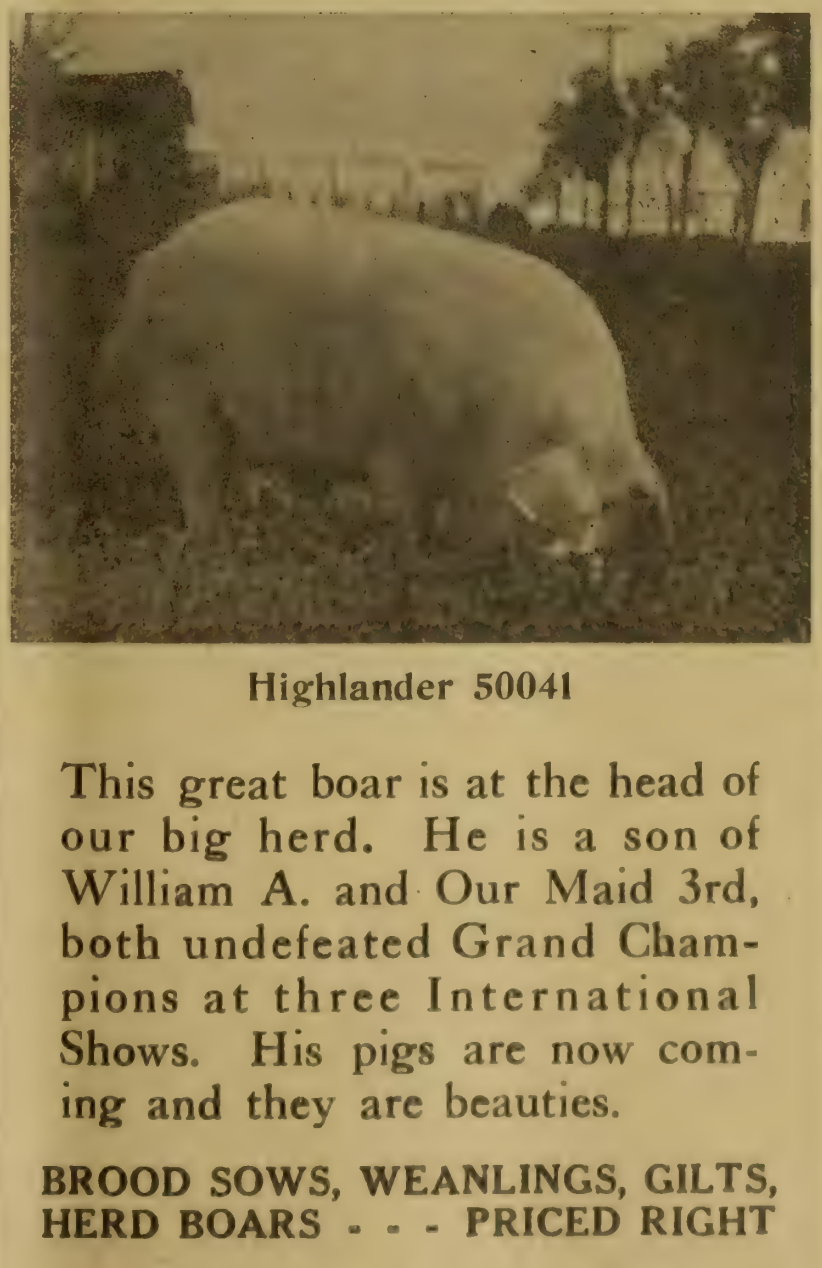
CHESTER WHITE

THE PREMIER HOG FOR

Large Litters—Quick Maturity
Easy Feeders—Top Prices

AT the Chicago International, 1918, this breed again won over all breeds on carcass tests. Either straight bred or crosses, the Chester White has for six years proven superior to all other breeds in Open Competition at these Internationals.

We Have the Largest Herd on the Pacific Coast. The Finest Blood Lines in America



Highlander 50041

This great boar is at the head of our big herd. He is a son of William A. and Our Maid 3rd, both undefeated Grand Champions at three International Shows. His pigs are now coming and they are beauties.

BROOD SOWS, WEANLINGS, GILTS, HERD BOARS - - - PRICED RIGHT

OAK KNOLL FARM
LAKEPORT, CALIF.
San Francisco Office - - 601 Balboa Bldg.

Livestock Markets

San Francisco, February 12, 1919.

CATTLE—There is little change to report this week either in the quality or number of cattle arriving on the market. The medium and poor grades predominate. The recent heavy rains, with their promise of good pasturage are influencing cattle growers to hold back their stock. Quotations are steady.

Steers—
- No. 1 weighing 1000@1200 lbs. ... 12½@13c
- do weighing 1200@1400 lbs. ... 13@13½c
- do second quality ... 11½@12c
- do thin ... 9@10c

Cows and heifers—
- No. 1 ... 9@10c
- do, second quality ... 8@9c
- do, common to thin ... 6@7c

Bulls and stags—
- Good ... 6½@7½c
- Fair ... 5½@6½c
- Thin ... 4½@5½c

Calves—
- Lightweight ... 11½@12c
- Medium ... 10½@11c
- Heavy ... 8 @10c

HOGS—Hog receipts continue in plentiful supply and the quality holds up well. Notwithstanding the abundant supply, prices hold firm, as the market has been fairly stabilized by the joint efforts of the Food Administration and the packers. Heavy shipments of pork products abroad are anticipated, which makes for a firm market. No change in prices.
- Lambs ... 14@14½c
- Yearlings ... 12@12½c
- Sheep, wethers ... 11½@12c
- do ewes ... 8½@9½c

SHEEP—Both sheep and lambs are in fair supply, though the latter are likely to be somewhat harder to get. As for some time past, the consuming public is buying sparingly of mutton and lamb, and the scarcity of supply is about being offset by the light demand. The market is strong and prices are unchanged.

Hogs—
- Hard, grain-fed, 100@150 lbs. ... 16c
- do, do, 150@250 lbs. ... 16½c
- do, do, 250@300 lbs. ... 16c
- do, do, 300@400 lbs. ... 15½c

HAY.

Receipts for hay for the past week were 929 tons compared with 1054 the previous week. This falling off was no doubt due to the rainy weather. The receipts, however, have been fully up to all requirements as the trade is very light. Most of the hay arriving has been of good quality. Although it has been difficult to effect sales, some sales have been made at top quotations. But as a rule the market lags and concessions have to be made to move consignments. The rains of the past few days have been beneficial to growing crops and give promise to a bountiful hay crop next summer. The Government was in the market last week for bids on 1200 tons, but as yet the order has not been placed. As the amount requested was small, considering what is usually asked for, it had no effect on the market.
- Wheat, No. 1 ... $22.00@24.00
- do, No. 2 ... 16.00@20.00
- Choice tame oat ... 21.00@23.50
- Wild oat ... 16.00@18.00
- Barley ... 16.00@18.00
- Alfalfa ... 16.00@19.00
- Stock ... 14.00@17.00
- Barley straw ... .50@ .80

FEEDSTUFFS.

Feedstuffs were marked at a lower figure this week for several descriptions. Cracked corn, rolled barley and rolled oats were all lower in sympathy with the weakness of the several grains. While millrun is slightly lower, bran is marked up a dollar. The mills are not yet turning out bran in quantity, and its price is more or less nominal. The heavy rains are expected to influence feedstuffs as they give promise of a plentiful supply of fresh grazing in the near future.
- New alfalfa meal, per ton ... $32.00@34.00
- Coconut cake or meal ... 45.00@47.00
- Whole yellow corn ... nominal
- Cracked corn ... 65.00@70.00
- Linseed Oilcake Meal ... 78.00@80.00
- Rolled barley ... 44.00@46.00
- Rolled oats ... 51.00@52.00
- Mill run ... 37.00@38.00
- Bran ... 39.00@41.00
- Fish meal, per 100 lbs. ... 4.80@ 5.00

Los Angeles, February 10, 1919.

CATTLE—The market situation here is much the same as a week ago. Good to choice cattle are scarce firm and in demand. Poor and medium are also being offered less freely since the rains. The demand however, is light. Calves in good demand and steady.

Per cwt., f. o. b. Los Angeles:
- Beef steers, 1000@1100 lbs. ... $11.00@13.00
- Prime cows and heifers ... 9.50@10.50
- Good cows and heifers ... 8.00@9.00
- Canners ... 6.00@ 6.50

HOGS—There were more in the past week and quality very good. Hence a slow and weaker market. While prices were not quotably lower, buyers discriminated more closely in their buying.

Per cwt., f. o. b. Los Angeles:
- Heavy, avr'ging 275@350 lbs. ... $14.00@15.50
- Mixed, avr'ging 225@275 lbs. ... 15.00@16.00
- Light ... 16.00@16.50

Rough docked 20 lbs., piggy sows 40 lbs., and stags, 40 per cent.

SHEEP—Good to choice sheep and lambs continue scarce. Demand only fair, but under the influence of light offerings prices continue steady and firm.

Per cwt. f. o. b. Los Angeles:
- Prime wethers ... $9.50@10.50
- Prime ewes ... 8.50@9.50
- Yearlings ... 10.00@11.00
- Lambs ... 14.00@15.00

Portland, Ore., Feb. 7, 1919.

The receipts of livestock at the North Portland market today consisted of 200 head of cattle and 1100 head of hogs.

CATTLE—Offerings are running for the most part to the medium grades of cattle, with nothing choice or prime on sale. Quotations are: Best steers, $12.50@13.50; good to choice steers, $11.50@12.50; medium to good steers, $9.75@11.50; fair to good steers, $8.50@9.75; common to fair steers, $7.75@8.50; choice cows and heifers, $9.25@10.25; good to choice cows and heifers, $8.75@9.75; medium to good cows and heifers, $7.50@8.50; fair to medium cows and heifers, $5.75@6.75; canners, $3.50@5.00; bulls, $6.00@9.00; calves, $9.00@13.50; stockers and feeders, $7.00@11.00.

HOGS—Hog alleys are somewhat congested because of the heavy supply of light underweight hogs arriving at this time. Quotations are: Prime mixed, $16.25@16.40; medium mixed, $16.00@16.25; rough heavies, $14.25@15.00; pigs, $12.00@14.00; bulk of sales, $16.40.

SHEEP—Sheep and lambs are in moderate supply and the market is steady, with an undertone of strength. Quotations are: Prime lambs, $13.75@14.25; fair to medium lambs, $9.00@11.00; yearlings, $10.00@11.00; wethers, $9.00@10.00; ewes, $6.50@8.75.

NEW SHORTHORN OFFICERS ARE ELECTED.

At the recent annual meeting of the California Shorthorn Breeders' Association, A. W. Foster gave a get-together luncheon and passed up the leadership to younger men, after having served most satisfactorily as president for two years. C. N. Hawkins, Hollister, was elected president; T. S. Glide, Davis, vice-president, and D. J. Stollery, San Francisco, secretary and treasurer. The retiring directors were A. W. Foster and D. J. Stollery, and they were succeeded by Paul Foster, San Francisco, and T. W. Dibblee, San Francisco.

The annual Shorthorn sale will be held at the University Farm, Davis, Tuesday, April 8, and the annual Hereford sale will be held on the following day. At the same time probably a meeting of the California Cattlemen's Association will be held, and it is expected that these combined events will bring out the biggest aggregation of stock men ever gotten together in this State.

GIBSON COW OUTDOING HERSELF

We recently announced that Princess Roma Alcartra, the senior four-year-old daughter of Prince Alcartra Korndyke, owned by the J. S. Gibson Company, Williams, had made the excellent record of 30.06 pounds butter in 7 days, but it appears that she was just getting up speed, as she has since increased her record to 31.53 pounds butter and 576.1 pounds milk. Also she has produced 125.55 pounds butter and 2493.1 pounds milk in 30 days.

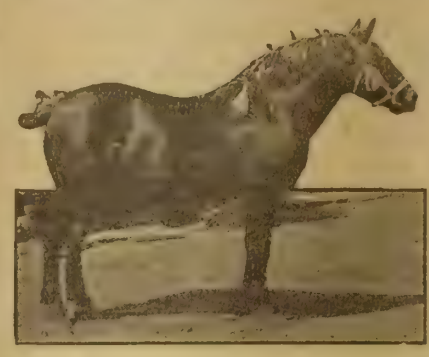
This heifer had no preparation for the test, and barely went dry from her previous freshening, when she made a record of 22.55 pounds butter with first calf.

INFLUENCE OF WATER UPON MILK PRODUCTION.

At the Government experiment farm at Beltsville, Md., experiments have been carried on to determine the effects of water upon the production of milk and butterfat. One lot of cows was watered once a day, another lot twice a day and a third lot was allowed to drink at will. The feed and other conditions were the same in each case. It was found that the lot that had free access to water produced a little more milk than those receiving water twice a day, and considerably more than those receiving it only once a day.

ORMONDALE SHORTHORNS
Are all heavy boned, and of Scotch and Scotch-topped breeding.
Suited for either the range grower or breeder.
EVERY ANIMAL POSITIVELY GUARANTEED.
Whether you buy or not, visit our ranch, 7 miles from Palo Alto on Woodside Road. We welcome inspection. Prices and pedigrees on application.
SHORTHORN CATTLE DUROC-JERSEY SWINE ORMONDALE CO. REDWOOD CITY, CAL. R. D. No. 1

The World's Largest Herd of Registered
HEREFORDS
The home of MISS RIALTO 2ND, NEVER defeated Grand Champion. Over 900 breeding cows, representing choicest blood lines. Great Bulls in service. Look up our records at the BIG livestock shows.
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Wm. Cox, Herdsman. Raymond S. Husted, Vice-Pres., Gen. Mgr.

Imported and American Bred Stallions
Percherons - Belgians - Shires

My Fall shipment of stallions has arrived. These horses were personally selected by me in the best breeding districts of Iowa, Illinois, and Indiana. Two, three, and four-year-olds that will weigh a ton or over.
The largest collection of Percherons, Belgians, and Shires west of the Rocky Mountains. State certificate of soundness and life insurance with each stallion. Every horse priced to sell according to his individual worth. Any reasonable terms will be given. I also have a carload of Heavy Draft Mares and Geldings for sale—age 4 to 7 years, weighing from 1400 lbs. to 1700 lbs. Matched teams in black, bay, or chestnut.
Correspondence invited and visitors always welcome.
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Kings County Jack Ranch

The largest Jack and Mule farm on the Coast. The best selection. Can show you the heaviest, biggest boned animals you ever saw.
1100 to 1400 lbs. in weight.
Prices right.
Special Offer: 50 Young Mules
JOHN BURRELL, HANFORD, CAL.

SAN RAMON SHROPSHIRES
WINNINGS P. P. I. E., 1915
Aged Ram, First and Second. Yearling Ram, First. Ram Lamb, First, Second, and Third. Champion Ram. Yearling Ewe, Second. Ewe Lamb, Second and Third. Get of sire, First. Pen of three Lambs, bred by Exhibitor, First and Fourth. Pen of Four Rams, bred by Exhibitor, First and Fourth. Flock, any age, Second. Flock, any age, bred by Exhibitor, Second. Flock, one year old, First. Flock, one year old, bred by Exhibitor, First. Flock under one year, First. Flock under one year, bred by Exhibitor, First. Produce of Ewe, First, Second and Third. Premier Championship for Breeder. Premier Championship for Exhibitor. A total, including American Shropshire Specials, of 15 Firsts, 9 Seconds, and 6 Championships.
Purebred Registered Rams and Ewes.
Individuals or Carload Lots.
BISHOP BROS., Agents, SAN RAMON, Contra Costa County, California.

Champion Ram, P P I E

CHOICE HERD OF
SHORTHORNS
Headed by
"Princely Stamp"
Grand Champion of the West at Denver, 1918, also Liberty Fair at Los Angeles, and imported "LOTHIAN MARMION" The Kind You Want.
Will sell any quantity of stock—from a single animal to a carload.
Maxwell-Miller Cattle Co.
STEAMBOAT SPRINGS, COLO.

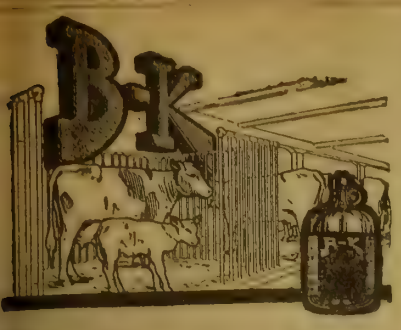
Red Polled Cattle
15 head fine, purebred bulls and 10 heifers, 8 to 12 months of age. For further information address:
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Petaluma, Cal.

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A few young bulls sired by Aaggie Cornucopia Pauline Count, and out of our A. R. O. cows.
Prices Reasonable.
A. M. BIBENS, Modesto, Cal.


Calf Profits
Are you getting them? Calf profits mean more to you now than ever before.
Blatchford's Calf Meal
has been known since the year 1890 as the complete milk substitute. Costs less than half as much. A tonic—prevents scouring—promotes early maturity. Sold by dealers or direct from the makers.
Write for New Data See actual figures showing you how to increase your calf profits.
COULSON CO. - - - Petaluma, Cal.

THE BEST RUBBER BELT EVER MADE
TEST SPECIAL
Special booklet, mailed free upon application, describing construction of Test Special Belt. Sample also sent. Tell us your belt troubles.
NEW YORK BELTING & PACKING CO.,
519 Mission Street, San Francisco.

Don't Waste Wool
Old methods of shearing leave too much wool on the sheep. Shear the modern way with a good machine. The Stewart No. 9 Ball bearing Shearing Machine works wonders with flocks up to 300 head. Saves time and money—shears 15 per cent more wool. Does away with second cuts. Soon pays for itself. You can get it by sending $2.00—balance on arrival. Or write for catalog.
CHICAGO FLEXIBLE SHAFT COMPANY
Dept. 103, 12th St. and Central Ave., Chicago



Flush Cows After Calving

Protect your herd against Contagious Abortion and Barrenness.

Barrenness or Sterility, like Abortion, Retention of After-birth and Premature Birth, is nearly always caused by infection of the reproductive organs by the germs of Contagious Abortion. Unless this infection is promptly overcome by the use of a powerful but safe antiseptic, it may permanently affect the reproductive organs so that the cow will continually fail to stick.

Every time a cow drops a calf—whether alive or dead—by premature birth or aborting, whether the after-birth is retained or not, her reproductive organs should be flushed out, because that is where the infection is developing.

B-K, the powerful non-poisonous antiseptic, is scientifically correct for this work. Used as a douche for the uterus, it quickly brings the after-birth, dissolves the slimy albuminous matter, kills the germs, stops discharges and controls the infection. B-K does not cause straining, but is soothing and heals the tissues.

Send for "evidence" and free Bulletin No. 52 "Contagious Abortion." If your dealer does not have B-K send us his name

GENERAL LABORATORIES
3449 S. Dickinson St., Madison, Wis.

B-K B-K B-K B-K B-K B-K B-K

SHIRES

Jack London Ranch
Offers for Sale
YOUNG STALLION and FILLY COLTS by
Nevada Hillside
Grand Champion of California
and by
DESFORD BANKER
The famous Stallion owned by Salvader Stock Farm

Prices Very Reasonable

For full particulars address
E. SHEPARD, Supt.
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ABSORBINE STOPS LAMENESS
from a Bone Spavin, Ring Bone, Splint, Curb, Side Bone, or similar troubles and gets horse going sound. It acts mildly but quickly and good results are lasting. **Does not blister or remove the hair** and horse can be worked. Page 17 in pamphlet with each bottle tells how. $2.50 a bottle delivered. **Horse Book 9 R free.**
ABSORBINE, JR., the antiseptic liniment for mankind, reduces Painful Swellings, Enlarged Glands, Wens, Bruises, Varicose Veins; heals Sores. Allays Pain. Will tell you more if you write. $1.25 a bottle at dealers or delivered. Liberal trial bottle for 10c stamps.
W. F. YOUNG, P. D. F., 88 Temple St., Springfield, Mass.



AUCTIONS
Sell your stock or implements at public auction. I can get big prices for you. Have cried successful sales in all parts of the State. Customers always satisfied. Write for terms and dates
ORD L. LEACHMAN,
1004 Fifth St., Sacramento

Allied Horses Clipped
Horses of Allied armies were clipped regularly. Army veterinarians knew that clipped horses were much less liable to sickness—did better work and gave longer service. The machine adopted was the Stewart Ball Bearing No. 1. The Stewart lasts a lifetime and costs only $9.75. Send $2.00—pay balance on arrival. Or write for new 1919 catalog.
CHICAGO FLEXIBLE SHAFT COMPANY
Dept. 1005, 12th St. & Central Ave., Chicago, Ill.

RHOADES & RHOADES
EXPERT LIVESTOCK AUCTIONEERS
Purebred Stock Sales a Specialty
Sales Conducted in All Parts of California.
Ben A. Rhoades, Auctioneer
501-3-5 So. Main St., Los Angeles, Cal.

THE BETTER THEY'RE BRED THE BETTER THEY PAY.

(Continued from page 212)

good stock as Mr. Bernstein had, and will work as faithfully. The better the stock you get in the beginning, the greater your profits will be, the quicker they will come, and the more rapidly they will increase from year to year.

Select foundation animals that are uniform in type, and have them big for their ages, with the proper frame and bone to carry their weight. Look for strong arched backs that will not sag; legs set right on the corners of their bodies, and as straight as mile-posts; short pasterns and good feet. They should have broad, intelligent heads, with wide-open eyes and trim ears. Short necks and broad, deep, full chests, with extra good heart girths. Insist upon great length of body, with well-sprung ribs. The sides should be smooth, even, deep, and free from wrinkles and coarseness. Look for good quarters, and, in the lard hog breeds, wide, deep hams that are full right down to the hocks. A smooth, sleek coat shows good breeding quality.

Sows should be big, roomy animals of great stretch and mellowness. Of course, prolificacy and good suckling qualities are chief essentials. The boars should be masculine, but not coarse. They should have more finish than the sows, as the offspring seem to take this quality from the sire.

HOW MUCH TO PAY.

How much will such animals cost you? Well, our questionnaire contained this question, and the answers varied all the way from $50 to $500 for a good registered boar of serviceable age and from $50 to $250 for a bred gilt. The consensus of all answers was $86 and up for a young service boar and $94 and up for a bred gilt. These prices are none too high. The right kind of stock cannot be turned out for less money, and at these prices you can make a good profit on your investment.

Get the best that your means will permit, and in corresponding with different breeders, if it is evident that one is breeding up to a standard, consider his stock seriously, for it will breed true and will make money for you. But if he seems to be breeding down to a price, drop him as you would a hot poker, bearing in mind that the sweetness of low price never equals the bitterness of poor quality. The better the hogs are bred the bigger the profit they'll make for you.

ADVANTAGES OF MULEFOOT HOGS.

Great muscular power and vitality; strong digestive and assimilating powers; prolificacy; careful nurses and good sucklers; strong, active pigs at birth; easy-feeding qualities; flesh containing a large proportion of finely marbled lean and fat; power of the boar to transmit these qualities to his progeny when crossed with other breeds—these are the reasons why Mulefoots are preferred by many.

Here in California H. T. Bailey of the Blue Gums, Lodi, has the leading herd. The blood lines are the same as those found in the blue ribbon herd of John H. Dunlap, Ohio. Herd boars, Bailey's Spot and Bailey's Nigger. Mr. Bailey has 10 service boars and 12 fall pigs for sale.

VON HEIM HOLSTEIN SALE.

It is not often that buyers of dairy cattle have a chance to secure foundation animals that have been instrumental in establishing the reputations of noted herds, but such an opportunity will be given, March 17, at Kent, Wash., when the entire Holstein herd at the Von Heim Lodge will be put up at auction.

J. H. Von Herberg, owner, has spared neither money nor brains in building up his herd and he has combined heavy production with beauty of type to a degree that seldom has been equalled. This herd has produced four world record cows and the average production of the entire herd is extremely high.

This is a complete dispersal sale and everything, even to the young calves, will be offered. The stock is in excellent condition and several of the cows are on test. Sixty-two head will be offered, and, besides cows, bred heifers and young stock, there will be some grand service bulls fit to head the best herds.

It will pay every breeder and every farmer interested in good dairy cattle to attend this sale of the finest herd ever offered at public auction west of the Mississippi. Catalogues can be obtained from George A. Gue, sales manager, Yakima, Wash.

Sooner or later you will buy a DE LAVAL CREAM SEPARATOR

If you have any use for a cream separator, it's only a question of time before you buy a De Laval.

Many buy a De Laval to start with and so avoid a lot of "separator grief."

Others buy one, two or three different machines before they finally learn by experience that "the best is the cheapest" and get a De Laval.

That's why, in the older dairy sections where separators have been in general use for many years, you'll find most of the machines are De Lavals.

"Claims" don't mean much to such farmers. They've had lots of separator experience. "Performance" means a thousand times more to them than claims.

They've watched the De Laval "perform" for several decades. They know that it is reliable and they stick to it, just as does the creameryman who is also "separator wise."

Why not be guided by the experience of these men and buy your De Laval "Sooner" instead of "Later?"



Order your De Laval now and let it begin saving cream for you right away. See the local De Laval agent, or, if you don't know him, write to the nearest De Laval office as below.

DE LAVAL DAIRY SUPPLY CO.
THE LARGEST DAIRY SUPPLY HOUSE ON THE PACIFIC COAST

Alpha Gasoline Engines — James Barn Equipment
Ideal Green Feed Silos — Viking Rotary Pumps
Acme Feed Cutters — Lauson Tractors
EVERYTHING FOR THE DAIRY
Catalog of any of these lines mailed upon request
61 BEALE STREET, SAN FRANCISCO
Over 2,325,000 De Lavals in Daily Use.

LOUDEN BARN EQUIPMENT

HAY TOOLS
STEEL STALLS
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SPRING BALANCE MANGERS
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MANGER DRAINS
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LITTER CARRIERS
HARNESS CARRIERS
FEED CARRIERS
FEED TRUCKS
MILK CAN CARRIERS
STEEL TRACK
TRACK FITTINGS
SWINGING CRANES



Louden Litter Carriers

One man with a Louden will clean your barns in half the time that two men would take with old methods. Even cleaning in wet weather is taught; disagreeable work, too.

Write for Catalog and Free Book of Barn Plans

California Hydraulic Engineering and Supply Company
68 Fremont St., SAN FRANCISCO. 424 E. Third St., LOS ANGELES

Oleo Bill Unfavorable to Dairying

Assembly bill No. 14, described as "An Act to prevent deception or fraud in the production and sale of oleomargarine," sounds good, but in reality it is intended to repeal our present State laws controlling oleomargarine. It eliminates the strong features which prohibit coloring oleo in semblance of yellow butter, by whatever means the coloring is accomplished. It also expressly defines oleomargarine as certain mixtures and compounds of fats, oils, annotto and other coloring matter, "made in imitation or semblance of butter, or, when so made, calculated or intended to be sold as a substitute for butter," thereby giving it legal standing when colored.

It eliminates the present retail and baker's license, which last July put into the hands of the State Dairy Bureau approximately $10,000 for use in its work of inspection and in supervising oleo traffic. It provides only for manufacturers' and wholesalers' license, and gives this to the State Board of Health, instead of the State Dairy Bureau, which was established to promote and protect dairying in California.

The bill specifies an extremely heavy fine as a maximum for illegality, but omits a minimum fine, thereby giving a lenient justice the chance to fix a fine of a few dollars against influential concerns, who probably would pay no attention to this law which apparently they are trying to have enacted.

Other features of the bill make the attempt to abrogate our present oleo laws a very dangerous invasion of the rights of butter manufacturers, and is designed to bring destruction to California dairies.

This measure, introduced by Assemblyman N. J. Pendergast of San Francisco, has been referred to the Committee on Manufacturers, only one member of which represents agricultural interests, and unless members of the Assembly from dairying counties are made fully aware of its fraudulent character, it will be a difficult task for the few representatives of the dairying interest to prevent its passage. Probably most of the city members will line up with the influences that eminate from the city and antagonize agricultural interests, so it is up to every reader of the Rural Press to write his Assemblyman at once to both vote and work against this spurious bill.

The present oleo law protects dairying interests and is good enough for the present. Let's do our best to prevent the oleo people from slipping one over on us.

Know What You Get in Millfeeds

"What's in the sack?" has been an unanswerable question to most dairymen, hog raisers, poultrymen and others who have used millfeeds in California. In about 40 other States the farmers know what is in a sack, and they can take it at the price or leave it, according to the way they estimate its real feeding value. Few people doubt the desirability of having large mills to mix feeds economically and to conduct chemistry departments to figure out the proportions of available feedstuffs which may be varied as prices rise and fall, thus working out the most economical balanced ration. Thousands of people swear by the feeding value of some of our brands of millstuffs, but most of our readers know that they can buy millfeeds that are expensive at any price, and many of these have sorrowful memories of injurious adulterants which made their livestock suffer. Poultrymen know that grit is beneficial in poultry feed mixtures, but who wants to buy crushed rock at the price of poultry mash when he can get it separately at a much lower price and add it himself?

We have it from the best of authority that manufacturers of certain rice by-products are begging people to take their products at what might be considered ruinous prices, yet they do not find the buyers. This is because it has become well known that the sandy rice hulls have quite generally been ground up and mixed in as an adulterant and they act somewhat like ground glass. Red Dog flour, mill sweepings, road dust and many other adulterants have been used.

It is to enable users of millfeeds to know what they are buying, to know something about its feeding value, and to know how much adulteration has been practiced that Senator E. S. Rigdon of San Luis Obispo has introduced bill No. 93 in the Senate and Assemblyman F. J. Cummings of Ferndale has introduced bill No. 480 in the Assembly.

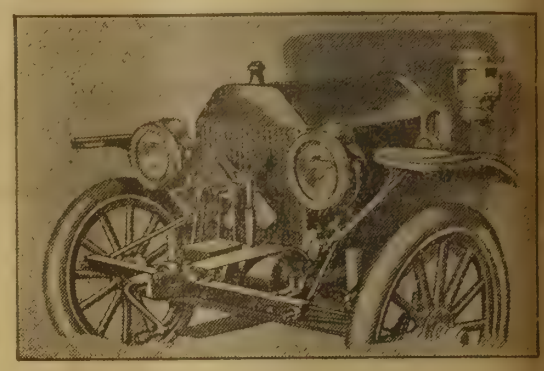
These bills, which apply to all commercial feedstuffs, provide for a label or tag to be affixed to each bag which must give the net weight of the contents, the name and address of the manufacturer, the minimum per cent of crude protein and fat, the maximum per cent of crude fiber, the specific name of each ingredient and, in the case of poultry feeds, the percentage of grit or mineral matter.

The bill provides for a penalty of not more than $100 for the first offense and not less than $100 for each subsequent offense. It does not call for an appropriation or require the formation of a new department, as the State Board of Health will be empowered to enforce its provisions.

A similar bill passed both houses at the last session, but was vetoed by the Governor because of ambiguous wording after its many alterations. The bills that have been introduced at this session are in proper form and should be passed. Every reader should write his Senator and Assemblyman to put in their best licks for Senate bill No. 93 and Assembly bill No. 480.

Your Ford

Made into a 12-Horse Portable Farm Engine in a few minutes' time. Has an auxiliary cooling fan, is connected direct to engine with clutch pulley in front, making it easy to line up anywhere with the machine you want to drive.



The Perfection Belt Power Attachment

Saws wood, grinds feed, fills silos, husks corn, and a thousand other things. Better and more economical than a gasoline engine.

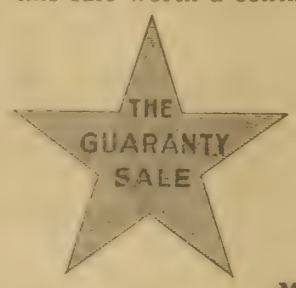
SPECIAL PRICE for a limited time only and a chance to make a little extra money besides. Ask us about it.

THE ASHLAND PRODUCTS CO., 50 E. Eighth St. Ashland, O.

A Wonderful Offering of HOLSTEINS

The 1919 Guaranty Sale of registered Holsteins, to be held at State Fair Grounds, Sacramento, California, on Thursday, March 27, will contain the most wonderful group of individuals ever assembled for a one day sale anywhere in the world.

This strong claim will be amply sustained on sale day as the remarkable individuals come into the sales ring, and in following announcements of this sale we shall set forth facts of sensational interest to every Holstein breeder in America, for there are animals in this sale worth a continent wide trip to see and own.



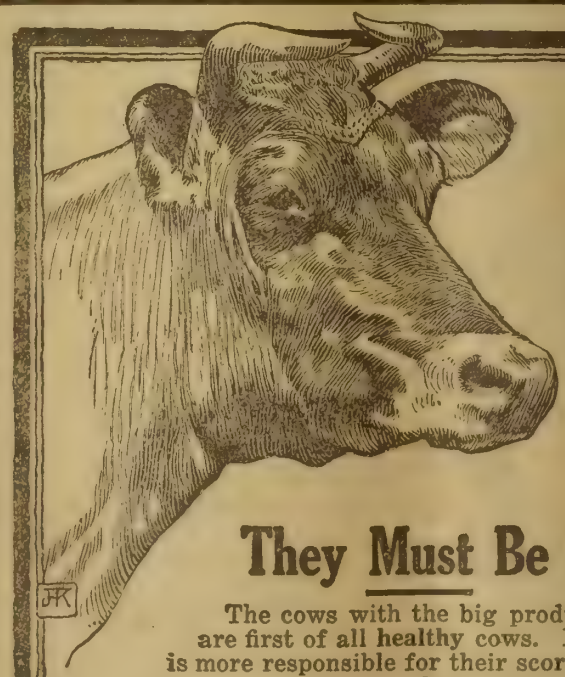
The catalog of this great event is being prepared, and it would be well to request a copy early as copies will be mailed only on application.

Management

California Breeders Sales and Pedigree Company

J. M. Henderson Jr., Pres. C. L. Hughes, Sales Mgr.

SACRAMENTO, CALIFORNIA



A Famous JERSEY with a champion long distance record for twenty-five consecutive months of 2,067 pounds of butter.

They Must Be Healthy

The cows with the big production records are first of all healthy cows. Perfect health is more responsible for their scores than breeding or any other single factor.

It is a fact that more than 80% of the poor milkers in almost any dairy can show remarkable gains in milk production by the most simple home treatment and observation.

Such common and dreaded ailments as Abortion, Barrenness, Retained Afterbirth, Scouring, Lost Appetite, Bunches and such other complaints as arise from low vitality of the digestive and genital organs are readily eliminated by simple home treatment and judicious use of KOW-KURE. Almost all diseases can be reached by this wonderful medicine. The cow can then thrive on Nature's food and increased milk flow is inevitable.

You can add hundreds of dollars to your milk income by spending a few dollars yearly for KOW-KURE. Send for our valuable free book, "The Home Cow Doctor." It gives directions for the use of Kow-Kure in each disease—also contains a wealth of general information valuable to any cow owner.

Buy KOW-KURE from feed dealers or druggists; 60c. and $1.20 packages.

DAIRY ASSOCIATION CO.
Lyndonville, Vt.



Another Star for the Guaranty Sale

The highest record bull ever offered for sale on the Pacific Coast is the latest entry for the Holstein Guaranty Sale to be held at Sacramento on March 27. He is a son of Adirondac Wietske Dairy Maid, the cow that recently broke the Pacific Coast record by producing 41.03 pounds of butter in seven days, and is still on test. This young fellow is a show bull and is sired by a 30-pound son of the $50,000 bull, King Segis Pontiac Alcartra. He is consigned by Bridgford Company, who own the sire and dam. The Bridgford Company is making its greatest consignment to date in this sale, including three cows above 30 pounds, of which the largest record cow is the 37-pound cow, Boweda.

McAlister & Sons have consigned a wonderful lot of daughters of their famous herd sire It, among them a daughter of K. P. Tola, a daughter of K. P. Idyl Segis, and others out of dams from 29 to 32 pounds. They have also consigned a great 31-pound cow, and a granddaughter of Rag Apple Korndyke 8th that has the third highest milk record in the world for a 2-year-old heifer.

A. W. Morris & Sons have consigned among others some splendid daughters of Prince Gelsche Walker, out of 30 and 32-pound dams, and all bred to the 34-pound bull, Sir Aaggie Mead De Kol, who is the only bull in the world whose seven nearest dams average over 1000 pounds butter in one year.

These consignments are a sample of the quality throughout this sale, and for the entire sale it is claimed by the management to be the highest bred, best individual lot of Holsteins ever assembled for a one day sale anywhere on earth.

Bridgford Cow Breaks Coast Record

Butter, 41.031 pounds; milk, 831.7 pounds. This is the wonderful record just made by Adirondac Wietske Dairy Maid, owned by the Bridgford Company, Knightsen. It is the highest seven-day record ever made on the Pacific Coast, the highest previous record having been made by Tilly Alcartra. Also, the record makes Adirondac the third highest 40-pound cow in the United States for combined milk and butter record.

The owners will continue Adirondac on test and look for her to make a very large yearly record. She is six and a half years old and has never been dry since she first freshened, except about six weeks before this freshening. When she was started to be dried off this year she was giving 60 pounds of milk per day in the regular two-time per day string, and this was ten months after her last calving date.

Last year Adirondac dropped a bull calf which has been consigned to the guaranty sale to be held at Sacramento, March 27. He will be the highest record calf ever sold on the Pacific Coast. He is sired by the Bridgford senior herd sire, King Segis Alcartra Abberkerk, who is a 30-pound son of King Segis Pontiac Alcartra, the $50,000 bull.

Farm extension work carried on by the Government during the war would be made permanent under a bill submitted to Congress by Secretary Houston, who asks for $5,670,000 to defray the Government's cost of this activity.

A Bull Fit to Head a High-Class Purebred Herd

11 First Dams, Average 32.84 lbs. DAM: State Record—4 year old

Butter, 7 days.. 35.63 lbs. Milk, 7 days.... 623 lbs.
" 30 days..139.29 lbs. " 30 days.....2883 lbs.

SIRE: King Segis Alcartra Prilly—whose dam has a 30.44-lb. 4-year-old record—"World's Record at time of making" and has a 35-lb. and a 30-lb. daughter.

The 11 first dams of this calf average 32.84 lbs. butter, 7 days—all different cows. He traces three times direct to King of the Pontiacs. He is a perfect individual, very large and perfectly straight; dark in color; born October 29, 1918. His dam is capable of a larger record; made her record at second calving and first time tested, a very persistent milker.

Also have for sale: Bull, born January 29, 1918.
Dam's record at two years two months, 26.37 lbs. butter, 7 days.
This calf—a show bull.
One born March 22, 1918: Dam—a 24.86-lb. two-year-old granddaughter of King of the Pontiacs. This calf mostly all white and a fine individual.
His dam—Reserve Grand Champion California State Fair, 1918.
Write for pedigrees and prices.

BRIDGFORD COMPANY, Knightsen, California



Lower Per Cent of Butterfat

Dairymen handling Holsteins do not hesitate to admit that the milk of this breed contains a lower percentage of fat, but in view of their enormous yield of milk they average more butter per cow and they produce a larger margin of profit.

HOLSTEIN CATTLE

Send for our booklets—they contain much valuable information.

The Holstein-Friesian Assn. of America
Box 141 BRATTLEBORO, VT.

REGISTERED HOLSTEINS

Creamcup Herd offers service bulls and bull calves of 34-lb. breeding. Females offered for foundation stock. Tuberculin tested.

M. M. Holdridge, San Jose, Cal.
R. D. "A," Box 437.
Two miles out North First Street.

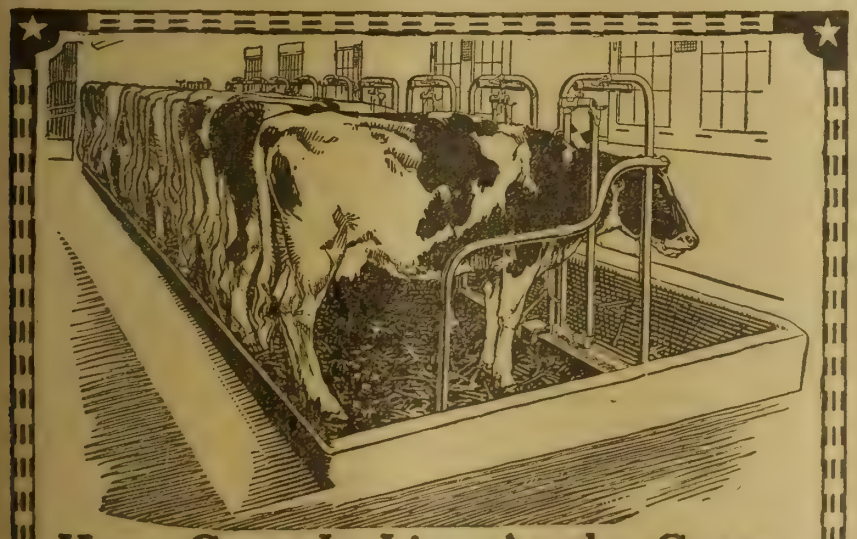
Calf Enemies

WHITE SCOURS BLACKLEG

Your Veterinarian can stamp them out with **Cutter's** Anti-Calf Scour Serum and **Cutter's Germ Free** Blackleg Filtrate and Aggressin, or **Cutter's** Blackleg Pills.

Ask him about them. If he hasn't our literature, write to us for information on these products.

The Cutter Laboratory
Berkeley, Cal., or Chicago, Ill.
"The Laboratory That Knows How"



Keep Cows In Line At the Gutter and You'll Keep Your Cows Clean

THE cow in a STAR Stall can be always kept in line at the gutter. This means a clean cow-bed and a clean cow; it saves you much of the work in cleaning out the barn day after day. The litter falls in the gutter, where it's easily taken care of. The STAR Alignment Device provides for this. It lengthens or shortens the cow bed instantly. As easily operated as locking the Stanchion.

This is just one of the many big work-saving features in STAR Equipment.



This shows the STAR Alignment Device with Stanchion in center position

Send for the STAR Catalog

Ask for Free STAR Barn Plans

and learn how easily and economically you can put STAR Equipment in any style barn. If you are thinking of building or remodeling, let the STAR Master Barn Designers send you free barn plans.

Write for the STAR Catalog No. 101

HUNT, HELM, FERRIS & CO.
HARVARD, ILL. *Complete Barn Outfitters* ALBANY, N.Y.

The STAR Line
Barn Equipment
Litter Carriers
"Harvester" Hay Tools
Door Hangers
Garage Equipment
Coaster Wagons
Tank Heaters and Other Farm Specialties

STAR Equipment

$7.50 After 30 Days' Trial

Caution! Vibration of the bowl will quickly cost you more money in *cream waste* than the price of your separator. U.S. Gov't. Bulletin No. 201 says a perfectly true motion of the bowl is absolutely necessary. The bowl is the *vital* part of the separator—the part where cream separation takes place. *The patented Melotte bowl is* SELF-BALANCING! It is the ONLY ball bearing separator bowl. It CANNOT vibrate. It hangs down from a single ball bearing and spins like a top. Can't get out of balance—can't cause currents in the cream—can't remix cream with milk.



Free Trial Yes, 30 day's free trial on your own farm—then, if satisfied, only $7.50 and a few monthly payments—AND—the wonderful Belgian Melotte is *yours.* Write today for catalog—it tells all.

No Money Down

Not one penny down. Before you buy *any* separator, we want you to TRY—*at our expense*—this great Belgian Separator, *winner of 264 International Prizes.* Use it just as though you owned it. Compare with all other separators. Put it to every test. *Test the wonderful self-balancing bowl!* Return it after 30 days, if you choose. We will pay freight both ways—the trial won't cost you a cent. Mail coupon *at once*—get full details.

Easy Payments

If, after 30 day's trial, you are convinced—as we know you will be—that the Melotte is the best separator on the market; that it gets more cream and bigger profits; that it will wear longer, work easier and give greater satisfaction than any other separator—send only $7.50. Buy on our rock-bottom direct-to-you offer. Only $7.50 as a first payment, if satisfied after trial—balance in small monthly payments. Pay right from your increased profits! Let the Melotte *pay for itself* while it works for you! Get full particulars. Write or send the coupon *at once.*

Valuable Books FREE.

"Profitable Dairying," a valuable 88-page text book by G. H. Benkendorf, Wisconsin Dairy School Agricultural College, and K. L. Hatch, Winnebago County Agricultural School, Wisconsin. Contains no advertising. A real practical, common-sense treatise, telling everything about cows and dairying—how to feed and care for dairy cattle—how to make more money out of your cows. Every farmer should have this book in his library. Send free—without Melotte Catalog—which gives the full story about the Melotte "Separator Supreme" and our 15-Year guarantee which is *100% stronger* than any other separator guarantee. Get these books *free.* Mail the coupon now!

THE MELOTTE SEPARATOR
H. B. Babson, U. S. Manager
2843 W. 19th St., Dept. 4902 Chicago, Ill.

LOOK! We guarantee the 600 lb. capacity Melotte to skim as clean, run as easy, and last as long as any $100 separator made. Its 15-Year Guarantee backs up this statement. Send for free catalog and $7.50 offer.

THE MELOTTE SEPARATOR
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2843 W. 19th St., Dept. 4902 Chicago, Ill.

Without obligation on me, send me your free book "Profitable Dairying," also latest catalog, separator offer and details of your 30 days' trial, monthly payment, no money-down offer.

Name .....
Address .....

DON'T USE CHOLERA CURES.

Quantities of remedies for hog cholera and other diseases of hogs have been seized by Federal food and drug inspectors on the charge that they were falsely labeled. These preparations include Anti-Choleric Hog Remedy, American Hog Remedy, Snoddy Hog Cholera Remedy, Swine Lixir, Cal-Sino Hog Restorative, National Hog Remedy, S. H. Hog Remedy, AHRA Hog Health Compound, B. A. Thomas Improved Hog Powder.

The preparations are labeled in such a manner as to convey the impression that they are effective remedies or preventives, but the specialists say that they are composed of ingredients which could not produce the effects claimed.

Thousands of hogs are lost annually because farmers are induced by the alluring claims of artful advertisers to rely upon these ineffective preparations in the treatment of hog cholera, instead of having the serum treatment applied. Treatment by inoculation with serum is the only effective remedy known for hog cholera.

The Federal Land Bank is steadily bombarded with applications for loans and its volume of business is building up by steady monthly growth. Over 100 inquiries reached the bank as a result of their advertisement in the Pacific Rural Press alone, we are informed.

Carl Vrooman of Illinois, assistant secretary of Agriculture, has tendered his resignation, and it has been accepted by the President. The reason is attributed to poor health.

LIVESTOCK DIRECTORY.

Rate in this directory 3c. per word each issue.

SWINE.

Poland-Chinas.

SOW BARGAINS—We are offering some exceptionally nice tried sows, bred and open gilts, at attractive prices. They are all sired by the undefeated and world's grand champion Superba and out of big type sows, which cost me $200 and over. Investigate before buying elsewhere. Rough's Greenfields, Arlington Station, Riverside, Cal.

NOW BOOKING ORDERS for spring pigs, either sex, from my prize-winning, large type Poland-China hogs. Also will book a few orders for bred gilts, February and March farrow, and a few good, serviceable, aged boars. Hale I. Marsh, Modesto, Cal.

THE BEST IN THE WEST—California Gerstdale and President's Equal are my herd sires. Fall and spring boars now ready to move—each one a corker. Dr. J. A. Crawshaw, Hanford, Cal.

BARGAINS IN POLAND-CHINA SOWS—All immune. Good mothers and prolific. Registered stock. Also boars. Write for details. N. C. Hansen, Coachella, Cal.

ELDERSLY FARM—Big type Poland-Chinas with quality. Young stock from the breed's best big type sires for sale at reasonable prices. J. H. Ware, Live Oak, Cal.

FOR SALE—April boar by Young Jumbo, by grand champion Kings Big Bone Leader. Will ship on approval. A. Buckland & Son, Route E, Box 126, Fresno.

WEANLING PIGS, both sexes, Gerstdale Jones and Caldwell's Big Bob blood lines. Booking orders for spring. Forest View Ranch, Paradise, Cal.

YOUNG POLAND-CHINA PIGS—Three months and up, $20 each, either sex; registered. Edward A. Hall, Route 1, Box 39, Watsonville, Cal.

OXBONE HERD offers March boars for sale from King's Big Bone Leader, grand champion at State Fair, 1918. Write F. E. Fay, Tipton, Cal.

40 SOWS and daughters of Big Bone Bob and I B A Wonder sows for sale. Price right. N. K. Horan, Lockeford, Cal.

BIG TYPE POLAND-CHINAS—Stock from the best herds of the Middle West. N. Hauck, Alton, Humboldt county, Cal.

20 HEAD of Big Bone Bob, Grand Model and I B A Wonder Stock for sale. J. W. Wakefield, Acampo, Cal.

LAKE SIDE STOCK FARM—Large, smooth and big boned Poland-Chinas. Geo. V. Beckman & Sons, Lodi, Cal.

REGISTERED POLAND-CHINA SWINE—Prize winners. Finest stock in the State. M. Bassett, Hanford, Cal.

BIG-BONED POLAND-CHINAS—From Eastern prize-winners. D. H. Forney, Route G, Fresno.

POLAND-CHINA PIGS WITH RIBBONS. Prices right. Johnnie Glusing, Winton, Cal.

POLAND-CHINA PIGS—Bernstein, Trewhitt, and Ross blood. B. M. Hargis, Tulare.

BEAOAKS RANCH herd of registered Poland-Chinas. W. J. Hanna, Gilroy.

BIG-BONED POLAND-CHINAS—Stock for sale. E. S. Myers, Riverdale, Cal.

Berkshires.

BERKSHIRES—GUERNSEYS
GRAPE WILD FARMS
A few fall boars left, by Royal Superbus; also a limited number of fall gilts. We have early spring pigs of both sexes, and we are breeding some top gilts for fall farrow. Prices upon application. A. B. Humphrey, Escalon, San Joaquin county, Cal.

CASTLEVIEW GIANT TYPE BERKSHIRES are the thrifty, typey, quick-growing kind that will make larger profits for you. Prizes and Championship honors are awarded—by the greatest judges in America—only to animals possessing the essential qualities for economical meat production, viz.: heavy bone, good feet, broad strong backs, large hams and easy feeding qualities. Our grand champion herd includes Riverby Princess, grand champion sow of the world; Rookwood Lady 100th, 1917 grand champion of America; Mayfield Laurel 15th, 1917 grand champion of California. Bred sows, bred gilts and fine weaned pigs for sale. Castleview Ranch, Santa Rosa, Cal.

ANCHORAGE FARM

MONEY-MAKING BERKSHIRES—The prolific, easy-feeding kind that make the highest priced pork from the lowest priced feed. They will increase your profits. Prices reasonable; satisfaction guaranteed. Write for free booklet, describing our world's reserve champion, STAR LEADER. We are now making a special offering of bred sows and gilts. Anchorage Farm, Orland, Cal.

$25.00—$35.00—$50.00
BARON DUKE 201ST
Omaha Grand National Champion
BOAR PIGS: 3, 5, and 6 months old, from 650-pound prize-winning sows. We will sell nothing that we wouldn't use ourselves.
SANDERCOCK LAND CO.,
906 K St., Sacramento,
In charge of Natomas Land sales.

GRAPEWILD FARMS BERKSHIRES
A few spring boars and fall pigs by Big Leader, Grapewild Farm Leader and Majestic King.
A. B. Humphrey, Prop., Escalon, Cal.

HIGH-CLASS BERKSHIRES—A bargain for 30 days only. Bred sows and gilts, $40 to $75. Weaned pigs, boars 8 to 15, sows 10 to 15 months. Older pigs in proportion. Twin Oaks Ranch, Linne, Cal.

CROLEY'S BALANCED HOG FEED—The cheapest feed to fatten hogs. Write Geo. H. Croley Co., Inc., Livestock Supplies, 8th and Townsend streets, San Francisco.

BERKSHIRES bred at Imperial Stock Farm are the kind that satisfy. Write us or call and be convinced. R. J. Merrill & Son, Morgan Hill, Cal.

MAPLEWOODE RANCH, Calistoga, Cal., offer some fine Berkshire fall and spring pigs of both sexes. Prices consistent with quality and breeding.

BERKSHIRES IN PERRIS—They make money for me. Write for catalogue and prices. F. L. Hall, Perris, Cal.

BERKSHIRES—Sired by Star Leader, the $1,500 boar. Kounias Registered Stock Farm, Modesto.

FOR REAL GOOD BERKSHIRES write Frank B. Anderson, B. 724W, Sacramento, Cal.

HOPLAND STOCK FARM—Registered Berkshires. Prices on application. Hopland, Cal.

CARRUTHERS FARMS BERKSHIRES—Cholera immune. Live Oak, Cal.

REGISTERED BERKSHIRES—Write R. D. Hume, Dos Palos, Cal.

BERKSHIRES—Fair Oaks Ranch, Willits, California.

Chester Whites.

THE BILLIKEN HERD of Chester Whites—Practically sold out. Offering this issue: One yearling boar; one bred yearling gilt to farrow in April; five fall boar pigs. Sows are bred for March and early April farrow and will book a limited number of orders for weaned pigs. Nothing better anywhere in the West. Plenty of size and all kinds of quality. C. B. Cunningham, Mills, Sacramento county, Cal.

VIGOROUS CHESTERS—All ages. Prices right. The Melone Co., Oak Knoll Ranch, Napa, Cal.

Duroc-Jerseys.

DUROC-JERSEYS AT IRELAND—Home of Cherry Volunteer II. Grand Champion Boar at Riverside. Ireland's Orion Defender and Orion's King of Ireland are excellent sires in service. Booking orders for spring delivery. Ranch at Owensmouth. City office, 1219 Brockman Bldg., Los Angeles.

THE JOHNSON HERD of Duroc-Jerseys—Spring gilts and boars, sons and daughters of Johnson's Defender, the 1917 junior champion, for sale. Weaned boar pigs, $25. Frederick M. Johnson, Napa, Cal.

HAVING RENTED MY FARM I offer for sale 3 registered Duroc-Jersey sows and six open gilts and six weanling pigs, all good breeding. Wm. B. Allen, Box 200, Walnut Ave., Patterson, Cal.

WE WON MORE MONEY on Durocs at the State Fair than any other exhibitor. Why not buy some of this winning stock? June Acres Stock Farm, Davis, Cal.

DUROC-JERSEYS—Burke's Good Enuff, Golden Model, King's Colonel and Pathfinder blood. Derryfield Farm, National Bank Building, Sacramento.

DUROC WEANLINGS for the farmer. Easy feeders; 200 lbs. at seven months. W. W. Everett, River Bend Farm, St. Helena, Cal.

OPEN GILTS, weanling pigs, either sex, at $20 each, out of mature sows. F. W. Gardiner, Route 4, Box 735, Sacramento.

A FEW CHOICE BRED GILTS, spring boars and gilts of the best blood lines. H. P. Slocum & Sons, Willows.

ANDREWS' QUALITY DUROCS—Noted for smoothness and uniformity of litters. W. P. Andrews, Modesto, Cal.

BOUDIER DUROCS all sold out, excepting some sow pigs weighing 100 lbs. apiece. H. E. Boudier, Napa.

HEAVY-BONED DUROCS—A few service boars for sale. Ormondale Co., Route 1, Redwood City, Cal.

YOUNG BOARS by "Ocks Chief," grand champion Indiana and Ohio. Sterling Smith, San Diego.

REGISTERED DUROCS—All from prize-winning stock. W. P. Harkey, Gridley, Cal.

Miscellaneous.

LARGE YORKSHIRES—The ideal hog for the progressive farmer. Young stock for sale. A. L. Tubbs Co., Calistoga, Cal.

MY HAMPSHIRES are money makers. Stock for sale. Buy now. L. A. Denker, Saugus, Cal.

MULE-FOOT HOGS—Large type. H. T. Bailey, P. O. Box 37, Lodi, California. "The Blue Gums."

DAIRY CATTLE.

Holsteins.

A PRICE ON EVERY ANIMAL.
Herd free from tuberculosis. All sales subject to sixty days' retest. Sons of **Finderne Soldene Valdessa,** whose dam is not only a world record cow in seven-day division, but has two sisters holding world's records for yearly production.
Toyon Farms Association,
679 Mills Building, San Francisco.

HOLSTEIN HEIFERS—For sale, 20 high grade heifers, 1½ to 2 years old. Well marked, fine condition. Part of them bred to freshen this fall to Buttercup bull. C. L. Knestice, Rt. A, Box 236, Reedley, Cal.

HIGH-CLASS HOLSTEINS—I have for sale some sons of Sir Veeman Korndyke Pontiac from A. R. O. dams. Write for particulars or come see them. R. F. Guerin, Visalia, Cal.

FANCY GRADE HOLSTEIN COWS and heifers from herd testing 100 per cent. Animals qualified for certified dairies. The Lewis Company, San Jose.

THE McCLOUD RIVER LUMBER CO., McCloud, Cal.—High-class thoroughbred Holstein bulls for sale. Write for prices and pedigrees.

PALO ALTO STOCK FARM, Palo Alto, breeders of registered Holsteins. Heifers and service bulls. Reasonable prices.

GLORIETTA STOCK FARM, WOODLAND, CAL.—Registered Holsteins. Special offering of fine heifers and young bulls.

CREAMCUP HERD—Registered Holsteins, Pontiac bull calves. M. Holdridge, Rt. A, B. 437, San Jose, Calif.

REGISTERED HOLSTEIN BULLS with world's record backing. Kounias' Registered Stock Farm, Modesto.

BREEDERS OF REGISTERED HOLSTEIN cattle and Berkshire pigs. Whittier State School, Whittier, Cal.

F. H. STENZEL, SAN LORENZO, CAL.—Breeder of Registered Holsteins. High test producers.

REGISTERED HOLSTEINS—A. W. Morris & Sons Corp., Importers and Breeders, Woodland, Cal.

REGISTERED HOLSTEINS—Best blood lines of the breed. R. L. Holmes, Modesto, Cal.

SUNNYBROOK RANCH, Willits, Cal.—Registered Holstein-Friesian bulls for sale.

GOTSHALL & MAGRUDER—Breeders of registered Holstein-Friesians. Ripon, Cal.

CHOICE HOLSTEIN bulls for sale. No females. Millbrae Dairy, Millbrae, Cal.

BREEDERS OF REGISTERED HOLSTEIN cattle. McAllister & Sons, Chino, Cal.

HOLSTEIN BULLS and bull calves from A. R. O. cows. C. A. Miller, Ripon.

REGISTERED HOLSTEIN CATTLE—E. E. Freeman, Route B, Modesto, Cal.

HENGERVELD DE KOL BLOOD. High producers. T. B. King, Visalia.

EL DORADO HERD OF HOLSTEINS—Alex. Whaley, Tulare, Cal.

Jerseys.

SUNSHINE FARM JERSEYS—Tuberculin tested. Production counts. E. E. Greenough, Merced.

YOUNG BULLS from Register of Merit cows. W. G. Gurnett, Orland, Cal.

Guernseys.

GRAPEWILD FARMS GUERNSEYS
A 21-months-old bull out of dam with record of 615 pounds in A. A. class and a few young bulls up to 1 year of age.
A. B. Humphrey, Escalon, Cal.

HIDDEN VALLEY FARM offers for sale 2 young Guernsey bulls, ready for service, out of high record advanced register dams. A. J. Welch, proprietor, Redwood City.

EDGEMOOR FARM GUERNSEYS—First in the show ring and in official records. Few animals of either sex for sale. Edgemoor Farm, Santee, Cal.

PALO ALTO STOCK FARM, Palo Alto—Breeders of registered Guernseys; both sexes; prices reasonable.

Ayrshires.

FOR SALE—My 4-year-old Ayrshire bull, Rob Roy 2nd of Steybrae 17823. Price and record on application. See his grade heifers. Roy S. Griffith, Box 71, Byron, Cal.

NORABEL FARM AYRSHIRES—Purebred young stock for sale at reasonable prices. Le Baron Estate Company, Valley Ford, Cal.

ELKHORN FARM AYRSHIRES—Choice young bulls at reasonable prices. J. H. Meyer, 440 Montgomery St., San Francisco, Cal.

FOR SALE—Eight-months purebred registered Ayrshire bull, $150. Redwoods Ayrshire Farm, La Honda, Cal.

AYRSHIRES—Registered; all ages. E. B. McFarland, 412 Claus Spreckels Building, San Francisco.

MILKING SHORTHORNS.

BREEDERS OF REGISTERED SHORTHORNS—Milk strain; choice young stock for sale. John Lynch Ranch, Box 321, Petaluma.

INNISFAIL DAIRY SHORTHORNS—Registered young bulls for sale. Alexander & Kellogg, Suisun, Cal.

BEEF CATTLE.

RANCHO SAN JULIAN SHORTHORNS—Purebred range bulls, unregistered, for sale. Estate Thos. B. Dibblee, Santa Barbara or Lompoc, Cal. John Troup, Supt.

REGISTERED YEARLING SHORTHORN Bulls—Heavy-boned, thick-meated Scotch and Scotch-topped breeding. Ormondale Co., Route 1, Redwood City, Cal.

THE NEVADA HEREFORD RANCH, Jno. H. Cazier & Son Co., props., Wells, Nevada. Registered Hereford cattle. Breeding stock for sale.

AM A SPECIALIST in registered beef cattle and familiar with the best herds in the country. If you need Shorthorns or Herefords, make use of my experience, save money and be satisfied. R. M. Dunlap, Hotel Land, Sacramento.

ALAMO HERD REGISTERED HEREFORDS (founded by Governor Sparks). Herd and range bulls. Reasonable prices. W. D. Duke, Likely, Modoc county, Cal.

REGISTERED MILK AND BEEF SHORTHORNS, bulls and heifers for sale; catalogue free. Thomas Harrison, Santa Rosa Stock Farm, Santa Rosa, Cal.

REGISTERED SHORTHORNS—A few choice young bulls, grandsons of Fair Knight. Prices reasonable. Fair Oaks Ranch, Willits, Cal.

JACK LONDON RANCH—Breeders of prize-winning beef Shorthorns. Glen Ellen, Cal. Eliza Shepard, Supt.

HOPLAND STOCK FARM—Registered Shorthorns. Prices on application. Hopland, Cal.

REGISTERED HEREFORDS—H. H. Gable, Diamond G Ranch, Esparto, Cal.

SIMON NEWMAN CO., breeders of Registered Herefords, Newman, Cal.

GEORGE CALLAHAN, Breeder of registered Herefords, Milton, Cal.

GEORGE WATTERSON—Breeder Registered Herefords, Bishop, Cal.

HEREFORDS—Mission Hereford Farm, Mission San Jose, Cal.

SHORTHORNS—Carruthers Farms, Live Oak, Cal.

SHEEP AND GOATS.

F. A. MECHAM ESTATE, Petaluma, Cal.—Breeders and importers of Shropshire, Rambouillets and American Merinos, both sexes. Also Red Polled cattle. Take electric car at Petaluma or Santa Rosa for Live Oak Ranch.

SHROPSHIRES FOR SALE—Ewe lambs and matured bucks from Iowa. Non-related. C. J. L. Stonebraker, Route A, Chico, Cal.

DORSETS AND ROMNEYS—Dorset ram lambs for sale. John E. Marble, South Pasadena, Cal.

BISHOP BROS., SAN RAMON, CAL.—Breeders and importers Shropshires.

KAUPKE BROS., WOODLAND, CAL.—Breeders, importers of Hampshire sheep.

CHAS. KIMBLE—Breeder and importer of Rambouillets, Hanford, Cal.

CALLA GROVE FARM, MANTECA, Cal.—Breeders and importers of Hampshire sheep.

HORSES AND MULES.

FOR SALE—One of the very best draft stallions in California; cheap. Weight 2150 pounds; 8 years old; color brown. Correspond with W. N. Price, Route C, Box 93, San Jose, Cal.

REGISTERED BLACK Percheron stallion, seven years old, weight about 1700. Terms reasonable. Write John Secrest, Escalon, Cal.

FOR SALE—Two imported Percheron stallions. Reasonable prices. Mary A. Hunter, Bradley, Cal.

FOR SALE—One Percheron stallion and one Mammoth Jack. Colony Holding Corporation, Atascadero, Cal.

MISCELLANEOUS.

This Is to Announce Our
FIRST ANNUAL FARM SALE
To be held in the town of Butte City, Glenn County, California, at 1 p. m., Saturday, March 1, 1919.

We will sell 20 Registered Shorthorns, 30 Registered Berkshires, 20 Registered Shropshires, and 15 Ponies. This sale is primarily to advertise the ranch. We do not expect high prices, but we know that every animal we sell will make a market for more in the future. It will be a buyer's opportunity. All stock of very best breeding. Col. W. H. Hord will conduct the sale.

Butte City is 16 miles southeast of Willows, 25 miles southwest of Chico, 19 miles north of Colusa, 80 miles north of Sacramento.

BUTTE CITY RANCH,
W. P. Dwyer and W. S. Guilford, Owners.

FOR CHEAP HOG FEED
Plant
JERUSALEM ARTICHOKES.
Cheaper than alfalfa, and a winter feed. Tubers, $5 per 100 pounds; 1000 pounds and over, 3½c per pound.
CALIFORNIA NURSERY COMPANY,
NILES, CALIF.

O. I. C. BREEDERS' NOTICE—I will sell Ohio Boy, two-year-old imported boar; none better. Also boar pigs ready for spring breeding (sire Ohio Boy, dam Toddler's Beauty, imported). Write for full information. Jas. Little, Wasco, Cal.

BUTTE CITY RANCH—Shorthorns, Shropshires, Berkshires and Shetland ponies. Write for prices and descriptions before buying. Butte City Ranch, Box P, Butte City, Glenn county, Cal. W. T. Dwyer and W. S. Guilford, owners.

FOR SALE—About 70 head of No. 1 two-year-old dairy heifers, grade, Holsteins, well marked. Some springers. To be sold all together or divided in equal lots. Priced to sell at $75 per head. A. T. Lewis, Box 54, Riverdale, Fresno Co., Cal.

CROLEY'S BALANCED DAIRY FEED—The cheap milk producer; and Croley's Calf Meal, the best California calf raiser. Geo. H. Croley Co., Inc., Eighth and Townsend streets, San Francisco, Cal.

Lodge Von Heim Herd

—AT—

Public Auction

—ON—

St. Patrick's Day

March 17th,

At Kent, Washington

This herd of Registered Cattle—They are too well known to make extra comment necessary.

It is Considered One of the Finest Holstein Herds in the World

65 Head—All official record stock:

8 Head have records over 30 pounds of butter in 7 days, and two of these are only 2 years of age.

Three cows hold World's Records:

One 3 years old with nearly 35 pounds of butter in 7 days.

One 2 years old with nearly 900 pounds of butter and over 22,000 pounds of milk in 365 days.

One two year old with over 32 pounds of butter in 7 days.

I will not mention more at this time only this:

In closing out Lodge Von Heim, the finest herd ever sold west of the Mississippi is being offered, and when breeding, quality, records and size of the herd is considered, no herd ever sold surpasses this one.

The Records range from 18 pounds as 2 year olds to 35 pounds, including 30-pound 2 year old and 34-pound 3 year old.

Write for Catalogue and Remember

St. Patrick's Day

J. VON HERBERG, Owner.

GEO. A. GUE, Sales Manager, Yakima, Washington.



JERSEYS

POOR cows have put a mortgage on many a farm. Jerseys are the mortgage lifters. If cows were pedigreed on profit, Jerseys would all have the honors. They are natural money makers because they give a richer yield with less feed than any other breed. Write Breeders for pedigree and prices. Ask us for the story of the Jersey.

Feed for Profit

THE AMERICAN JERSEY CATTLE CLUB
324 West 23rd St., New York City

N. H. LOCKE CO.
Lockeford, Cal.
Choice young bulls of King's Valet Blood, backed by Records.
Call at the ranch and make selection.

VENADERA HERD REG. JERSEYS
Herd headed by **Altama Interest, Grand Champion 1918 State Fair.** Awarded two other championships and 10 firsts, including Aged Herd Breeders' Young Herd, and get of sire. Young bulls for sale from dams and granddams in Register of Merit.
GUY H. MILLER, MODESTO, CAL.

LEONARD FARM JERSEYS
Bulls for sale from Register of Merit cows. Write for information.
W. J. HACKETT, CERES, CAL.

T. B. PURVINE & SONS
PETALUMA, CALIFORNIA
Breeders of
Registered JERSEYS
Young bull calves for sale. Fine individuals with Register of Merit backing.

RANCHO SANTA MARGUERITA, D. F. Conant, Prop., Modesto, Cal.
Register of **MERIT JERSEYS** A limited number

FOR LARGE AND ECONOMICAL PRODUCTION
Get one of my young Jersey bulls from a high producing dam. They are rich in the blood of Gertie of Glynllyn and Lady Letty Lambert. Occasionally one old enough for service.
A. A. JENKINS, TULARE, CAL.

Bull Calf
Dam: 430 lbs. fat in 9 mo. 16 days on alfalfa alone, carrying calf entire time.
Grand Dam: 690 lbs. fat in one year.
Sunshine Farm E. E. GREENOUGH Merced, Calif.

Dollar-Making Facts For Stock Owners

What is Pratts Animal Regulator?

Not a food. A general conditioner and tonic for horses, cattle, sheep and swine of all ages. A health builder and preserver.

What does it contain?

Medicinal herbs, roots, etc. Natural tonics, appetizers, digestives, blood-purifiers, worm-expellers. A scientific, perfectly-balanced combination needed by working, producing and growing animals.

What does it do?

Pratts Animal Regulator improves and preserves health and, *in a natural way*, increases strength, growth and production. Prevents most diseases. Saves feed by aiding digestion. Makes rich, red blood and improves circulation. Regulates the bowels. Expels irritating worms. Makes livestock more profitable.

Does it give satisfaction?

Satisfaction guaranteed or money refunded. The user to be the judge. America's original stock tonic and conditioner, widely used for nearly fifty years.

How is it used?

Daily, in small quantities, mixed with the feed. Full directions with each package.

What does it cost?

The price is low—large packages most economical. Pratts Animal Regulator actually *costs nothing*, since increased production returns the investment with *big profits*.

Where can I get it?

From 60,000 Pratt dealers. There is one near you. Direct from manufacturers if your dealer can't supply you.

Can I learn more about it?

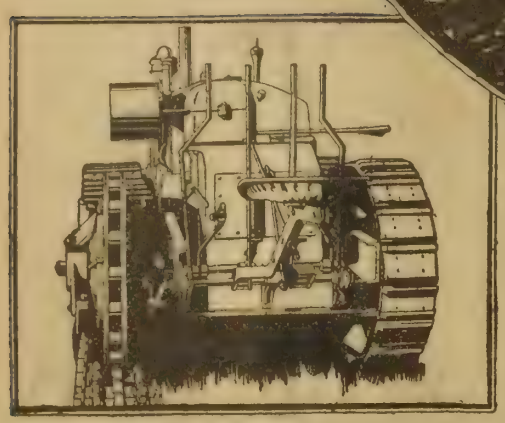
Yes! Write the Pratt Food Co., Philadelphia, for valuable FREE BOOK on profitable management of live stock. Mail your request today.

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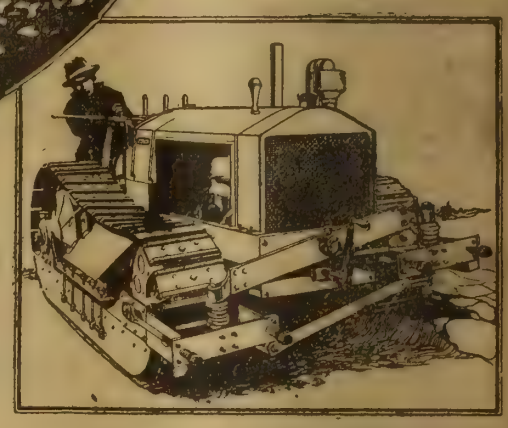
Pratts



The Trundaar is rated at 20 horsepower on the drawbar and 35 horsepower on the belt



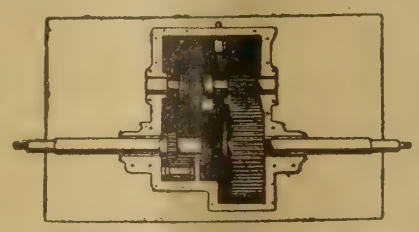
Every link and grouser plate is instantly detachable



The three-point suspension protects the engine against all shocks

The severest test of a tractor

ROUGH, uneven and hilly farms are the final and most severe test of a tractor. The tractor that pays in the long run is the one that makes good where the going is difficult. The Trundaar Tractor is making good on some of the most difficult farms of the West and Northwest because it has been designed particularly for that kind of farm land.



The massive Trundaar transmission requires no differential

The special Trundaar Tread supplies positive traction on the most difficult grades. This tread, built on the log-chain principle, is of the endless belt type. It requires no lubrication. If a link or grouser plate does get broken, it can be replaced in fifteen minutes by the removal of four bolts. The double three-point suspension allows this tread to give positive traction on the roughest ground. This suspension also protects the engine against the jars and shocks of rough work.

C. R. Coe & Son, Sawtelle, California, write:
"We know that our tractor is doing the work of fifteen horses and is not overloaded. We are working on side hills as steep as forty-five per-cent and pulling a six-ton Stockton gang plow."

An engine with excess power

The Special Buckeye Engine is designed particularly to stand the exacting work of heavy going. No ordinary internal combustion engine has to stand what the tractor engine does. It runs at full speed most of the time. It is bumped, shaken, subjected to clouds of dust, and run on low-grade fuel. The Special Buckeye Engine is designed expressly to meet these conditions. It is built big, powerful and strong to give continued, dependable service.

Special gear ratio

The massive Trundaar Transmission is built with a 5½" face on the main driving gear and is designed to have a 20% factor of safety. A special low gear ratio is furnished where the country is hilly, to give excess driving power for the grades.

A tractor that has the power and stamina to make good on rough going would be a profit-maker on your farm whether it is hilly or flat.

If you are farming 200 or more acres, write today for records of results and more complete information about the fourteen special mechanical features of the Trundaar.

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SPEEDS UP THE BUSINESS OF FARMING

Vol. XCVII—No. 8

THE PACIFIC RURAL PRESS

Forty-ninth Year

SAN FRANCISCO — FEBRUARY 22, 1918 — LOS ANGELES

Plow Early to Save the Precious Moisture

Written for Pacific Rural Press by John J. Fox

In California it has always been known that water and the conservation of moisture in the soil is of the first importance. And this is true not only in unirrigated sections but in those that are irrigated as well.

NO MATTER whether you have your ground filled up by rainfall or by gravity water out of a ditch, it is every man's problem who owns land how to keep moisture there in such shape that his plants and trees may get the maximum benefit therefrom with the least possible waste through evaporation. This evaporation takes place very rapidly as soon as the warm weather comes, through the leaves and foliage of a heavy overgrowth or from the surface of the ground drying out so that no smothering mulch of well-worked dry soil can be made to check the rapidity of the evaporation. How and when to go to work is the question. This must be decided by each man for himself.

Time to Begin.

The writer has satisfied himself that, generally speaking, not later than the first of March is a good time to begin plowing, provided the ground is in shape. For many years we started plowing not later than the 15th of March, but have now concluded that the trees don't like it in unirrigated sections. The enormously increasing size of a cover-crop is a great inducement to put off the day. But sometimes it becomes really too heavy and dense to handle properly later and then interferes with the proper function of the mulch.

In any event, a plowing put off till the end of March or April means a loss of moisture in the lower strata of the ground that can rarely be replaced again the same season—and moisture is the first consideration. You can be a bit shy on humus, on fertilizer or on climate in any way, but the tree or plant is distressed by lack of moisture before anything else—just like a human! Give a man plenty of water and he can manage to make out with a crust of dry bread and cheese. But take away his water for a day or two and he caves. Therefore, it is most important to conserve that moisture for the trees. Early plowing is the best way to make sure of it.



This ground is a little dry, but it has to be worked down at the end of each day's work.

Working Down as You Plow.

Men have often said, "But look, my ground is always moist at the grass roots and if I turn it over it dries out away below them." which is apparently true. The overgrowth keeps plenty of moisture well up to its roots, but where does it come from? Enough to keep the plant going doubtless comes from the dew at night, but during the day that moisture is drawn up from below and the evaporation on a hot day is enormous. As will be shown. Suppose we get the team and hook up and see how she goes. The soil, turning over nice and mellow and granular, shows the ground is in nice shape to plow. The furrow as it is turned is not sticky or shiny or too wet; a kick with your foot and it falls to pieces. We have a fairly heavy cover-crop, so we slip a piece of heavy chain onto the double-tree back of the near horse to drag the crop down towards the furrow. It works fine and everything turns right under if the plow is set right. You keep right on plowing till night and the ground looks so dark and mellow and pretty that you forget all about being weary and footsore and even the smell of the horses, as they give themselves a hearty shake, rattling the harness clear, makes you realize that you have done a good day's work. You have a good, strong piece of bottom land, say a sandy clay loam, and it takes a bit of handling. You think to yourself, "Well, I'll run the harrow or the clod-masher over that in the morning so as to make it safe." But the next morning the ground looks so inviting and there is the plow all ready right in the furrow. And the harrow is inside the barn—you forgot to put those new teeth in anyway—let it go till the end of the week, when you go to town. And on Saturday you are very pleased with yourself and the week's work with the plow. But before you get back from town maybe a north or east wind springs up and gives your land what cheer, oh! over the week end. Then you have a field of hard clods that is going to break your heart working down and you take it out maybe on the horses.

Methods of Working.

Of course it is not necessary to bother much on real sandy land, but if it is of a strong nature, every bit of land in an orchard should be worked down a bit each day before you unhitch for the night. Where large widths are being turned with a tractor, a heavy railroad iron dragging behind makes a good job of breaking stray clods and smoothing the ground over. The writer and various neighbors always ran the old wooden clod-masher or slicker over the plowed strips before leaving the field at night. It broke most of the clods, sealed up the furrows so as to cover any hollows where the cover-crop was not completely buried, and it shoved down any clods that it didn't break, into moist ground, so they wouldn't dry out and could get another chance of being broken up by the harrow or disk later. Sheridan H. Baker says that he always goes over each day's plowing in the orchard with a pulverizer before he unhitches for the night. He is of opinion that it does even better work than the clod-masher or harrow.

The Reason of Working Down.

The reasons for working down as you go are for the purpose of obtaining as perfect a condition of the soil in the shortest time and at the least expense possible. These remarks do not apply to fall or winter plowing, when the ground is left rough on purpose. They apply to the spring plowing and the obtaining of a dry, mellow condition throughout the mulch with as little tramping as possible. At times your work will be beaten down by long and heavy late rains—perhaps so much so that the spring-tooth or disk will not suffice to bring back your mulch—and you say, as we all have at times: "Wish I had left that plowing till later and saved all that work."

But from personal experience and that of many other men, that work is not wasted. Moisture has been conserved that would otherwise have been lost. And the second plowing, if it is necessary to plow a second time—need not be over five inches deep. If deeper it sometimes brings up clods that are harder to work down than the first ones were. And it is better to have a four-inch mulch of a good mellow consistency than a six-inch one of coarse, cloddy stuff.

Some Seasons Erratic.

Some years anybody is likely to get caught, especially if rains have been continuous in March and one is kept off the land maybe till April, which is a great time for drying, north winds. Everybody is busy and maybe there is two weeks' plowing to be done. By the end of that time the ground is getting hard and cloddy and the work is annoying. Not only because it is hard on man and team, but because it is impossible to

(Continued on page 273)

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JNO. J. FOX - - - - Horticulture
SUSAN SWAYSGOOD - - - - Poultry

EDITORIALS

NOT ORGANIZING BUT BEING ORGANIZED.

TO THE EDITOR: There is one thing I have noticed about farmers' organizations—farmers do not organize but are organized.—C. C. P., Kerman.

You have made a very sententious and significant utterance. If Solomon were still here in the proverb line, we doubt if he could beat it. It is true that through all time monarchs and anarchs, patriots and politicians, monopolists and cosmopolists have undertaken to organize farmers to serve their various and diverse purposes and have met with considerable successes, which have endured for a time and have served all kinds of interests but the farmers' own. The fact remains that the farmers, from their own points of view, are still unorganized and the prey of all kinds of organizers. It is surely time farmers did something by and for themselves!

BANKERS' INSIGHT DEEPENED.

WE ARE glad that the bankers are beginning to look deeper into the fundamentals of stability and profitability in farming. They seem to be disposed to acknowledge that they have been building belfries, erecting flagstaffs and putting ornamental brackets under the cornices—all these things calculated to make the roof of farming more attractive—but disregarding hitherto the improvement of the foundations of the industry, which are really the things which underlie its future service to the public and the success of those who give their lives to it. It seems to be admitted that the organized bankers of the country have hitherto been dealing too much with what is called "farming" and too little with farmers. A leader in bankers' organization to promote farming is Joseph Hirsh, a banker of Corpus Christi, Texas, and he has published this statement:

Up to this time the work of the bankers' committees has been largely devoted to agricultural production. That is, our principal work has had to do with increasing the number of farm demonstration agents, the introduction and distribution of thoroughbred livestock, the organization of boys' and girls' agricultural and baby beef clubs, but I think we should branch out now and go more largely into matters of marketing, warehouse construction, and the organization of co-operative marketing associations. In short, I think the bankers should bring their ability to bear on the matter of the marketing of farm products.

Mr. Hirsh calls this "branching out": we call it "digging deeper." In a way their work hitherto has been fundamental because it has aimed to direct and qualify more of the youth for farming, but it has overlooked the fact that a better way to develop farming and to make it more attractive to the youth is to make farming more profitable by helping those who are now doing farming to get their fair share of the value which their labor and enterprise produce. Mr. Hirsh is perfectly right in his conception that the way to do that is for "the bankers to bring their ability to bear on the marketing of farm products."

BANKERS AND BUREAUCRATS.

THERE will be a great assembly of bankers in Washington next week. The announcement is that there will be in the national capital on February 26 and 27 a joint conference of the agricultural commission of the American Bankers' Association and the agricultural committees of forty-two State bankers' associations. Two questions naturally arise: First, what is the purpose of this great assembly of bankers? Second, with whom will they confer? These questions are answered in these paragraphs from their official announcement in this way:

The object of the conference is to shape the bankers' plans for 1919 in the matter of dealing with agricultural problems.

The conference will be held with the Secretary, assistant secretaries and bureau chiefs of the Department of Agriculture, representatives of the Bureau of Education and the Federal Farm Loan Board.

The penetrating reader will perceive that the conference is just like all others which have been held during recent years: the war-style of conference is still fashionable though the war is over: there will not be a real farmer in the conference unless he happens to be either a banker or a bureaucrat and may therefore be counted as having his preponderating interest either in banking or bureaucracy. It still seems to be a popular conception that actual farmers are not to be recognized or trusted in national conferences about farming!

WHY REAL FARMERS ARE NOT IN IT.

WE DO not exactly know why, but we can make a guess at it. It is the same old guess which we made in our issue of October 19 last, when we indulged in comments on the fact that there seemed to be too many "farmers' temples" in Washington: or, at least, there were too many farming templars—one bunch claiming to have already set up a shack which should grow into a temple and another bunch claiming that they would have a brand new temple or none. More recently it has appeared that this architectural quarrel is really in itself a non-essential detail, except as it is a symptom of more fundamental incompatibility. This we judge to be the case because both of these templatic national organizations of farmers seem to be also tempestuous. Each of them has had a "national conference" in Washington during the last two months—one during the first week in January and the other during the second week of February—and in careful searching through the publications of each we can find no mention of the work or purposes or even the existence of the other! There is, however, one thing in which both seem to agree, and that is in cussing the agricultural bureaucrats in Washington, and this may be the first case in history in which two things which are equal to the same thing are not equal to each other. But what seem to us to be the facts in the case do clearly indicate one universal fact about agricultural organization in this country, viz., that even in the supreme matter of acting together nationally, farmers cannot agree, and so long as this is the case they will be the prey of both bankers and bureaucrats, and we do not know which can or will pummel them the worse. It may, however, be only fair to the engineers of this great national bankers' conference which will be held next week to say that they may have been driven to association with the bureaucrats because they could not confer with one bunch of real farmers without incurring denunciation by the other! It is a pretty kettle of fish and there are probably many bones of contention in it. The limit of our discernment seems to be that the catch consists of suckers attaching themselves as closely as possible to the administration with the hope of drawing it into socialistic vagaries, and of pike which delight in taking a bite at the administration whenever they can get it. And so, instead of pulling together and getting what is fair and important to agriculture into all kinds of politics, these farm organizers only get politics into themselves and it saws them asunder. And so we return to the apothegm of our modern Solomon of Kerman—"farmers do not organize but are organized"!

HAVE WE THE SAME ENDEMIC?

THE question now arises locally whether we have the same disjointing disease in California. We have in this State the finest lot of co-operative product-selling and supply-buying associations in this country. They should be built up, extended and affiliated until we get all farm-product marketing on a basis of fairness to producers. An issue has arisen in which their combined influence is needed to protect their own existence. There is legislation pending at Sacramento (which was outlined on page 249 of our last issue) which is intended to impeach the co-operative principle among producers and to propagate the outrageous doctrine that the application of that principle is antagonistic to the interests of consumers—therefore the State should hire three $5,000 market directors and give them $100,000 to try an experiment with a public market for consumers in some California city. As the bill which proclaims this purpose repeals the market director law of 1917, it repudiates the State's duty to promote co-operative selling by producers and leaves production at the mercy of consumption because there will be no calculation of price upon the basis of cost of production, no competition between traders to get good stuff to sell—nothing, theoretically, but determination of what consumers desire to pay. No production can long survive that kind of price-fixing. It would not involve the auction principle because the theory is that supplies would be ample and therefore all consumers could get all they desire of everything without competition among themselves and the three directors are counted on to fix up things so that consumers can do this. Now what are our disjointed and non-affiliated co-operative selling organizations doing about this? As a body they cannot do anything because only a fraction of them are affiliated. Single associations are protesting, which is the best they can do under the circumstances, but it will accomplish no more than a few charges of duck-shot aimed at an eagle! The last Legislature tried to give these co-operative associations of producers facilities for getting together, not alone for their own but for the public good, but they seem to prefer to play apart—each making its own mud pies in its own particular puddle. Evidently "farmers are not organizing but being organized" and to include the activities of the Sacramento statesmen who are very zealous about their metropolitan constituencies we must add a word to the Kerman proverb—"are being organized—against."

DON'T BREAK THIS CONNECTION!

IN VIEW of the facts already cited, viz.: the disposition of the general government to substitute its bureaus for the actual contact which it should have with the real farmers of the country and the indisposition of the farmers to organize themselves so that they can thrust themselves between these bureaus and the source of executive force, we have to make the plea: don't break the direct connection which we now have in California! We argued this appeal at considerable length in our issue of February 8—claiming that the distinctively agricultural "commissions," which the farmers had themselves created and supported for decades, should not be thrown down to install an academic vision of higher efficiency in State administration. Upon another page of this issue we print a statement which we prepared at the invitation of Senator Boynton's general "Committee on Efficiency and Economy," briefly outlining our reasons for protesting against the proposed plan of reorganization which merges our practical agricultural interests in a welter of mining, sportsmanship and other natural and unnatural affairs and interests which are either unsympathetic or at variance therewith. We doubt if any economy can be figured from this unholy alliance and we are perfectly sure that there can be no higher efficiency in it—except, possibly, that there might be more oil in it for the wheels of gubernatorial administration, and that we count as naught in comparison with other interests involved.

In addition to the few points which we thought proper to submit for the consideration of the subcommittee (as printed elsewhere), we wish to make, in this freer air of our own editorial domicile, this single plea for maintenance of the his-

toric order in our State promotion and protection of the agricultural industries. Do not, for the sake of academic improvement in organization, break the direct approach which our farming interests have always had to the person of the Governor of the State and to the Legislature thereof! Do not force our new-mown hay, our fruits and the sweet breath of our grazing animals to mingle their matchless perfumes with the reek of the miner's dynamite fumes or the pestilential odors of the sportsman's creel or game bag! And, if this suggestion seems fanciful and sentimental, think the more of this: We now have and have had for decades direct contact between those who are actually engaged in our agricultural and horticultural industries and the Government of the State. Do not break this connection! Do not place their interests and the expression of their desires on the off-side of a bureaucrat who is apt to know neither them nor their affairs or to know or care for them less than for politics, which it is the second nature and first ambition of a bureaucrat to properly serve. We have been and are fortunate in California to have, as executive functionaries of the State Government representing agriculture, men who have not been installed for the sake of academic ease or consistency nor for political efficiency. Do not make them subservient to a high-cockalorum "director" who cannot be broad enough to be fair nor deep enough to be wise about all the things which the "proposed plan" imposes upon him. Let us keep what we have!

QUERIES AND REPLIES

By the Editor.

Inquirer Must Give Full Name and Address.

Deep-Plowing Walnut Orchard.

To the Editor: Please advise me through your Pacific Rural Press if deep plowing will tend to increase the crop of a ten-year-old walnut grove.—R. N., Walnut Creek.

Deep plowing in the middles is likely to admit more rainfall to the subsoil and thus increase the available moisture of the trees and increase their thrift and bearing. It will also be a good preparation for better subsequent cultivation to retain the moisture from loss by evaporation. Near the trees we should not increase the usual plowing depth unless you find by trying a furrow or two that it can be done without reaching many roots. If you do not pull roots seriously, go to it as deep as you like. If you do, set the plow shallower as you get nearer to the trees.

Deeper Rooting for Cantaloupes.

To the Editor: Is deep hoeing and deep cultivation around young cantaloupe plants harmful or does it tend to make the cantaloupes root deeply. Last year many of the roots, which ran horizontally about four inches under the surface, were left in dry dirt as the moisture level sank and we were forced to irrigate about half our acreage.—L. J., Denair.

When one gets a hunch like that the thing to do is to brace up and try it on a small scale and reach conclusions by comparison with the usual depth of cultivation, and write the facts for the Pacific Rural Press so that all growers may be edified. The cantaloupe is naturally a shallow-rooter and all practice with it known to us consists in very shallow culture or none at all—except cutting out weeds. It also proceeds upon the plan of bringing moisture up to the roots and not of driving roots down to moisture. Our notion is that if you destroy the natural spread of roots by deep hoeing you will set back the plants—either in thrift or in delayed maturity of the crop or both. Reformers have a hard, long row to hoe generally, and we believe melon-reformers will prove no exception. Your mistake apparently was in not irrigating sooner.

Fruit Trees on Sand.

To the Editor: Last year in February I planted about four acres of one-year-old peach trees in a light sandy soil. I leveled and checked the land and sowed alfalfa between. They made scarcely any growth, although they were watered frequently. I am preparing to replant. Should I use fertilizers, and what kind? How should it be applied and what quantity?—R. C., Ripon

If you have stable manure, plant new trees and cover the ground for three feet or so all around each one with four to six inches depth of it. Cut or pull out weeds and let the manure stay as a surface covering all summer—irrigating through or under it and keeping the soil covered as best you can. If you have no stable manure, use two pounds of "complete fertilizer," as furnished by dealers—mixing it well with the soil in digging or filling the holes. If not ready to do that, plant the trees and when they are starting in March scatter one pound of nitrate of soda on the surface around each tree, being careful not to bunch it around the stem. As a rule, however, we would not plant fruit trees on land which required fertilizing the first year—if you are sure the trees had water enough. And if not given sufficient and frequent irrigation, fertilizers will not help their growth on a sandy soil which dries out very quickly.

Feeding Stock in Orchard.

To the Editor: I have an idea that I can fertilize my fig orchard by using fence-panels and feeding sheep and swine on one piece at a time and getting over the whole orchard that way. How long would it take to drop fertilizer enough on an acre that way?—C. M., Oakland.

You will have to be watchful about feeding sheep or swine in the fig orchard. Pigs will take to the bark very readily, and you will need to watch the sheep. Injury would be less likely to occur if the band had the whole orchard to range in. We see no reason for your subdivision method, for the feed could be scattered from place to place more easily than the sheep could be fenced. The tramping of sheep upon a heavy soil would impact it so that decent cultivation would be practically impossible. On a sandy soil, of course, less injury would be apprehended. We cannot compute the length of time necessary for the fertilization of a certain area. It would be more sheep, less time and vice versa. It would be better to feed the sheep in a feed lot and then distribute the accumulated manure, allowing them, however, sufficient run in the orchard to clean up weeds, etc.

For a Strawberry Bed.

To the Editor: How would you treat a strawberry patch two years old to get the most fruit from this coming season? The runners and old plants are one green mat.—A. C. D., Menlo Park.

If it is a suburban garden patch, we should trowel out the young plants, weeds and grass sufficiently to open the surface a little, keeping the older plants in place and planting out the youngsters in a new bed—if the variety is satisfactory. Then dust the surface with a "complete fertilizer" such as any of our advertising dealers can furnish you. Pinch off all runners as they start out, keep the ground reasonably moist, if rain is scant, and you ought to get plenty of fruit.

Grain Weevils in a New Place.

To the Editor: Grain weevil has appeared in two buildings used for storing grain in southern Humboldt. What are their habits and length of life, and will they bother the grain hay if the granary is in a barn? What is the cause of their appearance and what is the remedy? Also, should sacks be doctored?—V. H., Blocksburg.

The "cause of appearance" is the fact that someone brought in the parents of the present multitude. They might have come in old sacks or in other material from a weevil-infested warehouse. Sacks can be rid of them by boiling or baking or by putting them in a tight box, barrel or tank and fumigating them with carbon bisulphide. The granary should be swept clean, cracks and all, and sprayed or brushed with fresh lime whitewash, filling all cracks and crevices. It can be hid also by fumigation with bisulphide, but the vapor is very inflammable and there is great danger of burning the barn. Unless they are killed they will live right along by succeeding generations. If the hay has ripe grain in it, they will take to that, but they are not usually counted much of a hay pest.

Oh, if We Only Could!

To the Editor: I have been a subscriber to your valuable paper and have been much impressed by your way of showing the condition of value of different crops. I would like your opinion on the outlook for disposing of the 1918 hay crop. Will it drop or do you look for an advance in price?—R. L., Holtville.

If we could do that, Rockefeller, Morgan et al. would have nothing on us, for we could make ourselves billionaires by trading in a very short while or we could get a billion paying subscribers because everyone in the league of nations would regulate his business on our points. But of course we cannot. We can only guess at it and perhaps not as well as you can yourself. The way the rains are now coming in the grain-hay valleys and the way the snow is piling up on the mountains for next summer's irrigation of alfalfa, we would not hold onto last year's hay crop too long!

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Are you free to travel? Have you an automobile? Are you convinced that the Rural Press is the best paper of its kind on the Coast, and that it should be in every farm home?

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Smut in Corn and Sudan.

To the Editor: I have been raising corn between young trees for the past two seasons. Year before last smut was quite prevalent and last season more developed than did the previous season. I had the same conditions in Sudan grass. I have been very careful in selecting seed. Can anything be done to prevent this?—H. A. T., Gilroy.

Probably not. Corn smut differs from wheat smut in the fact that selection or treatment of seed do not prevent it because it carries over in the soil or otherwise. Cutting out and burning smutted ears as soon as seen and always watching for them seems to be the only treatment which has availed anything. In the case of Sudan grass earlier cutting for hay seems to be desirable. Experiments seem to indicate that smut can go to the field with the manure and feeding before smut ripens its spores may keep the soil cleaner from it.

Don't Delay Putting the Cover Under!

To the Editor: A melilotus cover-crop was soon on my orange orchard in October last. The frost has retarded the growth of the crop so that it is only a few inches high. I can't afford to wait beyond the first week in March to do my plowing. Would you plow now and turn under what crop there is, or would you wait for three weeks' more growth, or would you not plow at all and disk in the cover-crop? The soil is heavy.—R., Porterville.

Do not scant the tillage for the sake of the cover-crop. You will lose more by having your soil surface out of tilth all summer than you can possibly gain by getting more growth on the clover. Plow under whatever you have at the time when your experience has taught you that your soil ought to be plowed to get a good basis for summer cultivation—and let it go at that.

Red Spider in Bean Ground.

To the Editor: Should beans be planted on ground that had beans on last year which were badly affected by red spider? Part of the old plants were plowed under this fall.—F. A. B., Denair.

Red spiders winter in the ground and you are probably well stocked with them. You have two chances to defy them. One would be to begin blowing sulphur under the leaves from blooming onward—especially as the weather becomes hotter and drier, for these conditions are what the pest revels in. Your other chance is to plant garbanzos or blackeyes, which the spider does not care for—but of course simply beating the spider by planting what he hates does not insure profit in a bean crop. It is safer to plant the variety you can sell best and give the spider—sulphur!

California Weather Record

The following rainfall and temperature record is furnished the Pacific Rural Press by the United States Department of Agriculture Weather Bureau at San Francisco for the week ending at 5 p. m. February 18, 1919.

Station	Rainfall Data: Past Week.	Rainfall Data: Seasonal Total To Date.	Rainfall Data: Normal To Date.	Temperature Data: Maxim.	Temperature Data: Minim.
[illegible]	1.57	24.59	20.07	64	36
Red Bluff	.80	20.79	16.58	62	35
[illegible]	[illegible]	4.79	12.07	58	40
[illegible]	[illegible]	19.54	14.64	60	46
San Jose	1.11	11.[illegible]	10.[illegible]	60	36
[illegible]	[illegible]	[illegible]	[illegible]	62	40
[illegible]	.70	17.60	17.[illegible]	56	40
[illegible]	[illegible]	[illegible]	10.11	57	44
[illegible]	0	[illegible]	6.[illegible]	65	41
Winnemucca	.22	4.79	4.58	46	24
Reno	.10	[illegible]	6.[illegible]	50	34
Tonopah	.06	[illegible]	[illegible]	44	30

SNOW ON GROUND

Huntington Lake, 12 inches; Cascade Lodge, Portola, 6 inches; Summit, 6 inches; Squirrel Inn, 3 inches; Donner, 108 inches; Indian, 54 inches; Tamarack Camp, 40 inches.



The Dairyman's Problem at Home

Written for Pacific Rural Press by R. H. Whitten

ISN'T it provoking to attempt to carry on a conversation with someone who simply sits back and listens in silence? You don't know whether he approves or disapproves. You learn nothing from him and you doubt if he learns anything from you.

It's the same in our relations with our readers. The ones we like best are those who talk back. If they read something they don't like, they tell us about it. You know someone has given the advice, "To avoid criticism, say nothing, do nothing, be nothing." We don't intend to be in the namby pamby, spineless class, so we must expect some criticism.

We certainly got it when we published Mr. Webster's article urging greater efficiency in dairying, and while we cannot entirely agree with our readers in everything they have written, we want to say in the same breath that we do not wholly agree with Mr. Webster in some of his contentions. We feel about the same as W. B. Hopkins of the Petaluma Co-operative Creamery, who wrote: "I do not agree altogether with some of Mr. Webster's statements, but he is certainly correct in his position that there are greater possibilities for gain open to the average dairyman through increased production than he can hope to attain in any other way, and I believe that his article will start a good, healthy discussion among dairymen."

LAWS CANNOT REGULATE PRICES.

We do not care to discuss the matter of organization at length, but in passing we want to quote from a recent editorial in Hoard's Dairyman. It said, among other things, "In the reconstruction period now before us we must not lose sight of certain fundamental principles. We must remember that no human laws can be passed that will regulate the prices of farm products or any other commodities. The law of supply and demand regulates prices unless combinations interfere with the working of this law. It should be our concern to see that forces which interfere with the law are criticised and steps are taken to eliminate them. There are those who believe that laws can regulate all human endeavor, but the work of the Food Administration under war conditions indicates that it is impossible to do this."

The Food Administration did an immense amount of good because it worked along the right lines, and, in general, instead of attempting to fix prices, it accomplished its object by bringing producers, dealers and consumers together — getting each one to understand the others' problems.

That's the right form of organization, and that we are in favor of properly organized effort is proved by the fact that the very next week after Mr. Webster's article appeared we announced with a shout of delight the formation of the California Dairy Council. Why? Because we believe that the organization is starting out along the right lines to do the greatest possible good for dairymen by educating the public to the real food value of dairy products so that they will be willing to pay more for them; educating the farmer so that he will develop his herd to the highest point of efficiency and get all the profit there is to be made out of dairying; and working for or against legislative measures, as circumstances may require.

If an organization, formed to reduce manufacturing and marketing costs, will include work along the above lines, well and good. It ought to accomplish a great deal. But no farmer should fool himself by thinking that through organization the dairymen of the State can arbitrarily set the price of milk and dairy products and in this way practically be guaranteed a satisfactory profit. Even though their price is a just one, there is only one way by which they can get it, and that is to educate the people to the real value of their products. Otherwise, the people will curtail their consumption or use substitutes, and kerplunk will go the market.

DISCONTENT THE KEYNOTE OF PROGRESS

But to us the important point is this: even though some movement or method will enable the dairyman to get a price for his milk and butterfat which will mean a most liberal profit to him, is that any reason why he should be satisfied to continue with 180-pound cows? Isn't he still 50 per cent efficient? Shouldn't dairymen, as well as men of all other classes, have that discontent which has been at the bottom of all the progress that has ever been made in this world? It is not a dangerous situation when people are discontented. It is a good thing, provided it leads to progress, and no matter how profitable dairying may be in this State, we want to see every dairyman discontented just as long as the production of his herd is below the figure to which it can reasonably be brought. No matter how well he may be doing, he certainly wants to do better, and while the right form of organization may help him to increase his profits, the greatest increase will come from the increased efficiency of his herd.

The greatest obstacle seems to be that the average dairyman has an entirely erroneous idea of how real efficiency should be developed. Many of those who wrote us stated that they didn't have the money to sell off their 180-pound cows and replace them with others producing 360 pounds. They advanced the argument that if this were generally attempted there would not be enough 360-pound cows to go around; also that if they had to resort to the slow process of breeding up their herds it would take years to reach the 360-pound mark—one placing the time at ten years.

SCIENTIFIC FEEDING THE QUICK ROUTE.

But it is not necessary to sell off a large number of cows, or to wait years for the breeding-up process to show results, in order to increase the production of a herd. We believe thoroughly in cow testing and in the use of purebred sires, and we shall have more to say about these important factors in later articles. We are for scientific breeding and weeding, but we are also for scientific feeding, and we place feeding ahead of the weeding.

A great deal is said nowadays against feeding scrub cows, but we want to say a few words against the scrub feeding of cows. We want to put in a plea for the cows that are not measuring up to the standard—the boarders and the slackers—for we know from actual results that many of them can be developed into profitable producers if properly fed and cared for.

Many dairymen object to cow testing because they think that it simply means the detecting and selling off of cows not measuring up to expectations. But one of the chief objects of cow testing is the development of systematic and scientific feeding. And that this is a field well worthy of consideration is indicated by an experience recently made public and authenticated by the Department of Agriculture.

Three years ago Hulda was just an ordinary grade cow, no better than those in your herd. She was getting on in years—12 years old—and apparently had no future except to wind up as a canner. Her record for that year was 246 pounds of butterfat. But the next year her owner joined a testing association and began to take a new interest in the feeding and care of his cows. And Hulda responded to her better ration to the tune of 429 pounds of butterfat as a 13-year-old.

Not satisfied with even this good showing, Hulda's owner gave even better feed and care the next year and milked three times a day, and Hulda came through with the remarkable record of 716 pounds of butterfat.

Hulda stands as a striking example of the practical results of scientific methods. Her case is not an isolated one; there are plenty where whole herds can be cited instead of individual cows. At the Cornell experiment station they purchased poor cows here and there where records had been kept, and got together a herd averaging 155 pounds of fat. Intelligent methods doubled the yield, as the first year at the station showed an average of 302 pounds. At the Kansas, Iowa and Maryland stations similar experiments were carried on with similar results.

These instances have a world of interest for dairymen. We go on blaming herds for their low yields, but do we always lay the blame where it really belongs? A fire will not burn without fuel; an engine refuses to run without oil; a dynamo balks without power; and a cow fails to produce properly unless she is fed liberally.

Furthermore, it is not enough to simply feed the whole herd generously. When you see a dairyman push his feed cart along the mangers and scoop out the same amount of grain for each cow, put him down in Mr. Webster's 50 per cent efficient class. For in one stanchion will be a big cow giving six gallons a day, and in the next a stripper giving only a gallon, which means that the first is underfed and the second is overfed. This results in a distinct loss because the high-priced feed does not go where it will give returns to justify its use.

We say get rid of unprofitable cows, for there never will be a time when poor cows can be made to pay. But don't use any guesswork in making your decision. Join a testing association if there is one in your locality; if not, buy an outfit and do your own testing. Keep books for each cow and before you condemn one be sure that she has been given a fair chance, remembering that many a good cow has gone to the shambles because her owner did not know how to make her yield a profit. Go at the task with the idea of trying to retain as many cows as possible, instead of trying to get rid of as many as possible, and you will find that many of those you have considered unprofitable are well worth keeping.

PROFIT NOT IN NUMBERS.

However, don't get the idea that profit is in numbers. Two years ago a dairyman was milking 26 cows and getting 600 pounds of milk a day. He tested his herd and sold 17 of the cows for beef. He gave the nine remaining cows individual feeding and care, and last year these nine cows produced over 600 pounds per day—more than they and their 17 mates produced the year before. And his profits were more than doubled because of the feed and labor he saved. That man deserves to be promoted from the 50 per cent to the 100 per cent class in one jump, doesn't he? You can get to the top just as quickly. This advancement isn't such slow work as it is thought to be.

QUICK BREEDING-UP POSSIBLE.

It's the same in breeding up a herd. Two crosses from common cows will result in heavy producing animals—sometimes only one cross. At the University of Missouri, cows averaging 269 pounds of butterfat were bred to a registered bull and their daughters as two-year-olds averaged 511 pounds. Another heifer in the herd that produced 624 pounds came from a dam that produced only 206 pounds.

At the Iowa experiment station scrub cows were bred to a registered bull and the resulting heifers were bred to another registered bull of the same breed. The average yearly results were as follows:

	Milk.	Butterfat.
Dams	3,255 lbs.	161 lbs.
Daughters	6,311 lbs.	261 lbs.
Grand-daughters	11,295 lbs.	431 lbs.

Query: What kind of bulls has our reader been using who writes that it takes ten years to build up a profitable herd? This same man claims that two-thirds of all heifers raised have to go to the butcher and that only one-third produce well enough to make them eligible to stay in the herd. But Prof. Eckles, one of our leading dairy authorities, states that at present the figures are right the other way, it being necessary to cull only one-third, and that by scientific breeding. We can reach the point where nine heif-

(Concluded on page 288)



Say, isn't it queer that a fellow will work hard all summer raising feed for his cows and never know how much he is getting for it—especially when feed is almost worth its weight in gold?

Our Protest Against Heterogeneous Bureaucracy

COMMITTEE ON EFFICIENCY AND ECONOMY
State of California
Sacramento, February 10.

Prof. E. J. Wickson, Editor,
Pacific Rural Press.

Dear Sir: The sub-committee on agricultural and natural resources will meet Tuesday, February 18, at 2 o'clock P. M., in the Senate chamber of the State Capitol, Sacramento.

A brief outline of the tentative reorganization plan as adopted by the general committee as a basis for discussion is enclosed. Your attendance is most earnestly desired, and I hope you will find it possible to be present.

FRANK P. FLINT,
Chairman sub-committee on Agricultural and Natural Resources.

REORGANIZATION PLAN.

The following is an outline of the tentative reorganization plan adopted by the general committee as a basis for discussion, to which Senator Flint refers:

Advisory Board on Agriculture under a director:

1. Division of Fish and Game covering present function of:
   1. Fish and Game Commission.
2. Division of Natural Resources covering present functions of:
   1. Surveyor General.
   2. State Mining Bureau.
   3. Mineral Cabinet, Trustees of
   4. State Board of Forestry.
   5. California Redwood Park Commission.
3. Division of Plant Industry covering present functions of:
   1. Commission of Horticulture.
   2. Board of Viticultural Commissioners.
   3. Board of Citrus Fruit Shipments.
4. Division of Animal Industry covering present functions of:
   1. State Veterinarian.
   2. Dairy Bureau.
   3. Cattle Protection Board.
   4. Stallion Registration.
5. Division of Land Settlement covering present function of:
   1. Land Settlement Board.
6. Division of State Fairs covering present functions of:
   1. State Board of Agriculture.
   2. District Agricultural Associations.

(It is deemed advisable to reserve the present practice of operating the Fairs under the State Board and Local Boards.)

The essential features of this plan are:

(1) That all the agricultural agencies of the State are centralized in one department under the administration of a Director with an Advisory Board instead of acting independently as at present.

(2) That the form of administration for the following boards and commissions has been changed from that of a board to a single executive officer:

(a) Fish and Game Commission.
(b) Mineral Cabinet Trustees.
(c) State Board of Forestry.
(d) California Redwood Park Commission.
(e) Board of Viticultural Commissioners.
(f) Board of Citrus Fruit Shipments.
(g) State Dairy Bureau.
(h) Cattle Protection Board.
(i) Stallion Registration Board.
(j) Land Settlement Board.

THE PACIFIC RURAL PRESS
San Francisco, Feb. 14, 1919.

Hon. Frank P. Flint,
Chairman Sub-Committee on Agricultural Resources, etc.,
Sacramento, Cal.

My Dear Mr. Flint:

As stated engagements elsewhere will prevent my attendance upon your meeting of February 18, and as the letter of Mr. Boynton, chairman of the General Committee on Efficiency and Economy, inviting me to act with your sub-committee, included this statement: "If for any reason you cannot attend the conferences I shall appreciate your communicating with us as to any suggestions that you may have," I beg leave to briefly state my convictions on the proposed grouping of various natural resources and diverse industrial activities for purposes of administration, as follows:

1. The connection of two such commanding California industries as mining and agriculture for administration by a bureaucrat who cannot possibly expertly know the needs of both, and who may not have adequate and dependable knowledge of the points of view and operations of either, holds out no promise of reasonable and sympathetic promotive attitude on the part of the State. These two industries cherish interests which are often antagonistic and require careful adjustment on a statesmanlike basis, and even in their lesser affairs of current operation the groups of citizens pursuing mining and agriculture are so different in temperament, point of view, and conceptions of desirable industrial policies, that each group will discount and distrust both the public service and the fairness to its interests of a "bureau director" who undertakes to stand between the representatives of both of them and the Governor and Legislature, to whom they have hitherto had direct access and continuance of which they will be disposed to insist upon.

2. Two other elements included in the "Reorganization Plan" are also in "irrepressible conflict," viz: agriculture and sportsmanship. The enactments and regulations known as the "game laws" are as a rule enacted, promulgated and executed over the protests of the farming interests. Without undertaking to even seriously state the points at issue between the farmer and the sportsman, it may be confidently claimed that to compel the two to lie down together in the California style of "state commission," would be a legislative absurdity. It is a fact that they are tied together in governmental bureaus elsewhere, but in such cases farmers have never been consulted in organization of State service in their interest as they always have been in California.

3. Although I believe it is possible to unify the agricultural work of the State government, I am sure that it should not be undertaken hastily nor on the basis of an academic schedule alone. No State of the Union has an agriculture so diverse as California, and there is none in which so many of the subdivisions are great in commercial output, in initiative and ability of producers and in general human interest. To arbitrarily throw these together in a theoretical scheme without consultation with those who have their livelihoods and investments involved in these great California specialties in agriculture, is a very dangerous proceeding. I believe no reorganization of the executive agricultural work of the State should be undertaken without some form of referendum to the farmers of the State. This could be secured by the appointment of a committee of legislators charged with the duty of taking testimony and reporting an agricultural reorganization act to the legislature of 1921.

4. It should be remembered that in connection with the distinctively agricultural State boards and commissions, reorganizers have to deal with institutions of which the oldest was created in 1854, and of which several others have been in operation from 20 to 40 years. All of them found birth in legislative actions, the initiative and promotion of which came directly from the groups of producers whose interests they were designed to promote and protect. They were not created to serve any theory of administration or other general purpose. Producers insistently called for specific services which they demanded after careful consultation among themselves, and the execution of such services has almost always been entrusted to men whom the producers designated as especially qualified. To radically change this order of proceeding and to install even a theoretically perfect bureaucracy should be very carefully undertaken.

5. It is also important to remember that the operations of the various agricultural boards and commissions do not as a rule deal with academic phases of promotion and protection, but with the concretely practical operations of the industries they serve. Any reorganization which provides lump sums in place of specific purpose appropriations, or which changes the personnel, alignment or correlation of the officers and experts who are now rendering the specific services, which the laws prescribe or permit, and which the producers have organized their business to make use of, will disconcert or disarrange very important practical enterprises.

In my judgment it is a less evil that our State administration should remain inconvenient or even a little inconsistent for two years more rather than that the development of our agricultural production should be arrested or even disturbed.

E. J. WICKSON,
Editor Pacific Rural Press.

Answer to Lake County Pear Grower

[Written for Pacific Rural Press.]

To the Editor: How is it that the Pacific Rural Press cannot give an answer a little more adequate and thorough than the few remarks made by the Editor?

Taking a price of $70 per ton for No. 1 Bartletts delivered at cannery and say $35 for the No. 2s paid by the dryers around San Francisco.

Generally there are two tons of No. 1 pears to one ton of No. 2; consequently the average price would be, let us say, $58 delivered at the Bay.

The pear growers near the railroad and Bay can ship in lug-boxes, while Lake county pears have to be packed solid with lids on. The expense for the boxes, wear and tear and depreciation would be at least $2.50 per ton; the hauling to Hopland and freight to San Francisco is about $14 per ton; the weight of the boxes is about one-fifth, and must be hauled back and forth which costs $5.60 per ton of pears; the labor of packing and incidentals is not less than $3 per ton; a total of $25, to be deducted from the $58, leaving about $33 per ton to the grower f. o. b. ranch. Perhaps J. M. understands now why canneries did not come to Lake county to buy pears at $60, nor at $50, nor even at $40.

In regard to dried fruit, J. M. labors under similar false ideas. He says dried pears at 10c to 11c, with Lake county dried pears at 15c. No Lake county grower sold his dried pears before or during the drying season as high as 15c; later on a few scattered small lots may have brought that or more.

The main reason Lake county pears bring usually more than other dried pears is that we dry all our pears, while most other growers in the State dry only the No. 2 pears.

If J. M. will take a pencil and figure out that it takes from 4½ to 5 tons of orchard run pears to make a ton of dried, that it costs about $60 now to dry them, he will easily find out how much the dryer gets for his investment in dry yard equipment, for taking chances on weather and other things.—S., Kelseyville.

[This seems to clear the matter up a little. Our subscriber's figures are definite and should be convincing. Taking our subscriber's own figures of $33 a ton to the grower f. o. b. ranch, of $60 a ton for cost of drying, 4½ tons green to one dry, we have a total of $208.50 per ton of dried pears. Suppose these realize 14½ cents a pound this gives the dryer $290, or a profit of $81.50 per dried ton, or still using the 4½ tons, he makes a profit of $18.50 per green ton for his investment in dry yard equipment and for taking chances.]

Maximum Pear Yields in California

To the Editor: Is there not some mistake in your article appearing in the Pacific Rural Press on February 1, in which you state that the owner of the orchard had picked nearly 20 boxes of packed pears to the tree on an average last season. This appears to me to be too much, though I am only a tyro in pear growing. My orchard is planted 22 feet apart each way—etc. I would like to hear more of yields of pear orchards in different parts of the State so that I may figure out a fair average.—H. V. L., Oakland.

The orchard you refer to in your letter of the 4th instant, and described in our issue of February 1st, belongs to S. V. McCurdy on Beacon avenue, near San Jose. The report of this crop, which I suggested in my article was probably a record one, I have every reason to believe was given me correctly by the owner. The trees had sufficient bearing area to carry this amount. As you say you are yourself interested in pears, it would pay you to visit this orchard. Your trees would be better at 24 to 30 feet apart if standard, and only 12 to 15 feet if dwarf. The average yield of pears in the mountain pear districts is probably three to five tons of good pears. The average in the valley, say five to eight tons on unirrigated ground, though in exceptional years these yields may be doubled. The highest yield I have known has been 36 tons of pears to an acre, from trees 30 feet apart (48 to the acre). The chief message my article was designed to carry was the advantage of cross pollination. The average yield for the State is five tons to the acre.—J. J. Fox.

The Walnut Growers' Association has installed a muncle in their Los Angeles by-product plant, where about 20,000 walnut logs are being treated with the heated rollers to a compression and heat to kill any living insect contained therein. Also about 12,000 logs are being sent in from outside plants.

Governor Stephens has issued a call for the enlistment of 150,000 boys and girls in the U. S. School Garden Army to increase the food resources during 1919. "Many a mickle makes a muckle."

Soda-Sulphur or Lime-Sulphur Solution

The following is taken from Professor G. W. Gray's report to the State Commission of Horticulture. He says of "Niagara Soluble Sulphur Compound," "Sulphide of Soda," "Sulfide of Potash," etc.: These appear to be effective as a substitute for lime-sulphur solution. Aside from convenience in handling, they possess the following advantages over lime-sulphur solution:

1. Soap can be used with them as a spreader, if desirable.

2. They are also compatible with soap-oil emulsions. The most important disadvantage is the fact that they cannot be used with lead-arsenate as a combination spray. When used on foliage they are somewhat more caustic than the lime-sulphur solution. Taking everything into consideration, these compounds do not possess enough advantages to warrant using them in preference to the older well-established standard lime-sulphur solution, except in some cases as a combination spray.

Farmers Buy Dirt at Price of Hay

To the Editor: In the issue of the Pacific Rural Press of January 18 is an article entitled "Selling Adobe at the Price of Hay," regarding the failure of Senate bill 882, which was introduced in the 1917 session of the State Legislature by Senator Tyrell of Alameda at the behest of Charles G. Johnson, State Sealer of Weights and Measures. The writer was in Sacramento during all of that session, in charge of the office of the Farmers' Protective League. The bill as it came out of the Senate read as follows:

Section 1. The term "baler," or "presser," as referred to in this act, shall mean the person, firm, association, or corporation, owning or having possession of, or operating a hay press.

Sec. 2. The term "stack" shall mean a pile of hay composed of shocks or bunches of hay. The term "shock," or "bunch," shall mean a quantity of hay pitched or bucked into a pile from the windrow.

Sec. 3. Any person baling hay intended for sale, shall when hay is sold by the bale upon the weight thereon indicated use accurate scales, inspected and sealed by a sealer of weights and measures, and he shall mark each bale, baled or pressed by him, with his name and address and the correct weight of the bale. An amount of deficiency of the net weight not to exceed five pounds per bale, shall be allowed by the baler to compensate for loss due to shrinkage or evaporation, which five pounds shall constitute a legal tolerance in the sale of hay. He shall also indicate each bale as to whether such hay was baled from a stack, or from shock or bunch. These markings shall be made upon a tag securely fastened to the bale, of not less than one and a half inches in width and three inches in length.

Sec. 4. No baler, or presser, of hay shall put or conceal in any such bale of hay any damaged hay or other materials, or hay of any inferior quality to that which plainly appears upon the outside of such bale, or put or conceal in such bale, or bundle of hay, anything whatever other than hay for the purpose of increasing the weight of such bale.

Sec. 5. Hay, when sold, offered or exposed for sale, shall be sold by avoirdupois weight and a ton shall consist of two thousand pounds net weight; providing, however, that hay may be sold by the bale when the weight of the bale is indicated thereon as herein provided.

Sec. 6. When any hay is shipped by a common carrier, in bales, and where any of such bales become broken, the approximate weight of such broken bales shall be included in the total weight of the hay.

Sec. 7. Any person, firm or corporation, violating any of the provisions of this act shall be guilty of a misdemeanor and shall be punished by a fine of not less than twenty-five dollars, or more than one hundred dollars.

Sec. 8. The enforcement of the provisions of this act shall be under the supervision of the state superintendent of weights and measures.

The bill was opposed because many of the League members from many counties, including both alfalfa and grain hay districts, bombarded us with letters and telegrams in opposition to the bill because of its many impractical features. Many communications were received from dealers and warehousemen, not members of our League, and several representatives sent from hastily called growers' meetings, who were suddenly aroused to the danger, called upon us.

A partial resume of ideas expressed by grower objectors to the bill were: The general poor phraseology and repetition, not necessary, of matter already covered in other general laws relating to fraud, weighing apparatus, etc.; the creation of more tax-eating officials to enforce it; a burden on the hay farmer with no advantages to him; that large consumers would refuse to accept weights tagged at time of baling; unfairness to man who carefully cured hay over one who would bale improperly cured or damp and heavy hay which would evaporate; irrelevancy of information as to stack or shock or number of setting and possibility of fraud in same; ignorance of foreign balers, necessitating their employing clerical aid; chance for fraud in shipping broken bales and the practical prevention of baling damaged hay because it would be impossible to do so without concealing in interior of bale. The greatest number of objections seemed to be aimed at the tolerance feature, of a fixed five pounds, when it is so very variable under differing conditions as to curing, climate, and mode of handling.

Lively action was needed immediately, for the bill was generally in favorable consideration by those members whose interests were not hit, because it was understood to have come from the State Weights and Measures office and therefore worthy, as well as it being good politics to support a so-called administration measure.

A swift campaign of education was immediately started among the farmer members, who in turn interested others, to the extent that soon a formidable opposition developed. Finally, it having become so changed from its original text and intent, Mr. Johnson was willing that it die in committee.

There is really a very small percentage of the many hundreds of thousands of tons of hay usually baled in the State which merits complaint. However, there might well be some legislation affecting this, so simply drawn and devoid of frills that it will not place a burden on either the producer or his product, but will catch the occasional rascal. A convocation of hay growers from the various hay growing districts, not theoretical city men, to formulate such prospective legislation would doubtless achieve an end acceptable to the State Weights and Measures people, as well as farmers and warehousemen. This would seem to be the logical way to initiate action, before some badly working measure happens to get through.—C. A. Bodwell, Jr., Manager Farmers' Protective League.

Better Farming, Better Yield, Less Dirt

To the Editor: Having been a hay buyer for some twenty years, I have had more or less to do with dirty hay. In some lots there has been an unreasonable amount of lumps and stones. We hear of cows dying from being sanded, an accumulation of dirt in the rumen or stomach of the cow. I furnish my man with a brush broom and require the mangers cleaned out at least every other day, and it is surprising how much dirt and trash accumulates in that short time. The leaves of hay shake off in handling and when the cow or other animal is eating it they usually go to the bottom after the fine leaves—and that is the source of "sanded cows."

I will suggest a remedy, which I believe to be the chief one. Fields are not properly prepared, the seedbed for the best crop should be one in which the soil is pulverized. In so doing the farmer will add a large per cent to his yield, he will save much in wear and tear of machinery and wear and tear of his anatomy, in being shook, jarred, jerked and tumbled about as he clings to his machine to avoid being thrown under the wheels of mower, rake or other machine, also it will save in horse flesh and feed, as it tires a team as much as a man to be stumbling over clods all day. I will admit that in some seasons some soils are not easy to put in proper condition, especially where there is a large acreage. In this case I would suggest that fewer acres be put in and the excess land be summer fallowed. In this way the farmer can add 10 per cent to his crop when properly put in. He gains at both ends, greater ease in harvesting his crop, greater production, less dirt in hay, and a greater crop the next season on the summer fallow.

Much needed machinery, absent from many farms, are good rollers, clod mashers, and pulverizing machines. All these add to increase of crops and pay for themselves in various ways in a very short time. If the seedbed is lumpy when seeded, the roller should be used later in the winter or spring. It does not hurt grain hay fields to be rolled even after the grain stands several inches high. This packs the soil about the roots of the grain and also smooths the ground, and checks evaporation, while a rough surface aids evaporation.

Machinery costs money Certainly it does, but it pays for itself in a short time.

Now I would not allow the baler to go scot free. I believe they are not as particular as they should be, as I have seen stones which would weigh 20 to 25 pounds in the middle of a bale and lumps of dirt nearly as large. It cannot all be cut out, but much of it can, and greatly to the advantage of the farmer.—L. J. Belknap, M. D., Garden City Sanitarium, San Jose.

FARMERS' INCOME TAX.

Married farmers whose income was over $2,000 in 1918 or unmarried farmers whose income was over $1,000 must get blanks and make returns for the income tax under penalty of $1,000 fine plus 25 per cent of the amount due, for neglect; or $10,000 fine or one year's imprisonment or both for refusal to make the returns. Free help and advice is given by internal revenue officers who can be located by inquiring at your bank or postoffice. Returns must be in with at least one-fourth of the tax before March 15.

SUDAN ON OLD VINEYARD.

Sixty acres of a former vineyard were planted to Sudan grass last season by Philip Mocettini of El Dorado county. A crop of hay was cut and fed to the cows, leaving the plants to go to seed. Returns from the hay were better than alfalfa would have produced on the same ground.

Colusa county is selling nearly as much rice as barley now, according to J. L. Mendenhall.

Top Dress with Nitrate of Soda

It does not Sour the Soil

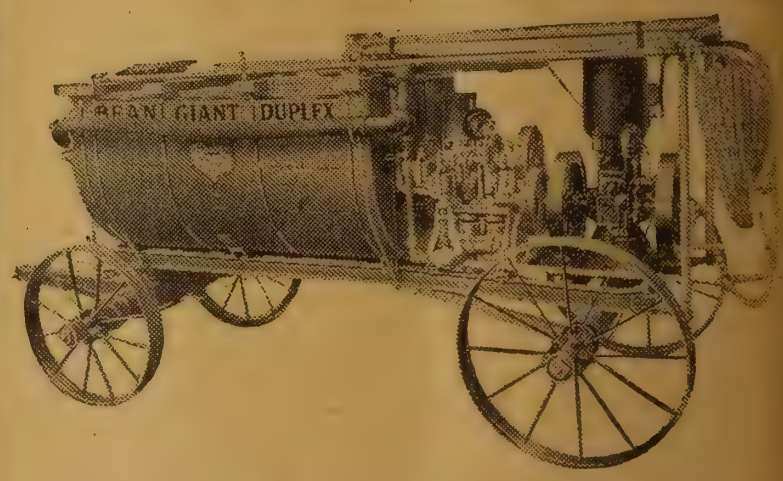
Nitrate leaves no mineral acid residue to injure your soil—it keeps the land sweet.

Nitrate of Soda

Top dress 100 lbs. per acre for seeded crops; 200 lbs. cultivated in thoroughly for hoed crops. These light dressings should be evenly spread.

W. LAMBERT MYERS
Chilean Nitrate Committee
P. O. Box 248 Berkeley, Cal.

Protect Your Crop With a Bean



Millions of dollars worth of fruit are ruined in this state each year by insect and fungus pests that could easily be saved by thorough spraying. Go into any fruit-growing district anywhere in harvest time and you can usually pick out the orchards that have been sprayed by the increased crop they bear—and the finer condition of the fruit.

If you have suffered in the past—**GET A BEAN THIS YEAR AND DETERMINE THAT SO FAR AS YOUR OWN CROP IS CONCERNED YOU ARE GOING TO PROTECT IT AGAINST THE RAVAGES OF DESTRUCTIVE PESTS.** Get a **BEAN**—because a **BEAN** does the work right—drives the material on at high pressure—gets over the ground quickly—and stands up to the hardest service day in and day out—and gives the best results at the least cost. Ask your neighbor who owns one!

Bean Spray Pump Company

211 W. Julian St.

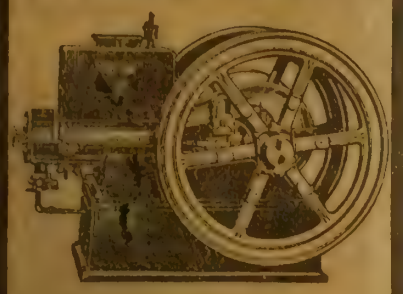
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Gentlemen—Send me your catalog. I am interested in
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1000 SACKS OF SELECT BRITISH QUEENS
Absolutely clean. Grown on sandy soil. Good producer.
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GET THIS BOOKLET BEFORE PLANTING ALFALFA



Avoid disappointing yields in future years by planting the kind of alfalfa that will yield heaviest and live longest under your particular conditions.

This illustrated booklet shows the growing habits of our different kinds of alfalfa, explains which one does best under your soil and moisture conditions. It will pay you to get a copy before purchasing your seed.

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(Desk A)

725 Tenth St. Modesto, Cal.



LET US SPRAY.

Have we scale from San Jose?
Let us spray!
Or other pest, be what it may—
Let us spray.
While we rest and talk they're feedin',
While we're swearin' they are breedin',
Lime and sulphur's what they're needin'—
Let us spray.

Sulphur sprays with nicotine,
Let us spray!
Lead arsenate beats paris green,
Let us spray!
Wet the tree from twig to stump,
Check the hopper's cheerful jump,
Get some pressure in that pump—
Let us spray.

Thrips, red spider, almond mite,
Let us spray!
Curled leaf, peach moth, ditto blight,
Let us spray!
Tho' the bugs be plump or flaccid—
Emulsion, alkali or acid
Well laid on will make them placid—
Let us spray.

—Adapted from New Zealand paper.

NURSERY NOTES.

The California Nursery Company reports: "Ornamental stock is in great demand. Right now we are so covered up with work that we have not the time to write you particulars. In a few days we may be able to give you the names of some of the large planters—as soon as we have a chance to run through the orders."

Newcastle nurserymen report their stocks of young trees being rapidly "cleaned up." Not much of the planting favors experimenting in new varieties — those whose commercial value has already been established being chosen. The fine rains will give an impetus to planting operations.

The manager of the Fresno Nursery Company reports: "When you were here before I remember telling you the almonds and apricots were moving rather slowly. But in the last two weeks we have disposed of quite a quantity of both varieties. Apricots seem to be gaining favor and we certainly believe they should, as they are a very profitable crop and are also thought well of by growers who dry them. All varieties of peaches are moving well. In fact, it has reached the point where both freestones and clings are short."

Leonard Coates reports as follows: "We are rushed with orders for fruit, nut, and ornamental stock. The demand for fruit trees has been notably more varied. There have not been nearly enough plums to go around, and nearly all other stock promises to be well cleaned up. The Concord walnut, which we named and introduced, has been more in demand than any other variety and from all parts of the State. One large grower even said he was going to graft over his whole orchard to Concord. As the editor of the Rural Press first put us on the track of this walnut, it is but one more laurel wreath for him. Ornamentals are selling well, although the season is yet early, and, from inquiries, the sale will be very large."

The Kirkman Nurseries report a good demand for prunes on peach root. Many growers are asking for the peach root in preference to Myrobalan, the reason given being that prune orchards on peach root are giving better sizes ordinarily than where the trees are on Myrobalan. An exception, to this rule would, of course, be in very damp, soggy land. The demand for table grapes far exceeds the supply. There is a normal planting of peaches, but not nearly a normal stock on hand. Peach trees in the standard varieties will all be cleaned up. Almond trees are not moving quite so freely as they might owing to the fact that much land now being planted to almonds has to be cleared and prepared first on the hillsides. This explanation holds good regarding the almond territory of San Luis Obispo county.



Wonderful Results

No other word except "wonderful" will properly describe the success that has followed the planting of Armstrong strong-rooted Olive Trees in all of the olive districts of California. Just listen to what some of these enthusiastic planters have written us:

—from J. S. Douglas, in the Kern County District we get this: "30 acres of Olives planted last spring, not a single tree required for replanting."

—and H. J. Bierwilder, in the Sacramento District, writes: "I got a 100% stand; I am strong for Armstrong Olive Trees."

—from Tulare County, Ed Moore writes: "98% of the Olive Trees received from you last spring are growing nicely."

—L. L. Williams of Yolo County says: "Have planted 25 acres of Olives from your nursery; all doing fine."

—from the Orland-Oroville District, C. W. Butler writes: "Every tree good, no fault to find with them."

That means satisfied planters—uniform orchards—profitable groves. Why should you be satisfied with less?

We now have a large stock of the very best strains of Ascolano, Manzanillo, Mission, Sevillano. Write for prices, naming quantity you expect to plant.

Expect to Plant Anything Else?

We have more than 300 acres in our propagating grounds and grow the largest assortment of nursery stock in California.

Deciduous Fruit and Nut Trees in great variety, for the home orchard as well as commercial planting—Grapes, Berries, etc.

Citrus and sub-tropical fruits, such as Avocados in 20 finest tested varieties, budded Carobs, Loquat, Guava, etc.

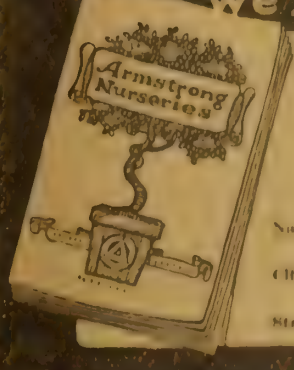
Roses—the best the world has to offer. The cream of the new roses and the finest of the better known sorts.

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J. S. ARMSTRONG, Proprietor

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We'll gladly send it -



If you want a copy of this 1919 catalog, which pictures and describes all the newest and best fruits of California, the world's best roses, and the finest ornamentals

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Without fertilizer, crops will decrease and deteriorate in quality.

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Bigger and better crops mean bigger profits to you.

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are scientifically manufactured to meet California soil conditions and crop necessities. They are made from animal products that contain the necessary elements to feed your crops.

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SAN FRANCISCO, CAL.

PURE ANIMAL MATTER AMMONIATES

GOLD BEAR FERTILIZERS

FOR CALIFORNIA SOILS

Proposed Reopening of the War on Thrips

[Written for Pacific Rural Press by E. R. de Ong, University of California.]

During the recent deciduous fruit short course held in the Santa Clara Valley an orchard survey was suggested by local men to determine the relation between the growing of cover-crops and other orchard practices and the damage resulting from thrips. It is proposed to make this investigation by means of local associations and secure data from as many different orchards as possible so as to correlate the experiences under the varying conditions found in different soils and orchard practice.

THE PRUNE NOT YET ADEQUATELY PROTECTED.

The consensus of opinion of orchardists present at the meetings was that the spray programs thus far offered were inadequate, particularly on the prune, and that certain cultural practices, such as fall irrigation and the growing of cover-crops had an important bearing on the subject.

Much work has been done in the past by the Government officials, the University of California and the county officers in co-operation with the orchardist towards the control of this insect. Different types of sprays have been devised, special cultural measures advocated, such as deep fall plowing, fall irrigation and fertilization. But as yet the prune growers have not adopted any program as being thoroughly satisfactory. In view of the fact that occasional rather severe losses occur, it seems worth while at this time to take some concerted action to determine what measures should be taken to protect our orchards.

THE PEAR PROGRAM MORE SATISFACTORY.

The pear growers have apparently been more successful in securing results by spraying than have the prune men. Both the distillate and tobacco sprays, devised by the Government men, and the lime spray, introduced by E. L. Morris, have given definite results on pears. In Contra Costa county and in the pear districts of the Sacramento river especially, the distillate and tobacco application has become part of the regular spray program of many orchardists. Perhaps the varying results on these two kinds of trees may be due to their manner of blooming or to the total number of flower buds present. But even though many pear growers have satisfied themselves that the sprays which have been suggested are satisfactory, it is still worth while to extend the proposed survey into the pear districts and compare conditions as found in the two types of orchard.

LINE OF STRATEGY SUGGESTED.

Since the use of cover-crops, fall irrigation and other good farm practices are the only measures which have persisted out of all those suggested for the control of thrips, it seems probable that they are worthy of further investigation, at least they are building up the vigor of the orchard and thus making it more resistant to the attack of the insect. Perhaps, incidentally, they may be of direct value in checking the work of the thrips on the buds when they are at their most susceptible stage. To determine the value of such practices, it is necessary to observe conditions in orchards which have been handled in different ways. Observations made in the orchard are of value principally where they can be compared with a number of other orchards offering a similar condition, because soil, moisture conditions of the tree, number of insects present and other factors complicate the results and only by a comparison of a large number of orchards do we get results that are dependable.

CAREFUL OBSERVERS ESSENTIAL.

Thus to make a survey of this kind of value it should be under the direction of one person or body and should cover a large area in as short a time as possible, the same parties visiting all localities where observations are desired, rather than left to the individual orchardist. No two people judge alike, and also there might be confusion in the minds of some orchardists as to the identity of different species of thrips and finally, a larger number of reports will be made if a few people make it their business rather than for everyone to make observations for his own locality.

Other localities besides Santa Clara Valley which have been suffering injury from thrips might care to co-operate in the survey. This would be very desirable as it would not only extend the area under observation but would include different soil and climatic conditions. Also a comparison of different cultural methods would be obtained. The survey might be carried on under the direction of the county agent, horticultural commissioner or the co-operative fruit associations and in co-operation with the University of California.

THINGS WHICH NEED TO BE KNOWN.

The main points to be determined are relative injury from the attack of thrips in orchards with and without cover-crops, what cover-crops are used, amount of growth, when planted, stage of bloom, whether started by irrigation or rainfall, use of commercial fertilizers or manures in growing the crop, number of years such a crop has been grown and the date and stage of growth of the plant when plowed under. Conclusions of the orchardists as to any past experiences in the use of cover-crops, whether they seemed to have any bearing on thrip injury or emergence. There should also be noted the character of the soil, the customary time of plowing, condition of the orchard, any sprays which have given promise and any farming operations such as irrigation, fall plowing, pruning or fertilizing experiments which may have a bearing on the insect itself or in improving the thrift of the tree.

No Compensation for Wine Growers

To the Editor: I have just read your editorial entitled "Inimbibition" and find myself very much in disagreement with your argument that "the State should do everything it reasonably can to relieve, compensate and quickly restore to profitable industry those who have lost livelihood and outlook." I particularly object to that "compensate." As to the "relieve" and "quickly restore to profitable industry," that should ever be the State's duty to its people who may be in difficulty.

The idea seems prevalent in some quarters that the wine-grape growers should receive payment for vines which prohibition may force them to do away with. I fail to see it that way. If we were to pay the grapemen for the vines they will lose we will be setting a rather dangerous precedent. Such a proceeding would encourage every farmer who found himself with an unprofitable venture on his hands to seek compensation from the State. And there would be many of them with a fairer claim than the wine-grape men.

One of the chief arguments set forth by the "wets" in the recent "wet or dry" campaigns was, "Give our grapemen time to rearrange their affairs before killing their business." How many of them took advantage of the time given them?

Just one thing more: If the winemen hadn't been so consistent about standing in with the saloonmen and distillers, they might not find themselves in so difficult a position.—Geo. Sandholdt, Watsonville.

[The question is, of course, up to the people and your judgment is pertinent. We are quite in accord with your claim that the wine growers never should have entered any "entangling alliance" with the saloonmen. That was surely the worst mistake they ever made. There may, however, be quite a difference of opinion as to how much and in what way they should be punished for it.—Editor.]

ORCHARD BRAND SPRAY MATERIALS

Economy

It does not pay to use home-made spray mixtures. For very little more than the cost of raw materials you can get the most efficient mixture, already prepared, which will save you time, trouble, and useless expense.

ORCHARD BRAND PREPARED BORDEAUX MIXTURE

is the standard spray for use on peach trees, almond trees, apricot trees, etc., to control blight and shothole fungus. It is put up in paste form, ready for use, and dilutes easily in water.

The various ingredients are combined at the factory by a special process which insures the best results and the greatest economy. No one but an expert chemist is capable of combining these ingredients with the proper degree of accuracy.

Use 8 to 10 pounds of **Orchard Brand Prepared Bordeaux Mixture** to 50 gallons of water.

On good crops depend good prices. Good crops depend largely upon the quality of the spraying materials. Take no chances. See that "ORCHARD" BRAND is on the head of every keg or barrel of BORDEAUX MIXTURE you buy.

We issue free bulletins on tree diseases and their remedies. Write for the one in which you are interested.

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SUPERPHOSPHATE

is a wonderful fertilizer for ALFALFA

Excellent, also, for Fruit Trees, Vines, etc.

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DEGEN DRYING KILNS

Puts fruit drying on a paying basis. Easy and economical to operate and built to suit your requirements.

ONE TO SIXTY-TON CAPACITY.

For information write

DEGEN EVAPORATOR CO.,

27 Leese St., San Francisco, Cal.

Spring Spraying of Prunes

[Written for Pacific Rural Press by John J. Fox.]

Spraying bearing prune trees with lime-sulphur, winter strength, when the buds have started to move their scales has had beneficial results that are tangible in the following instance: The Thomas Brothers had not been getting the results from their prune orchard and thrips' work was very apparent on leaves and buds and the twigs had that blackened dead appearance which always follows. We suggested using lime-sulphur (winter strength) just as the buds were swelling, and eight rows of the worst part of the orchard was sprayed. As there was a fair crop of prunes throughout the orchard, this experiment was lost. But last year one-half of the eighty acres of prunes was sprayed at this time and the other forty left unsprayed. Seventy-five tons of prunes were saved from the 40 acres sprayed and only 25 tons from the unsprayed 40 acres.

TREES SPRAYED IN BLOOM.

But the surprising thing about this is that before they got through spraying the trees were in bloom. Virgil Thomas told us that a friend of his from Lake county had advised him that it was quite safe and he could go ahead. Which he did, using Rex Lime-Sulphur at the rate of 9-1! He used 13 barrels of Rex on the 40 acres and claims that he perceived no damage to those trees sprayed when in bloom. This was such an amazing thing that I wrote to the friend who had advised it, also to Fred G. Stokes, horticultural commissioner of Lake county, to see if he knew of anyone there who had used lime-sulphur, winter strength, on prunes or pears in bloom. Mr. Stokes replied as follows: "Regarding the application of lime-sulphur spray, winter strength, to trees in bloom, I fail to see the need of trying any such game as it would, even if safe, probably effect pollenization. As for pears, in Lake county I have known different people to apply lime-sulphur, 1-10 (33° Baume test), when the pears were in bloom and without apparent damage. This has happened when they were late with their scab spray which should be put on when the buds are well opening up. I prefer the lime-sulphur to Bordeaux for this purpose because of its additional value as an insecticide.

"About putting on lime-sulphur, 1-10, on prunes in bloom, I would not recommend it. Would be afraid it would burn foliage and hurt pollenization."

As this goes to press I have received another letter from Mr. Stokes, who had interviewed the man reputed to have recommended spraying prunes in bloom. The letter is as follows:

"I have seen ——, and he says there is a misunderstanding about the spraying of prunes with lime-sulphur 10-1 (33° Baume) whilst in bloom. It appears that the party you referred to (Thomas Bros.) was spraying as a general clean up, etc., and had not quite finished and —— advised him to finish the job up even though a third of the blossoms were out. No noticeable difference was perceived as to crop on the trees thus treated. —— said he had not answered your letter, so I am sending you this so you will get the straight of it."

FURTHER EXPERIMENTS.

Mr. Thomas said that thrips were practically absent in the part of the orchard sprayed, but were very bad in the unsprayed portion. He also said that the former was plowed last. This year he intends spraying the 40 acres left last year. Several other men who have been troubled with thrips have also promised to try out a portion of their orchards with this treatment early in March so that we may have more definite results to offer.

Now, apart from thrips, this is a most useful spray to apply at bud swelling time, anyway. Used winter strength and properly applied it kills San Jose and greedy scale, first hatch of red spider, plant lice and aphids, kills the spores of scab (also shothole fungus as a second spray and peach blight), peach moth and blister-mite. In a word it is the most useful and beneficial spray—especially applied at this time, that has ever been devised. Disagreeable to put on—sure—but you get results. It's those things that cost effort that pay.

TIME TO SPRAY WITH LIME-SULPHUR.

The best time to spray with lime-sulphur will be, generally speaking, about the first week in March—except for almonds, which have already been done. The almonds can have another shot after they have finished blooming, using the lime-sulphur at the rate of five gallons to 200-gallon tank or even one gallon to 35 gallons of water; for red spider and leaf spot or atomic, sulphur 10 pounds to 100 gallons. This latter is an excellent spray for any trees in foliage for mites, red spider, thrips (with black leaf 40°) and apple or pear scab.

But every locality must watch its own sap movement and spray accordingly. No time is to be lost now in getting that spray material on hand.

NOTHING NEW UNDER THE SUN.

To the Editor: I am interested in "The Last Word in Pruning" and I think you save the day in calling it "The Last Word in Pruning Young trees" and adding "at least up to the fourth year." For my father and uncle pruned to save all growth on young trees in this identical manner between forty and fifty years ago. By the way, my father exhibited and took a premium at one of the first State Fairs at Stockton in early days, he being now 92 years old.

I have used this method of pruning and use it now, except that I prefer to cut back a little to a stronger bud and to keep the tops even or give the advantage to the south side. I don't want a tree to look pruned in the general way, but when done to look so that you can't find any fault with it. I went to see the professor give a demonstration in pruning under the auspices of the Farm Bureau and I consider him the best posted man we have had. I think when the trees get older the method will have to be modified for best results, sooner with the peach than other trees, and the Bellefleur sooner than other apples. I have found I had rather keep a leader on the three main branches, making a branch on each side a distance apart—the same as on the trunk, and another set higher up differently spaced. Then if the necessity arises for thinning out it can be done with less harm. As I have said, I give the south side of the tree the advantage—the north side can take care of itself—but a limb lost on the south side is gone forever.

One experiment I have tried is to cut back my apple trees one year and simply thin out the next. The year they were not cut back they started fruit spurs the whole length. In the end this makes a strong, stocky tree, able to hold its fruit up out of the road.

In planting a young tree I let it lean a little to the south and see that it stays there.—H. R. Dakin, Santa Cruz county.

UNIVERSAL ORCHARD SPRAY

For Crop Insurance

Kill Thrips While Still in the Bud

That's where the eggs are laid—in the bud. By the first of March the adults have come out of the ground and embedded their eggs deep in the tender buds. A week later and the larvae are ravishing your crops, eating out the heart of buds about to burst into bloom. Insure your crops with a spray that goes into the bud and kills the egg. Give your trees a chance to bloom by spraying with

Miscible Oil No. 2 for Thrips

a highly penetrating, quickly evaporating, high gravity oil especially prepared for thrip destruction. Be prepared! Order your supply of Miscible Oil No. 2 today.

Universal oils are uniform. They give the right results. They kill the insect without harming the tenderest bud. They penetrate and kill the eggs.

We have a thrips specialist, Paul R. Jones, who has had years of experience fighting thrips. Write to him today about your orchard conditions and let him help you. His services are free.

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Power—Power—Power

Fertilizer is to the tree what gasoline is to the engine. If you want small returns, feed little; if you want BIG RETURNS, feed liberally.

90 per cent of the non-paying groves are the UNFERTILIZED groves. Feed your trees into the dividend-paying class by using

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Built for California conditions.
Send for booklet, "Fertilizer Efficiency"—tells you why.

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ATTENTION, TREE PLANTERS

We have only a few trees left—the best of our stock—and as we are anxious to close them out as soon as possible we are making special prices on the following varieties:

Beurre Anjou on French and Jap Root;
Comice and Winter Nelis on French;
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Almonds, all varieties, on almond root;
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French Prune on Peach;
Cherries on Mazzard.

WRITE FOR SPECIAL PRICE LIST

UNITED FRUIT CO. - - NEWCASTLE

TREES
PEACH APRICOT ALMOND
PLUM PRUNE PEAR
APPLE CHERRY OLIVE
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More Than a Million High Class Fruit Trees per Year to California Planters

KIRKMAN NURSERIES

Established 1888
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Fresno, California

How About Losses from Wine Industry?

To the Editor: In your issue of the 1st inst. you express yourself editorially at some length relative to the owners of wine-grape vineyards in California. Near the close of your expression you say: "All loss-bills which are expertly audited and from which all compensating circumstances and conditions are set off should be paid" by our State. If in the expression quoted you mean to include those losses (all compensating circumstances and conditions having been set off), which have been experienced by persons not owning wine-grape vineyards in California and are direct results or clear consequences of the wine traffic here, please say so in your next issue. If you do not mean to include those losses just mentioned, why not?—Allyn O. Taylor, Selma.

[We do not intend to discuss that aspect of the matter. It involves the whole question of prohibition, which we consider as dead as a mackerel, and we have no interest in efforts to revive it by either side. We have said that we have no sympathy with efforts to impeach the overwhelming national decision of the matter. We intend to leave everything but the one question of helping the vine-losers to the lawyers and the courts.—Editor.]

Better Hay Farming Possible

To the Editor: Why should the hay raiser care? So far he has passed off tons of dirt and rocks, and latterly at a high figure. It seems the dealer cares but little, since he passes it along after making about a flat rate for good and indifferent qualities.

Generally speaking, the better grades of hay are produced upon gravel or hilly ground. In the latter case, it must be dragged to convenient places to be baled on the level. It has heretofore been dragged on rakes, at all times sliding on the ground, and, on account of the steepness of the hills, this procedure has seemed indispensable.

It occurs to me that there is no reason why a rake on wheels with a lever attachment allowing the load to be slightly elevated from the ground should not be used. Also, if a farmer cannot use a roller in the hills to smooth down his clods, let him use a clod smoother.

But why worry about this? Buy and pay him for the described hay and if he delivers you his freehold, hold him to his contract. Business men are under such restrictions, why not place the hay producer on the same footing?—William Bond, Newark.

The Atwater Fruit Exchange handled $124,000 worth of fruit last year, which is expected to be vastly increased the coming season. The membership has grown from 31 to 70.

FALSE BOTTOM BERRY BOXES DEFENDED.

Our article, "False Bottom Berry Boxes Banned," in the issue of February 1, draws fire from W. I. Newcomb of the Sebastopol Berry Growers, Inc., and we are glad to present their side of the argument. Mr. Newcomb insists that the false bottoms are necessary for extra strength, especially during field handling, and for safety of the berries when boxes are stacked one on top of the other by retailers. They are used very little for strawberries, but entirely in the Sebastopol district for Logans and blacks, of which 718 tons were shipped East last season by the organization, mostly to Mississippi Valley States. Mr. Newcomb points out that since less than 2 per cent of the organization's shipments are to destinations within the State, and since Eastern growers all use false bottom boxes, it would not be right for a State official ruling to handicap California berries in Eastern markets. The Sebastopol baskets are of full measure, labeled one pint each, and no Eastern State or market has objected to them.

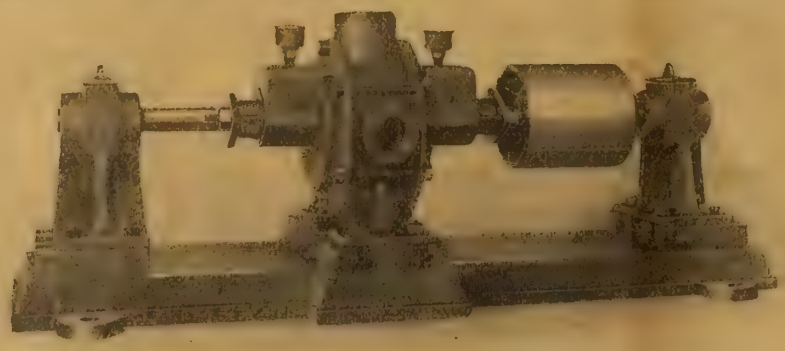
Traveler—Isn't this train pretty late?

Stationmaster—Yes, she is a bit behind, mister, but we're expectin' her every hour now.—Harper's Magazine.

The last week in January apple buyers purchased $46,000 worth of dried apples at Sebastopol. The prevailing price paid was 15c a pound.

WONDER PUMP

Guaranteed



5 Years

The WONDER PUMP is the Most Successful Irrigation Pump Manufactured

It will pump air and water at the same time.
It will pump more gallons of water for the amount of power used than other pumps.

Why use an old style pump when you can install a **WONDER PUMP** and save the price of your pumping unit in a few years?

Seeing is believing. Write us and we will give you a demonstration of the Wonder Pump, free of charge.

Please fill in the following—

1. I wish to irrigate.....acres.
2. I want to raise the water.....feet elevation from the pump.
3. Do you pump from river, lake or well?.....
4. How close to the water will you place the pump?.....feet.
5. Will you use motor or gas engine?.....
6. How many gallons per minute do you wish to pump?.....
7. Would like to have you demonstrate your pump, which is free of charge.

Name.....

Address.....

IMMEDIATE DELIVERY GUARANTEED.

Jackson Rotary Pump Co., 403 New Call Building San Francisco, Cal.

Horticultural Jottings

Some Napa vineyardists are offering $2.50 per day and found for pruners. It would be interesting to know why they spend money this way.

Federal fruit experts have declared that the walnut worm of Southern California is the apple codling moth. Its identity has been established.

The Fresno county Chamber of Commerce has entered protest to Senators Johnson and Phelan against the proposed reduction of agricultural appropriation by $3,000,000.

The strawberry growers of Central California propose to fix a price of 10c a pound for strawberries to the canners this season, as against 7c last year. It is also proposed to fix a minimum of $8 per chest in open market.

Directors of the California Packing Corporation have declared regular quarterly dividend No. 8 of $1 per share on the common stock and dividend No. 10 of $1.75 per share on the preferred.

One hundred and twelve carloads of apples were shipped from New York State, February 8, nearly twice as many as were shipped by all the other apple growing States combined—whose total for the same date was 68 carloads.

Orange growers of Porterville affiliated with sections which control over 60 per cent of the output will pay three-quarters of a cent a box to create an advertising fund to market Sunkist marmalade, a new industry for utilizing the cull fruit.

W. C. Jacobsen, Superintendent of Rodent Control in California, is trying to arrange for co-operation between Contra Costa and Alameda counties in rodent work. Harry H. Ladd has made great inroads on the squirrels in San Joaquin county, of which he is Commissioner.

The Mills Orchard Company at Hamilton City recently shipped a carload of 20,000 trees from their nursery here. They included French prunes, Tuscan and Phillip cling peaches. Foreman F. C. Shank reports pears and almonds not moving so freely. They will be planting 50,000 Myrobalan seedlings this season.

Three aspirants for the post of Horticultural Commissioner of Contra Costa county reported to take the State board examinations at Martinez on February 6. Their names are Will Van Dyke (Ukiah), Edwin B. Sellers (Oakley) and C. A. Noren (Reedley). The present incumbent, Frank T. Swett, has expressed a desire to retire.

FIG GROWING IN MERCED COUNTY.

In 1918, out of nearly 45,000 trees planted in Merced county, 20,070 were figs. The total number growing in the county was 99,000, of which 29,000 were in bearing. Considerable planting has been done in the neighborhood of Tuttle and more acreage is to be planted there this year. It is expected that figs will lead all varieties of fruit trees to be planted in this county again this season. The annual production of Smyrna figs in the State of California is now nearly 2000 tons, which will be vastly increased in the very near future with a large acreage of sturdy young trees coming into bearing. Since importations were cut off owing to the war, some 10,000 acres of figs have been planted in the central San Joaquin Valley. The outlook for the fruit in the future is promising, setting aside the late war prices. When we settle into our stride and produce canned figs, pickled figs, candied figs, fig jam and other sugar-saving delights from this fruit, the industry will loom up. As a food and corrective it is very hard to beat among the dried fruits. Now is the time for growers to begin an educational campaign for the production of quality rather than tonnage. For if half the fruit is not much larger than a cling peach pit it will take some time building up a market for the tonnage already in sight. Fertilization is a big factor.

Some Itinerary Notes

LAKE COUNTY NOTES.

On heavy land many started pruning as soon as pear picking was finished and much of the pruning is done. Most of our orchards are straight Bartletts and there seems to be no difficulty about pollenization.

In December and the early part of January there was quite a heavy planting of Bartlett pears and French prunes in Lake county, according to a report from F. G. Stokes, Horticultural Commissioner, respective plantings to the middle of the month being 17,413 pears and 14,465 French prunes, also miscellaneous lots of walnuts, almonds, apricots and peaches.

The fruit last year was very clean and practically free from scab. We are figuring on spraying with lime-sulphur (1-10, Baume 33 degrees) as soon as the buds open up well, but before blossoming, for a scab preventive and as a general clean-up for San Jose scab, blister mite, etc. So far we have had over 10 inches of rain (January 25) and things look most encouraging. I hear that Frank T. Swett has just completed a report on the year's work of the Pear Growers' Association which would be of interest to our growers. I always advise their taking the Pacific Rural Press, so please put in all the pear news you can—also wine-grape news. (We had already published the above report.)

STANISLAUS COUNTY NOTES.

D. H. Simms planted strawberries between his young figs and from the plants occupying one acre he sold $1,500 worth of berries last year.

I. C. Baker of Stanislaus county says his 23 stands of bees saved the day for him last year, for, though he lost out on his beans, the bees brought him, in honey and wax, $465, besides all he wanted to use for himself and family.

Two years ago C. M. Smith bought 20 acres near Ceres, 14 of which were in peaches. The last two years he has sold $8,000 worth of fruit from these trees. He believes in plenty of irrigation—also believes in peaches.

GRASS VALLEY NOTES.

The unsettled conditions incident to the war have curtailed our orchard planting materially. Ninety per cent of the trees planted have been furnished by our local nurseries. Bartletts take the lead, with a goodly sprinkling of Beurre d'Anjou, Beurre Bosc and Forelle. In plums the Grand Duke and President take the lead, with Hungarian third.

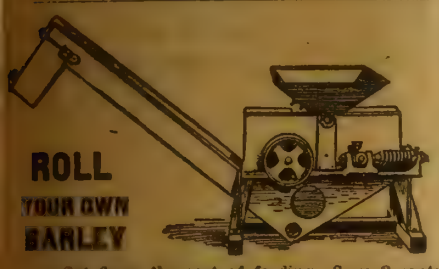
In reply to our inquiries D. F. Norton, Horticultural Commissioner of Grass Valley, reports as follows: You will remember that I used to brag that Nevada county was immune from pear blight. In justice to myself I believed it. But last year my illusion was dispelled by its appearance in an impartial manner, for no part of the county was slighted. The scarcity of intelligent labor made its eradication an uphill fight, but we have kept at it and I hope that our winter pruning will leave it but a memory.

MISCELLANEOUS.

The Germans and Poles, who have been fighting for the town of Posen, have both of them declared martial law in that town. Co-operation is not suspected. The humor of the situation should lead to improved relations.

We recently noticed in an enterprising Berkeley store an artistic attempt to classify eggs under a new standard. The three qualities displayed bore the following legends respectively: "The end of a Perfect Lay," "Barnyard Echoes" (of the past?) and "Just Eggs." The price of the last named was quite reasonable.

We were recently approached by one of those harmless, nondescript individuals who is so fond of calling the attention of the unwary to the fulfillment of ancient prophecy. He said that: "He hath put down the mighty from their seat" referring to the ex-kaiser) "and exalted the humble and meek" (referring to our doughboys and the British). The last explanation is not convincing. He said nothing about the rich being sent empty away! This man is of the same kidney as the old sea captain who had much time for contemplation. He arrived at the conclusion that when Elijah made a monkey of the prophets of Baal it was coal oil and not water with which he drenched the sacrifice and then, unbeknownst, he scratched a match up his leg to ignite it!



ROLL YOUR OWN BARLEY

Cut down the cost of feeding. Save 3 cents per pound and the hauling. Do the work at your leisure. The No. 22 rolls 10 to 15 sacks with 3 to 4 H. P. engine. Other sizes to meet your requirements. Write for circular.

THOMAS E. BROWNE
Factory Representative, Stockton, Cal.

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"It is safe, convenient and insures absolute privacy. There is a sense of satisfaction and pride in having a savings account in a strong San Francisco bank. You can start an account with as little as one dollar—Your interest will be compounded semi-annually.

"Write or visit the bank and I will explain the superior service this bank gives to out-of-town depositors."

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French American Bank of Savings
108 Sutter St., San Francisco

STATE CERTIFIED
SEED POTATOES
British Queen and American Wonder Varieties.
Grown from hill selected seed in cool coast climate. Give excellent yields throughout the state.
$3.00 PER CWT.
CARL NIELSEN, Grower
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714 Main St. Woodland



One Avery Sells Another

Gentlemen:

Regarding the 8-16 Avery tractor purchased from your company early last fall, will say that no better evidence of how we like it can be given than to say that we expect to purchase another.

The powerful motor, the simple and direct transmission, and the lack of a lot of power-robbing gears has allowed our tractor to stand the test of severe every-day use, without one provoking delay.

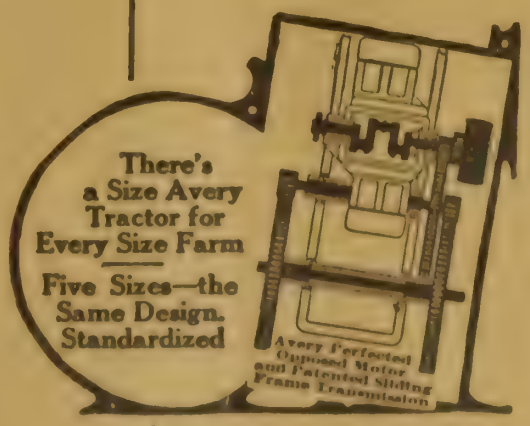
We have been pulling a four-bottom 10" Bonanza plow, plowing five inches deep, also used a twenty-foot spike tooth harrow, loaded with brick.

Will say that we are perfectly satisfied with the Avery, as we are in a position to either praise or condemn a machine. Anyone that is interested can call upon me for any information.

Yours very truly,

E. W. DEVERE.

Ranch near Esparto, Yolo County.



A tractor that will work under all conditions—a tractor with practically no up-keep cost—a tractor that stands the test of every-day use without provoking delays—a tractor that is sold at a reasonable price—THAT IS THE AVERY TRACTOR.

Call on the Avery distributor nearest your home and see the complete Avery line.



The FRUIT GROWER says=

"for tree planting genuine GIANT is most satisfactory"

The Giant Farm Powders—Eureka Stumping and Giant Stumping—**loosen and pulverize** the soil instead of packing it and throwing it high in the air.

Western fruit growers have used hundreds of tons of these Giant Powders for blasting beds for trees. They have proved that blasting with genuine Giant Powders provides free drainage, increases moisture-storage capacity and insures vigorous growth and early bearing.

"My trees planted three years ago in beds blasted with Giant Powder are 75 to 100 per cent bigger and better than the trees that I planted in dug holes," writes H. H. Smith, Oregon City.

You will enjoy reading "Better Farming with Giant Farm Powders." It describes all the new and money-saving methods of blasting beds for trees, subsoiling established groves and orchards, clearing land, ditching, etc. Write for it now.

THE GIANT POWDER CO., CON.
"Everything for Blasting"
216 First National Bank Bldg., San Francisco
Branch Offices: Denver, Portland, Salt Lake City, Seattle, Spokane

GIANT FARM POWDERS
STUMPING EUREKA

ESTABLISHED 1896
REX
KING OF SPRAY MATERIALS

"There is a Rex for every orchard trouble."

REX SPRAYS are the development of 20 years of Scientific Investigation and Development.

REX LIME AND SULPHUR SOLUTION —THE MOST GENERALLY USED SPRAY—REX ARSENATE OF LEAD, AN ARSENICAL POISON FOR KILLING LEAF EATING INSECTS, CODLIN MOTH, ETC.—REX SUL-PASTE, A PRODUCT OF FINELY DIVIDED SULPHUR FOR THE CONTROL OF SCAB, MILDEW AND OTHER FUNGUS TROUBLES—ALSO RED SPIDER AND OTHER INSECTS. REX BORDEAUX - OILS - SOAPS

California Rex Spray Co.
BENICIA, CAL.

REX SPRAYS — The Standard for 20 years

Here and There in the Fruit Business

[Written for Pacific Rural Press.]

Cleaning Up the Gopher.

In Santa Cruz county demonstrations of gopher poisoning were given at every farm center in the county in December. This was followed by the appointment of gopher drive committees, when it was decided that each center hold a drive to be completed during February. Sweet potatoes, carrots and parsnips are the best bait. To discourage storage cut the baits into cubes one-half inch square by one inch in length. The U. S. Biological Survey poison formula consists of one ounce of alkaloid strychnine mixed with one ounce of insoluble saccharine. The preparation is put in a pepper box and sifted over the bait as needed. One ounce is sufficient to make eight gallons of prepared baits, which must always be dropped into the main runways and not in laterals.

Good Old U. S. Efficiency.

We are told that the value of food products destroyed by the ground squirrel in 1917 exceeds the gold production by $8,000,000. The United States Government is controlling the ground squirrel on federal lands, national forests, etc. The State Rodent Control Division is doing this on State lands. The individual is called upon to do it on his own property to complete the thing. Now is the time to get busy before the young ones are able to take care of themselves. It has to be done anyway so let's do it now. The astonishing thing is that united action has not taken place long ere this! Last year we made a good start at it. This year should clean them up to such an extent that the annual expense will be practically nominal and the damage ditto.

Limitations on the Income Tax.

The farmer is not required to include in his income tax computation the value of the farm produce consumed by himself and his family. This is quite an item where a man has a large family and puts up his own meat, cheese, butter, fruit, and so forth, for the year. But in cases where he exchanges produce for groceries, merchandise, etc., the market value of the article received in exchange must be included. A farmer must figure up all income derived from sale or exchange of products during the year, whether they were raised on the farm or purchased and resold. He is allowed to deduct from this total his expenses of the year connected with planting, cultivation, harvesting and marketing of the crop or the care, feeding and marketing of livestock.

Federal Land Bank Going Strong.

The Federal Land Bank of Berkeley has closed loans to farmers now amounting to nearly $10,000,000. It is considered that this bank is saving borrowers an average of 1½% to 2% per annum on the amount of their loans, or an annual saving on the above amount of $200,000 a year. The advantages of the long time loans appeal to every farmer even more than the saving. As the system is understood more and more farmers will take advantage of it. Associations are growing stronger and have a better understanding of their working basis than they had a year ago.

Squirrels Swatted in Stanislaus.

A. L. Rutherford of Stanislaus county has been busy at the squirrels. We recently rode with A. E. Gray, assistant field superintendent of rodent control, along the river district, both sides, and to Oakdale. Mr. Gray, who worked against squirrels for three years in connection with the health department, expressed amazement at what had been done, as he said certain sections here used to be alive with squirrels. Today the only evidence of them in some sections is mounds that had accumulated by the earth working of the rodents now covered with grain instead of being bare areas.

California Fruit Exchange.

Three new directors of the California Fruit Exchange were named at a recent meeting held in Sacramento. They are J. W. Sharer of the Melvin Fruit Growers' Association, Ward B. Minturn of Fresno, and Martin Gilbert of the Dinuba Grape Growers' Association. The growth of the Exchange in the San Joaquin Valley is given as a reason for this special representation. More than one-third of its entire business originated in this great valley.

The Way to Whack 'Em Off.

On February 6 another big rabbit drive was held southeast of Merced, in which some 75 gunners took part and over 600 jack-rabbits were slain. Last year the same territory was "drawn" in a drive staged by the farm bureau, which resulted in the death of 5500 bunnies. This is an excellent time of year to carry out such campaigns, just before the breeding season and when every one is not buried in work. Further drives are being planned.

State Market Commission Endorsed.

The Los Angeles Honey Producers' Exchange at its annual meeting adopted a resolution protesting against the proposed discontinuance of the State Market Commission. The president of the Exchange is J. D. Bixby of Covina. It is reported that Sonoma county growers are protesting against any reduction in the appropriation for agricultural propaganda and assistance.

Silk Worms in Butte County.

The promoters of the Wyandotte silk industry here recently received a consignment of special cocoons from China. The moths are said to measure nearly six inches from tip to tip of wings. The company has already set out a number of mulberry trees. These have to be headed low and kept cut low to produce the best quality of silk.

Almonds in Oakdale.

Lots of almonds are being planted out in the Oakdale district of Stanislaus county this year. One nurseryman told us he had already sold over 40,000 trees, chiefly Nonpareil, Drake's Seedling, Texas Prolific and I. X. L. The planting is done on small acreages ranging from five to forty acres.

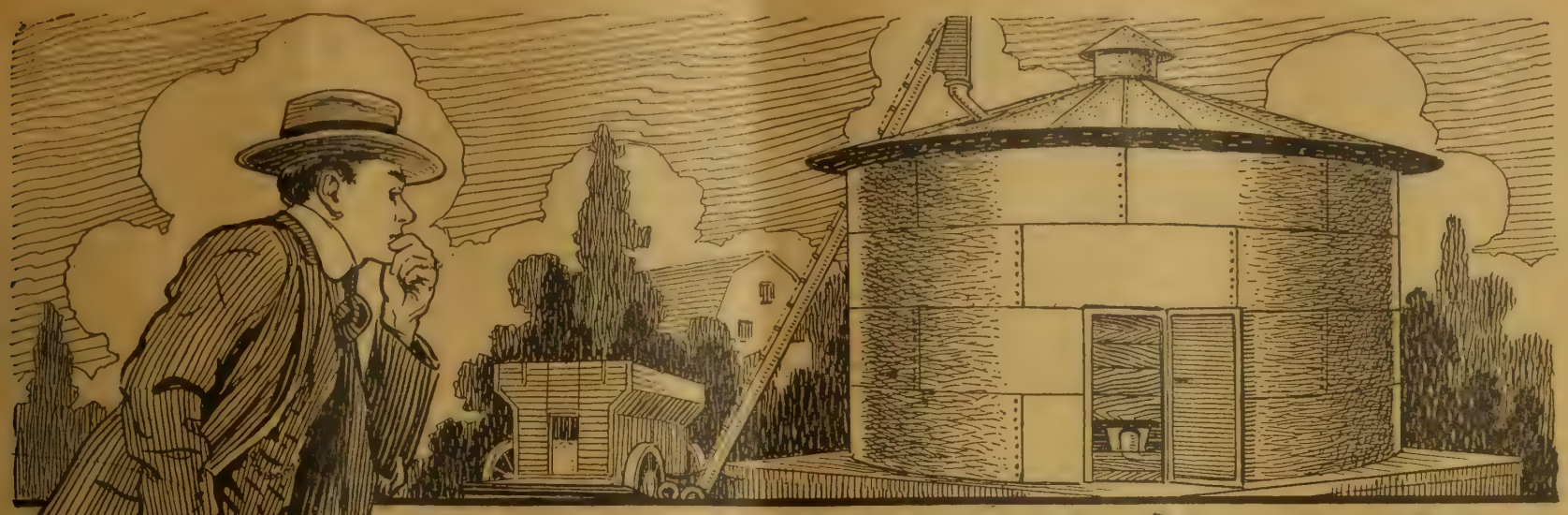
Peach Packing Plant Planned.

It is reported that the California Peach Growers' Inc., have decided to establish a branch plant for handling the fruit of their members at Hanford. The headquarters of the company at Fresno will still be the central point.

George Grundel, an Orange Blossom (Stanislaus county) rancher, has sold 340 pounds of walnuts, the product of one tree this season. The price was 25 cents a pound, or $85 for the fruit of this one tree. The year previous this fourteen-year-old tree netted $45.

Growers' Contract Sustained in Ventura Case

In the case of California Prune and Apricot Growers, Inc., vs. A. L. Drown, in the Superior Court of Ventura, the association won its first suit against a non-delivering grower. This is the first instance where the contract has become part of a court action, and consequently of considerable importance, since this contract is one of an identical series on which all members are signed. The hearing of the evidence occupied two days. In the result of this test case the California Prune and Apricot Growers are assured the greater respect of the trade, the producers and other interested parties. Their contract—the foundation of any co-operative organization—has been on trial and not found wanting.



-It's a real handy Grain Bin

"I'M just independent enough," says one Farmer, "to want to hold my grain until I get ready to sell it. For that and other reasons I got my Calco Grain Bin.

"And now I hold my crop—as long as I see fit. Another thing, when the rest of the boys are scratching their long hair over the scarcity of labor during harvest time, I go right ahead. Don't need so many men, with the Calco Bin.

"I picked a good, convenient place in my field and put my Calco Bin there. It is big enough to store my entire crop of grain. I haul right from the harvester to my bin—just like putting my grain in a bank's safe deposit vault.

"My Calco Bin gets ahead of the high cost of harvesting; saves sacks, cheats rats and stays dry inside. Let it rain, I say, my crop is perfectly safe—until I get ready to move it.

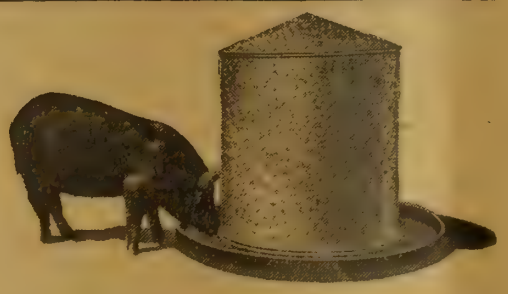
"I'll say this:—everything else being in favor of the Calco Grain Bin, it is also a real handy grain bin. And I've already paid for mine out of what it saved for me last year."

Write for the Calco Grain Bin Booklet; it's free. If a Calco Bin is worth anything, it's worth knowing about. Write now.

and CALCO Products for Hogs are right

Calco Automatic Grain Feeder

Constant feed to hogs, without waste. Cast-iron bottoms and trough, rust-resisting iron bin. Capacities from 2 to 10 bushels. Send for circular.



Calco Automatic Hog Watering Fountain

Continual fresh water, without overflowing. Safe, sane and sanitary. Get the price lists for detail description.



Calco Hog Watering Tank

Designed to give same service as the Automatic, where water must be carried or hauled. Saves time, and keeps water clean. Ask about this Tank.



Calco Hog Trough

Built of Armco Iron—strong, durable. Smooth bottom—sanitary. For healthy hogs. Length from 24 to 120 inches. Ask for circular—now.



California Corrugated Culvert Company

LOS ANGELES
417 Leroy Street

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406 Parker Street

AMERICAN ARMCO IRON

CALCO GRAIN BINS

Do You Want Clean Seed Potatoes?

[Written for Pacific Rural Press.]

On March 6 a meeting of all potato growers interested will be held in Sacramento to discuss a bill which will be proposed in the latter half of the session of the Legislature if growers show enough interest. It provides for examination and certification by the State Horticultural Commission of potatoes grown for seed. Certificates will show variety and freedom from disease or insects. Growers will be charged reasonable costs and their names will be published, which will be good free advertising. A qualified potato inspector is to be employed. The bill asks an appropriation of $5,000 per year to cover the inspector's salary and expenses of operation.

CERTIFIED POTATO GROWER SPEAKS.

Mrs. Hilda B. Nielsen of Sebastopol, who is to speak at the meeting, has had several seasons' experience growing certified potato seed under the present unsatisfactory law.

Says Mrs. Nielsen in a special article written for the Pacific Rural Press: "The potato industry in this State is today where fruit growing was years ago. Nature seemed very kind to potato growers for many years. But now new pests and diseases are constantly arriving, so that growers must have aid in the near future if we are to continue to grow potatoes profitably in this State. I found a large problem down south recently, a new disease. As yet no one had diagnosed it, but the results were plain enough. What is their future?

"I consider the necessary inspecting which must be done under the proposed law as of more importance in protecting our now successful potato districts than in simply certifying seed potatoes. The fact is that if we can continue to grow good potatoes and good seed, certified seed will not be so much in demand.

"We growers must help ourselves whether our potatoes are confined to the gardens or are grown in large fields. Write to the State Horticultural Commissioner. Your letters will exert more influence than anything else except your presence in person. I especially ask aid from agricultural clubs.

"George P. Weldon, Deputy State Horticultural Commissioner, wrote me January 28, saying that 'if we find that the potato interests will give this bill sufficient backing we, of course, will be glad to see that it gets into the hands of someone in the Legislature who will introduce it and push it. The Horticultural Commission, is hardly in position to ask for any more appropriations, but there could be no objection to the potato growers themselves organizing their forces for the purpose of securing this measure.'"

NEED OF THE FARMER-TEACHER.

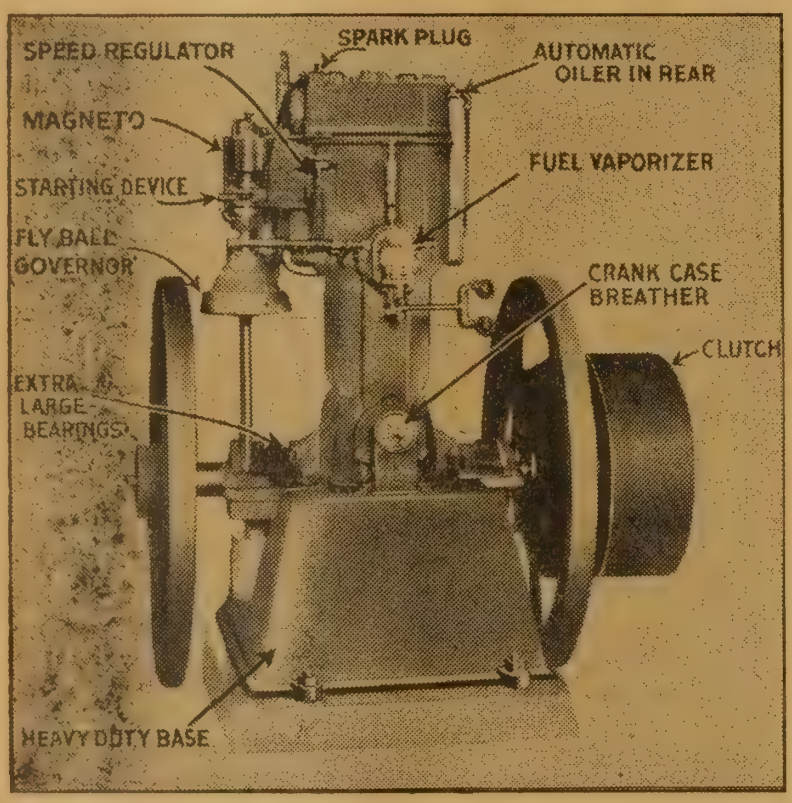
[Written for Pacific Rural Press by S. H. Dadisman, Director of Teachers' Classes.]

Before the war the type of agricultural instruction in the high schools was, to a large extent, a duplication of the particular college courses that the teacher had during his training and the method of instruction was also limited. The passage of the Smith-Hughes Act created a greater demand for those vocationally trained. A gradual change was taking place when the war interrupted. During the war a shortage was found in the teaching professions as in practically all other professions. This was a handicap to the new type of instruction which was developing in California. In order to meet this shortage the University of California, in co-operation with the State Board of Education, established classes for the training of vocational teachers at the University Farm, Davis. It was found that by going into the actual farming profession those in charge were able to recruit persons for the vital work of teaching who had had professional training. These people made splendid teachers in a short space of time. It was also found that these types of people, with their knowledge of practical experience, could grasp the training work for teaching vocational agriculture in a much shorter space of time than had formerly been supposed.

The opportunities for this type of teaching are better now than at any previous time for the person who has been trained and has had practical farm experience and who wants to enter the classes which are now in session and better fit himself for the teaching of vocational agriculture. These short courses have proved efficient for this training.

This type of instruction under the Smith-Hughes Act is to take the boys who have a natural inclination to follow farming or who expect to reside on the farm and give them a half day instruction in the application of science and mathematics to agriculture, rural English and rural sanitation, while the other half day is to be spent in farm mechanics and in conducting a project on the home farm on a commercially productive basis. These projects may be, for examples, raising ten pigs, or keeping twenty dairy cows, growing ten acres of alfalfa, five acres of potatoes, five acres of citrus fruit, etc. It is expected that this type of instruction will give the boy who has for some reason dropped out of school or who expects to return to the farm a renewed interest in rural life. By reaching the boy through his project he will see the relation of his training to the business world and make a more efficient member of society, for he will be trained for better citizenship.

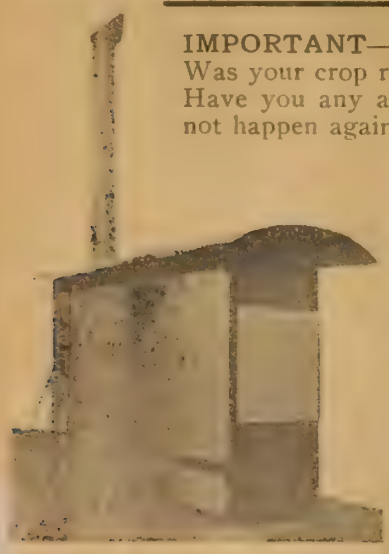
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OIL MOTORS
For IRRIGATION



Your inquiries will receive prompt attention.
Our engineering department is at your service.
Our agencies serve the entire State.

VICTORY MOTOR COMPANY

NILES, CALIFORNIA



IMPORTANT—Mr. Farmer—Mr. Fruit Grower. Was your crop ruined last year by the early rains? Have you any assurance that the same thing will not happen again this year?

THE SAHARA DRIER affords you absolute protection. It will dry your vegetables and fruits cheaply and quickly and just when they are ripe and full of flavor, or if the market is not favorable, dry them and store till you get your price.

EVERY GROWER has need for one or more of these machines. It protects you against all weather conditions and gives you a product equal to the sundried.

THE SAHARA is inexpensive and efficient. No need for the grower to join in organizing a big Central Drying Plant at excessive cost and inefficient methods. The "Sahara" makes you independent of any organization. Dry your own fruits—save time, expense, wastage. Your products will command highest market prices. Orders should be placed now for future delivery.

CALIFORNIA DRIED PRODUCTS CO.
149 California Street.
San Francisco, Calif.

Mr. Farmer Take Notice!



Western Pulverizers, Mulchers and Packers are made for tractor or horse work.

This machine is well worth your careful consideration, for you surely realize what perfect seed beds mean to you. Retaining moisture is very essential.

Western Pulverizers can be used right after the plow, for they are self-cleaning.

You cannot afford to be without one of these modern machines.

Write us for information.

BAKER HAMILTON & PACIFIC CO.

SAN FRANCISCO, CALIF.

10 Searching Questions About the Maxwell and 10 Frank Answers; Read Them, for They May Decide Your Choice of a Car

Q.—Reduced to one point what is the single greatest thing you can say about the Maxwell?

A.—It is reliable.

Q.—What makes it reliable?

A.—The chassis was designed five years ago to be extremely simple. Then we kept on making and making Maxwells all alike on this chassis year after year until now we have made 300,000 of them. Our policy is to do one thing well and thus obtain perfection.

Q.—Have you changed the original design any?

A.—Not in any single fundamental. We have added an improvement here and there from time to time—but no changes from our original program.

Q.—Have there been any great chassis improvements in the last 5 years?

A.—We believe not. There have been multi-cylinder cars and multi-valve cars; but in a car under $1000 we do not believe them to be practical.

Q.—How much of the Maxwell car do you build?

A.—We believe that we manufacture more of the parts that go into our car than any other manufacturer.

Q.—Why do you do this—can you not buy parts from others cheaper than you can build them?

A.—In some cases yes; but not so good as we can build them. In other cases no, for we operate 8 great plants, have an investment that runs into many millions of dollars, carry a tremendous inventory, have a rapid "turnover" and a large one. Besides, we make parts for cars other than our own including some that cost in excess of $4000.

Q.—Has the Maxwell every modern equipment?

A.—Yes, even including the carrying of the gas tank in the rear.

Q.—Have you improved the appearance of the Maxwell any?

A.—Yes. We have made a vast improvement in the last few months—so much so that many persons thought we produced a new model. Note the illustration. This is drawn from a photograph without the slightest exaggeration.

Q.—How about parts?

A.—There are $5,000,000 in parts carried by 2500 Maxwell dealers all over the United States.

Q.—Will you reduce the present price if I buy a Maxwell now?

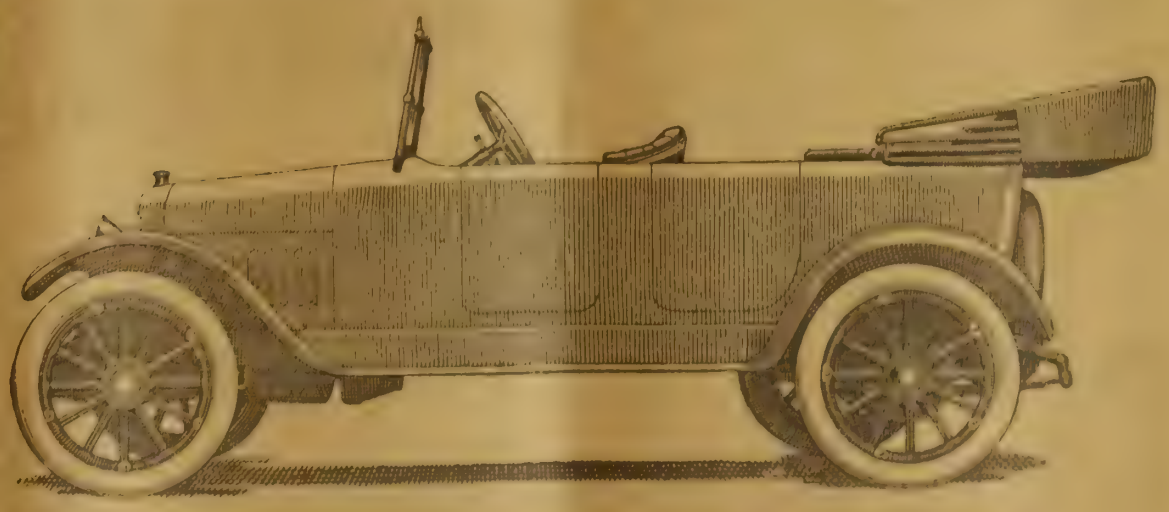
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Immediate Causes of Tree Sunscald

[Written for Pacific Rural Press.]

The temperature of the twigs, trunk and growing layer of a tree is higher than that of the air on sunny winter days. It is lower than that of the air on sunny summer days.

This short article is a valuable supplement to Dr. J. C. Whitten's article on "Frost Control in Orchards," which appeared in our issue of February 8. The definite statement contained in the above panel must serve as a basis for reflection regarding many of the mysterious ailments which affect our trees. Here are Dr. Whitten's own words in explanation:

"The coloring matter in the twigs and bark of fruit trees absorbs sun heat on sunny winter days, warming the buds and growing later to from 15 to 25 degrees above the temperature of the air—sometimes more. This has been actually worked out at the Missouri Experiment Station. On a sunny winter's day the cells and buds in the sunlight become active and turgid with sap and may grow a little; they become 'tender' even when the atmosphere itself is not warm enough to stimulate growth or activity.

"As soon as the sun goes under a cloud and also at night, the tree cools in a few minutes to atmospheric temperature. That may be freezing or below.

"This fluctuation of temperature, from perhaps 65 or 70 degrees in the daytime to below freezing at night, results in sunscald of trunk and limbs and weakening injury to the buds. Buds and cells warmed up during the day are too tender to endure safely the cold temperature at night. Sunscald begins mainly in winter.

"Whitewashing the tree reflects the heat, maintaining the tree at atmospheric pressure or a little below. It protects the buds and growing layer from wide changes of temperature and from injury.

"In summer evaporation of water from the leaves cools the tree (by cool sap coming up from the roots), keeping it from ten to twenty degrees cooler than the air. There is not much sunscald in summer unless it has begun in winter, so that the sunny side has its growing layer too dry to be cooled. This emphasizes the desirability of maintaining short, leafy twigs and fruit spurs all up and down the main limbs so as to cool them both by shade and evaporation along their whole surface. Dried out, sunscalded main limbs, bare of leaves, are not cooled much. They get very hot in the summer time.

"Pruning by 'heading back' robs and shades out twigs down on main limbs. The new method of not heading back but thinning out surplus branches—mainly above, so as to admit sunlight — encourages the growth of twigs, leaves and fruit spurs all along the lower main limbs and prevents sunscald and injury.

"The recommendation is to whitewash trees and to keep them white to reflect the sun heat during winter. Whitewash sticks on better by slacking together 15 pounds of lime, two pounds of common salt and three pounds of sulphur. Water enough to make a good wash and spray on the trees in early winter or on young trees as soon as they are planted."

Where Desert and Mountain Meet

[Written for Pacific Rural Press.]

Traveling up from Los Angeles through the Mint Canyon last November we stopped for lunch at Palmdale intending to take in Little Rock. Instead we went 10 miles east of Little Rock to the Valyermo ranch at Big Rock situated practically on the rim of the desert at an elevation of 3750 feet. This ranch is unique in a way. It stands by itself, surrounded by desert land or mountains, as it is watered by gravity with water from Big Rock Creek — using 163 inches — a filed right that has been settled by suit.

We found the owner, Dr. C. C. Evans, at home and he showed us over the ranch. The main fruit portion of this consists of 75 acres of apples and 75 acres of pears. The apple varieties grown are Jonathan, White, Winter Pearmain, Delicious, Missouri Pippin, Arkansas Black, etc.

We went into the packing house and saw the apples being graded and packed — fine, smooth, well-colored fruit, free from scab or worm. Two sprayings of arsenate of lead a year is found sufficient to keep the codling moth in abeyance. All the apples are put in cold storage till May.

But it was not so much the apples as the pears which interested us. And the points of interest were cross pollination for one thing and an alfalfa crop between the trees for another—alfalfa and melilotus alba—which points we will explain. Dr. Evans showed us a fairly thrifty looking block of Winter Nelis pears that do not bear at all. This solid block stands by itself on good ground, but higher up than the others. But the Winter Nelis among Bartletts bear regular and heavy crops, starting early. He showed us one such mixed seven-acre orchard, the same age as the above—seven years—which yielded 42 tons of pears the past season or six tons to the acre.

He also took 150 packed boxes from seven acres of three-year-old Bartletts. The doctor is now quite satisfied that cross pollination is necessary for the Winter Nelis, as demonstrated, but was unable to say whether the Bartlett was improved in production by being mixed in with the Winter Nelis, though he thinks that cross pollination is necessary or beneficial to all trees.

In the lower pear orchards he had melilotus four feet high that had been cut twice and the hay stacked on the skirts of the orchard ready to be put back as a winter mulch. Where the alfalfa was, the land is sub-irrigated and we were told that it had yielded five cuttings without irrigation, yet the trees looked thrifty and in good color. The doctor told us that the trees had improved in vigor since the alfalfa was planted—the explanation of which is that the plant takes away a portion of the superabundant moisture from below and possibly helps to drain the soil in another way through the penetration of the clay by its roots. Whatever the cause, the fact remains. We relate this as a curious incident and not a recommendation for practice, though it might be worth trying on a wet spot. Unless, however, the trees are on quince root, the probability is they would not grow very large or be very long lived unless some further method of drainage were carried out. For, although a pear tree can "stand" wet land better than many, it cannot thrive on it (except on quince root) and does not like it.

At Little Rock, which is 1000 feet lower, they have some good pear orchards, but we did not care for the looks of the apples. This seems better adapted to the pear than to anything else. As one looks across the desert from here and its beautiful soft colors dim in the twilight one remembers the school maps of forty years ago, when this country was marked Llanos Estacados, or staked plains. In the dusk, the numberless yuccas look like tufted fence posts on a billowy lake. The November air gets thin and penetrating and we hie us back to Palmdale, drain off our radiator, have our supper and hug the stove. And we are thankful we are not obliged to own all the beauties we admire up and down this enchanting State.

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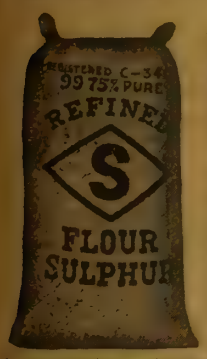
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GRAPE SUGAR FROM WINE AND TABLE GRAPES.

More than 40,000 tons of sugar, of a present value of nearly $8,000,000, can be conserved if the 250,000 tons of wine and table grapes that cannot be used next year in the usual way are made into grape sugar. This is the conclusion reached by Professors Frederic T. Bioletti and W. V. Cruess of the College of Agriculture of the University of California after an investigation into the possible utilization of wine and table grapes covering a number of months. A preliminary report of their investigations is published in a Bulletin just issued by the University Press.

The Conclusions are as follows: "About 250,000 tons of wine and table grapes cannot be used next year in the usual way. This represents a value of the raw material of over $4,000,000 and of about twice this amount in the manufactured state, as wine, etc. Their loss would involve the ruin of thousands of grape growers. If they were made into grape syrup, the product saved would be equivalent to over 40,000 tons of sugar of a present value of nearly $8,000,000.

"Investigation has shown that a grape syrup can be made which is wholesome, attractive and suitable for table use, cooking, the making of jams, and fruit butters, and for the canning of most of our fruits. Most of the equipment necessary for making this syrup already exists in the wineries and beet-sugar factories of the State and what is lacking could be easily obtained. The marketing of this large quantity of a new product could be successfully done only if many fruit canneries could be induced to use a certain quantity of grape syrup during the season of 1920. This could probably be done only by suitable governmental regulation."

The Bulletin may be had upon application to the Director of the College of Agriculture, Berkeley, Cal.

PLOW EARLY TO SAVE THE PRECIOUS MOISTURE.

(Continued from first page)

make a good job of it and you feel you can never work it down satisfactorily. To ride over those clods with a cultipacker or disk when no other tool will touch them is enough to loosen the teeth in a man's head. It even makes the horses cranky. But it has to be done. Good orchard management as regards handling of soils will always be more or less of a problem with us. We know what we want to get, but nature (and sometimes our own indecision) often interferes with our operations or compels us to repeat them. When plow time comes, it is poor policy to wait for rain. And if the weather looks settled for fair, early in March, experience has taught us that waiting on the weather is positively dangerous. Also it leads to excuses of a similar nature to those offered to the well-known "Arkansaw Traveler." The old "cracker" didn't mend his roof because it rained—didn't mend it in fair weather because it provided ventilation or something. If we have to do some of the work over again, at least we are ahead of the game in saving moisture and we have not risked anything to save ourselves trouble. A later article will demonstrate so far as possible degrees of loss of moisture from different causes.

The strawberry growers of Arnos, Monterey county, have set out thousands of plants this season and claim they will soon become one of the largest berry districts in the State. Several crates of strawberries have already been shipped from there to the San Francisco market this season.

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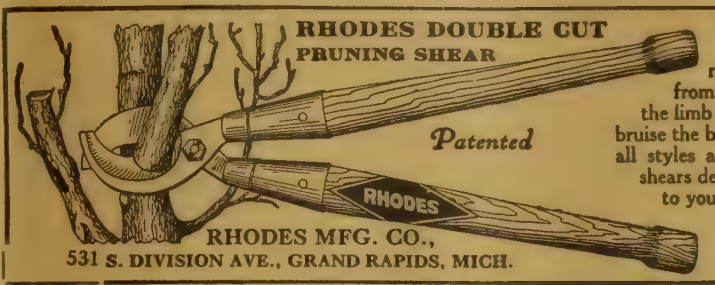
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Joy-Life in a Garden and How to Get It

[By J. W. Gregg, Prof. of Landscape Gardening, Univ. of Cal.]

Happy is he who has a home, though it be but four square walls; doubly happy is he if the possessor as well of a strip of mother earth that he may have a domain all his own; thrice happy is he whose home grounds are bright with bud, leaf and bloom, rejoicing the eye of the passerby and bringing happiness and content to the inmates of the home. The happiest days of the human race were spent in Eden's garden, and the nearest approach to an earthly paradise today is still the garden, embowered in Nature's richest green, and gemmed with lovely flowers and luscious fruits, where under one's own "vine and fig tree" one can rest or wander at will.

DREAM GARDENS.

We all have our own dream gardens in which stretches of smooth lawns appear, hedges of sweet smelling shrubs like Brier roses, Lavender, Rosemary, or of neat leaved Box, such as one sees at the old home of George Washington. We have our pictures of rose beds encircled by grass or sand covered paths, with a little fountain or bird bath nearby a cozy arbor or pergola on one side and borders filled with a variety of old-time hardy flowers fragrant with memories of other days.

Here and there a fruit tree may be growing, laden with the promise of luscious fruits, and all around is the busy hum of insect life, the flutter of birds and butterflies, and the throbbing of a hundred things from nature's great storehouse. Such things make a garden more than a dreamland, a place of great refreshing rest, recuperation, peace and happy thought.

It is a place to commune with friends, either in bodily presence or in book, a place in which to plan, to read, to rest, to work, to play. Back of all such beauty may be the vegetable garden, the drying yard, the chicken house, and household pets, together with the children's swing and sand box, as well as other happy features that serve to make a house and surrounding grounds a home.

THE IDEAL GARDEN.

The ideal garden for many flower lovers may be the one where there is something in bloom from the time of the earliest crocus in spring to the fall and hardy winter flowering ornamentals. The chief charm in many gardens lies in the ever-changing panorama of color of leaf, bud, bloom and fruit. Such a garden is a delight to plant, a pleasure to labor in, and a satisfaction to look upon. If one's place is but a small area of so many dozen square yards, it is all the more necessary to carefully plan for each feature, and the very first considerations in composition are simplicity, privacy, utility and beauty.

The planning, selection and arrangement of the features of a garden or of the grounds about the house should be as carefully considered as the choice and planning of the furnishings in one's home, or the choosing of a suit of clothes or a dress to wear. The same idea should prevail, namely, the planning of a suitable, agreeable, comfortable composition.

HOW TO REALIZE DREAMS AND IDEALS.

The garden has often been referred to as the outdoor living room and indeed it should be. In fact, where space permits, the whole grounds round a house should be so developed that there may be a series of outdoor rooms, as it were, where one may enjoy to the fullest extent nature's ever-changing beauties.

The arrangement of the walks, the grading of the lawn, the location of buildings should all be preconceived and settled in an orderly, economical manner. There should be no mistake about the main, permanent features. Minor features may be changed from year to year as new ideas and points of view assert themselves, such changes being a part of the recreation of amateur gardening. Thus one may alter the shrubbery border, change the location of annuals or perennials and perform many interesting experiments in minor arrangement without changing in any way the scheme as a whole.

HINTS FOR STARTING NOW.

In this wonderful State, where there is such a variety of soil and climatic conditions and where there is such a wealth of ornamental plants, both native and exotic, there is no reason why everyone should not be interested in having a "home" and not merely a "house and lot," particularly if the following brief principles are observed:

Make a start! Do it now!

Plan the work. Work the plan.

Plan the whole place. If you can not plant it all this year, do what you can and think about what you will do next season.

Have a lawn and keep the center open.

Don't break it up with flower beds, etc.

Plant shrubs against the house and property lines; vines and shrubs tie the house to the ground.

Keep simple; don't overload.

Screen objectionable views, and objects such as your neighbors' chicken house or garbage can.

When spacing and locating shrubs, keep in mind the mature size of the plants. Plan low growing shrubs under windows and taller growing ones against blank wall spaces.

Use coarse plants for distant effects, finer ones close to.

Don't use freaks.

Don't use too many varieties, but plant enough of one variety together to get the full effect of such massed beauty.

A "chop suey" planting gives the effect of "a little of everything and not much of anything.

Select and place plants so as to get a good combination of height, color and season of bloom.

Prepare your soil well.

PLACING AND PLANTING.

Get plants from a reputable firm, otherwise you are not apt to get good stock or in good condition.

Don't make the holes too small. Have them large enough so that the roots will not touch the sides. If the ground is hard for you to dig, remember that it will be harder for the plant, which has just gone through an operation. Don't leave the plant exposed while digging the hole. When filling in the dirt don't leave air holes around the roots, but pack the dirt firmly and soak with water to settle soil.

If you cant' afford hardy plants and annuals both, get the hardy plants first. They are a permanent investment, improve each year and are cheaper in the long run. Annuals give quick, showy display for the money invested, but are only a temporary improvement. A combination of flowers and shrubs is the best.

Put bulbs and other herbaceous flowering plants in front of the shrubs, rather than in separate beds and in formal gardens. In this way they do not leave a bare and unsightly spot when gone. Formal gardens have to be designed by an expert and need a lot of attention to be satisfactory.

In the back yard use berries and small fruits in the place of flowering shrubs. They are useful and may be made to give good effects in borders.

HOME GARDEN PICTURES.

Not one thing alone, but several, contribute to the making of attractive premises, and the neglect of one of these essentials largely mars the effect of all the rest. Flowers are the loveliest, brightest and finishing touch of home adornment, just as laces and ribbons are the last and brightest accessories of a lady's toilet.

Let us therefore decide the extent and direction of our walks and lawns, and the planting of our trees and shrubbery that are to serve as frames or backgrounds for the proper setting of our floral beauties; then we can plant flowers to our hearts' content, and enjoy them as we could not if they were scattered through a tangled wilderness of grass, shrubs, vines and trees, as we too often find them.



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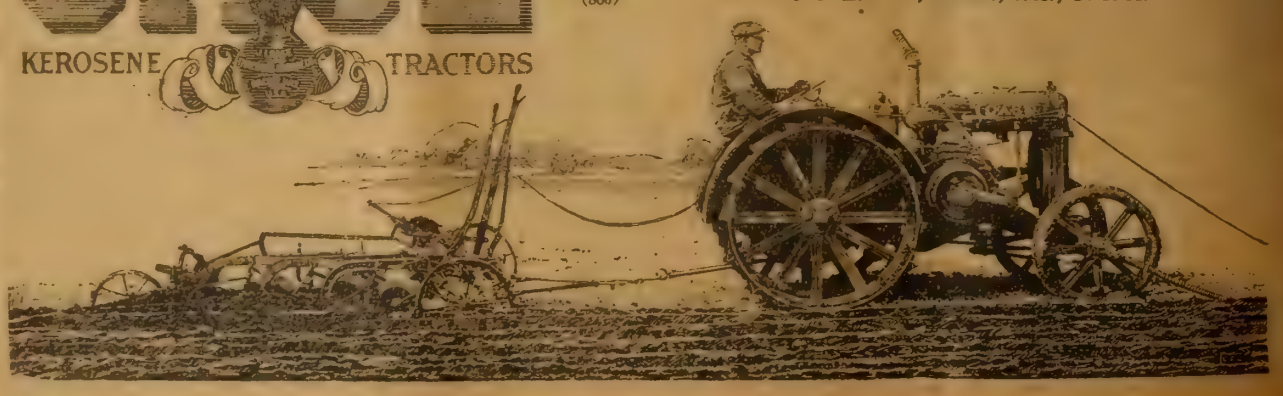
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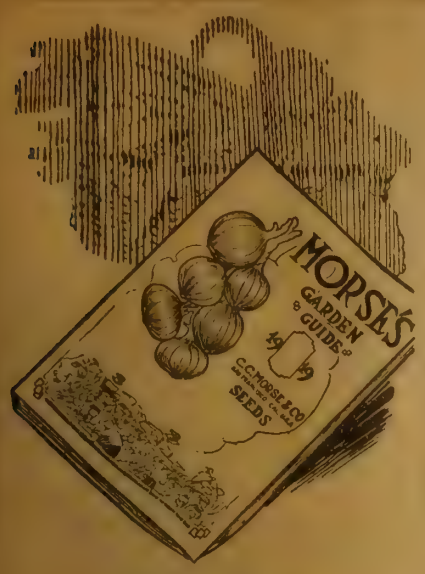
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CALIFORNIA'S SHARE IN SCHOOL-GARDEN ARMY.

[Written for Pacific Rural Press by C. A. Stebbins, Regional Director, San Francisco.]

Six hundred thousand boys and girls in California consume one-seventh of the food supply. They produce but little. Every boy and every girl, however limited his or her efforts, should be a producer. The world suffers from an over-production of non-producers. California needs the food less, but she needs the type of citizenship which would result from such a realizable ideal more.

Production is the first principle in education. The growing of plants and animals should therefore become an integral part of the school program. Such is the aim of the U. S. School-Garden Army. Therefore, the biggest piece of work on the part of the U. S. School-Garden Army in California is to urge the passage of Assembly bill 467 at the current session of the California Legislature. The bill, if it becomes a law, will touch farming rather directly in two ways:

(1) Boys and girls will develop an interest in growing plants and animals by growing plants and animals. I am inclined to think that the young man who enters upon the vocation of farming, interested only in making money, will become a discontented farmer, for he is most likely to find there hard work, long hours and not the bag of gold. On the other hand, if the young man goes onto the farm because he enjoys growing plants and animals and because he realizes that on the farm is the place to bring up boys and girls and to make his home, he will be a successful farmer in the largest sense and will be contented, although the gold does not materialize.

(2) Some few years ago, in connection with my work in the Agricultural College, I met regularly a class of boys and girls at San Leandro, at which time demonstrations connected with their school and home gardens were given. The development of one of the boys has come under my observation from time to time. Through his interest in agriculture, stimulated in the elementary school he attended, he traveled along the long road to the farm four years in the high school, taking the agricultural course, and then four years in the University of California. I am quite sure that there are hundreds of other cases somewhat similar.

Production is the first principle in education. Everything that educates a boy starts from within and that thing must be given expression, must result in doing. An educational program should include work with the hands as well as work with the head, therefore manual training, domestic science, growing plants and animals.

THE BALANCE AND A LOT MORE.

To the Editor: As far as one voice can tend to emphasize your common-sense suggestion in reference to the federation of the special purpose organizations now recognized among the agricultural interest, I wish to give my endorsement to that view. If your suggestion should be followed, the only politics to be done by the federated organization would be to throw the whole of the organization's vote to the political party which would properly foster and protect our interests. The organization would hold the balance of power, which no strictly political organization would be likely to ignore.—H. H., Sebastopol.

[Yes, that is the way it works at first when political organization goes for the offices, but in economic or industrial affairs it soon goes farther. It lays such an attractive foundation that all parties platform their candidates on it and then you are sure of getting what you want industrially, no matter what candidate you choose to vote for. It is the American labor way and it works!—Editor.]

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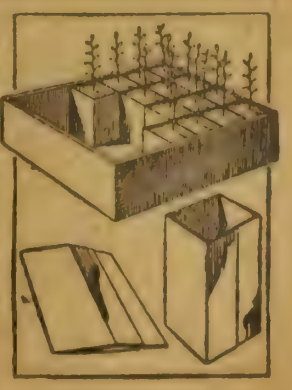
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Good Prices for Weeds and Dead Seed

[Written for Pacific Rural Press.]

A lot of alfalfa seed was offered for sale at Gustine. A farmer sent a sample of it to the Government-University seed testing laboratory at Berkeley. After receiving their report, he wrote that it had saved him at least $300. The "alfalfa" seed was sweet clover mixed with dodder.

Another sample of alfalfa seed tested at the laboratory germinated 36 per cent with 2 per cent additional of hard seeds which might have germinated if left in the ground long enough.

A sample of rye grass seed was found to contain approximately 20,000 foreign seed per pound, including 8556 of sorrel and 3036 of tarweed.

Red clover in one case was found 38.26 per cent of pure red clover seed and 58.63 per cent of other seed, including 6390 Russian thistle seeds per pound and a total of 54,000 foreign seed per pound.

A test made on one lot of alfalfa showed that it included 1.07 per cent of foreign seed, of which there were 1260 dodder seeds per pound. In sowing this almost pure alfalfa seed at the rate of 20 pounds per acre a farmer would have planted 393 weed seeds per square rod, including 157 dodder seed per square rod average all over his field.

One man sent in nine different samples of alfalfa which germinated in the following percentages: 48, 58.5, 62, 48.5, 64, 58, 64, 45, and 73 per cent. This is not so bad, because alfalfa germination is averaging somewhere around 70 per cent this season, but the man who plants alfalfa of 50 per cent germination has a right to know it, so that he can double the quantity if he wants to. A great many samples this season are germinating over 90 per cent.

One test showed alfalfa containing only one-tenth of 1 per cent of foreign seed. In sowing this alfalfa at the rate of 20 pounds per acre, a farmer would have sown 22,960 dodder seed per acre or 143 per square rod.

Two-thirds of the alfalfa samples tested at the laboratory this season contained dodder. A sample of small yellow flowered melilotus contained 14,365 black mustard seed and 7395 curled dock per pound.

No pure Johnson grass seed unmixed with Sudan has been offered for testing this season as Sudan grass, but a considerable number of Sudan grass samples have been found to contain Johnson grass seed.

Several samples of alfalfa seed the records of which were given the writer contained only 75 per cent of alfalfa. Farmers who bought 100 pounds of that seed paid alfalfa seed prices for 25 pounds of straw, dirt, and weed seed.

CAN YOU TEST YOUR SEED?

Farmers as a rule do not have convenient facilities or knowledge to find out what's in the sack and whether it will grow. If they get 50 per cent of the stand they should have, they get somewhere around half as much hay per acre and it is not of so good quality. Figuring on four tons of alfalfa hay as a good crop the first year and a loss of half due to poor stand and weak plants, the use of poor germinating seed has cost the grower two tons of hay per acre the first season. That is rather expensive seed! But its cost could have been brought down to not more than twice what it should have been if he had bought and used twice as much seed per acre.

INSIST ON LABELED SEED.

Wouldn't you like to know the germinating power and the purity of the seed you use? If the bill introduced by Senator E. S. Rigdon in the Senate and by Assemblyman F. J. Cummings in the Assembly becomes law, you can find the germination and purity by looking at the label. It will become law at the session of the Legislature beginning February 24 only if it is well enough supported by seed users. As introduced, it includes all seeds except flower and garden vegetable seeds. They are to be labeled as to germination and purity, and in the case of cereal and alfalfa seeds with the locality where grown. A gate is left open by providing that growers may sell to planters by labeling the seed "not cleaned." But any person will have a right to send seed to the State Horticultural Commissioner for test, probably at no cost. Details of the bill are sketched more fully in our issue of January 25. If you want it passed, write to the Senator or the Assemblyman who introduced it, telling why you want it passed. Address them at Sacramento. Do it now. You can't depend on George to do it. Everyone counts, for Mr. Rigdon and Mr. Cummings will need the support of You.

What's in the Seed You Buy?

[Written for Pacific Rural Press.]

A sample of white sweet clover seed tested at the Government-University seed laboratory at Berkeley contained 56 per cent pure seed, 39.63 per cent alfalfa, 4770 green foxtail seed per pound, 2610 Fremont's goosefoot, 180 gum weed, 90 yellow thistle, 90 Russian thistle, 90 pigweed, 90 compositae, and some yellow-blossom sweet clover. The man who bought it may have been disappointed.

Celery seed of one lot tested for 24 days showed one per cent germination. Another lot germinated 72.5 per cent in 20 days. Another germinated 56 per cent, and another in a 29 days' test germinated 60.5 per cent.

Three samples of beet seed germinated 59, 85, and 63 per cent respectively within 11 days.

Other lots tested 93, 76, 61.5, 91, and 63 per cent germination. Others tested 12 days germinated 80, 35.5, 85.5, and 36 per cent respectively.

Alfalfa seed containing one-sixth of one per cent of foreign seed had 450 dodder per pound, which meant that 45 dodder per square rod would be sown with that alfalfa at 20 pounds per acre. Another lot included enough to sow 53 dodder per square rod. Another lot 98.59 per cent pure alfalfa contained enough to sow 96 dodder per square rod.

Several lots of squash germinated 66.5, 23, 83.5, and 94 per cent within six days. The writer has planted some worse than one of that.

Some small yellow-flowered melilotus included 3420 black mustard seed and 3150 curled dock per pound besides an assortment of other weeds.

Parsley germinated 68 per cent in 28 days and spinach germinated 85.5 per cent in 16 days.

Carrots germinated 68, 70, 66.5, 80, and 86 per cent respectively for various lots in a 14-day test.

Radishes germinated 97.5, 93.5, 99.5, and 95 per cent.

A lot of bur clover seed was offered for sale as alfalfa.

A sample of red clover 67.97 per cent pure contained 11,880 lambs quarters seed per pound. Another contained 9270 Russian thistle per pound.

A sweet clover seed sample contained 360 dodder seed per pound, though it contained a total of only 0.93 per cent of foreign seed.

Alfalfa seed found 74.42 per cent pure contained 9360 canary grass seed per pound, 4320 charlock, 1358 chicory, 990 wheat, 90 dodder, etc.

Sweet clover of 99.05 per cent purity contained 85 Johnson grass seed per pound, 170 curled dock, 85 green foxtail, and 85 salt bush.

Four lots of melilotus indica showed in a seven-day test respectively 57 per cent germination and 31.5 per cent hard seed; 28.5 per cent germination and 57.5 per cent hard seed; 72.5 per cent germination and 20 per cent hard seed; and 64.5 per cent germination plus 19.5 per cent hard seed.



Multiplexing the Telephone

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The vision of the engineers has foreseen requirements for increased communication, and step by step the structure of the art has been advanced—each advance utilizing all previous accomplishments.

No one step in advance, since the original invention, is of greater importance, perhaps, than that which has provided the multiplex system, by which five telephone conversations are carried on today simultaneously over one toll line circuit, or by which forty telegraphic messages can be sent over the one pair of wires. As in a composite photograph the pictures are combined, so the several voice waves mingle on the circuit to be again separated for their various destinations.

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TOMATOES AND KENTUCKY BEANS.

To the Editor: I note in your February 1 issue an item on tomato canning contracts. I believe growers in some sections are receiving all of $22 to $25 for the coming crop. Kindly inform me just who the "good people" are who believe in paying such remunerative prices. I have a couple of acres of rich bottom land very suitable for tomatoes and understand that only $16 to $18 is paid in San Jose. Also do you know who contracts for Kentucky Wonder beans dried? A local concern is canning green Kentucky Wonders. Just what is a good yield per acre of green beans?—C. W. G., Watsonville.

The tomato item you mention did not appear in the Pacific Rural Press of that issue nor in the one previous. We believe no one is contracting at that price for any considerable quantity. The California Packing Corporation has paid up to $20. The Hogue-Kellogg Co. of Ventura contracted for some dried Kentucky Wonders last year in behalf of an Eastern seed firm. An approximate average yield of green Kentucky Wonders is about three tons per acre.

GOOD WORDS FOR TEPARIES.

[Written for Pacific Rural Press by H. G. G., San Jose.]

May I say a good word for the Tepary bean? Two years ago we planted one pound of the beans and after they had endured a season of utter neglect we harvested 15 pounds. These were put away and forgotten till this winter, when we expected to find them destroyed by weevils, but there were very few of those pests to be found. The beans furnished several hearty meals and were prepared as follows:

Soak 2 cups of beans 12 hours; boil in ample water with ¼ teaspoonful of soda till they froth; skim that all off and boil till they begin to soften; add a tablespoonful of sugar, a pinch of poultry seasoning, a teaspoonful of fat, a teaspoonful of salt, and boil till really soft.

If preferred rather dry finish in the oven in a covered dish. A very tasty way is to boil a piece of fat pork with them and on putting the beans in the oven slice the bacon, sprinkle it with sugar, lay over the beans, and brown crisp.

We would like to know if Mrs. Swaysgood would approve of feeding Tepary beans raw to hens. Our hens greedily eat every bean they can find, and as beans are so much easier to raise than corn, can they be fed safely?

MOLDBOARD FOR HILLSIDES.

To the Editor: Which will give best satisfaction on hillsides when pulled by a tractor—a disk plow or moldboard plow?—C. H. M.

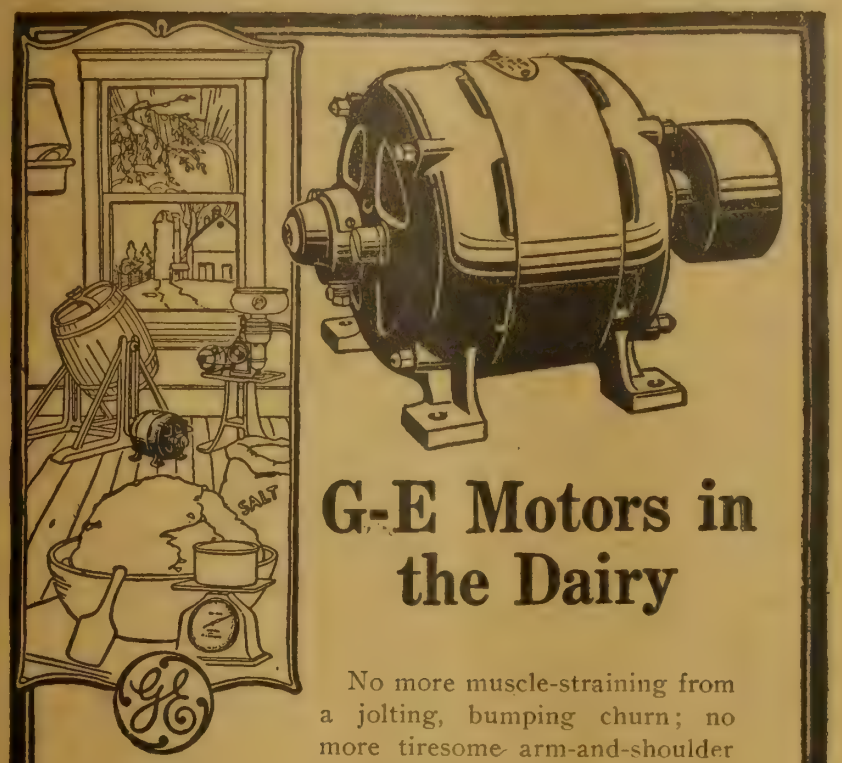
A moldboard will keep to the furrow better and will probably enable you to get closer to the trees on a hillside.

A tractor short course under auspices of the University of California is to be held February 24 to March 1 at the Riverside Citrus Experiment Station. This includes lectures and practice in management and repairing of tractors. Last year over 40 applicants had to be turned away. Enrollment will be in order of applications accompanied by $1 registration fee.

Last year there were 2021 acres in sweet potatoes in Stanislaus county producing 9094 tons of marketable tubers, according to the county horticultural commissioner, A. L. Rutherford.

The immense stock of beans in the warehouses of Stockton will soon be moved. California is to receive 65 per cent of the purchase orders of our own and allied governments. Europe is hungry and wants them.

A carload of dwarf milo and white feterita was recently shipped by the Mills Orchard Co., at $2.55 f. o. b. Colusa.



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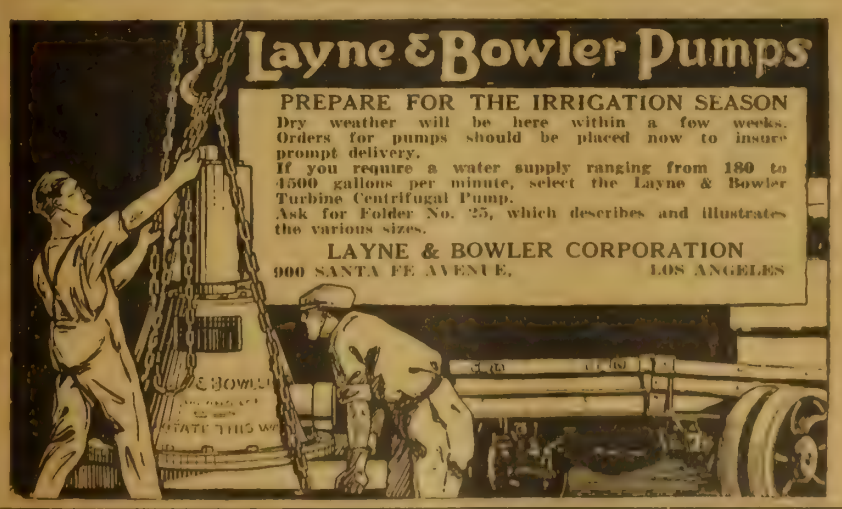
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ARCADIAN Sulphate of Ammonia is the well-known standard article that has done you good service in your mixed fertilizers for years past. Especially kiln-dried and ground to make it fine and dry. Ammonia 25¼% guaranteed. Made in U. S. A.

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C. E. HOUGH. Conn.

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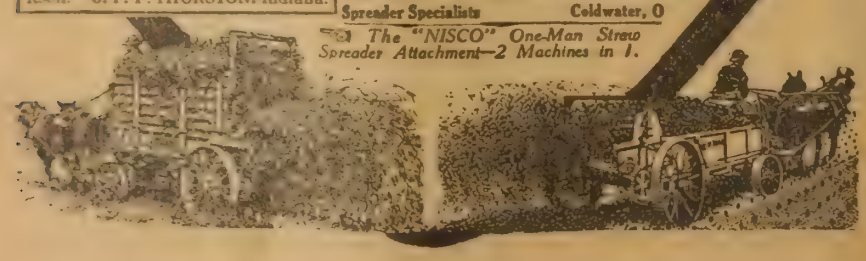
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Field and Garden Suggestions

[Written for Pacific Rural Press.]

New Varieties of Field Crops.

Clean seed of new varieties of grains, beans and forage plants which are continually being tried out at University Farm ought to be obtainable for farmers to try out in various sections if they prove any superiority at Davis. For instance, the agronomy department there has all the seed of Harding grass, concerning which Prof. P. B. Kennedy recently wrote for the Pacific Rural Press. Prof. G. W. Hendry points out that many acres of the Farm are growing stock feed instead of trying out new varieties as they might, if the Department had laboratories, seed cleaning and testing equipment, and other facilities to carry on the work. He feels that the $15,000 asked for such a building and equipment will be quickly returned to taxpayers in the shape of better varieties of staple field crops.

Wire Fences Discussed by Cattleman.

"I believe it would be to the general interest of stockmen in the snow country to abandon barbed wire," says Assemblyman M. B. Browne, a stockman of Sonora, Tuolumne county. Mr. Browne owns 3400 acres of grazing land, and rents about 3100 acres in the foothills and mountains. He has found that tightly stretched barbed wire rots in two years so it can be pulled apart by hand, due to the strain caused by contraction in the cold weather. But his square-mesh wovenwire fence nine years old is still an effective barrier to cattle, which never try more than once to break it down. The kinks in wovenwire permits its contraction in cold weather. This fence is 47 inches high and cost $150 to $200 per mile to put in, but is considered cheapest at that.

Sudan and Johnson Grass Seed.

To tell whether a seed is Sudan or Johnson grass is easy enough when they have their outer coats or glumes on. The Johnson grass seed breaks off at a joint close to its base, while a Sudan grass seed carries with it a cone-shaped chaff extending below the base of the main glume about one-quarter of the length of the latter. It is scarcely possible to be sure of the difference after these outer coats are taken off (decorticated), though the Johnson grass seed is a little smaller and the flat or hollow place on its side near the base is narrower in proportion to its length and less rounded than that on Sudan seed. When there is any suspicion of Johnson grass in decorticated seed, the best practice is to send it to Miss E. O. Gilbert of the Government seed laboratory at Berkeley.

Dry Plowing for Beans After Grain.

An average of 22 sacks of Mexican Red and Lady Washington beans on 24 acres, and an average of 28½ sacks of Mexicans on 4.7 acres was made last season following a grain crop of barley by R. H. Frazer of Stanislaus county. Mr. Frazer prepared for these as described in an article in Pacific Rural Press last spring. The land was dry plowed after grain was off, and then irrigated, worked down, and planted shallow so the beans were up in a good stand within a very few days, with minimum loss of moisture, minimum loss of time for growing, and minimum chance for weeds to get started.

Bearded Sahara Rice.

Two hundred acres of bearded Sahara rice, planted by J. V. Biard of Glenn county last year where he got a poor stand at the first planting, yielded only 30 sacks per acre. The Wateribune variety yielded up to 60 sacks per acre on one piece of ten acres and the whole planting of 1360 acres averaged a great deal more than 30 sacks. The chief value of the Sahara variety, as learned by Mr. Biard, is its shorter growing season, enabling it to mature earlier and safer from fall rains, or to be planted later in the spring where other plantings fail.

Paying Grain Buyers $75,000.

Figuring on the percentage of profit allowed to grain buyers by the Government during the war, J. L. Mendenhall of Colusa county asserts that grain growers in that county are paying about 20 local buyers $75,000 a year chiefly to sample their grain. Mr. Mendenhall last season offered to give a bond that he, with one man and a stenographer, could grade all grain in the county for $5000. He urged grain growers to organize a central selling agency to which buyers could come.

Bean Straw Increased Barley.

One season Fred Onstott of Butte county failed to get barley on an 80-acre piece. He planted beans and neglected them so that they were not harvested, but plowed under. In the next season, barley on the beanvine ground yielded 10 sacks per acre more than the rest under similar conditions. This has led him to provide in the lease under which another man is to raise beans on 300 acres this season, that all of the bean straw must be used by livestock on the ranch or else left to be plowed under.

High Yield of Honey Sorghum.

Fifteen acres of honey sorghum were grown last year by the Mills Orchard Co. of Glenn county. Ninety-eight sacks of seed were obtained from the first cutting from five acres. This was about two-thirds of what grew on it. From the other ten acres they filled a 150-ton silo and had about 35 tons besides, according to Foreman F. L. Shank. This was fed mostly to dairy stock which ate it with relish as they had eaten two silofuls the year before.

Late Irrigation Helped Barley.

Barley on lowland that had not yet ripened last spring when a three-day hot spell came, ripened suddenly and made poorer barley for J. H. Guill Jr. of Butte county than barley along the hills which had ripened naturally because of conditions favoring maturity there before the hot spell came. However, the plumpest barley on the lowland was that which had been flooded with the last of the ditch water in May.

Onion Seed Germination.

Good onion seed will germinate 90 per cent the first year, 80 per cent the next year, 65 to 50 per cent the third year, and cannot be depended on at all after it is three years old, according to a well known seedsman. Several samples of last season's seed tested at the Government laboratory germinated in a nine-day test 87, 88.5, 85 and 41 per cent respectively.

Where Goes the Tax Money?

"Except for better schools, there is no better way to spend tax money than for better roads," says Assemblyman W. A. Doran of San Diego county. "These are practically the only places where taxpayers recognize return benefit for taxes of which there are $9,000,000 more now than four years ago."

Planting Unrecleaned Grain.

Did you drill unrecleaned grain and did you get a poor stand because beards and straw and trash stopped up some of the drill holes? And did you find that along with the barley you had planted a lot of weed seed which could have been cheaply taken out in a cleaning machine? Will you reclean your grain seed next year?

Seed Potatoes Ready Dipped.

Seed potatoes already dipped in formalin solution and dried are offered by J. M. Bomberger to see whether people appreciate having this work done for them. He soaks them an hour in a mixture of two ounces formalin per gallon of water to kill scab, etc. This takes about one ounce of formalin per bag.

$1475
F. o. b. Racine

New Mitchell Sixes

Wheelbase 120 inches
Long-stroke Six motor
Cylinders 3¼ x 5
Tires 34 x 4

A Completely New Six

Over 100 New Standards—75% More Endurance

The war has enabled us to do in 18 months what we might have spent years to accomplish. The great Mitchell factory was given to truck building. Our engineers and specialists had 18 months to bring out a new Mitchell, built to new standards.

The result is that now we are able to offer our new conception of a lasting Six. There are more than 100 improvements, 50 per cent added strength, 75 per cent more endurance, 25 per cent more economy and 20 per cent greater beauty and comfort.

It Had to Come

Two years ago we decided, for our part, that the Light Six type should be bettered. It had been too light. Experience had shown that the boasted over-strength was too often under-strength.

Fierce price competition had forced makers to skimp. Then ideas were changing. Buyers bought their cars to keep, and they looked for many years of service.

The Mitchell was great and successful. In 14 years it had won a world-wide fame. But we knew that all Light Sixes, including the Mitchell, must adopt new standards to meet new-day expectations. And we started then to make our preparations.

New Specialists

We added to the Mitchell staff many new specialists. These were men who had made their mark in high-grade car construction.

Then came the war, and with it came their unique opportunity. For 18 months, while we built trucks, they worked on this new model.

They made over 100 important improvements. Part by part they added an average of 50 per cent more strength. They spent over $250,000.00 for new machines and equipment, just to build parts better and to test them better. They created a staff of 135 trained inspectors, to measure and test and insist on perfection.

The result is this new-standard Mitchell, combining 100 of the greatest advances that ever were made in Sixes.

New From End to End

The design is new, the color and the top. The radiator is larger, and the wheels, with 34x4-inch tires.

The steel frame is deeper, adding 50 per cent to the strength. Rear axle strength is increased 50 per cent, brake efficiency 75 per cent. The gears are 25 per cent stronger by actual crushing test.

There is a new-type disc clutch. There are 123 drop forgings. Chrome-Vanadium and Chrome-Nickel steels are lavishly used in construction.

The ball-bearing steering gear is made 10 per cent stronger. Our new crank shafts show a tensile strength of 150,000 pounds per square inch. They are perfectly balanced on two costly machines.

Gasoline Saving 25%

Gasoline and oil cost is reduced 25 per cent. This largely comes through the use of a thermostat to regulate the water system. It controls the temperature of the air, liquids and gases. The carburetor intake is twice better heated, so the gasoline is vaporized and combustion is complete.

To make staunch bodies we use frame material costing twice the usual. We use interlaced hair in the upholstery. We use four coats of varnish, instead of the usual two, to double the life of our finish.

We give ample room with a 120-inch wheelbase. Compare that with other 5-passenger Sixes.

But one part could not be bettered—our long cantilever rear springs. Out of 40,000 now in use, not a spring has broken. And they have made the Mitchell the easiest-riding car in its class.

Undersells All Rivals

This new Mitchell, despite all these new standards, still sells below all comparable cars. That is due to our wonderful factory efficiency, which has made the Mitchell plant famous. We build the complete car—chassis and body—under scientific methods, which reduce labor cost to the minimum.

Write us for further details. Then go over this new car, part by part with your nearest Mitchell dealer. When you know this car, you will want this new strength, new endurance, new beauty, new economy.

Mitchell E-40

Price, $1,475, f. o. b. Racine

Wheelbase, 120 inches, 40 horsepower

Six-Cylinder Motor

Cylinders 3¼ x 5. Tires, 34 x 4

3-Passenger Roadster, same price

We also make a Touring Sedan

MITCHELL MOTORS COMPANY, INC., RACINE, WISCONSIN

Farming Interests in Legislature Committees

[Written for Pacific Rural Press.]

To the Editor: Many of your readers would be interested to know the agricultural interests of the various committees of the Legislature who will deal with bills affecting farmers.—C. J. F., Eureka.

We have the data for only a few of the committees. We give below what we know of them. Assembly Agricultural Committee: Ivan H. Parker of Auburn, chairman; owns 3300 acres, mostly unimproved; has sold 16,000 acres of Placer land in past six years; depends on farm prosperity for his own business prosperity; favors extension of State land settlement, good roads, and all bills for good of agriculture. Chas. W. Cleary, Lindsay; has ten acres of oranges and is president of the local Farm Bureau Center. Carlton W. Greene, Paso Robles; attorney; has 640 acres in cattle ranches; boosting squirrel control and local University experiment station. Mrs. Elizabeth Hughes, Oroville. W. J. Kenney, San Francisco, merchant. C. M. Kline, San Jacinto, publisher in fruit district. Ed Lewis, Marysville wholesale grocer, with farm seeds department; business established on farm seeds and supplies; depends on country for support and says he will vote for measures of benefit to farmers. W. J. Martin, Salinas, extensive stock raiser. W. C. Oakley, Santa Maria; farms between four and five hundred acres of grain and beans; operates biggest bean threshing outfit in northern Santa Barbara county; has over two hundred hogs and over two hundred cattle. Oscar L. Odale, Lemoore; has 45 acres of raisins; believes in State encouragement of cooperative marketing of farm produce and subdivision of large land tracts; stockholder in local creamery and director of Kings County Canning Co. Melvin Pettit, Parlier; fruit grower. J. Leonard Rose, Newark; attorney and extensive dairyman. Guy Windrem, Madera; has ten acres olives, ten of figs, five of other fruits, and some other farm land; believes in organization of growers to hold prices down to encourage consumption, referring particularly to figs last season.

SENATE AGRICULTURAL COMMITTEE.

E. S. Rigdon, San Luis Obispo, chairman; owns and operates the farm he was born on; does general farming; has championed farm bills during three terms in the Legislature; "producers' interests first and all other interests afterward." Frank S. Boggs, Stockton; farms 1000 acres adjoining Stockton, including the prize sugar-beet crop, beans, potatoes, alfalfa and dairy outfits. W. E. Brown, Los Angeles; no agricultural interests. F. M. Carr, Oakland; family always financially interested in farming; brother owns 30 acres apricots and cherries in Alameda county fruit district, which Mr. Carr represents along with Livermore Valley and hills surrounding it. S. C. Evans, Riverside; banker in citrus and farming district. Herbert C. Jones, San Jose; attorney in deciduous fruit district. L. M. King, Redlands; newspaperman, banker, orange growing on the side; member Farm Bureau. Benjamin F. Rush, Suisun; stock raiser and general farmer all of his life on large scale; consistently supported for eight terms in the Legislature by Solano county farmers. William S. Scott, San Francisco; born and raised on a fruit and alfalfa ranch near Woodland; lived two years on a 200-acre ranch in Fresno county, then moved to a 40-acre fruit ranch at Selma; been in San Francisco since 1904 and has farm viewpoint along with city business efficiency.

ASSEMBLY LIVESTOCK AND DAIRIES.

Frank J. Cummings, Ferndale, chairman; dairyman and proud of it; has been president of the dairymen's association and is president of the Humboldt County Farm Bureau. M. B. Browne, Sonora; owns 3400 acres of grazing land and rents 3100 acres in foothills and mountains; has 300 breeding cattle and does a slaughtering business. Bismark Bruck, St. Helena; born on a farm and still farming, mostly grapes but some hay, corn, and dairying; member Grange and Napa County Farm Bureau. W. A. Doran, San Marcos, San Diego county; has 100 acres alfalfa, grain, and dry farming, but is planting to cling and Hale peaches. G. M. Easton, Los Angeles; buys as much as 3100 tons of hay per season throughout southern California and the San Joaquin Valley for the Cudahy Packing Co., who continually feed about 1900 cattle and 3500 sheep; also buys beet tops and bean straw; in touch with many farmers. Carlton W. Greene; see Assembly Agricultural Committee. J. E. Manning, San Anselmo; attorney representing dairy county. C. C. McCray, Redding; mining interests. W. C. Oakley; see Agricultural Committee. J. L. Rose; see Agricultural Committee. Guy Windrem; see Agricultural Committee.

ALFALFA ASSOCIATION SELLING 1918 CROP.

[Written for Pacific Rural Press.]

A grower of alfalfa hay was offered $17 per ton by a dealer for a carload of his crop. The California Alfalfa Growers' Association sold the carload to a consumer at less than the dealer could have sold it and returned $18 per ton to the grower.

The association expects to have sold all of the 15,000 tons of hay now offered by its 1200 members before the new crop comes on, according to J. P. Satterlee, their San Francisco representative. The Los Angeles office has been selling up to seven carloads per day since New Year's and the San Francisco office is handling 60 to 100 carloads per month. There is no difficulty in selling the small tonnage of first-class hay at approximately the prices quoted in the Government bulletin, but these prices are lower than they should be on account of the psychological effect of the low prices for which the rain-damaged hay has had to sell. However, daily arrivals of hay are received to be sold on commission in the San Francisco market in addition to the sales made through the association direct to consumers. It is intended that the association shall contract the 1919 crops of its members to dairymen and others at competitive prices, thus insuring early sale of their crops. This selling is done on Wholesale Hay Dealers' Association grades, as graded by the grower with the help and advice of the association. The association guarantees the grade in making a sale, according to the report filled out on a printed blank by each grower stating how much hay of each quality he has for sale.

HOW HAY CONSUMERS BUY.

As the association sells only in carlots, the way for consumers to buy at producers' prices is to organize and appoint a business agent who can obtain credit, buy in large quantities, and distribute to members of the organization. The Northern California Dairymen's Association of Sacramento has such a manager, as also has the Humboldt County Farm Bureau. Thus can consumers buy cheaper and producers get better prices. Then also can each understand and help in solving each other's problems.

WASHINGTON ASPARAGUS
GROW THE BEST
Bred by Government experts for **improved size, color, quality, and rust resistance,** using as a basis the English Reading Giant asparagus imported for this purpose by A. D. Shamel, Government plant breeder, now of Riverside, Cal.
IDA L. PRESCOTT, Concord, Mass.
32 MONUMENT ST.

As You Sow—



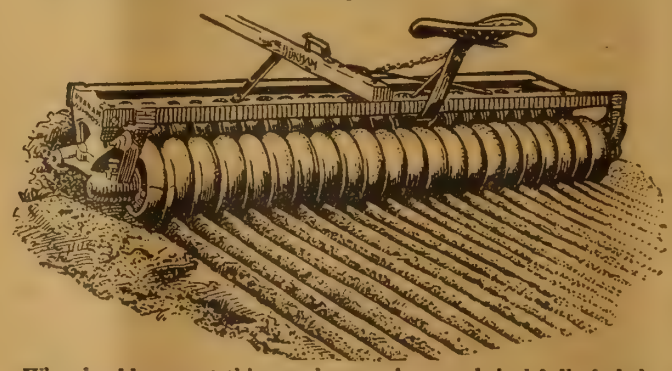
This field directly adjoining the one at the right was put in ideal shape for seeding by one operation with the double disc harrow and the Dunham Culti-Packer pulled by a tractor.

DUNHAM CULTI-PACKER
TRADE MARK REG.



After plowing, an attempt was made to fit this field by use of the disc harrow and peg tooth harrow behind the tractor. Compare with the field at the left where the same amount of work was done by a disc harrow and the Dunham Culti-Packer.

The only difference between these fields was in the use of the Dunham Culti-Packer for fitting the seed bed. Soil, seed, fertilizer and other conditions were the same and yet look at the tremendous difference in the condition of soil and in the final yield.



All Drawings Made from Photographs

All Drawings Made from Photographs

Why should you put this year's crops in a seed bed full of clods or peppered with air spaces in which plant roots can find no food. Why should you let a crop become stunted for lack of moisture when here is a remedy for all of these troubles, tested and proved by agricultural authorities?
The Culti-Packer is successfully used on all crops—wheat, oats, corn, alfalfa, cotton, rice, sugar cane, sugar beets, flax, potatoes, etc.
The Culti-Packer will crush every lump, releasing great quantities of plant food which would otherwise be lost. It will firm out air spaces and pack loose soil around the seed, thus attracting moisture, causing quick germination and giving immediate nourishment to the first rootlets. At the same time the Culti-Packer stirs the surface forming the mulch which will retain moisture in dry seasons.
Make your 1919 Seed beds worthy of a better harvest with the Dunham Culti-Packer.

Talk with any John Deere dealer about the Culti-Packer. Ask him for copy of the 56-page illustrated booklet Soil Sense.



This wheat field yielded 46.3 bushels per acre. An increase of 16.8 bushels over the field at the right, due entirely to the use of the Culti-Packer in making a perfect seed bed.



The yield from this wheat field was only 29.5 bushels per acre, yet it had exactly the same soil, same fertilizer and same seed as the field shown at the left. The Culti-Packer was *not* used.

CULTI-PACKERS FOR SALE BY
JOHN DEERE DEALERS

THE DUNHAM CO.,
Berea, Ohio
(Suburb of Cleveland)

You Shall Reap

For Modern Uniform School Buildings

A State Inspector of School Buildings and Sanitation is to be appointed by the State Board of Education, as provided in a bill introduced by Senator E. P. Sample of San Diego. The Inspector's duties are to visit all elementary and secondary schools of the State to investigate their architecture and sanitation. He may order changes deemed necessary to welfare of the pupils, including the planting of fruit trees and ornamentals, total first expenditures for such purposes in any one rural district not to exceed $250, and later expenditures not over $100 per year. He may have this work done if school trustees fail to do so and draw a requisition on the county auditor to be charged against the district. The Inspector is to advise with various boards regarding new school construction or remodeling old buildings in order to secure modern conditions and uniform architecture. He may provide plans and specifications; and all building plans for schools must receive his approval before building is commenced, except in incorporated cities.

The Inspector's salary is to be $4,000 per year and expenses and he is to be allowed such assistants as may be necessary. State Superintendent of Education Will C. Wood says such a man would save ten times his salary besides securing better health and attractive surroundings for school children. The appropriation asked is $15,000 for the next two years.

HARD ALFALFA SEED—POOR GERMINATION.

[Written for Pacific Rural Press.]

Almost every sample of alfalfa seed, and many samples of several other legumes, contain seed whose hard coats resist softening for a year or more, with the result that a poor stand is obtained the first year and perhaps permanently. A few illustrations of this are given from tests made at the seed laboratory at Berkeley:

SEED UNGERMINATED BECAUSE OF HARD COATS.

Kind.	Germination percentage.	Per cent ungerminated due to hard coats.
Alfalfa	74.0	11.0
"	81.0	13.5
"	74.5	13.5
"	53.5	34.5
"	56.5	31.0
"	67.5	16.5
"	64.0	25.5
"	48.5	39.0
"	91.0	4.0
"	50	44.5
"	58.5	41
"	51.5	39.0
"	42.5	53.5
"	66.0	30.5
White sweet clover.	60.0	24.5
" " "	6	69.5
" " "	18.5	73.5

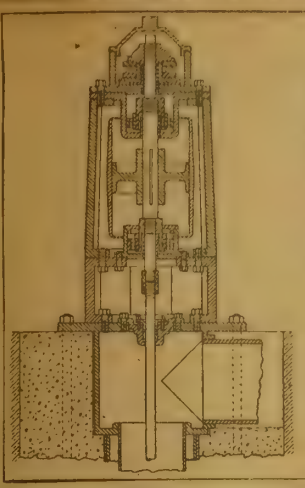
Most of these hard seeds are perfectly good and will grow promptly after planting if their coats are scratched or "scarified" to permit soil water to soak in.

When a quarter to one-half of a year's crop is likely to be lost because of these hard seed, it will be cheaper to pay a little extra for the scarifying, which is done commercially by seed houses, or buy extra seed to insure a good stand the first year and let the hard seed soak for a year or two in the soil, where they may perchance sprout later in places where the stand is weak.

KNOCKERS DON'T HELP ANYBODY.

California has lost good settlers who had actually paid one-third cash for land and had enough money to live on for a year. These are of a class most desirable from the standpoint of citizenship and prosperity for the State, yet they were lost because of local knockers who went about with insinuations and more or less distorted facts. A case we have in mind is the Orland Government Irrigation Project and the Capay Ranch nearby. Settlers have actually become so discouraged after buying land in one or the other of these subdivisions that they have left the State and in some cases abandoned their ranches. The cause was not their inability or difficulty in making the ranches pay, but it was the knocking of certain local malcontents before they had a chance to prove their ranches. Truly such faint-heartedness is not to be commended; but the knockers whose knocking leads newcomers to our State to move out again is to be most severely condemned. And civic organizations at Orland have recently undertaken to knock the knocking.

Every season that we harrow barley after it is up we say we will do it next season, says Fred Onstott of Butte county. We don't always get to it, but the extra work is well repaid in barley, especially if the surface gets crusted.



DEAL DIRECT WITH MANUFACTURER
SAVE AGENTS' PROFITS

When goods are sold through agents or middlemen you can rest assured that the agent's commission and dealer's profit are added to the price received by the manufacturer, and as "the consumer foots the bills," he pays all these profits and commissions.

After twenty-one years experience with agents we have decided that in the future we will sell direct to the consumer at wholesale prices giving the buyer all these profits and commissions.

Therefore, if you want to save money, BUY AT WHOLESALE and at the same time get the

Best Pump On Earth

Write for catalog and price list of the
P.K.WOOD DEEP WELL PROPELLER PUMP
WOOD PUMP CO. 935 N. Main St., Los Angeles, Cal.



Saves Crops and Labor By Cutting Twice as Much Grass in Same Time

Labor saving and crop saving are going to be more important than ever before in the history of the world.

The E-B (Standard) Mower is a big aid to conservation of man power and increase of crops.

With its eight foot swath it does more work in less time with no more pull on the horses than many a five foot mower. Also made in 7, 6, 5 and 4½ foot sizes, with correspondingly easy pull.

The E-B compensating lever and spring carries the weight of the cutter bar on the drive wheels. No side draft. No weight on the horses' necks. Less wear and tear and longer life to the machine.

Do your mowing with the E-B and you'll have a more successful haying season, less work, a better crop.

See your E-B dealer and have him explain all of the points of E-B Mower construction.

EMERSON - BRANTINGHAM IMPLEMENT COMPANY, INC.
Established 1852 ROCKFORD, ILL.
The Most Complete Line of Farm Machinery Manufactured



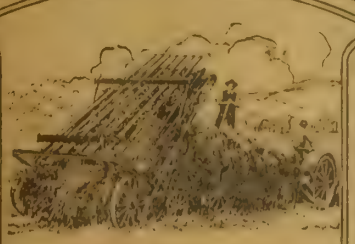
E-B Side Delivery Rake
Rakes Three Acres in the Time of Two

Three swaths instead of two, three acres while others rake two, that is the story of the E-B Side Delivery Rake.

Labor saving, time saving, when time means the difference between a good crop and a poor one. Light, fluffy windrows that allow the hay to cure gradually and thoroughly.

Teeth can be changed from seat for wet hay or dry. Lever changes from rake to tedder instantly.

See your E-B dealer for complete facts.



E-B Hay Loader
Gets All the Hay - Without Wadding, Rolling or Twisting

The E-B Hay Loader cleans the windrow as it goes along. It handles the hay gently does not tear stems and leaves or thresh out seeds. 66-inch sweep of rakes parallel to ground assures clean raking and easy action.

Continuous push upward prevents hay being drawn off rack hay may be allowed to accumulate at rear of rack without clogging. Put an end to the hardest work of haying by putting an E-B Hay Loader on your farm.

Get complete facts from your dealer.



E-B Swinging Stacker
Lifts the Hay High – Places It Where You Want It

Building a firm, well-shaped stack is easy with the E-B Swinging Stacker.

Simple in construction, with strong wood frame and powerful steel angle plate and cast hinge block.

Load of hay received from rake after being carried upward is easily swung into any desired location by operator and dumped.

The rapidly increasing number of E-B Stackers used by the most progressive farmers in the country is proof of their being practical for your farm.

MONEY MAKERS

TO MEND GRAIN BAGS

Spread cold flour paste on the patch, put the patch inside the bag, lay a piece of brown paper over the hole, and press the patch with a hot iron. The pressure of the grain in the bag will tend to hold the patch instead of pushing it off. If pepper is put in the paste it will keep mice away.

TO MAKE A HOG SHELTER

Serve for two lots, set two of the fence posts where you want the shelter to come and use them for the center props. Build half of the roof on one side and half on the other. The same may be done with watering troughs or feeding platforms.

BANG! WENT THE CALF'S HEAD

Into the milk pail, and the milk splashed all over everywhere when the pail tipped over. The man lost his temper and the calf missed a good meal. And all the trouble might have been prevented had the man driven four pieces of 2x4 into the ground so that the pail would set firmly inside of them. This simple plan saves milk, time and temper, and what farmer doesn't need to save all three?

TO PREVENT HOG FIGHTS

Take one-half pint of turpentine and a third as much lard, mix and rub on the noses of the hogs; then turn them in together. Funny, but they won't fight at all, and the turpentine and lard can't hurt them. This method has never failed to prevent quarrels among hogs. It is a successful peace maker.

TO SAVE TIME IN HARNESSING

And unharnessing horses, and to prevent harnesses from getting mixed up, fasten a pulley in a rafter over each stall, run a small rope through it and change to two ropes when about four feet through the pulley. Attach a metal hook to each of these ends, and after unbuckling the harness and taking off the bridle catch the bridle and harness on one hook and the back pad and breeching on the other. Pull the other end of the rope, and thus you will remove all of the harness except the collar. The harness will hang suspended over the horse until he is to be used again, when it can be put back on with half the effort of the old-fashioned way.

ZIP! THE POOR SHEEP'S SKIN

Is torn loose from the flesh as you catch it by the wool on the back or sides, and it will take the innocent creature two months to recover. The skin of a sheep is very lightly attached to its flesh, so never catch it by the wool. Instead, grasp it by the flank. Not only will no injury be caused, but the strongest ram will yield and stand still when caught in this manner.

WATER TROUGHS FOR A SONG

Can be made by purchasing second-hand, defective steel range boilers at junk yards (cost about a dollar apiece) and splitting them in half lengthwise with a cold chisel and hammer or a metal saw. These boilers usually have a capacity of thirty gallons, so each makes two leak-proof, indestructible fifteen-gallon troughs. They are not large enough for cattle or horses, but prove just the thing for calves, hogs and sheep.

MAKE YOUR OWN RAWHIDE.

It is very useful about the farm and may be prepared from cow, horse or dog skin by removing the hair in either milk of lime or ashes, stretching the skin on the ground for scraping off the flesh and epidermis, and rubbing repeatedly with fish oil, tallow or other animal fat. Simple enough; try it.

TO MAKE WINE

After the nation goes dry, graft a common bottle gourd (legamaria vulgaris) onto any good wine grape. When the gourds are ripe you will find them filled with choice wine. (Note: Our horticultural editor was asked to contribute a suggestion for this department, but failed to come across, so one of the other editors furnished this for him. But he confesses that he doesn't know anything more about horticulture than a night-prowling cat knows about the manufacturing of patent boot-jacks.)

BIGGEST TRACTOR DEMONSTRATION ALREADY PLANNED.

What already promises to be the greatest tractor and implement demonstration ever held in the West is well under way. It is to be held May 6 to 11 inclusive on the Ranch del Rio, five miles out the paved Freemont road from the center of sacramento, according to Publicity Manager S. R. Coffee. The 458 acres already secured is not enough; and before this appears a committee will have made arrangements if possible to get added area. Members of the California Tractor & Implement Association, under whose auspices the Demonstration is to be held, will occupy at least 60 tents with tractors and tractor-operated implements and machines of all kinds suitable to California conditions. A highly desirable change in the daily program is suggested in that the General Demonstration each day should be held in four hours in the forenoon. The first hour would be for tractors of 10-horsepower and less, the second for those of 10 to 20-horsepower, the third for those over 20 horsepower, and the fourth for all together. This would permit the man who is interested in certain sized tractors to see all of that size working together. It would give him enough time to study each. Heretofore, with tractors of all sizes mixed up miscellaneously all over a big field for a single hour's demonstration did not give time enough for comparison. The afternoons would then be given over to private operations at the requests of visitors.

The Demonstration is to be managed by R. M. O'Neill, who has managed two mammoth events of the same kind at Los Angeles. His headquarters will be at Hotel Land, Sacramento. Prof. J. B. Davidson of University Farm, Davis, is chairman of the Demonstration committee.

The Tractor Association will meet February 24 for annual election of officers and further perfection of details regarding the Demonstration.

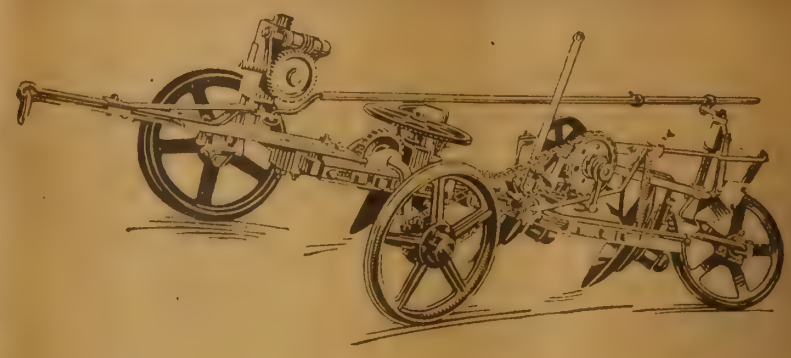
Our readers may well begin now to plan a week off to study the latest and the best in working tractors at Sacramento, May 6 to 11. The association has over $3000 to start with. It has also provided for assessment of members to make up whatever is needed to make the coming event of utmost significance and interest.

NEW 15-27 CASE UNION SUIT.

A new 15-27 h. p. J. I. Case tractor including all of their latest improvements is now being delivered for California patrons. This has the "union suit" gray cast iron crank and transmission case comprising the main frame of the tractor by which all the main bearings are compelled to stay in exact alignment. The union suit is a feature of the Case 10-18 tractor, of which several hundred have been sold in California the past year, according to the local manager, A. J. Olson. The system of setting the four cylinders crosswise of these tractors, enabling them to transmit their power to the wheels without bevel or worm gears, also gives the tractors an appearance of animals all set ready to spring to their work.

The Eagle Lake irrigation project is progressing, over 20,000 acres having been already signed up in the Honey Lake Valley. Much of the land is now unreclaimed sagebrush desert.

Barge transportation companies in the Delta region charging a lower rate for shipments of more than 100,000 bags per shipper per season than for lots of less than 100,000 bags were summarily ordered by the State Railroad Commission to discontinue these discriminatory rates.



For Orchard Work

—this is the only power lift plow that actually does the work! It goes right up close to the trees—to within eight inches, even when throwing the soil away. Your tractor isn't complete without a

Knapp Tractor Disc Plow

behind it. It has a real Power lift, too. A slight tug at the rope and up comes the plow CLEAR of the ground. No drag!

Why were so many Knapps used by tractor demonstrators at the recent demonstration? Because the operators on the tractors knew that a good tractor deserves a good plow.

Send for New Folder.

H. G. KNAPP & SON

1022 SO. FIRST ST., SAN JOSE, CAL.

THE WAR IS OVER

BUT THE FOOD SCARCITY IS GREATER THAN EVER

What will You Plant This Year?

You must soon decide upon your next garden and field crops, and the best guide at this time is the latest edition of

California Vegetables, in Garden and Field

BY E. J. WICKSON

The long winter evenings are with us—why not take the opportunity to study up the best way to grow and make the most out of your soil? Whether you wish to produce beans, beets, potatoes, celery, cucumbers, corn, melons, onions, tomatoes, rhubarb, squashes, turnips—or any garden or field crop—you need this book. It is a handsome volume of over 300 pages, well illustrated, bound in cloth, and will be sent to your address for $2 per copy postpaid.

PACIFIC RURAL PRESS

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California's Pioneer Harness Manufacturers
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Catalogue of Harness, Saddlery, Trunks and Traveling Bags sent free on request.

WHAT A SHOCK! CHEAP ELECTRICITY.

[Written for Pacific Rural Press by our Sacramento Correspondent.]

"With irrigation expansion will come the development of our wonderful hydro-electric resources," says Governor William D. Stephens. "The development of this power will prove a great stimulus to industrial activity. California, by reason of its nearness to the high Sierras, should have the cheapest electrical power in America."

The Governor may also have had in mind the consistent demand from farmers in irrigation districts that these districts be allowed to generate electricity from their own water in the mountains before using it for irrigation. Several private corporations do this, notably the Pacific Gas and Electric Co., who use the water repeatedly for power and then sell it to Placer county farmers for irrigation. This is as it should be wherever water is dammed up anyway and the only additional cost to make it generate electricity would be the installation of a plant and transmission lines.

As we understand it, the reason irrigation districts cannot now use their own water to make electricity even for their own use is that provision in the Public Utilities Act which safeguards interests already performing public utility service against competition which would make their business unprofitable. This was inserted by way of compensation for the exorbitant profits which are not allowed by the State Railroad Commission. There is reason in this, though there is a suspicion that the Railroad Commission may be a little lenient in reckoning the expenses of corporations plus which a profit is rightly allowed. It may be that corporations protected by the Public Utilities Act could economize in various respects and so lower the charges for their products, electricity included. At any rate, irrigation farmers want to try it out at least for themselves.

LAWS PROPOSED.

This subject has been agitated for a long time, and has taken concrete form in two bills introduced at the present session of the Legislature. One is an amendment to the present county water district law permitting such districts to "construct, maintain, and operate power, light, and heat plants" and to sell electricity, etc. This was introduced by Assemblyman Bismark Bruck of St. Helena. The other bill was introduced by Miss Esto B. Broughton of Modesto in the Assembly and by L. L. Dennett of Modesto in the Senate. This bill provides that any irrigation district may generate and sell electricity for all purposes and to whoever will buy whenever it shall appear beneficial and profitable for the district or the land included therein.

The passage of such a bill would greatly increase the supply of electricity and would most probably make it a great deal cheaper.

If the power companies already generating electricity see it this way, they may be depended on to fight the bill to the last ditch. If the farmers see it in the same way, can they be depended on to support the legislators who are pushing these bills? If you want cheaper electricity made by irrigation waters whose mountain power is now wasted, it will cost you about three postage stamps and three letters addressed to the legislators mentioned above at the Capitol, Sacramento. These letters should state your reasons for favoring the law and must be mailed pronto!

Armour's farmers' almanac for 1919, besides containing the usual calendar and weather forecasts, has practical articles by men of authority on improved livestock and other matters dealing with better farming standards. It contains several charts picturing the leading commercial types of beef cattle, hogs and sheep in color, with suggestions on breeding for better quality and a comparison of the points of the most profitable breeds. A request to the Armour Farm Bureau, Armour & Company, Chicago, will bring a copy of this almanac without charge

You Can Plow Deep In Wet Land with a Nilson

the Tractor with the Famous Lever Hitch



The lever hitch carries the pull of the plows up over the drive wheel. The harder the pull, the harder the wheel grips the ground.

THE first duty of a tractor is **traction.** It may have the strongest motor in the world but if the wheels slip, the tractor is useless.

There are two ways to obtain traction—by weight and by the lever and fulcrum principle.

It was Archimedes who said, "Give me a fulcrum on which to place my lever and with these hands will I lift the world."

This is the principle of the famous **lever hitch.** Instead of employing a straight line drag from the engine to the plows, the lever hitch carries the pull **up over** the drive wheels and then **down** to the plows. The Nilson Patented Lever Hitch gives the drive wheel grip without excess weight. It increases traction when it is most needed. It saves fuel, it prevents slippage. It does not pack the ground.

The lever hitch is patented.

It is found only in the Nilson—the tractor with the famous Waukesha Motor, Hyatt Roller Bearings, Nilson Perfex Radiator, K-W Ignition with impulse starter and Bennett Air Cleaner.

The Nilson comes in two styles, the Junior and the Senior. The Senior pulls four and five plows, the Junior three and four. The Nilson is the recognized five wheel tractor devoting the entire width of the tractor to surface contact. It has proven its efficiency by more than four years successful work.

You cannot afford to make a mistake in the choice of your tractor this year. You need a light, powerful tractor that will work in any sort of soil or weather. You will find it when you have examined the Nilson.

Write today for your free copy of the Nilson catalog

NILSON TRACTOR COMPANY
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Minneapolis, Minn.

Arrow Points to Lever Hitch



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Economical Durable

FOR BARNS, SHEDS, SILOS, WAREHOUSES, RESIDENCES.

ASK YOUR DEALER

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Los Angeles

Mechanical Power on the Farm

Users of tractors, engines, pumping plants, motor trucks, automobiles, electric motors, and other mechanical farm power are invited to make this department an exchange of their experiences and troubles.

A NECESSITY FOR SPRING PLOWING.

Spring plowing has brought grief to many a man because it has left air spaces under the surface which are neither food nor drink for plants but are very active in taking away what little drink the soil would hold for plants. Many devices are used to pack this under soil into a firm, compact seedbed. The farmer who is going to put a whole year's work on a piece of ground and make a whole year's living from it, cannot afford to handicap himself by an ill start. He can afford to pay exorbitant interest on the tools and labor for two or three operations not generally practiced. The first of these on any but light soils is to disk the dirt that is going to be plowed into the bottom of the furrow. A ten-foot double disk and a tractor of 12 drawbar horsepower will thus predisk 25 acres a day. Plowing will then require less power and few clods will be deeply covered. To disk after plowing may be considered the best treatment; but another type of tool has been gaining popularity in the past year or two and several implement houses handle them. They have cast iron wheels set close together but loose on an axle as long as available power indicates, and used in multiples with big tractors. The wheels have sharp flanges which are three to six inches deep and either curved off to the edge of the wheel hub or running straight to it at a right angle. The flange cuts into the soil and breaks or cuts clods without picking any of them up. The hubs pack the soil into a tight moisture-holding seed bed. This is a simplification of clod crushers of the same general type but with all the wheels or alternate wheels provided with V teeth on their edges or spurs on the sides of the flanges. They do not require so much power as a disk set at its full angle and they have a packing effect not obtained with disks set straight.

WILL MACHINERY PRICES DROP?

What if machinery prices do drop, there are many cases where that drop will not be a drop in the bucket compared with the labor that would be saved or the extra crops that would be made by getting the machine now at the present price. It is for each farmer to sit down calmly and consider whether he can make more by doing without a machine he needs or by paying more for it now than he may a year hence and getting the use of it this season. In many cases old machines will be repaired to last through one more crop. In others it may be that neighbors may use the same machine. But in other cases it will be a pennywise policy to makeshift just because machinery may be lower next year.

We do not believe it will be much lower in price a year from now. The policy of the Government is to restore prices to normal lower levels so gradually that it will cause no serious trade disturbance. This policy is automatically almost enforced by the attitude of labor unions toward reduction of wages, since labor costs are a leading factor in sales prices from raw materials to finished machines. Many of the implement houses stocked up with raw materials at prices prevailing before the war closed. They want to make these materials into machines to sell at no loss. In order to induce their dealers to stock up for the demand that is sure to come in the near future they are guaranteeing their present prices against reduction. This policy is necessary because local dealers have been shy about putting in stocks big enough to enable them to make the immediate deliveries most farmers want when they buy. As it looks to the writer, farmers who need certain machines for this season's crop will lose more by not having them this season than they will by any decline in price. Figure it out for yourself.

AVERY TRACTOR SCHOOLS ARE COMING.

Several tractor courses of one to three days each are soon to be held in California by the Avery Company, at which everybody who applies may receive instructions free. L. R. Von Volkenburg is coming from the Peoria headquarters to supervise the schools. A tractor will be taken to pieces and reassembled to show what's in it. Dates are as follows: Chico, March 24 and 25; Sacramento, March 27, 28 and 29; Stockton, March 31 and April 1; San Jose, April 3; Salinas, April 5; Fresno, April 7 and 8; Los Angeles, April 10, 11 and 12. Similar schools will be held at later dates working separately on motor cultivators, motor planters, threshing machines and plows. The Avery people believe in motorizing all farm operations. Those interested should write soon to the Avery Company of the Pacific Coast, 67 Bealé street, San Francisco.

POWER ADJUSTABLE DISKS.

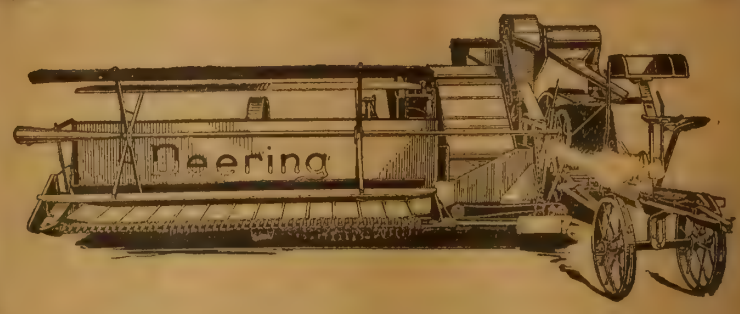
What a job it is to adjust a disk harrow several inches imbedded and standing still! It is no trick at all to adjust it while in motion if you can keep your balance. But the cream of convenience in disking is to pull a little rope from your seat on the tractor and let the disk adjust itself while the tractor keeps going. The Killefer Mfg. Co. of Los Angeles has been the most consistent booster of such an "automatic" disk in California, but other manufacturers are seeing the desirability and are fixing to supply the demand. One of these is the International Harvester Co., whose new automatic disk is adjusted by a rope to a short ratchet lever on the front set. The other end of the same rope goes to the rear set, which adjusts independently of the front one; and the middle of the rope hangs at the driver's seat.

GRINDS AND MIXES FEED AT ONE OPERATION.

A stock feed mixer and elevator, to be attached to an alfalfa mealing machine, and a grain grinder, all to be run by the same power is to be a feature of the Pacific Implement Company's exhibit at the California Tractor and Implement Dealers' demonstration to be held in Sacramento. The feed mixers are made to fit various sized alfalfa recutters

Fast Preparation of Rice Seed Bed by Tractor

A Caterpillar and double disks enable J. V. Biard of Glenn county to keep sheep on 640 acres of his rice stubble until spring, so they get the benefit of sprouted green grass before the land has to be worked for the next crop. This section of land is of fertile silt and plant growth should be held back anyway, so the ground is not plowed. A few days before the rice should be planted, four ten-foot disks are fastened together diamond shape, so each disk when straight has the same angle to a straight-ahead line as if it were hitched by its center and angled as usual. This enables the tractor to disk a strip of stubble over a rod wide at each trip, or about 45 acres in ten hours or 90 acres in 20 hours. This permits not only the advantage of a lot of extra feed, but also better weather and soil conditions for the work. The disk is followed by drills and the crop may be in within two weeks of the time seedbed preparation is started.



Harvest and Thresh at One Operation

MANY Western farmers are now using **Deering** or **McCormick Harvester-Threshers,** and many more will buy these machines for the coming grain crop.

Modern grain handling means harvesting and threshing in one operation wherever weather conditions permit, turning the threshing expense into clear profit, doing away with the big threshing bill and burden, saving time and long-drawn-out labor.

Deering and **McCormick Harvester-Threshers** are Western necessities. They cut a 9-foot swath, harvest 15 to 18 acres per day, and thresh as clean as any thresher. Require 8, 10, or 12 horses, and one or two men, depending on attachment used. In most cases, an International kerosene tractor can be used to best advantage.

The harvester-thresher has proved that it is designed and built right in every particular—strong and lasting, simple, of light draft. It can be used as a stationary thresher, too, by adding cylinder and beater pulleys, which are supplied at extra cost. A 10-h. p. engine does the work. Capacity 30 to 50 bushels of wheat per hour. Write us for interesting folders on **Deering** or **McCormick Harvester-Threshers** and on any other machines in the list below.

THE FULL LINE OF INTERNATIONAL HARVESTER QUALITY MACHINES

Grain Harvesting Machines
Binders, Push Binders, Headers, Rice Binders, Harvester Threshers, Reapers, Shockers, Threshers

Tillage Implements
Disk Harrows, Cultivators, Tractor Harrows, Spring-Tooth Harrows, Peg Tooth Harrows, Orchard Harrows

Planting and Seeding Machines
Corn Planters, Corn Drills, Grain Drills, Broadcast Seeders, Alfalfa & Grass Seed Drills, Fertilizer & Lime Sowers

Haying Machines
Mowers, Tedders, Side Delivery Rakes, Loaders (All Types), Rakes, Combination Side Rakes and Tedders, Stackers, Sweep Rakes, Combination Sweep Rakes and Stackers, Baling Presses, Bunchers

Belt Machines
Ensilage Cutters, Huskers and Shredders, Corn Shellers, Threshers, Stone Burr Mills, Hay Presses

Belt Machines—Cont.
Cream Separators, Feed Grinders

Power Machines
Kerosene Engines, Gasoline Engines, Kerosene Tractors, Motor Trucks, Motor Cultivators

Corn Machines
Planters, Drills, Cultivators, Motor Cultivators, Binders, Ensilage Cutters, Pickers, Huskers and Shredders, Shellers

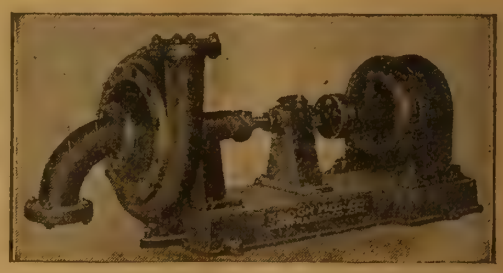
Dairy Equipment
Cream Separators (Hand), Cream Separators (Belted), Kerosene Engines, Gasoline Engines, Motor Trucks

Other Farm Equipment
Manure Spreaders, Straw Spreading Attach., Farm Wagons, Farm Trucks, Stalk Cutters, Knife Grinders, Tractor Hitches, Binder Twine

International Harvester Company of America
(Incorporated)
Billings, Mont. Crawford, Neb. Denver, Colo. Helena, Mont.
Los Angeles, Cal. Portland, Ore. Salt Lake City, Utah
San Francisco, Cal. Spokane, Wash.

IRRIGATING PUMPS

AWARDED PANAMA PACIFIC INTERNATIONAL EXPOSITION GOLD MEDAL AWARD 81890 GOLD MEDAL MACHINERY HIGHEST AWARD GIVEN



Single Stage Motor Driven Pump

KROGH PUMPS absolutely hydraulically and automatically water balanced. No end thrust whatsoever.
Also DEEP WELL TURBINE PUMPS for bored wells 10 inch diameter and up
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Washington Navels, Valencia Late Oranges, Eureka and Lisbon Lemon and Marsh Seedless Grapefruit Trees

from carefully selected trees as to quality and production. The main consideration in buying citrus trees is to have them not only true to name, but true to the strain and type from which they are budded. The few cents more that you pay for our trees is money well spent and will be returned to you a thousand-fold every year during the life of your grove.

WALKER HUBBARD NURSERIES
First National Bank Building San Fernando, California

and are geared to them in a way to use the Smalley safety device on the mixer also. The shaft of the mixer extends enough to hold a pulley to drive the grain grinder which empties into the mixer direct. A pipe the full length of the mixer inside is provided to connect with the molasses barrel and distribute sweetness through holes which may be plugged or opened to vary the amount. Mixed feed empties onto a draper elevator to dump into a wagon.

SPLIT OLD STUMPS EASILY.

Stumps and old logs lie around in the way of a great many farmers because it is "quite some job" to split them with maul and wedges. It is much cheaper to bore a hole into such wood so an inch off from a stick of dynamite may be used to split it. Bore just past center and pack the dynamite tight with a wooden stick (not with iron). Punch a hole into the dynamite with a stick just big enough to put a cap in. Cover with an inch or two of non-gritty dirt and then tamp the hole full of moist clay around the fuse. If two or three charges are needed, put them at different places along the same line of the grain in the wood and use electric caps. A battery to shoot them with may be fixed up or a regular "blasting machine" may be rented from the dynamite dealer. This will explode all charges at once so each will help the rest.

MORE AIR REDUCES TIRE COSTS.

Should I increase the air pressure in my tires in winter? Probably, because tires are generally run too soft. But no more pressure is needed in winter than in summer, according to C. J. Fitch of the B. F. Goodrich Rubber Co. A tire gauge should be used to avoid all chances of under inflation which causes tires to bend more and crack around the sides. The idea of giving less pressure in summer is due to the expansion of air in tires on hot roads. This increases the pressure a little, but is scarcely enough to justify different pressures when pumped up at different seasons.

MOTORIZED FARM IMPLEMENTS.

A motor beet digger and topper is to be demonstrated at Oxnard probably in April by the Avery Company. The machine is a new one and will dig a row of beets, topping them at the same time, in the presence of officials of several beet sugar companies and the interested public.

The regular Avery two-row motor cultivators of 5- and 10-horsepower, which have been on the market about a year, are now supplied with a two-row planter for corn, beans, etc., to be attached in place of the cultivator shovels.

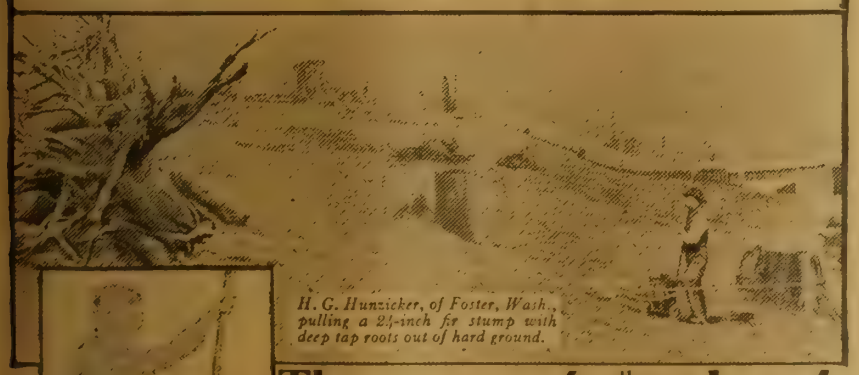
A six-cylinder motor cultivator is another new development.

TRACTOR COURSES COMING.

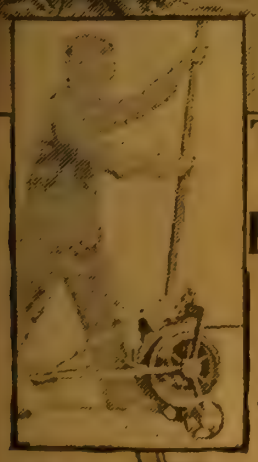
Of the traveling tractor courses carried on by the Government and the State Board of Education, several are yet to come. These include: Chico, Feb. 17-March 8; Corning, March 3-22; Willows, March 17-April 5; Williams, March 31-April 19; Santa Ana, Feb. 10-March 1; Van Nuys, Feb. 24-March 15; Salinas, Feb. 10-March 1; Santa Clara, Feb. 24-March 15; Livermore, March 10-29; Concord, March 24-April 12; Napa, April 7-26; Santa Rosa, April 21-May 10. The University will hold a tractor short course at Riverside February 24 to March 1.

One of the "traveling tractor courses" of the State Board of Education is to open at Santa Clara, February 24. Hours will be from 9 a. m. to 2 p. m. and anybody over 16 years old is eligible, with farm men and boys given preference if enrollments exceed accommodations.

Big Money In Stump Land



H. G. Hunzicker, of Foster, Wash., pulling a 2½-inch fir stump with deep tap roots out of hard ground.



This man made $35 Land Worth $200 an acre Pulling Big stumps by hand

CLEAR your stump land cheaply—no digging, no expense for teams or powder. Your own right arm on the lever of the "K" Stump Puller can rip out any stump that can be pulled with the best inch steel cable. I guarantee it. I refer you to U. S. Government officials. I give highest banking references.

Showing easy lever operation

HAND POWER
K Stump Puller

One man with a "K" can outpull 16 horses. Works by leverage—same principle as a jack. 100 lbs. pull on the lever gives a 48-ton pull on the stump. Made of best steel—guaranteed against breakage. Has two speeds—60 ft. per minute for hauling in cable or for small stumps—slow speed for heavy pulls. Works equally well on hillsides or marshes where horses cannot go.

Write me today for special offer and free booklet on Land Clearing.

Walter J. Fitzpatrick
Box 1
182 Fifth St.
San Francisco, Calif.

Weight, without cable, 171 pounds

No Stump Too Big For The K

FAGEOL
WALKING TRACTOR

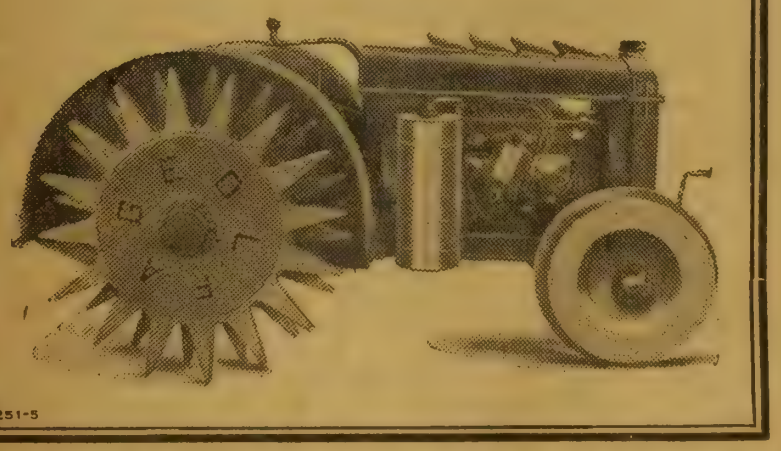
OWNERS find the positive traction of the Fageol Walking Tractor delivers more pull to the implement behind the Tractor.

Fageol grousers, in mating with the ground, give a steady draw-bar pull to the implement behind equal to from six to eight good horses.

Fageol *walking traction* is positive because it is easy and natural, using the ground itself as one cog in its traction chain.

Price $1295.00 f. o. b. Oakland. Send for booklet of information.

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Sales Organization—Fageol Products.
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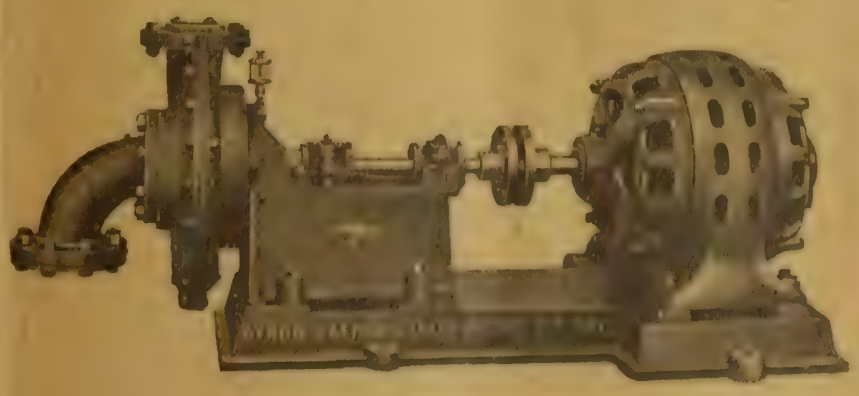


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Southern Cal. Distributors for "FAGEOLS"
231 North Los Angeles St. Los Angeles, Cal.

UNCLE SAM DEPENDS ON YOU!

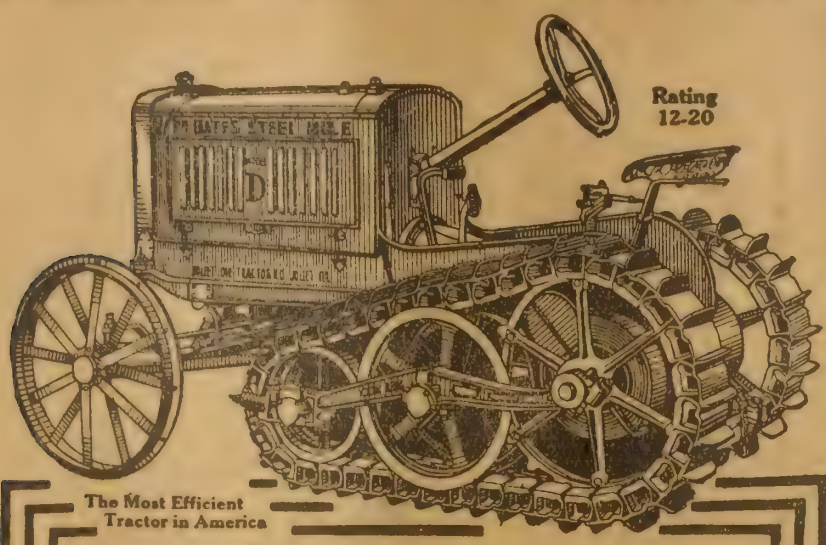
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"BYRON JACKSON" PUMPS are built to meet every condition of "supply and demand" on your ranch.



Write us your conditions.
New Catalog No. 60-A for the asking.

BYRON JACKSON IRON WORKS, Inc.
LOS ANGELES SAN FRANCISCO VISALIA



The Most Efficient Tractor in America

NO SIDE DRAFT

The Bates Steel Mule is built low, with a low center of gravity. And still it has nearly 14 inches' ground clearance.

The draft comes squarely in the center—cannot come from the side. So on hillsides there's no tendency to work down like in ordinary tractors.

Unit construction, Timken bearings, valve-in-head kerosene motor and long-life crawlers are a few of the other valuable features.

The STEEL MULE plants are working night and day filling orders. We have only been able to reserve a small number for early delivery. Better talk the matter over with us NOW.

THE ONLY CRAWLER TRACTOR ADAPTED TO BEET CULTIVATION WITHOUT MAKING CHANGES.

Excellent Proposition Offered Live Agents.

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MUSCLES OF STEEL

You can begin plowing early with the LAUSON TRACTOR. Early in the season, early in the day. The LAUSON is a good servant. It has muscles of steel and iron. You do not have to bed it, feed it, nor scrape its collar pads. Its shoulders never get sore and it drinks but never eats. And it even stops drinking when it stops working.

With the LAUSON Tractor one man can handle three times as much work because the physical element never enters in.

The LAUSON 15-25
DUST PROOF-ALL GEARS ENCLOSED

is built so that mechanical perfection and ruggedness appear in every detail of construction. It will stand the hard gruelling work of power farming day in and day out without a rest. Sold with or without Christensen starter.

Known as the Pattern Tractor

It is dust proof; all the gears, including the final drive, being fully enclosed and running in a bath of oil.

It has reserve power, the Lauson-Beaver valve-in-head engine being capable of delivering fully 25% surplus of power. There are 24 sets of Hyatt and Timken roller and ball bearings to insure easy running and freedom from friction.

You owe it to yourself not to purchase a tractor until you have seen the Lauson. Taking into consideration its power and durability, it is the most economical farm power unit on the market today. Your nearest local dealer will be glad to demonstrate the Lauson on *your* farm. If you don't know him, we will be glad to send you his name and address.

Builders of Lauson Frost King Engines

For twenty-three years the LAUSON Frost King Engines have been the standard of farm engine excellence—1½ H. P. to 18 H. P.

Write for our Free Book on Power Farming and full information on the Lauson

THE JOHN LAUSON MANUFACTURING COMPANY
1038 Monroe Street New Holstein, Wisconsin

Giant Winter Rhubarb

Now Best Time to Plant

Should return from $1,000 to $1,500 per acre first year. If interested in Rhubarb or Berries, write for special prices. J. B. WAGNER, Rhubarb and Berry Specialist, Pasadena, California.

Power Department Needs Equipment

[Written for Pacific Rural Press by R. E. Hodges.]

WE ARE ENTITLED TO DISINTERESTED POWER INFORMATION

Farmers of California are entitled to the benefits that would come from having adequate equipment at the University Farm for investigation and teaching of farm power and machinery. Financial support of this department has been so scant that it has accomplished only a fraction of what farmers are entitled to. A bill in the Legislature appropriates $25,000 for this Department for the next two years. It should be $100,000. Write to Assemblyman Lee Gebhart of Sacramento, indicating the demands of yourself and your neighbors. Do it now.

The factor that has done more than anything else to make American agricultural production per man the greatest in the world has been use of power machinery as distinguished from hand implements. The question which most universally concerns American farmers other than soil itself is the equipment with which they till the soil and handle the crops. The power to operate our tillage and harvesting equipment has within the memory of still active farmers developed from oxen, horses, mules, and steam tractors to gas engines and gas tractors. Improvement of farm machinery and introduction of new devices have been more rapid in recent decades than in whole centuries before. Farmers busy with their crops have had scant opportunity to get acquainted with even a part of these improvements by which they could lighten their toil and at the same time increase their production. Their information regarding machinery and tractive power has been generally haphazard and largely of the biased type handed out by zealous salesmen. They have needed sorely an institution where they could get disinterested accurate information on the principles and the practical operation of newly developed machinery. They have had thousands of questions to ask, with but few correct and satisfactory answers.

POWER INVESTIGATIONS CRIPPLED.

The logical agency to investigate, experiment, and put forth the answers to such questions would naturally be an Agricultural Engineering Department of the State Agricultural Experiment Station. Other States have recognized the need and the solution—many of them have over $100,000 in special buildings and equipment—California has a few temporary sheds and a little equipment, mostly loaned to the State by faculty of the University Farm School and by implement dealers. Experiments have not been carried out because our University lacks money to support the experiments and to provide necessary laboratory facilities. Instruction in the facts and practices already developed more or less imperfectly at other places has been given to several thousand California students whose learning was handicapped by inadequate equipment.

Power farming, the newest development of agriculture and of most general vital importance, has had niggardly support from the powers that could have developed it to maximum value in the war emergency just past. The Governments of the world were in sore straits to get tractor and motor truck drivers and they could not get them. They threw into this vital service of the world-war thousands of young men who had only a few weeks' training in the work on which military victory was achieved. Who can even guess how many defeats were suffered, how many lives sacrificed, because inexperienced, though eager and patriotic, motor truck drivers could not get supplies to the fighting line in time or because tractor drivers in trouble could not get the artillery forward to support infantry in what the latter could have done.

Now, while the military need is past and the food production urgency has eased up, there is going to be a more insistent demand that the rights of farmers be considered. One of those rights is the provision for power farming investigation and information. The demand for it has been universally shown by the popularity of recent tractor short courses.

Now, who is responsible for such scant provision for a thing of so much importance to farmers? We are assured that the agricultural department of the University has asked for this expansion. We are assured that the State Board of Control has recommended to the Legislature all of the appropriations that the University Regents asked for. Yet we see no recommendation for any appropriation to support expansion of the Agricultural Engineering Department. A glance at the list of University Regents and the State Board of Control indicates that they do most of their thinking along other than farming lines and are not in full touch with farm needs. This is partly our own fault because we do not make enough noise.

The recommendations of these boards have been tempered by the fact that ordinary building, if done at this time, would cost more than if done later. The question arises, however, whether it might be well to pay $10,000 or $20,000 extra cost on a $100,000 agricultural engineering building rather than to lose its benefits for two or more years. In this case, when the entire farm industry is in need of something which they won't get until adequate facilities are provided by the Legislature, expensive machinery is going to the scrap heap through ignorance which a power farming department should overcome, and $20,000 is quickly lost by penny-wisdom.

Therefore, the Pacific Rural Press is supporting whole-heartedly the bill introduced by Assemblyman Lee Gebhart of Sacramento, which would appropriate $25,000 "for the construction and equipment of a tractor and farm machinery experiment station at the University of California Farm School at Davis." Now, if you believe that you ought to have the benefit of an adequate disinterested power farming department, drop a card to Assemblyman Lee Gebhart, Sacramento, at once; for the Legislature meets February 24. "Do it now." Don't depend on anyone else to do it. Every letter counts.

NEW SEED GRADER AND CLEANER COMBINED.

A machine which cleans grain and other seeds and separates them into three grades is the Success grader and cleaner, made in the grain district of Washington and newly undertaken for California distribution by the John Deere Plow Co. of San Francisco. Cleaning and grading seed grain and other seed means many things: First, it means bigger crops, because better seed is planted; second, it means a better stand, because drills and seeding machinery will not be clogged by foreign matter; third, it means that our grain and crops will not compete with so many weed seed carefully planted at the same time in the fine seedbed; fourth, it means that seed will be much more salable when the law goes into effect to compel seed to be labeled with the amount of foreign matter and specific weed seeds or else labeled "not tested or not recleaned." The Success grader and cleaner is made in two sizes—a smaller one for hand power and a larger one with elevator and sacker attachments to be run by hand or motor power. Various sized and shaped sieves for various seeds are furnished. The Deere company has been handling a cleaner, but they are much pleased to have a cleaner and grader combined to offer.

WILL FARMERS BE CRUSHED BETWEEN CORPORATIONS AND COMMUNES?

[Written for Pacific Rural Press by W. F. Gillett, Holtville.]

To the Editor: My wife does not want me to write to you, but I don't think I can use a three-cent stamp better any other way. In an editorial in the Pacific Rural Press of January 4, you say:

"To exchange the sure foundation of individualism upon which our agriculture has been so successfully built up, for a socialistic vision of communistic production and exchange might starve half the population and ruin a generation of farmers before it could be really learned whether it could be done or not."

No doubt you have heard of a Mr. Campbell of Los Angeles, who conceived an idea to raise wheat to feed the starving millions of the world. He is said to have laid his plan before Secretary Lane and asked him to lease him 200,000 acres of the public domain on which to grow wheat. After securing the lease of Mr. Lane, he went and submitted his plan to J. P. Morgan and asked Mr. Morgan to finance the proposition. Mr. Morgan asked him just five questions: How old are you? Have you a college education? Have you had experience in farming? Will you stay on the job yourself? All these questions being answered in the affirmative, his fifth question was, "How much money do you need?" and he answered $5,000,000. The result was that a $5,000,000 farming corporation was organized, and eight carloads of farming machinery was bought and shipped at one time.

What I want to say is this: If we had a socialist government our farming would all be done with improved machinery and on a much larger scale than Mr. Campbell is undertaking. Some of the people would be making all kinds of machinery, others running tractors, etc. The very thing that Mr. Campbell, Mr. Morgan and Secretary Lane thought would feed the hungry people of the world, you think would starve half our population to death.

The way I look at the matter is that the only difference between their plan and socialism is that instead of Mr. Campbell and a few Wall St. bankers owning the farming corporation, every man, woman and child in the United States would have an equal interest in the corporation. Mr. Campbell expects to extend his farming operations to foreign lands. Now, if we don't have socialism here, will you please tell me how a man who is unable to buy modern tools of production is going to compete with the $5,000,000 corporations which use the most modern tools of production?

I have not written this for the sake of controversy, but I have read your editorials now for about a year, and I take you to be a very fair minded man.

[You are having rather a bad dream. The Campbell-Morgan game, to which you attach so much importance, is not played out yet. It is the biggest of a line of large farming schemes which have gone to pieces in the past in this State and elsewhere and it is too soon to draw any arguments or analogies from it. Nor can they be safely drawn this year when the price of wheat will be about twice the normal value. But their success, which you take for granted, is not a basis on which to rest an even wilder dream and that is that you can ever draw all the independent, self-directing people of this country into place as cogs in the great socialistic wheel which is whirling around in your belfrey. The secret of the past achievements of American farmers is their self-thinking and self-directing individualism. What they need now is co-operation to get the best machinery and other advantages, which will be their sure defense against both corporationism and communism. Our farmers are so independent and individualistic that it is very hard to draw them even into co-operation. It is waste of time to dream about them as communists, like a lot of badgered and brow-beaten European peasants.—Editor.]

RICE IRRIGATION $8 PER ACRE.

A charge of $8 per acre for rice irrigation for 1919 is about to be put into effect by the Sacramento Valley West Side Co., according to a petition asking the State Railroad Commission for the necessary authority. A large number of growers have signed a statement of their willingness to pay the new rate which is $1 per acre over the 1918 rate. The increased revenue is to be used solely to develop the system and insure adequate water.

Former Manager H. O. Jacobson of the Dodge Rice & Land Co. of Chico has rented 3000 acres of the Parrott estate mostly for rice.

How Mohawks Ride on Clay Roads

Mohawk, Keaton or Non-Skid treads are excellent clay road tires.

Their big sturdy projections have the faculty of digging down into the slipperiest kind of a road, holding the car safe.

Right from the beginning we have built Mohawk tires, both the treads that show and the parts underneath that don't show, so that they will give the right sort of service, on clay roads, rocky roads, paved roads, or any other kind of roads, and give a lot of it.

We don't believe that Mohawk users want to pick their roads or spend any great amount of time babying their tires.

We have held to the idea that to give Mohawk users the kind of service they want, we must build a tire that is so extra strong it will always give good big mileage and mighty little trouble no matter where the user may choose to drive.

There is nothing mysterious about the way we accomplish it—just the sensible method of using the finest grade of rubber and fabric in the world, building a reasonable quantity of tires so that we can watch each one carefully, allowing the builders plenty of time to do their work right.

We have kept our company on a very efficient basis—haven't a dollar's worth of watered stock or bonded indebtedness and we are satisfied with a reasonable profit. In this way, we have been able to use these expensive materials—more of them than the average tire maker seems to think he can, and have still been able to sell Mohawks at competitive prices.

That's all there is to it.

As far as we know, almost any maker could have done the same thing if he had been organized the same way we have—had the same ideals and had been able to keep away from the temptation of making bigger profits by using cheaper materials and methods.

The point is that most of them haven't done so.

And that is why Mohawks have stood out from among the great variety of tires on the market and have gained such a reputation for consistent high quality.

The best proof of this is that our records prove that 85% of car owners who buy their first Mohawk tires become permanent Mohawk users.

MOHAWK RUBBER COMPANY
AKRON, OHIO

Branches at:
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MOHAWK "Qualify" TIRES



Mohawk Tires—either Mohawk, Keaton or Non-Skid treads—hold a car safe on clay roads. But there are altogether too many of these bad roads in this country. It is estimated that 20 per cent of our roads carry from 80 to 90 per cent of our traffic. In other words, while we have over 2,000,000 miles of roads, if 400,000 miles were permanently and properly constructed in the right place, they would practically complete our necessary highways.

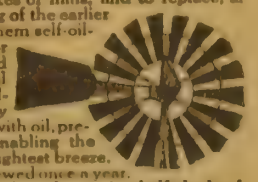
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No matter what your irrigation problem, our advice is free. Write today for our special literature, or any specific information you may require.
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"Originators of the Valve System of Irrigation."

THE SELF-OILING WINDMILL

has become so popular in its first four years that thousands have been called for to replace, on their old towers, other makes of mills, and to replace, at small cost, the gearing of the earlier Aermotors, making them self-oiling. Its enclosed motor keeps in the oil and keeps out dust and rain. The Splash Oiling System constantly floods every bearing with oil, preventing wear and enabling the mill to pump in the lightest breeze. The oil supply is renewed once a year. Double Gears are used, each carrying half the load.

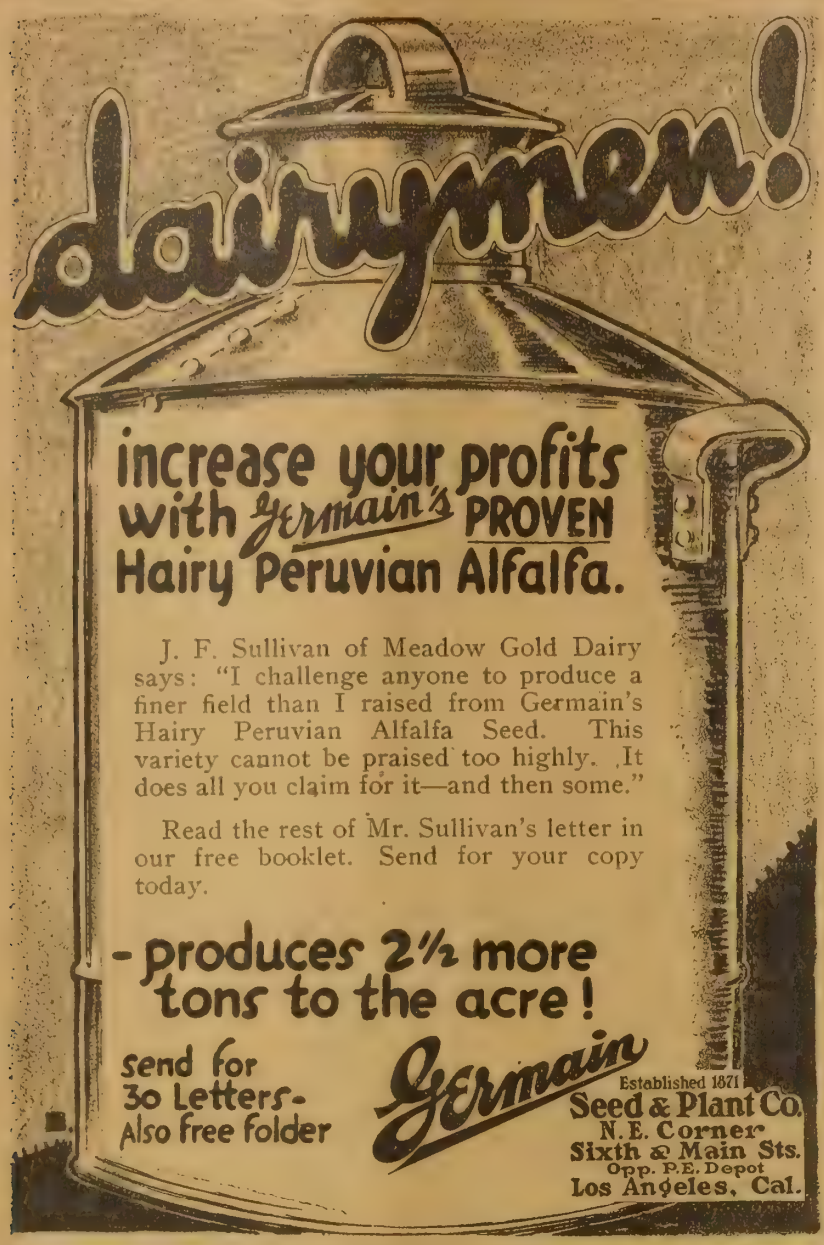


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The next State tractor demonstration is to be held near Sacramento, as decided by vote of the California Tractor and Implement Association.

Kill Grubs in Backs of Cattle

[Written for Pacific Rural Press.]

Those characteristic lumps or swellings which may be found on the backs of many dairy and beef cattle from January until April contain grubs. From reports received from subscribers they are worse this year than ever—in some cases there being as many as four or five dozen on one animal.

The grubs weaken the cattle, cause them to fall off in flesh and milk and decrease the value of the hides. The meat in the immediate vicinity of a grub becomes shiny and of a greenish color, and is known to the butchers as "licked beef." On an average the damage to the hides is placed at one-third their value, and the loss of beef to each infested animal ranges from $3 to $5.

The loss of milk is even greater. A case is recorded of a cow that gave 33 pounds of milk per day. Forty-six grubs were extracted from her back and eight days later she was giving 44 pounds of milk, other conditions being the same. The loss in this case was 25 per cent.

The fly that causes this grub is variously known as the warble fly, the heel fly or the ox botfly. During the spring and summer the eggs are deposited on the skin of an animal, and the animal on licking them carries the eggs into its mouth. The maggots on hatching pass into the gullet and then migrate through the tissues of the body to the back, finally appearing under the skin. In the spring or early summer months the grub emerges from the back of the animal through a small hole previously used for breathing purposes. On falling to the ground and burrowing in it the grub enters the pupa stage, which lasts from three to six weeks. At its conclusion a two-winged fly emerges which lays more eggs to develop into more grubs, and so on.

HOW TO COMBAT.

It is advisable to examine the cattle for lumps or swellings over the back every two or three weeks during the late winter and early spring. When grubs that are ripe are found they should be squeezed out through the opening of the tumor. If the opening is too small, enlarge it with a sharp knife. A pair of tweezers will sometimes help in removing an obstinate grub. Be sure to crush all grubs removed to prevent further development and transformation into flies. After the grubs are removed apply carbolated vaseline to the tumors and they will quickly heal. Five per cent solutions of antiseptics such as Kreso, Cresol or Zenoleum are often used with good results.

Various oils, including kerosene, turpentine and carbolic acid are sometimes used for grubs, either smeared over the infested region or applied to the breathing hole of the grub by means of a small oil can. The objection to this method is that the source of irritation—the grub itself—is not removed, and the wound does not heal readily. However, in the case of large herds of beef cattle, this may be necessary, and in such a case they are driven through a chute with a man or either side equipped with an oil can filled with the preparation to be used. As the cattle pass through, the hand is pressed over the backs of the animals and each lump is treated by inserting the slender nozzle of the can in the opening at the top of the lump. Arsenical preparations and tobacco decoctions are sometimes used, but the oily lotions are more effective because they are more penetrating.

Sometimes grubs are smashed or killed while underneath the skin, causing infection which results in a swelling as large as a dinner plate, and about the same shape with the plate laid upside down.

PREVENTION TOO DIFFICULT.

Fish oil, train oil, kerosene and other substitutes are sometimes recommended as a spray to keep off warble flies, but to be effective their use would have to be continued throughout the spring and early summer months, and such a practice would be difficult and expensive, and probably impracticable except in the case of small herds of valuable cattle. The flies do not appear to attack cattle which stand in water or in dense shade. A dairyman in Tulare county had his irrigating reservoir in the cow corral, and fed the cows under a shelter. They stood either in this shade or in the corral much of the time during the summer months, and as a result it was very seldom that an animal was found infested with grubs. A pretty good plan for other farmers to adopt.

Guaranty Sale Promises a Sensation

The Guaranty Sale of registered Holsteins, to be held at the State Fair grounds, Sacramento, on March 27, will set new standards for Holstein sales in the West. The 37-pound cow, Boweda, is distinguished as the highest record cow ever sold in the West, and a son of the new 41-pound cow, Adirondac Wietske Dairy Maid, will be the highest record bull yet sold in the West. In fact, his dam has the highest seven-day butter record yet made on the Pacific Coast.

The first females bred to the 106,000 bull, Carnation King Sylvia, ever offered at either public or private sale will be one of the outstanding features. Another feature will be a wonderful consignment of King Segis-Pontiac Korndyke breeding, every female in the consignment by a 30-pound sire or better and nearly every one out of a 30- to 35-pound dam. Most of these are bred to the great Judge Segis.

A remarkable consignment of daughters and sons of the famous sire, It, out of 29- to 35-pound daughters of King Segis Pontiac and King of the Pontiacs, will attract the attention of every breeder who knows breeding.

Glimpses through the list of entries show other great 30- to 32-pound cows, a large number of daughters of 30- to 35-pound cows, a long list of daughters of 30- to 40-pound sires, great yearly record cows and daughters of yearly record cows, bred in the best blood lines of the breeed.

The cattle for this sale were selected by a committee composed of Frank L. Morris, Woodland; V. Bridgford, Knightsen; James W. McAlister Jr., Chino, and C. L. Hughes, Sacramento.

THE DAIRYMAN'S PROBLEM AT HOME.

(Continued from page 260)

ers out of every ten will prove satisfactory producers.

USE BACKBONES INSTEAD OF WISHBONES

So there you are. And yet we have mentioned only a few of the many ways by which a dairyman can increase his profits while the marketing problem is being solved.

At one of the Eastern dairy shows a farmer who had his wishbone where his backbone should have been approached a progressive dairyman and said: "I suppose you, like the rest of us, are hoping for better things in the dairy industry."

"Hoping!" exclaimed the P. D.; "well, perhaps so. But while I'm hoping for those better things I've got my sleeves rolled up, and I'm workin' like the very dickens for 'em."

Not a bad plan for us to adopt. While we're hoping for better profits through higher prices of dairy products, let us work for bigger profits by increasing the production of our herds. Let us breed wisely. Let us feed scientifically, studying the value of chopped feed, silage, root crops and different grains—of cutting hay as compared with pasturing. Let us feed, milk and handle each cow according to her peculiarities. Let us test and weed.

Complete Dispersal of

LODGE VON HEIM HERD

One of the Finest Holstein Herds in the World

St. Patrick's Day March 17, 1919 St. Patrick's Day

65 Head to be Sold on the farm at Kent, Washington, midway between Seattle, and Tacoma

8 Cows with records over 30 lbs.

At 3 years, Daisy Dew Drop, 34.29 lbs. butter in 7 days; 134 lbs. in 30 days.

Clothilde of Westboro 3d's Jennie, 30.10 lbs. in 7 days; 115 lbs. in 30 days.

Winifred Piebe De Kol 2d, 33.09 lbs. in 7 days; 134.93 lbs. in 30 days.

At 3 years, Johanna De Kol of Rushcourt, 32.89 lbs. in 7 days; 130.31 lbs. in 30 days.

Ormsby Christeria Mechthilde, 31.03 lbs. in 7 days; 115.72 lbs. in 30 days.

At 2 years, Von Heim Mary Hartog, 32.71 lbs. in 7 days; 116.90 lbs. in 30 days.

Countess Romula Korndyke, 31.03 lbs. in 7 days; 115.72 lbs. in 30 days.

Camilla Korndyke, 29.02 lbs. in 7 days; 117.71 lbs. in 30 days.

At 3 years, Aaggie Netherland Abbekerk, 26.91 lbs. in 7 days; 100.29 lbs. in 30 days.

Von Heim Winifred Colantha, 29.62 lbs. in 7 days; 117.71 lbs. in 30 days.

Echo De Kol America, 27,06 lbs. in 7 days out of a 29-lb. dam.

At 3 years, Florence of Greenbank, 26.30 lbs. in 7 days; 108.96 lbs. in 30 days.

At 2 years, Johanna De Kol of Rushcourt, 858.91 lbs. in 365 days, and other high-record cows and heifers.

Heifers with records over 18 lbs. of Butter in 7 days

3 world's records in this Herd

Five young bulls out of dams with records up to nearly 35 lbs., all sired by Finderne Mutual Fayne Valdessa, whose sire's dam has 41 lbs. and his 2d dam 44 lbs. His own dam over 1200 lbs. butter in 365 days, and testing over 4.32% fat for the year. She gave over 36 lbs. of butter in 7 days as a junior 3-year-old. Finderne Mutual Fayne Valdessa, together with the Senior Herd Sire, will be sold. I might add that the Senior Herd Sire, Colantha Sir Hartic, is the sire of Von Heim Mary Hartog, who at 30 months of age made 31.29 lbs. of butter in 7 days, and 120.49 lbs. in 30 days, a world's record. He also sired Von Heim Margaret, who at 26 mo. made 20.67 lbs. in 7 days. He has a splendid lot of 2-year-old daughters showing the same possibilities for the future. The daughters of Finderne Mutual Fayne Valdessa are also a very fine lot, and they are sure to develop into very fine cows.

If you are on the market for a very fine bull, why not consider Finderne Mutual Fayne Valdessa? He is a wonderful animal, and is classed among the world's greatest bulls. There will be offered in this sale his sons and daughters out of 30-lb. and world record cows. Remember the greatest Dispersal Sale for 1919, to be held at Kent, Wash., on St. Patrick's Day.

World Record Cows, High Class Breeding, Splendid Individuality.
30-lb. Cows, 30-lb. Heifers, 30-lb. Bulls.

The Closing Out of Lodge Von Heim Offers the Opportunity

Write for Catalogue.

J. Von Herberg, Owner
Kent, Wash.

Geo. A. Gue, Sales Manager
Yakima, Wash.

Sheep Losses---A Doggone Shame

[Written for Pacific Rural Press.]

Dogs in the United States destroyed more meat last year than all the people saved by their patriotic observance of meatless days. They even destroyed more meat than we were able to ship to Europe for the use of the U. S. and allied armies, the civilian population, the Red Cross and the Belgian relief.

Not every dog is worthless. Many are literally "worth their weight in gold." But in the vast army of 30,000,000 dogs found in the United States there is ample opportunity for a judicious weeding out, and we believe that California has her share of the worse-than-useless kind.

"The country is full of worthless cur dogs," writes Fred A. Ellenwood of Red Bluff, president of the California Wool Growers' Association, "that are half starved and prey upon small flocks for a living. It is the nature of a dog, the same as a wolf or coyote, to kill sheep. Shepherd dogs that work almost perfectly with a flock of sheep on the range will go several miles at night and kill sheep in a flock, yet they will not disturb the sheep in the band they are herding. Even dogs too old to work any more have been known to go five miles and kill sheep when permitted to run loose."

Aside from the sheep and lambs killed outright, there are heavy losses due to ewes running away from their lambs when scared by dogs, and considerable abortion can be attributed to their fright and flight. Another loss comes in summer, when sheep die from overheating due to running from dogs. A Kings county rancher lost several hundred head in one day in this way. J. L. Mendenhall of Colusa county lost 10 per cent of his flock of 500 last year on account of stray dogs, and says that thousands more sheep would be raised in his county if it were not for the dog menace. It's the same all over the State.

It is claimed that because the big ranges are being cut up our lamb and wool of the future must come from the small farm flocks. There are many farmers who really want to carry a few sheep to use waste feed and clean up weeds in fences, irrigation ditches, orchards and fields, but they hesitate because of fear of losses from the dogs that at present seem to have the undisputed right to trespass and kill.

A law to prohibit dogs from running at large has been introduced in the Legislature by Senator B. F. Rush of Suisun. Among its provisions are the following: The county assessor, when assessing property, must find the number of dogs harbored by the owner of the property. The tax collector must collect $2 to $4 for each male and $3 to $5 for each female, the exact fee to be determined by the county supervisors. The tax for registered dogs will be $10 annually if kept constantly confined and more if they are allowed to roam. The tax collector supplies a numbered metal tag to be worn by each dog, and published in two county papers a list of dogs so assessed. If anyone refuses to pay the fee, he is subject to a fine of $10 to $50, and the sheriff or constable must kill the dog or pay a fine of $25. There is no requirement for the licensing of dogs belonging to anyone but land owners, but further provisions are about as effective. It is the duty of any dog owner to keep the animal confined to the premises where it regularly belongs or to keep it under reasonable control when hunting or herding, in such manner as to make escape "impossible." Failure to do this makes the owner subject to a $5 fine.

MAY KILL STRAY DOGS.

Any person may kill any dog straying on any farm whereon livestock or poultry are kept, or any dog worrying any such livestock, except when the dog is muzzled and within reasonable control of some person in charge. Whenever a dog has worried any livestock within three months, complaint may be made to a justice of the peace or district attorney and the dog must be killed within three days or the owner will be subject to a $25 fine. A separate provision is made that the owner must kill the dog within 48 hours after notice is served by court or pay $3 penalty with $1 per 24 hours additional until death, except where the owner proves it was impossible to kill the dog so soon.

"DOG FUND" FOR DAMAGES.

License fees and fines go into a county "dog fund" from which stockmen can immediately recover damages for stock injured by dogs. Affidavits of amount of damage are required and false statement of damage incurs a fine of $100. The county may recover the damages from the dog owner if the latter can be made to pay by judgment of court. When the dog fund exceeds $200 the excess is turned over to the school funds for the teaching of agriculture in high schools. Livestock running at large on highways or on unenclosed land in violation of law has no compensation coming from the dog fund.

Parts of this bill seem a little ambiguous and a few of the provisions may be considered unnecessary by some, but as a whole it is good and if enacted will do more to encourage sheep raising on cultivated farms in California than all the urging of the Government, farm advisors, agricultural papers and sheep associations. Write your Senator and Assemblyman to work and vote for Senate bill No. 641.



O, where is your wandering dog tonight, while you sweetly slumber and sleep?
Is he safe at home under lock and key, or killing these innocent sheep?

SHIRES

Jack London Ranch

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YOUNG STALLION and FILLY COLTS by

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Grand Champion of California

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DESFORD BANKER

The famous Stallion owned by

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GLEN ELLEN, CALIF.

The Way Successful Breeders Are Doing

[Written for Pacific Rural Press by Thomas F. McConnell.]

MILLBRAE METHODS.

Harry Robb, assistant superintendent of the Millbrae Dairy at Millbrae, is a firm believer in the machine method of milking and thinks that the machines only need careful supervision by competent operators to give satisfaction. Certainly the machines have been given a thorough testing at this establishment, as they are milking 12 strings composed of 80 purebreds and 240 high-grade Holsteins. The machines are gone over twice each week by qualified men, who see that they are cleaned properly and are mechanically right. With this supervision the ordinary milker is able to operate a machine with satisfactory results.

It has long been the practice of this well-known dairy to keep all satisfactory females, and, as this has led to the blood lines of the cows being similar, any record made by an individual is really to the credit of the whole herd.

The usual amount of testing has not been done during the past eighteen months on account of the absence of the assistant superintendent. However, the results obtained have been most satisfactory and now that the war is over we may look for a number of new records from this herd. One record made by Gladys of Millbrae of an average of over 102 pounds of milk per day for 30 days is an indication of what may be expected.

Silos are used extensively at Millbrae, some being filled with corn and others with barley. Corn silage gives the best results, but barley is eaten with a relish. Mr. Robb plans hereafter to cut the barley greener, as it will pack more closely and be more succulent. The standard ration at Millbrae consists approximately of 8 pounds dried beet pulp, 6 pounds barley and wheat, 20 pounds silage and 15 pounds alfalfa hay per day per cow.

While it is the practice to keep all females raised at Millbrae, they are generally in a position to furnish fine young registered bulls of serviceable age. They are not in show shape, but are thrifty, vigorous young animals, typical of the breed and all ready to do good service in a herd and build it up.

GETTING FULL VALUE FROM FERTILIZER

F. O. Bohnett of Campbell got fine results from applying manure from his dairy cows to his six acres of apricots. Some years ago every other row of trees was removed, with the expectation of intercropping, but no particular results had been obtained from either the apricot trees or crops grown between them. Three hundred tons of manure were applied, and the ground was irrigated and plowed in the fall. The next spring the orchard was plowed again and six rows of corn were drilled between each row of trees. The result was 50 tons of green apricots—more than the orchard had ever produced when there were double the number of trees—and 100 tons of corn raised for silage. Then the ground was irrigated and plowed and sowed to barley and vetch, which grew to a height of three feet and was then cut and fed green to the cows. A second crop grew up, resulting in a cutting of about three tons to the acre. And all this within one year.

Mr. Bohnett uses a feed cutter and chops all hay fed to his dairy cows. He estimates that he saves at least 20 per cent by this method.

LIBERAL FEEDING AT HIDDEN VALLEY RANCH.

Hidden Valley Ranch is well named. It is seven miles from Palo Alto on the Woodside road, and persons passing along the highway would never dream of what lies back at a little distance.

Quality rather than quantity seems to be the object here, although the herd of Guernseys is by no means a small one, as there are 55 head, and not an inferior animal among them. The milking string at present consists of 21 cows and heifers, of which 12 are on test.

Hand milking is practiced, but the superintendent, D. Ulken, considers milking machines a success under proper conditions. He operated a machine in an Eastern herd of 140 head for over a year, resulting in a larger yield of milk and a low cost of operation.

The ration fed at this ranch is more elaborate than that of many dairy herds at present, yet results seem to justify the practice. Where feeding for records is being done, it is necessary to make the ration as palatable and digestible as possible and a variety of feeds is used. One practice seems of value, and that is the mixing of a small portion of beet pulp with the grain ration to

Breeding Will Tell

KING KORNDYKE PONTIAC 20TH as a calf looked like the real bull to head our herd, adding to his great individuality the backing of a pedigree with an unbroken line of great producing dams and type of the highest character. The price of $6,500 which we paid for him was really a minor consideration. Now that his calves are coming on we know that we made a fortunate choice, for they are certainly beauties. His oldest son in our herd was sold at 40 days of age to become the future head of a newly established Stanislaus county herd.

And the last six calves by King have all been heifers, mostly white in color, beautiful individuals, and every one of them has large, well-placed teats, just what we expect from the great uddered cows in his ancestry.

Better get in touch with us for one of his young sons for YOUR herd. We already have requests for reservations of unborn calvesif they are bulls.



Satisfaction of the buyer is our first consideration, and our prices are reasonable.

Our Entire Herd is Tuberculin Tested

Tulare Holstein Farm

W. J. Higdon, Owner, TULARE, CAL. H. L. Redd, Herdsman

HOLSTEIN BULLS

A few young bulls sired by Aaggie Cornucopia Pauline Count, and out of our A. R. O. cows.

Prices Reasonable.

A. M. BIBENS, Modesto, Cal.

Faster Shearing

Shear with a machine—save time and money. You can shear at least one-half faster. Get 15% more of longer, better wool and not scar the sheep. Get a Stewart No. 9 Ball Bearing Shearing Machine. Fine for flocks up to 300 head. Price $14. Send $2—pay balance on arrival. Write for catalog.

CHICAGO FLEXIBLE SHAFT COMPANY,
Dept. B 103, 12th St. & Central Ave., Chicago, Ill.

Edgemoor Farm Guernseys



Imperial Itchen May King, 25174

PRETTY PRODUCTIVE PROFITABLE

A Few Animals of Either Sex For Sale

See list of our winnings at Los Angeles in this issue of the Pacific Rural Press.

SANTEE, CALIF.

H. F. SCRIBNER
Supt.

W. H. DUPEE
Pres.

REGISTERED HOLSTEINS

Creamcup Herd offers service bulls and bull calves of 34-lb. breeding. Females offered for foundation stock. Tuberculin tested

M. M. Holdridge, San Jose, Cal.
R. D. "A," Box 437.
Two miles out North First Street.

California Breeders have sold more than $350,000.00 worth of registered cattle in our sales, under the most stringent requirements laid down by any sales organization in America. Satisfied buyers have been the rule in all our sales.

California Breeders Sales & Pedigree Co.
C. L. Hughes, Sales Mgr., Sacramento, Cal.



Calf Profits

Are you getting them? Calf profits mean more to you now than ever before.

Blatchford's Calf Meal

Write for New Data

COULSON CO. - - - Petaluma, Cal.

lighten it and to prevent a pasty, sticky mass forming in the paunch.

When people want clean milk and cream they are very apt to get it from dairies equipped as this one at Hidden Valley Ranch. The cow barn, milk house and equipment are modern and are kept scrupulously clean. There are cement floors and metal equipment throughout. Last and not least, all cows in the milking string have the hair clipped close on their udders and parts where filth might accumulate.

This herd has been tested for tuberculosis and not a reactor found, which is a record to be proud of, as not many herds show such good results.

The prepotency of the senior herd sire, Dairy Maid's Prince, is shown in the records of his first three daughters, who produced an average of over 500 pounds butterfat in one year as two-year-olds. This is an example of transmission of desired characteristics that should be sought after by breeders. Such an animal is above price to the owner and no offer should tempt him. He can make more in the long run by keeping the bull and selling his offspring.

SALE OF FAMOUS VON HEIM HOLSTEINS.

The closing out of the Lodge Von Heim Holstein herd will prove a big event, not in the number of animals that will be offered but in their breeding and records. When these factors are considered, the herd must be placed among the world's greatest.

Here is a herd of only 30 cows with 8 holding records above 30 pounds of butter in 7 days, yet most of the animals are only two- and three-year-olds. How many herds can show two-year-olds with records over 31 pounds, or with nearly 900 pounds of butter in a year produced from over 22,000 pounds of milk?

Not only the above mentioned high record heifers, but also three world's record cows and a 29-pound two-year-old and a two-year-old with 31.29 pounds in 7 days and 120.49 pounds in 30 days will be offered. Every two-year-old has made over 18 pounds, which is a remarkable record, considering that over 95 per cent of all heifer records are under the 18-pound mark.

There will be a 33-pound cow producing 135 pounds of butter in 30 days, and nearly all of the mature cows have gone over 100 pounds in 30 days. The senior herd sire is a son of Aaggie Cornucopia Johanna Lad Jr., and out of one of the greatest Hartog cows. He is a grandson of Colantha Johanna Lad, whose high record daughters are making him famous, and Aaggie Cornucopia Pauline, with a record of 34.32 pounds of butter—a world's record when made. He has proved a phenomenal sire, all his daughters going over the 20-pound mark at two years old and one producing 30.29 pounds of butter from 503.30 pounds of milk in 7 days at only thirty months of age—a world's record. He is a wonderful show bull also.

The junior herd sire, Finderne Mutual Fayne Valdessa, is one of the wonders of the world in Holstein breeding. His sire is out of a 41-pound cow and his sire's dam out of a 44-pound daughter of King of the Pontiacs, while his own dam has the most wonderful record ever made by any cow, producing over 25 pounds of butter in 7 days and over 1200 pounds in 365 days as a junior two-year-old. She tested 4.30 per cent for the entire year. She carried a calf seven months while on test and then came back as a three-year-old with 37 pounds of butter in 7 days.

Mr. Von Herberg has spared neither time nor money in establishing one of the finest Holstein herds in the world, but his theatrical interests are demanding his entire attention and the whole herd will be sold on St. Patrick's Day, March 17, at the home farm at Kent, Wash., midway between Seattle and Tacoma. Geo. A. Gue, Yakima, Wash., is sales manager and further particulars and catalogues will be gladly furnished by him.

GREAT HOLSTEIN SALE



Sarah Topsy De Kol.

Our consignment to Guaranty Sale, Sacramento, March 27, 1919, consists of the

HIGHEST RECORD BULL EVER SOLD ON THE PACIFIC COAST.

THE HIGHEST RECORD COW EVER SOLD IN PUBLIC SALE ON PACIFIC COAST.

No. 1. **BOWEDA.** Butter, 7 days, 37.61 lbs. from 538.2 lbs. milk. Due to freshen April 13, 1919; to service of King Segis Alcartra Prilly, a candidate for a 40-lb. record. In great shape to put on test.

No. 2. **KING ABBEKERK JOHANNA SEGIS:** Bull, born January 11, 1918; dam, Adirondac Wietske Dairy Maid; record, butter, 7 days, 41.013 lbs. from 831.7 lbs. milk. Pacific Coast record; still on test, going strong. Sire, King Segis Alcartra Abbekerk, a 30-lb. son of King Segis Pontiac Alcartra, the $50,000.00 bull.

No. 3. **SARAH TOPSY DE KOL, No. 215769:** Record, 32.4 lbs. butter from 701.1 lbs. milk in 7 days. Due to freshen February 24, and will be run on test again before sale. A great foundation cow; a granddaughter of King of the Pontiacs.

No. 4. **JESSE FOBES BURKE, No. 167097.** Record, 31.66 lbs. butter from 615.6 lbs. milk, 7 days. Due to freshen June 22d; to service of King Segis Alcartra Prilly; a cow backed by a wonderful line of breeding.

Three other high class cows, detail of which will be given later.

BRIDGFORD COMPANY

KNIGHTSEN - - CALIFORNIA

Put Your Herd on the Profit Side

With high feed prices and high cost of labor prevailing and bound to prevail for some time to come, you must either bring up the production of your herd or go out of business.

Breed up with sires who have back of them big production and who will transmit that production to their offspring. Such sires are to be found in sons of



Pauline Inka De Kol Creamelle,
Senior yearling. Record: Milk 423.1, butter 21.13, test 1.62 per cent.
A daughter of Dutchland Sir Pietertje Creamelle.

DUTCHLAND SIR PIETERTJE CREAMELLE

He is by a grandson of the great transmitting cow Changeling, and out of a daughter of the world's record cow, Creamelle Vale. He has proven his worth and transmitting power with 20 A. R. O. daughters in my herd with records up to 30 lbs. butter in seven days and averaging 20 lbs. at two years or younger. All are high testers.

Have for sale a few young bulls of serviceable age sired by him and out of big producers in my herd. I have sold a large number of them and they have all proved satisfactory. Many have come back for their second and third bull

WRITE OR CALL AND SEE THEM.

F. STENZEL, San Lorenzo, California
Breeder of high test Holsteins.

Helps Your Horses - Saves You Money

The horse is a vital factor in greater farm production. To realize the best results he must be kept one hundred per cent. fit.

STUFFED COLLAR PADS
Filled with our Special Composite Stuffing

are the only guarantee against bruised, galled and chafed shoulders. They are better than other kinds, being soft, springy and absorbent. They also make possible the continued use of a horse collar long after its worn condition would otherwise compel its discontinuance.

NEW PATENTED HOOK ATTACHMENT
(Found Only on Pads Made by Us)

Consists of wire staple with felt washer. It gives hook a firmer hold and prevents pulling off, even though fabric is weakened by long usage. Life of pad is thus materially lengthened. This is the greatest improvement since we invented the hook. Ask your dealer for Tapatco Booklet.



(3)

THIRTY-SEVEN YEARS MAKING PADS
Look for the Felt Washer
SOLD BY DEALERS EVERYWHERE

The American Pad & Textile Company, Greenfield, Ohio
Canadian Branch: Chatham, Ontario

Pat. in U.S. Dec. 1, 1914
Pat. in Can. Dec. 1, 1915

Herefords

LEADING HERD OF THE STATE.

My stock is the result of nearly 40 years of careful breeding and selection. Have for sale a carload of registered bulls and a carload of heifers —1917 calves, grandsons and granddaughters of Beau Donald 31 No. 109885 and Mr. Perfection No. 215575.

They will go quickly. Write or call at once.

Wm. Bemmerly, - Woodland, Cal.



Veramont Stock Farm

Taylorsville, Cal.

Purebred HEREFORDS

Patrician 5th and Don Woodford 4th at head of Herd. Fine lot of young bulls for sale, also few cows and heifers.

Address H. M. BARNGROVER, = Santa Clara, Cal

Shorthorn Bulls BRD PRICED Right

	Price
Dropped, April 1st, '18; color, Red; sire, Baron Wilderburg 2d, 446137; dam, Gay Lassie 3d, 124748. Remarks, exceptionally good range bull	$125.00
Dropped, March 31st, '18; color, Red; sire, Baron Wilderburg 2d, 446137; dam, Edna 4th, 137016. Remarks, Low, thick meated, excellent type	200.00
Dropped, September 2d, '18; color, Red; sire, Baron Wilderburg 2d, 446137; dam, Victoria Countess 7th, 217837. Remarks, full Scotch, good prospect	150.00
Dropped, May 26th, '18; color, Red; sire, Baron Wilderburg 2d, 446137; dam, Elgitha King, 124747. Remarks, an animal of merit	200.00
Dropped, May 11th, '18; color, Roan; sire, Count Victor, 588983; dam, Lovely's Pride, 560070. Remarks, exceptionally good range bull	125.00
Dropped, May 17th, '18; color, Roan; sire, Count Victor, 588983; dam, Grand Duchess, 560068. Remarks, white roan, splendid individual	175.00

Satisfaction guaranteed. Registered and crated free. Prices f. o. b. Willits.

FAIR OAKS RANCH, Willits, Cal.

CARRUTHERS FARMS

LIVE OAK, CALIFORNIA

Shorthorns and Berkshires

HOME OF THE CHAMPIONS

Ten splendid young Bulls for sale, also several heifers. We have on hand the best lot of young Berkshires we ever raised. Come and see them. Prices reasonable.

The World's Largest Herd of Registered

HEREFORDS

The home of MISS RIALTO 2ND, NEVER defeated Grand Champion. Over 900 breeding cows, representing choicest blood lines. Great Bulls in service. Look up our records at the BIG livestock shows.

THE HEREFORD CORP. OF WYOMING, Box 876, Cheyenne, Wyo.
Wm. Cox, Herdsman. Raymond S. Husted, Vice-Pres., Gen. Mgr.

ORMONDALE SHORTHORNS

Are all heavy boned, and of Scotch and Scotch-topped breeding.
Suited for either the range grower or breeder.
EVERY ANIMAL POSITIVELY GUARANTEED.
Whether you buy or not, visit our ranch, 7 miles from Palo Alto on Woodside Road. We welcome inspection. Prices and pedigrees on application.
SHORTHORN CATTLE DUROC-JERSEY SWINE **ORMONDALE CO.** REDWOOD CITY, CAL. R. D. No. 1

ASK YOUR DEALER FOR

El Dorado Cocoanut Oil Cake

for Milk Cows and Chickens and Young Pigs and Hogs. Cheapest food in the market today. If your dealer doesn't carry it, address
EL DORADO OIL WORKS,
433 California Street, San Francisco

RANCHERS and STOCK RAISERS

will be interested in the new fodder plant. SUDAN has proven its worth as a forage and silage plant. There is now a new GIANT SUDAN GRASS. Much heavier yielding and sweeter than the common SUDAN. GIANT SUDAN makes good hay, excellent silage and fine fall pasture. Yields 75 to 100 tons of feed per acre. Morris & Snow Seed Co. of Los Angeles are distributing GIANT SUDAN GRASS.
Price, 75c. a pound, or 10 lbs. for $5.00, postpaid.

CHOICE HERD OF

SHORTHORNS

Headed by

"Princely Stamp"

Grand Champion of the West at Denver, 1918, also Liberty Fair at Los Angeles, and imported
"LOTHIAN MARMION"
The Kind You Want.
Will sell any quantity of stock—from a single animal to a carload.
Maxwell-Miller Cattle Co.
STEAMBOAT SPRINGS, COLO.

Getting There First with Beef Cattle

[Written for Pacific Rural Press.]

The United States is now considered a has-been in the beef cattle industry. Isn't that statement a stunner? We have been reading of the quantities of beef shipped to Europe and have accustomed ourselves to think of our country as one that could pretty nearly supply the whole world with meat. But along comes a report from the American Consul General at Buenos Aires containing the illuminating remark made by the manager of an Argentine packing establishment that "large quantities of canned meat are now regularly sent to the United States, the great cattle country of former years." Also that "the United States can no longer be regarded as a meat exporting nation."

And on top of this we have the statement of Dr. J. R. Mohler, chief of the Bureau of Animal Industry of the Department of Agriculture, that the United States actually imported over one hundred million pounds of meat and meat products during 1918. These imports were received principally from Argentine and Canada. From the one province of Alberta, Canada, cattle to the value of over $3,000,000 were shipped to the United States between September 1 and December 15, 1918.

Government statistics show that the efforts to increase livestock resulted in only 287,000 more beef cattle last year than in 1917; also that the total now in the United States is several million less than that of ten years ago. Our population is increasing at the rate of 21 per cent, but the supply of meat animals is decreasing at the rate of 18.5 per cent. And failure to maintain our livestock in proportion to our population means dependence on other countries, says Dr. Mohler, not only for meat but for leather, animal fats and fertilizer with which to maintain crop yields in the absence of manure. In other words, if we fail to feed ourselves or to satisfy our home market, someone else will.

Perhaps we cannot compete with Argentine and Australia in supplying cheap beef to Europe, but we should at least be able to feed our own population. And to do this we must develop our herds along the same lines followed by other countries which are able to produce meat cheaply enough to compete with our home-grown meat products.

How do they do it? Well, take Argentina for example. The consular report mentioned answers the question very definitely. "There has developed," it states, "the systematic improvement of herds by the infusion of the best stock blood in the world, which has resulted in types of cattle even superior to the imported strains. The extensive growing of alfalfa has made it possible to support and fatten one animal per two and a half acres where five acres of unimproved land were formerly needed to support one animal which later had to be fattened on improved land. Moreover, the cattle are in the open throughout the year."

The conditions are strikingly similar to those here in California, and even if the United States as a whole cannot successfully compete with Argentine and Australia for European trade, this State, with her national advantages and her shipping facilities, ought to be able to meet her own needs and take care of a large export trade besides. Los Angeles and San Francisco packers are now killing beef for export. The demand is good and the business is limited only by the small number of boats available. But more will be released every month, and soon our export trade should be heavy.

So let's prepare for it in the proper way to make it pay. Which is by breeding up our herds.



With her unequaled advantages, why should California not develop an extensive export business in beef and packing house products?

SPRING SALE OF HEREFORDS.

The spring sale of registered Herefords by Pacific Coast breeders will be held at University Farm, Davis, on Wednesday, April 9, 1919. The offering will consist of approximately 75 head of registered Hereford cows, heifers and bulls from leading coast herds. It is freely conceded that this will be an offering of the best Herefords yet sold at public sale in California. The sale will be under the auspices of the Pacific Coast Hereford Cattle Breeders' Association, of which H. H. Gable, Esparto, is president and W. R. Madden, Dixon, secretary.

BUTTE CITY RANCH SALE.

To get more farmers interested in purebred stock is the object of the annual sales planned by Butte City Ranch, the first of which will be held on the ranch at Butte City, March 1.

The offering will include 20 Shorthorns, 30 Berkshires and 20 Shropshire sheep, all registered; also 15 Welch and Shetland ponies. A town holiday will be declared; a band and speakers will be there to entertain, and a good time is promised all who attend.

The sale of Walter F. Mitchell's registered Holsteins at his farm near Visalia will be held on April 3 instead of April 10, as previously announced. The dispersal of the E. R. Putz herd of Holsteins at Laton will also be subject to a change of date from April 9, the date previously announced. Formal announcements of both of these sales will appear in next week's issue.

Red Polled Cattle

15 head fine, purebred bulls and 10 heifers, 8 to 12 months of age. For further information address:

F. A. MECHAM ESTATE,
Petaluma, Cal.

Two 20x40 Indianas,
SANITARY DAIRY, EL CENTRO, CAL.



Four 18x40 Indianas,
MILLBRAE DAIRY, SAN FRANCISCO.

18x30 Indiana,
GEORGE SIMON, TURLOCK, CAL.

From Orland to El Centro

From Santa Clara to Owens Valley

Like almost every other state of the Union, California has put Indiana Silos to the test—and **found them right.** They lead in **numbers,** because they lead in service.

Cheaper feed is the vital issue with California dairymen and stockmen now, and will continue to be for a long time to come. Hay and mill feed are too high priced to yield profits. Nothing will do so much to lower feeding costs as an Indiana Silo.

This "Wizard of the Live Stock World" takes otherwise worthless crops in its great wooden belly, and turns them into rich, succulent, **money-saving** feed. Corn stalks, weedy alfalfa, hay and grain crops that the rain would spoil—sun flowers—all these are being used by owners of the Indiana Silo in California. Even Yucca and Russian thistles—the pestilants—have been made usable for silage.

INDIANA SILO

From Maine to California, Indiana Silo has proved itself supreme as a producer of cheap feed. In the great live stock centers of California Indiana Silos lead all others, and in the dairy industry Indianas are being erected in sets of two to four silos to a ranch. This page shows pictures of Indiana Silos used by leading dairymen.

Two 20x40 Indianas and herd of dairy cattle at McNeil Dairy, Fresno, California.



Pacific Coast Edition
New 1919 Indiana Silo Book FREE

Most valuable Silo Book published on the Coast. Tells how the Indiana is built complete by us, from the tall timber to the finished product. Contains articles on Silage Crops, Filling a Silo, What Size Silo to Buy, Dairy Rations with Silage, Silage for Cattle and Sheep, etc. While they last, a copy will be sent **FREE** to the owners or managers of California ranches. We will also explain our **EARLY BUYERS' DISCOUNT,** which is in effect now.

The Chas. K. Spaulding Logging Co.

Owners of the Logging Camps, Railroads, Lumber Mills and Silo Factories.

SILO DEPT., SALEM, OREGON.

Coast Distributors of "Money Maker Cutters"—the Safe Silo Fillers.



New 1919 Indiana Silo Book for Pacific Coast---Your Copy FREE

Spaulding Logging Co., Dept. P, Salem, Oregon,
Gentlemen:---Please send me one copy of your new 1919 Indiana Silo Book, issued for the Pacific coast. Also details of Early Buyers' Discount. Name_____ Address_____

Livestock and Dairy Notes

Livestock breeders all over the State are invited to send on postal cards, notes regarding their sales, State and County Fair intentions, new stock, etc.

The Dairy.

A. M. Bibens of Modesto reports the sale of registered bulls to A. P. Meiley and Fred Mitle of Modesto and W. J. Hayden, Crows Landing.

J. Chamberlain, Ceres, has two grade cows that brought him over $50 for the month of December besides furnishing skim milk for his hogs.

S. D. Noel of Winton recently bought of Mr. Bailey of Merced a seventeen-months-old pureblood Holstein bull. Mr. Noel has three cows that led in the cream contest in Merced county last year.

Exportation of butter, which was prohibited during the war, will be permitted again under an order recently issued by the War Trade Board. This ought to increase the demand and consequently the price.

John Phillips, Fresno, has recently purchased 15 exceptionally fine registered Holstein heifers from the noted herd of John B. Irwin, Minneapolis. The herd sire is a 27-pound son of the famous Sir Pietertje Ormsby Mercedes.

Grade cows are up again. Robert Zange of Bellflower recently sold 44 Holsteins at auction at an average of $170, with a top of $305. At two recent sales near Tulare animals brought as high as $155. At one sale 74 head averaged $102.50.

A. A. Jenkins, Tulare, has sold a son of Gertie's Son's Victor to C. W. Brown, Tulare. This calf is out of Glenwood Clara 2nd, who recently made a record of 621 pounds butter in a year. Another son of this bull has recently been sold to Jacob Sifers of Tulare.

The Redwoods Ayrshire Farm at La Honda, San Mateo county, reports the sale of its Robin Hood Ayrshire triplet heifers to E. B. McFarland of Steybrae Farm, San Mateo. These calves were sired by Mr. McFarland's bull, Willowmoor Robin Hood 32nd, who recently died.

Bridgford Company, Knightsen, has sold to D. D. Elmore the young bull, Segis Prilly Woodbine Pontiac, to head his purebred herd. This youngster is a grand individual and one of the best bred bulls in the State, his first four dams all being 30-pound cows. He is by the Bridgford grand champion bull, King Segis Alcartra Prilly, and out of a cow sired by a son of King Pontiac Champion—a great cross.

Beef Cattle.

Co-operative associations are being formed by the smaller cattlemen of El Dorado county to secure grazing privileges in the national forests.

At the sale of Beau Blanchard Herefords, owned by Jesse Engle & Sons, Sheridan, Mo., February 3, 53 head averaged $997. Ten Beau Blanchard bulls averaged $2,432, with a top of $4,400.

The American Shorthorn Breeders' Association has compiled a list of Shorthorn breeders by States, which includes those making remittances regularly for registrations. Washington has 231 members, Oregon 205 and California only 100. What's the matter?

An average of $920 on 42 head of Hereford calves was made by Col. E. H. Taylor Jr. of Kentucky in his first annual sale, held in Chicago, February 11. Ten bull calves averaged $2,027, with a top of $5,500. The highest priced female brought $2,000.

T. S. Glide of Hillcrest Stock Farm, Davis, has just sold to White & Terry, Sacramento, one of his most promising young Shorthorn bulls, Hillcrest Count, sired by his Canadian bull, Count Amaranth, he by Escana Champion. The calf's dam is sired by King Lancaster out of old Inwood Mary, hence a three-quarters sister of Inwood Lass, the heifer that made such a sensation in 1907 and was never beaten. The young bull will be used on heifers sired by a grandson of Whitehall Sultan.

Fairoaks Ranch, Willits, reports Shorthorn sales as follows: Bull to B. Mitchell, Spyrock; bull to G. Schirend, Sherwood; bull calf to Mr. Brayton, Cloverdale; bull calf to Dowling Bros., Ukiah; 3 heifers and 2 bulls to William Muir, Willits; 14 cows and bull to D. Wimmer, Willits; 4 heifers to R. P. Cornell, Galt; 2 bulls to Jones & Price, Lakeport; and 3 heifers to S. G. Clark, Capell, Napa county.

Swine and Swinemen.

John M. Bernstein, Hanford, reports the recent sale of President's Bob, out of Beautiful Belle, to A. J. Elliott of Tulare.

Maplewoode Ranch, Calistoga, has a thousand dollar Epochal boar secured from the Gossard Breeding Estate, Indiana.

W. L. Haag & Son, Poland-China breeders of Hanford, report the sale of Chocolate Bess to William Bernstein; Silver Bell to J. Griffith, Caruthers; Laura's Boy to Kern County Land Company, Bakersfield.

R. F. Guerin of Visalia has sold to W. E. Martin, Visalia, a fine young herd header sired by King's Big Bone Leader and out of Belle Beauty, the $360 sow from the Wm. Bernstein herd at Hanford.

M. Bassett & Son, Hanford, report a recent sale of 10 gilts and 1 boar out of a lot of 24 to Harry Brown of Hanford. The gilts were sired by Model Fellow and are wonderful in size, quality and uniformity of type.

That W. Bernstein of Hanford is making a success of raising Poland-Chinas is proved by the fact that in 15 months he sold $14,820 worth of registered hogs at three consignment sales and one private sale. Going some.

F. D. Ross, Hanford, reports the sale of 4 Poland-China boars to the Kern County Land Company, Bakersfield. Mr. Ross says that the demand for stock is very heavy and he is cleaned out of everything for the present.

Fairoaks Ranch, Willits, reports the following sales of Berkshires: Boar to Mr. Tuttle, Garberville; boar to Clifford Bishop, Fort Bragg; boar to Charles Tuck, Willits; boar to Mr. Ramsey, Spyrock; and 3 sows to Smith & Miller, Ukiah.

George M. York, Modesto, has sold the 3 special gilts recently advertised in our columns, together with another choice one. The four go to the Sycamore Farm, Douglasville, Pa. Mr. York has also sold 2 very choice gilts to W. J. Lackron, Modesto.

Western Berkshire Congress officers were elected at Davis last Wednesday as follows: A. B. Humphrey, president; James Mills, vice-president; Frank B. Anderson, secretary; directors, Chas. Maurer, Geo. Murphy, Mrs. Ruth Hardy, Homer Hewins, J. Francis O'Connor, W. F. Sandercock.

M. Bassett & Son of Hanford report the death of their noted herd boar, Model Fellow, but in his son, Model Fellow Jr. they believe they have the coming boar of the State. His dam was Miss Beauty, the grand champion at the P.-P. I. E. His litter mate, Bonieto Model, weighed 236 pounds when six months old and sold for a big price to head a great herd in Arizona.

Dr. J. A. Crawshaw of Hanford reports the sale of the boar, Gerstdale Tule, to Y. R. Smith of Hanford. Dr. Crawshaw recently received a promising young boar, Kings County Buster, from W. C. Williams, Thorntown, Ind. The boar shows some signs of a hard trip, but is coming fast. The doctor has some Indian corn that is hard to beat anywhere. The variety is yellow dent, perfectly formed, many ears with 18 rows kernels and some with 24—hard, deep-kerneled, sound cobs. Good hog feed.

H. D. McCune, Lemoore, reports the following recent sales of young Poland-China boars: King's Jumbo to H. E. McMahon, Stratford; Stratford Jumbo to T. J. Woodworth, Stratford; and Rosebud's Jumbo to W. Bernstein, Hanford. Mr. McCune has his original foundation sow, Peggy, who has farrowed thirteen litters aggregating 103 raised pigs, which is a good indication that his herd is founded on prolific lines.

A. D. McCarty of San Francisco has rented Riverina Farms, Modesto, to Starkweather & Burris, and has sold them a half interest in his well-known herd of Poland-Chinas. The business will be carried on under the name of McCarty & Starkweather. Mr. Starkweather, who will have charge of the ranch, was formerly dairy inspector of Stanislaus county, and Mr.

ANCHORAGE BERKSHIRES

The animals in our herd, strong in the blood of our world's reserve champion, Star Leader, are bred for business. They have size, type, finish, vigor and easy-feeding qualities—everything you are looking for.

Bred Sows and Gilts

Right now we are offering some wonderful sows and gilts, bred for spring farrow to Anchorage Leader 2nd, the outstanding son of Star Leader.

Superb matrons with good bone, well-sprung ribs, strong backs, heavy hams. Right in every way and all ready to go ahead and make money for you.

Order Early--They Are Going Fast

Don't let anything on earth stop you from getting one or more of these wonderful sows and gilts. Order yours right now and begin to reap a golden harvest. Illustrated booklet and price list sent on request.

Anchorage Farm

P. O. BOX 163A ORLAND, CAL.

FEED

WILSON & CO.

High Protein Tankage

and help the PIGS make HOGS of themselves —at less cost to you.

1000 Lyon Street, Los Angeles, Cal.

DESFORD BANKER

(Imported)

This well-known Shire Stallion is for sale. He is sound and a proven sire.

This is probably the only opportunity there will be this season to secure a really high-class Shire Stallion, and is for sale because the owner is absolutely retiring from business.

Also a few imported mares and young stock for sale.

HENRY WHEATLEY, SALVADOR STOCK FARM, NAPA, CAL.

BRIGHTON FARM SHORTHORNS

One three-year-old bull bred by H. R. Clay.

Three outstanding under-a-year bulls sired by Sir Type, a son of Cumberlands Type. A few under-a-year heifers of same breeding.
Also registered Berkshires of both sexes of best breeding.

H. L. & E. H. MURPHY Perkins, Sacramento Co., Cal.

Burris is president of the First National Bank of Newman. It is planned to go into the breeding of big-type Polands on a big scale.

Poland-China sales records are being smashed to smithereens back in the Corn Belt. William E. Greene of Algona, Ia., sold 37 head for an average of $811, with a top of $4,000; Fred Sievers, Audubon, Ia., sold 38 head for an average of $760, with a top of $1,700, and an average of $824 for 20 sows bred to Smooth Jones; R. W. Halford, Manning, Ia., averaged $640 for 40 head, with a top of $3,400; L. H. Glover, Grandview, Mo., averaged $823 on 37 head, with a top of $2,000; Silver Brook Farm, Muncie, Ind., averaged $688 on 43 head, with a top of $3,500. When will the limit be reached?

Sheep.

Wool growers will receive from 40 to 50 cents a pound for the coming clip, according to S. W. McClure, secretary of the National Wool Growers' Association, who has recently returned from Washington.

Fred A. Ellenwood of Red Bluff urges all sheepmen to help in having amended the law that now prohibits traveling or camping upon any public highway between the hours of sunset and sunrise. This makes it almost impossible for stockmen to travel on the roads. If the law was amended so as to be applicable only to State highways, it would give a man a chance to get off the main highway and camp at night on some less traveled road. It has been proposed to amend the law so that the words "to camp" will be omitted.

LIVESTOCK DIRECTORY.

Rate in this directory 3c. per word each issue.

SWINE.

Berkshires.

CASTLEVIEW GIANT TYPE BERKSHIRES are the thrifty, typey, quick-growing kind that will make larger profits for you. Prizes and Championship honors are awarded—by the greatest judges in America—only to animals possessing the essential qualities for economical meat production, viz.: heavy bone, good feet, broad strong backs, large hams and easy feeding qualities. Our grand champion herd includes Riverby Princess, grand champion sow of the world; Rookwood Lady 100th, 1917 grand champion of America; Mayfield Laurel 13th, 1917 grand champion of California. Bred sows, bred gilts and fine weaned pigs for sale. **Castleview Ranch Santa Rosa, Cal.**

ANCHORAGE FARM

MONEY-MAKING BERKSHIRES—The prolific, easy-feeding kind that make the highest priced pork from the lowest priced feed. They will increase your profits. Prices reasonable; satisfaction guaranteed. Write for free booklet, describing our world's reserve champion, STAR LEADER. We are now making a special offering of bred sows and gilts. Anchorage Farm, Orland, Cal.

$25.00—$35.00—$50.00
BARON DUKE 201ST
Omaha Grand National Champion
BOAR PIGS: 3, 5, and 6 months old, from 650-pound prize-winning sows. We will sell nothing that we wouldn't use ourselves.
SANDERCOCK LAND CO.
906 K St., Sacramento,
In charge of Natomas Land sales.

GRAPEWILD FARMS BERKSHIRES
A few spring boars and fall pigs by Big Leader, Grapewild Farm Leader and Majestic King.
A. E. Humphrey, Prop., Escalon, Cal.

CROLEY'S BALANCED HOG FEED—The cheapest feed to fatten hogs. Write Geo. H. Croley Co., Inc., Livestock Supplies, 8th and Townsend streets, San Francisco.

BERKSHIRES bred at Imperial Stock Farm are the kind that satisfy. Write us or call and be convinced. R. J. Merrill & Son, Morgan Hill, Cal.

MAPLEWOODE RANCH, Calistoga, Cal., offer some fine Berkshire fall and spring pigs of both sexes. Prices consistent with quality and breeding.

BERKSHIRES IN PERRIS—They make money for me. Write for catalogue and prices. F. L. Hall, Perris, Cal.

BERKSHIRES—Sired by Star Leader, the $1,500 boar Koumiss Registered Stock Farm, Modesto.

FOR REAL GOOD BERKSHIRES write Frank B. Anderson, R. 7, 21W, Sacramento, Cal.

HOPLAND STOCK FARM—Registered Berkshires. Prizes on application. Hopland, Cal.

CARRUTHERS FARMS BERKSHIRES—Cholera immune. Live Oak, Cal.

REGISTERED BERKSHIRES—Write R. D. Home, Dos Palos, Cal.

BERKSHIRES—Fair Oaks Ranch, Willits, California.

Poland-Chinas.

SOW BARGAINS—We are offering some exceptionally nice tried sows, bred and open gilts, at attractive prices. They are all sired by the undefeated and world's grand champion Superba and out of big type sows, which cost me $200 and over. Investigate before buying elsewhere. Rough's Greenfields, Arlington Station, Riverside, Cal.

NOW BOOKING ORDERS for spring pigs, either sex, from my prize-winning, large type Poland-China hogs. Also will book a few orders for bred gilts, February and March farrow, and a few good, serviceable, aged boars. Hale I. Marsh, Modesto, Cal.

THE BEST IN THE WEST—California Gerstdale and President's Equal are my herd sires. Fall and spring boars now ready to move—each one a corker. Dr. J. A. Crawshaw, Hanford, Cal.

HARTSOOK BIG TYPE POLANDS—A fine lot of young boars. Both bred and open gilts for sale. Toggenburg goats and Holstein bulls ready for service. Fred Hartsook, Lankershim, Cal.

BARGAINS IN POLAND-CHINA SOWS—All immune. Good mothers and prolific. Registered stock. Also boars. Write for details. N. C. Hansen, Coachella, Cal.

ELDERSLY FARM—Big type Poland-Chinas with quality. Young stock from the breed's best big type sires for sale at reasonable prices. J. H. Ware, Live Oak, Cal.

FOR SALE—April boar by Young Jumbo, by grand champion Kings Big Bone Leader. Will ship on approval. A. Buckland & Son, Route E, Box 126, Fresno.

BOOKING ORDERS for spring pigs, sired by "Bob Big Boie" 281289, litter brother of the Junior Champion at Sacramento, 1918. P. E. Mitchell, Atwater, Cal.

WEANLING PIGS, both sexes, Gerstdale Jones and Caldwell's Big Bob blood lines. Booking orders for spring. Forest View Ranch, Paradise, Cal.

YOUNG POLAND-CHINA PIGS—Three months and up, $20 each, either sex; registered. Edward A. Hall, Route 1, Box 39, Watsonville, Cal.

OXBONE HERD offers March boars for sale from King's Big Bone Leader, grand champion at State Fair, 1918. Write F. E. Fay, Tipton, Cal.

40 SOWS and daughters of Big Bone Bob and I. B. A. Wonder sows for sale. Price right. N. K. Horan, Lockeford, Cal.

BIG TYPE POLAND-CHINAS—Stock from the best herds of the Middle West. N. Hauck, Alton, Humboldt county, Cal.

20 HEAD of Big Bone Bob, Grand Model and I. B. A. Wonder Stock for sale. J. W. Wakefield, Acampo, Cal.

LAKE SIDE STOCK FARM—Large, smooth and big boned Poland-Chinas. Geo. V. Beckman & Sons, Lodi, Cal.

REGISTERED POLAND-CHINA SWINE—Prize winners. Finest stock in the State. M. Bassett, Hanford, Cal.

BIG-BONED POLAND-CHINAS—From Eastern prize-winners. D. H. Forney, Route G, Fresno.

POLAND-CHINA PIGS WITH RIBBONS. Prices right. Johnnie Glusing, Winton, Cal.

POLAND-CHINA PIGS—Bernstein, Trewhitt, and Rose blood. B. M. Hargis, Tulare.

REAOAKS RANCH herd of registered Poland-Chinas. W. J. Hanna, Gilroy.

BIG-BONED POLAND-CHINAS—Stock for sale. E. S. Myers, Riverdale, Cal.

Chester Whites.

THE BILLIKEN HERD of Chester Whites—Practically sold out. Offering this issue: One yearling boar; one bred yearling gilt to farrow in April; five fall boar pigs. Sows are bred for March and early April farrow and will book a limited number of orders for weaned pigs. Nothing better anywhere in the West. Plenty of size and all kinds of quality. C. B. Cunningham, Mills, Sacramento county, Cal.

PUREBRED CHESTER WHITES—August boars. Prices moderate. Cedarhurst Ranches, Route 2, Sacramento.

VIGOROUS CHESTERS—All ages. Prices right. The Melone Co., Oak Knoll Ranch, Napa, Cal.

Duroc-Jerseys.

DUROC-JERSEYS AT IRELAND—Home of Cherry Volunteer II. Grand Champion Boar at Riverside. Ireland's Orion Defender and Orion's King of Ireland are excellent sires in service. Booking orders for spring delivery. Ranch at Owensmouth. City office, 1219 Brockman Bldg., Los Angeles.

WE WON MORE MONEY on Durocs at the State Fair than any other exhibitor. Why not buy some of this winning stock? June Acres Stock Farm, Davis, Cal.

DUROC-JERSEYS—Burke's Good Enuff, Golden Model, King's Colonel and Pathfinder blood. Derryfield Farm, National Bank Building, Sacramento.

DUROC WEANLINGS for the farmer. Easy feeders; 200 lbs. at seven months. W. W. Everett, River Bend Farm, St. Helena, Cal.

OPEN GILTS, weanling pigs either sex at $20 each, out of mature sows. F. W. Gardiner, Route 4, Box 735, Sacramento.

A FEW CHOICE BRED GILTS, spring boars and gilts of the best blood lines. H. P. Bloomfield & Sons, Willows.

BOULDER DUROCS all sold out, excepting some one pigs weighing 100 lbs. apiece. H. E. Boulder, Napa.

HEAVY-BONED DUROCS—A few service boars for sale. Ormondale Co., Route 1, Redwood City, Cal.

DUROCS—Defender, Clinton B. and Golden Model strain. The big type. Allen Thompson, Tracy.

YOUNG BOARS by "Oaks Chief," grand champion Indiana and Ohio. Sterling Smith, San Diego.

REGISTERED DUROCS—All from prize-winning stock. W. P. Barkley, Gridley, Cal.

DUROC-JERSEYS—October pigs, $15.00 to $20.00. Jack London Ranch, Glen Ellen.

REGISTERED DUROCS. Stock for sale. W. J. Eggleston & Sons, Visalia, Cal.

HAMPSHIRES.

REGISTERED HAMPSHIRES—Fine stock. Two open gilts. Now booking orders for weaning pigs for April. Our Hampshire herd boar being related to our prize Calif. sow sires, at 15c lb. Tom M. Dodge, Gardena, Cal.

MY HAMPSHIRES are money makers. Stock for sale. Buy now. L. A. Denker, Saugus, Cal.

HAMPSHIRE SWINE—Young stock for sale. Ira Hart, Dos Palos, Cal.

Miscellaneous.

O. I. C. BREEDERS' NOTICE—I will sell Ohio Boy, two-year-old imported boar; none better. Also boar pigs ready for spring breeding (sire Ohio Boy, dam Toddler's Beauty, imported). Write for full information. Jas. Little, Wasco, Cal.

LARGE YORKSHIRES—The ideal hog for the progressive farmer. Young stock for sale. A. L. Tubbs Co., Calistoga, Cal.

MULE-FOOT HOGS—Large type. H. T. Bailey, P. O. Box 37, Lodi, California. "The Blue Gums."

DAIRY CATTLE.

Holsteins.

A PRICE ON EVERY ANIMAL.
Herd free from tuberculosis. All sales subject to sixty days' retest. Sons of Finderne Soldene Valdessa, whose dam is not only a world record cow in seven-day division, but has two sisters holding world's records for yearly production.
Toyon Farms Association,
679 Mills Building, San Francisco.

HOLSTEIN HEIFERS—For sale, 20 high grade heifers, 1½ to 2 years old. Well marked, fine condition. Part of them bred to freshen this fall to Buttercup bull. C. L. Knestice, Rt. A, Box 236, Reedley, Cal.

HIGH-CLASS HOLSTEINS—I have for sale some sons of Sir Veeman Korndyke Pontiac from A. R. O. dams. Write for particulars or come see them. R. F. Guerin, Visalia, Cal.

FANCY GRADE HOLSTEIN COWS and heifers from herd testing 100 per cent. Animals qualified for certified dairies. The Lewis Company, San Jose.

THE McCLOUD RIVER LUMBER CO., McCloud, Cal.—High-class thoroughbred Holstein bulls for sale. Write for prices and pedigrees.

PALO ALTO STOCK FARM, Palo Alto, breeders of registered Holsteins. Heifers and service bulls. Reasonable prices.

GLORIETTA STOCK FARM, WOODLAND, CAL.—Registered Holsteins. Special offering of fine heifers and young bulls.

CREAMCUP HERD—Registered Holsteins, Pontiac bull calves. M. Holdridge, Rt. A, B. 437, San Jose, Calif.

REGISTERED HOLSTEIN BULLS with world's record backing. Kounias' Registered Stock Farm, Modesto.

BREEDERS OF REGISTERED HOLSTEIN cattle and Berkshire pigs. Whittier State School, Whittier, Cal.

F. H. STENZEL, SAN LORENZO, CAL.—Breeder of Registered Holsteins. High test producers.

REGISTERED HOLSTEINS—A. W. Morris & Sons Corp., Importers and Breeders, Woodland, Cal.

REGISTERED HOLSTEINS—Best blood lines of the breed. R. L. Holmes, Modesto, Cal.

SUNNYBROOK RANCH, Willits, Cal.—Registered Holstein-Friesian bulls for sale.

GOTSHALL & MAGRUDER—Breeders of registered Holstein-Friesians. Ripon, Cal.

CHOICE HOLSTEIN bulls for sale. No females. Millbrae Dairy, Millbrae, Cal.

BREEDERS OF REGISTERED HOLSTEIN cattle. McAllister & Sons, Chino, Cal.

HOLSTEIN BULLS and bull calves from A. R. O. cows. C. A. Miller, Ripon.

REGISTERED HOLSTEIN CATTLE—E. E. Freeman, Route B, Modesto, Cal.

HENGERVELD DE KOL BLOOD. High producers. T. B. King, Visalia.

EL DORADO HERD OF HOLSTEINS—Alex. Whaley, Tulare, Cal.

Jerseys.

SUNSHINE FARM JERSEYS—Tuberculin tested. Production counts. E. E. Greenough, Merced.

YOUNG BULLS from Register of Merit cows. W. G. Gurnett, Orland, Cal.

Guernseys.

GRAPEWILD FARMS GUERNSEYS
A 21-months-old bull out of dam with record of 615 pounds in A. A. class and a few young bulls up to 1 year of age.
A. B. Humphrey, Escalon, Cal.

HIDDEN VALLEY FARM offers for sale 2 young Guernsey bulls, ready for service, out of high record advanced register dams. A. J. Welch, proprietor, Redwood City.

EDGEMOOR FARM GUERNSEYS—First in the show ring and in official records. Few animals of either sex for sale. Edgemoor Farm, Santee, Cal.

PALO ALTO STOCK FARM, Palo Alto—Breeders of registered Guernseys, both sexes; prices reasonable.

Ayrshires.

NORABEL FARM AYRSHIRES—Purebred young stock for sale at reasonable prices. Le Baron Estate Company, Valley Ford, Cal.

ELKHORN FARM AYRSHIRES—Choice young bulls at reasonable prices. J. B. Meyer, 110 Montgomery St., San Francisco, Cal.

FOR SALE—Eight months purebred registered Ayrshire bull, $150. Redwoods Ayrshire Farm, La Honda, Cal.

AYRSHIRES—Registered, all ages. E. B. McFarland, 412 Claus Spreckels Building, San Francisco.

MILKING SHORTHORNS.

BREEDERS OF REGISTERED SHORTHORNS—Milk strain, choice young stock for sale. John Lynch Ranch, Box 141, Petaluma.

INNISLAIL DAIRY SHORTHORNS—Registered young bulls for sale. Alexander & Reid, Suisun, Cal.

BEEF CATTLE.

RANCHO SAN JULIAN SHORTHORNS—Purebred range bulls, unregistered, for sale. Estate Thos. B. Bishop, Santa Barbara or Lompoc, Cal. John Tromp, Supt.

REGISTERED SHORTHORNS. A few choice young bulls, grandsons of Lee Knight Prince 2d. Fair Oaks Ranch, Willits, Cal.

AM A SPECIALIST in registered beef cattle and familiar with the best herds in the country. If you need Shorthorns or Herefords, make use of my experience, save money and be satisfied. R. M. Dunlap, Hotel Land, Sacramento.

ALAMO HERD REGISTERED HEREFORDS (founded by Governor Sparks). Herd and range bulls. Reasonable prices. W. D. Duke, Likely, Modoc county, Cal.

REGISTERED MILK AND BEEF SHORTHORNS, bulls and heifers for sale; catalogue free. Thomas Harrison, Santa Rosa Stock Farm, Santa Rosa, Cal.

REGISTERED YEARLING SHORTHORN Bulls—Heavy-boned, thick-meated Scotch and Scotch-topped breeding. Ormondale Co., Route 1, Redwood City, Cal.

THE NEVADA HEREFORD RANCH, Jno. H. Cazier & Son Co., props., Wells, Nevada. Registered Hereford cattle. Breeding stock for sale.

JACK LONDON RANCH—Breeders of prize-winning beef Shorthorns. Glen Ellen, Cal. Eliza Shepard, Supt.

HOPLAND STOCK FARM—Registered Shorthorns. Prices on application. Hopland, Cal.

REGISTERED HEREFORDS—H. H. Gable, Diamond G Ranch, Esparto, Cal.

SIMON NEWMAN CO., breeders of Registered Herefords, Newman, Cal.

GEORGE CALLAHAN, Breeder of registered Herefords, Milton, Cal.

GEORGE WATTERSON—Breeder Registered Herefords, Bishop, Cal.

HEREFORDS—Mission Hereford Farm, Mission San Jose, Cal.

SHORTHORNS—Carruthers Farms, Live Oak, Cal.

SHEEP AND GOATS.

F. A. MECHAM ESTATE, Petaluma, Cal.—Breeders and importers of Shropshire, Rambouillets and American Merinos, both sexes. Also Red Polled cattle. Take electric car at Petaluma or Santa Rosa for Live Oak Ranch.

SHROPSHIRES FOR SALE—Ewe lambs and matured bucks from Iowa. Non-related. C. J. L. Stonebraker, Route A, Chico, Cal.

WANTED—Merino ewes and Angora goats, 1000 head, for cash. State price and age. H. C. Jacobsen, Gen. Del., Napa, Cal.

DORSETS AND ROMNEYS—Dorset ram lambs for sale. John E. Marble, South Pasadena, Cal.

BISHOP BROS., SAN RAMON, CAL.—Breeders and importers Shropshires.

KAUPKE BROS., WOODLAND, CAL.—Breeders, importers of Hampshire sheep.

CHAS. KIMBLE—Breeder and importer of Rambouillets, Hanford, Cal.

CALLA GROVE FARM, MANTECA, Cal.—Breeders and importers of Hampshire sheep.

HORSES AND MULES.

FOR SALE—One of the very best draft stallions in California; cheap. Weight 2150 pounds; 8 years old; color brown. Correspond with W. N. Price, Route C, Box 93, San Jose, Cal.

REGISTERED BLACK Percheron stallion, seven years old, weight about 1700. Terms reasonable. Write John Secrest, Escalon, Cal.

FOR SALE—Two imported Percheron stallions. Reasonable prices. Mary A. Hunter, Bradley, Cal.

FOR SALE—One Percheron stallion and one Mammoth Jack. Colony Holding Corporation, Atascadero, Cal.

MISCELLANEOUS.

This Is to Announce Our
FIRST ANNUAL FARM SALE
To be held in the town of Butte City, Glenn County, California, at 1 p. m., Saturday, March 1, 1919.

We will sell 20 Registered Shorthorns, 30 Registered Berkshires, 20 Registered Shropshires, and 15 Ponies. This sale is primarily to advertise the ranch. We do not expect high prices, but we know that every animal we sell will make a market for more in the future. It will be a buyer's opportunity. All stock of very best breeding. Col. W. H. Hord will conduct the sale.

Butte City is 16 miles southeast of Willows, 25 miles southwest of Chico, 19 miles north of Colusa, 80 miles north of Sacramento.

BUTTE CITY RANCH,
W. P. Dwyer and W. S. Guilford, Owners.

FOR CHEAP HOG FEED
Plant
JERUSALEM ARTICHOKES.
Cheapest feed alfalfa and a winter feed. Tubers $5 per 100 pounds, 1000 pounds and over $4 per pound.
CALIFORNIA NURSERY COMPANY,
NILES, CALIF.

BUTTE CITY RANCH—Shorthorns, Shropshires, Berkshires and Shetland ponies. Write for prices and descriptions before buying. Butte City Ranch, Box F, Butte City, Glenn county, Cal. W. T. Dwyer and W. S. Guilford, owners.

CROLEY'S BALANCED DAIRY FEED. The cheapest milk producer; and Croley's Calf Meal, the best California calf raiser. Geo. H. Croley Co., Inc., Eighth and Townsend streets, San Francisco, Cal.

TWENTY HEAD of No. 1 grade dairy heifers for sale from 1 to 2 years. L. A. Fondini, Copperopolis, Cal.

Three Troublesome Swine Diseases

Aside from cholera, which can be prevented by immunizing the hogs, and scours and thumps, the ills of pighood for which treatment has been prescribed in these columns many times, probably the most troublesome diseases encountered in California are coughing, rheumatism and paralysis of the hind parts.

COUGHING IN PIGS.

Generally the pigs eat well and appear fairly thrifty, but they cough a great deal. Sometimes it is difficult to determine the cause. Dust will cause coughing, but there is little dust at this season of the year. Tuberculosis causes hogs to cough, and if they are receiving unpasteurized skim milk from a herd that is not known to be free from the disease, perhaps this is the trouble.

If a pig dies, he should be examined for tuberculosis. If no symptoms are found, then examine for lung worms, as this is often the trouble when quite a number of hogs are affected at one time. It is due to the presence in the lungs of a fine, thread-like worm, which is usually found in the smaller end passages of the windpipe. The worm is so small that it is difficult to detect unless one knows just where to look for it. Animals infected with this worm are constantly throwing off both the worms and eggs when they cough. This contaminates the feed and drinking water and other hogs thus get the worms.

Upon examination discolored areas will be found on the surface of the lungs, varying in size from that of a pea to that of a walnut. If these spots are opened, they will be found to contain fully developed worms and some eggs. If a worm dies in this location, it changes to a cheesy substance, which later becomes of a lime-like hardness.

No curative treatment is satisfactory on account of the difficulty in reaching the worms. Steaming with oil of turpentine or oil of eucalyptus is effective, but it is difficult to give this treatment. Medicine is sometimes injected directly into the windpipe, but this is a dangerous practice and should be done only by a veterinarian. Consequently, about the only thing you can do is to adopt preventive measures by general cleanliness and disinfection around the premises. It is advisable to change the hog fields, and if possible to plow up the old field.

RHEUMATISM.

This is quite a common condition, and may affect the joints or the muscles, or both. The hogs are stiff, and sometimes have swollen, tender joints, the lameness appearing first in one leg and then in another. Sometimes a hog gets so bad that it crawls along on its knees.

The true cause is not well understood, although exposure to colds and dampness is undoubtedly a contributing cause. The affected animals should be placed in clean, dry, comfortable pens and should not be exposed to the inclemencies of the weather. They should not be allowed out in rains, and should have shelter at night so that they will not be affected by dampness.

Internally they should receive salicylate of soda. For a hog weighing 200 pounds, give 2 drams every two hours in a small amount of feed until eight doses are given. After this continue the same dosage, but only three times a day. If there is no improvement after ten days' the treatment may be discontinued, as in this case the hog probably has some other ailment, for salicylate of soda, properly administered, is quite certain to cure all acute attacks of rheumatism.

PARALYSIS OF THE HIND PARTS.

When this trouble occurs the hog is unable to use its hind legs, although otherwise apparently healthy. Its appetite is good, and it seems bright and has no trouble in raising itself on its front feet, but it apparently has lost all control of the hind limbs.

Paralysis is generally caused from a lack of mineral matter in the feed—a want of sufficient phosphate of lime in the nerve system, and especially the nerves supplying the hind legs. Pregnant sows are most often affected, and their nerves and bones become deficient in phosphate of lime on account of the drain on the system in developing their young.

Give 1 tablespoon of codliver oil, 15 grains of phosphate of lime and 3 drops of fluid extract of nux vomica in a little feed twice a day and continue until improvement is noticed. Also, use oil meal in the regular feed.

It may be encouraging to know that pigs from sows that have had this trouble do not seem any more liable to be attacked by the disease than pigs from a sow that has never had it.

TULARE COUNTY'S FINEST RANCH AT AUCTION.

In offering the Whitten Ranch at public auction the owners present a rare opportunity for someone to settle right down on a fully established ranch of the most profitable kind and quickly have an independent income.

When Mr. Whitten, the former owner, decided to develop a ranch in the San Joaquin Valley he had a soil expert spend weeks in searching and testing, and pick out for him what he considered the best quarter section in the entire valley. Then Mr. Whitten secured another expert to lay out the ranch and establish a stand of alfalfa, and experienced farmers have pronounced the work the best job of developing ever done. The same good judgment and skill were used in erecting the buildings, equipping the ranch with implements and tools, and stocking it, and while inspecting the property one is impressed at every turn with the foresight that the former owner must have had.

The present owners have decided to offer the ranch itself and all the implements, tools, furniture and livestock at auction, and the ranch itself will be sold on such reasonable terms that a purchaser should be able to make all payments out of his profits and still have enough left over for a mighty good living.

To those who realize that science and system are the keynotes of success in farming nowadays, a wonderful opportunity is afforded. They will find this ranch the kind that they have been wishing they could own. Others who have been going for years without implements and tools which they really ought to have, but which seemed a little beyond their reach, will be able to find them at this sale and to make a little money go a long way.

It will prove a liberal education in modern farming to attend this great sale, and every progressive farmer who can possibly attend should plan to be there Thursday, February 7, at 9 o'clock, when Col. Ben A. Rhoades will start the sale. Fuller particulars will be found in the advertisement which appears elsewhere.

GARDEN CITY DUROC SALE.

Dr. L. J. Belknap of the Garden City Sanitarium, San Jose, has commissioned Prof. Coffey of the Illinois Agricultural College to buy 25 purebred Shropshire ewes for him. This means much to the sheep industry of California, as Dr. Belknap is a thorough livestock man and will develop one of the finest flocks in the West.

It also means an opportunity for buyers to secure high-class Duroc-Jersey hogs, for in order to make room for the sheep Dr. Belknap has decided to dispose of his choice herd of swine at public auction. Anyone wishing to obtain foundation stock or individuals to improve what they already have will make no mistake in attending this sale. There is not an inferior animal on the place; in fact, from the herd boar to suckling pigs they all look like prize winners.

Col. Ord L. Leachman will cry the sale, which will be held March 18 at 1 o'clock.



EXTRA! EXTRA!

The Whitten Ranch

Pride of Tulare County

At Public Auction

Everything goes—the ranch itself, the implements, tools, furniture, and the well-known live stock.

Dairy Cattle

The registered Holstein bull, Parthena Sir Colantha, of royal breeding, his mother being considered the best foundation cow this state ever had. Two young bulls; 2 bull calves; 10 fresh heavy-producing cows; 26 heifers over eighteen months; 6 heifers six to nine months; 4 heifer calves—all well-bred grade Holsteins, marked like purebreds.

Horses

Team heavy Percheron mares; team medium Percherons; team matched sorrels; 6 heavy mares and horses; Percheron colt, 7 months old.

Hogs

A grand lot of registered Poland-Chinas of the leading Eastern blood lines. They have the size, bone, stretch and easy-feeding qualities you want. One registered boar, Ideal Jumbo Boy, a real herd header. A corking good brood sow with litter. A granddaughter of Hartsook's Big Bone Girl. Six bred yearling gilts that are top notchers. Also 100 gilts and 140 barrows—mostly Duroc; some grade.

Sheep

Registered imported Hampshire buck; 1 young buck; 25 mature ewes; 12 yearling ewes; 18 lambs—all young stock by registered ram.

The Ranch You've Heard So Much About

The best developed, best equipped, and heaviest producing ranch in the central San Joaquin Valley. 159 acres of rich soil; 100 acres in a fine stand of alfalfa; 36 acres already in barley; 20 acres in 40 fields, hog tight, with feed troughs and automatic concrete watering troughs in each field; balance in corrals, garden and for houses.

Three houses, one an attractive 6-room bungalow with all modern conveniences. Bunk house of 5 rooms. Shower bath, running water, etc., for help. Full set of farm buildings, including hay barn, dairy barn, calf barn, separator house, pasteurizing plant, farrowing house, etc. Three electric pumping plants.

With this ranch you don't have to worry about soil and water conditions, or run the risks and suffer the losses when raw land is developed. You can settle right down on a completely developed ranch, fully equipped for carrying cattle, hogs, and sheep, and raising all necessary feed.

Thursday, February 27, at 9 O'clock

Pay From Your Profits

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Best time to clip is in the spring, when coat is heavy and animal is soft. Short hair means healthier pores and prevents sickness. A horse kept in good condition in the spring stands better chance of remaining healthy all year. The best way to clip is with a Stewart No. 1 Ball Bearing Machine, $9.75. Send $2.00, pay balance on arrival, or write for catalog.

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Livestock Queries

Rhubarb Leaves as Feed for Stock

To the Editor: Is there any danger in feeding rhubarb leaves to cows? They are fond enough of it to steal it, but I am afraid it will cause digestive troubles or a shrinkage in the flow of milk.—A. L. F., Santa Cruz.

[Answered by Prof. F. W. Woll, University Farm, Davis.]

Rhubarb leaves and stalks cannot be safely fed to stock in large amounts because they contain considerable oxalic acid which will cause inflammation of the stomach and intestines that may terminate fatally. However, it probably would take a considerable quantity of leaves to cause damage because of the large amount of water in the plant. Given in moderate amounts there can be no danger or obpection to the use of the leaves for stock feeding. They will serve as a relish to stock as they do to man.

Growth in Milk Duct.

To the Editor: I have a good dairy cow that bruised one teat a year ago, just 10 days before I dried her up, and when she came fresh there was a lump in the teat and a very slow flow of milk. I left the calf with her for a very long time, but it did not help, so I dried up the quarter and this year I can't get any milk from it without using a tube. What can I do?—E. B., Byron.

[Answered by Dr. E. J. Creely, San Francisco.]

Your cow has a growth of obstruction in the milk duct, which will have to be removed with a teat slitter. This is a very delicate operation, inasmuch as if it is not done exactly right and if proper after-care is not given, the quarter will be ruined. Consequently, unless you have had experience in work of this kind, you ought to have it done by a qualified veterinarian.

Cure for Thoroughpin.

To the Editor: My mule began to develop a thoroughpin about two months ago. It seems to be quite sore, as he holds up his foot a good deal and is a little lame. What remedy should I use?—P. B., Kerman.

[Answered by Dr. E. J. Creely, San Francisco.]

Put a shoe on the affected foot of the mule with heel calks about two inches high, but no toe calk, and apply the following blister: Lanoline, 4 ounces; pulverized cantharides, ½ ounce; bin iodine mercury, 2 drachms; euphorbia, 1 drachm. Thoroughly mix, clip the hair and rub in well. Do not permit the blister to exert its effect in front of the hock.

Who Is Liable for Damages?

To the Editor: A man having stock of his own takes in other stock to pasture. By reason of poor fences the stock gets out and damages neighboring crops and property. Who is liable—the man who owns the stock, or the man who takes the stock to pasture?—E. P. T., Concord.

[Answered by Livestock Editor.]

It is the opinion of our legal advisor that if a man who pastures stock for anyone takes pay for it, he is liable in such a case as that mentioned by you. But if he pastures the stock just as a favor to a neighbor or friend and does not take pay for it, then the owner of the stock is liable.

Cow Gives Bloody Milk.

To the Editor: The milk from one of my cows contains small clots of blood. How can I overcome this?—W. S. T., Salinas.

[Answered by Livestock Editor.]

Bloody milk is often due to the presence of small tumors or growths in the teats, or it may be due to the rupture of a blood vessel. As the manipulation of the teats during milking stimulates the bleeding, you should use milking tubes for about 10 days, and after each milking inject in each affected teat a mixture of ½ ounce of formalin and a quart of warm water.

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These sheep are purebred, large and smooth, with heavy fleece of fine, long, staple, white wool. Yearling rams and ewes. Individuals or carload lots. Prices reasonable. Correspondence solicited.

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Cream of the breed. Large type, mammoth sows, senior yearlings, 7 feet long, over 36 inches tall. Mammoth Boar, Orion Cherry King, 2 years old, weight 900 lbs. The finest lot of gilts you want to look at. Blue Ribbons and Purple. No better ever offered on the Coast. Young Boars ready for service, big bone, typey fellows. Orion Cherry King and Colonel strains. Come and get them at your own price. Terms cash, or its equivalent paper. MARCH 18, 1:00 P. M. SHARP.

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Sell your stock or implements at public auction. I can get big prices for you. Have cried successful sales in all parts of the State. Customers always satisfied. Write for terms and dates.

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Poultry for Profit

[Written for Pacific Rural Press by Susan Swaysgood, Pomona.]

DUCKS AND GEESE PROFITABLE.

(Concluded)

FORCING FOR THE MARKET.

If goslings are to be sold green—that is, while young—they can be forced just as ducks are, but if they are intended for mature geese they need nothing but pasture and water after the first ten days. Lots of people do not feed at all, but just turn them out with the mother goose. But they don't raise all they hatch. Believe me, little goslings are very tender for the first few days and it is not only humane to feed and care for them, but it is profitable. Give them the egg, bread crumbs and rolled oats at first. They eat very little for a few days and this will give them a good start. I used to bake bread for them the same as for chickens; but it costs to bake bread and I think the eggs boiled hard, which means they must be boiled 15 minutes, are good enough. But always mix the egg with the rolled oats and bread crumbs, and after the first few days throw a little green feed in and let them pick it themselves. Their beaks are sharper than a duck's beak and they can cut the green feed. After ten days all you need do is to give them pasture and a bed to sleep on and the cheapest kind of a shelter and they will bring in the coin next fall.

RUNNING THE INCUBATOR FOR DUCK EGGS.

In hot air machines the heat is a little drier, in my opinion, than in hot water machines. This may be only my opinion. Any way, in hot air machines I used, years ago, to put a thin layer of moist sand in the incubator with the eggs. The machine was first run as for hen eggs until it gauged 103, and run even for some time, then the sand trays and eggs were put in, the regulator being left as it was until the machine caught up of its own will. The moisture from the shallow layer of sand was not much, but it prevented the eggs drying out at first, as they do without any misture, and also it prevents the hardening of the shells right off the bat.

Whether this is of any special benefit to the ducks that hatch out I am not able to say, but I know that it gives the eggs a more natural environment to start the germs in. Wild ducks make their nests near ponds, or, as we called them in Dakota, sloughs. Around the edge of these sloughs we used to go duck-egg hunting, finding the nests always in the cool, moist places, well concealed with grass. Moisture to start the eggs is an effort to imitate nature, and if the incubator is darkened it comes as near as we can get. Leave a small spot opposite your thermometer clear and darken the rest of the glass with a moist blueing bag. The eggs then are in a semi-dark moist nest, with the moisture under them, as it should be.

TEMPERATURE AND MOISTURE.

When the machine comes up to 103, turn the regulator a trifle lower and run the machine as near 102 as you can, keeping under rather than over that figure. The sand should not be moistened again, but after the first week the eggs should be sprinkled every other day. The third week sprinkle four times, and the last week sprinkle every day and increase the heat to 103 until the ducklings begin to hatch, when you can run it up to 104 and get them out quickly. About the day before the eggs are due moisten the sand trays well; it lasts longer than the moisture on the eggs. But sprinkling the eggs is necessary in order to rot the shell. Ducks are not good at breaking hard shells, so all the sprinkling is for that purpose. It is not that the young duckling needs moisture, as some think, but the shell gets very hard with the incubator heat and must be rotted.

THE ENGLISH CLASS.

[Written for Pacific Rural Press by Susan Swaysgood, Pomona.]

This class comprises all the Orpingtons—that is, all colors: the Dorkings, Speckled Sussex, the Red Caps and some of the Games. Granted that the Games are all called Orientals, in spite of that I insist that the old Game birds are an English breed, because all resemblance of any other nationality has been bred out of them for over a hundred years. Still the standard of perfection calls Games Orientals, so we will have to call them so to have peace in the family.

Dorkings are the real foundation of Orpingtons and Sussex fowl. They have very short legs, with five toes, but the legs are clean, free from feathers. They lay a white egg. Weight of cock is from 8 to 9 pounds, hen 6½ to 7 pounds, cockerel 7 to 8 pounds and pullet 5½ to 6 pounds.

The Red Cap is also a very old English breed, perfectly marked, each feather being tipped with a half moon. The comb is what gives the name "Red Cap," for it is large enough on the male to form a cap. These fowls are among the very best layers. They lay a white egg of good size and are absolutely non-sitters. I bred and raised a good many of them in the northern part of this State, but they did not seem to do so well down here because they were confined. The eggs hatch fine, but unless the chicks can run out they do not thrive well.

Weight of Red Cap cock is 7½ pounds, cockerel 6 pounds, hen 6 pounds, and pullet 6 pounds. These are the finest flavored table fowl of all except the old English Game, which their meat tastes like.

The Orpingtons are so well known that little need be said about them. The Buff and White varieties are the most popular, although the Black and Blue are also excellent birds. The Jubilee, a speckled Orpington, named for Queen Victoria's Jubilee, never won much favor in this country. The Partridge Orpingtons, originated by the Goodacre Brothers of Compton, are also beautiful birds and good layers. All Orpingtons have red earlobes, clean legs and lay a brown egg. Weight of cock 10 pounds, cockerel 8½, hen 8, and pullet 7 pounds.

Sussex are much similar in appearance to the Jubilee Orpington, but are a really distinct variety or breed. When well bred they are very handsome birds, good layers of brown eggs and good table fowls. Weight of cock 9 pounds, cockerel 7½ pounds, hen 7, and pullet 6 pounds.

Cut—Cut—The High Cost of Living

The average hen in California shells out only 80 eggs per year. She ought to double her output. So says Uncle Sam, and he has just established two specialists in this state to make biddy buck up.

C. J. Evans will have the northern part of the state, and N. E. Luce the southern. They will work under the direction of the Bureau of Animal Industry at Washington, but will co-operate with the extension division of our own College of Agriculture. They will travel constantly, giving frequent demonstrations and working right with the poultrymen to increase production along more efficient lines. Breeding, feeding, culling, housing, marketing, treating diseases—these and dozens of other subjects will be discussed and expert advice and assistance will be given.

Seems to us a mighty good plan. Here's hoping they make more hens lay, and less lie.

Poultry Breeders' Directory

GIANT BRONZE TURKEYS—Gold Nugget Strain. Prove their superiority by winning Gold Special Sweepstakes for best turkeys at the following great shows: Arizona State Fair, 1916; Texas State Fair, 1917; California State Fair, 1917-1918; Los Angeles Show, 1917-1918; Pacific Coast Land and Industrial Exposition, Oakland, 1918. An unequaled record. Large turkeys can be raised at practically the same cost as small ones. Toms for sale that will increase size and improve any flock. I am the originator of the Gold Nugget Strain. J. Will Blackman, 607 East Third St., Los Angeles, Cal.

SULLIVAN'S FAMOUS BUFF ORPINGTONS—Want the best? Write Sullivans, Specialists. Oldest flock on Pacific Coast. Line bred for 20 years. Said by Walter Hogan, originator of "Hogan System," best layers of this variety he ever handled. Have won thousands gold and silver special prizes, cups and ribbons—more than all competitors combined, on the Pacific Coast. Eggs, $3.00, $5.00 per 15; $12.00 and $15.00 per 100. Breeding stock. Write for prices. Mr. & Mrs. W. S. Sullivan, 100 Market Road, Agnew, Santa Clara Co., Cal. Telephone S J 5205, R. 5.

NEVER SAW CHICKS GROW FASTER—"Your pullets laid through moult." Why? Bred 20 years to lay 200-290 eggs yearly. White, Brown, Buff Leghorns; Anconas; Reds; Barred White Rocks; Minorcas; Orpingtons; clearing customers $5.00 Valuable circular with proof, free. Chicks two-thirds booked to May. Reasonable, yet most week still open. Increasing our hatcheries as demanded (50,000). Many repeat orders monthly, yearly. Breeders, Pullets. J. Beeson, Pasadena, Cal.

WHITE LEGHORNS are the most profitable breed of poultry. If you are in the business for profit, you will eventually have them. Early broilers; early layers; early profits; we sell only White Leghorn Baby Chix from heavy laying Hoganized hens. Safe delivery of full count live chix guaranteed. Prices per 100: February, $15; March, $14; April, $12.50. The Pioneer Hatchery, 408 Sixth street, Petaluma, Cal.

BARRED PLYMOUTH ROCKS—Champion prize winners and wonderful layers. Choice cockerels, hens and pullets for sale. Hatching eggs from twelve grand matings. I have made a specialty of Barred Rocks for over twenty years. That's why I win at all leading shows. "Nothing Better In Poultry" than Vodden's Barred Rocks. Catalog free. Chas. H. Vodden, Box 396, Los Gatos, Cal.

BABY CHICKS—We specialize this season on money-making White Leghorns—hatching from stock with high records that are unimpeachable. Also Brown Leghorns, Anconas, Minorcas, Rocks, Reds, Orpingtons, and White Wyandottes. Especially interesting circular with price list ready January 1st. B. W Archibald, Soquel, Santa Cruz Co., Cal.

LIGHT BRAHMAS—Large stock direct from the East. Eggs, $3.00 and $5.00 per 15. Rouen duck eggs for hatching. Stock for sale. Big winners. Golden and Silver Seabright Bantam eggs, $2.50 per 15. Pair of Goldens, first prize stock, $5.00. Emma Miller, Farmington, Cal.

GOLDCROFT BUFF ORPINGTONS fulfill every standard and utility requirement. Won San Jose show first, second, third, pullet and cockerel. Eggs, $5.00 and $3.00 from winning pens; $2.00 from general flock; $12.00 per hundred. Stock for sale. Samuel Abrams. Los Altos, Cal.

BABY CHICKS EVERY WEEK—Order early and get the date you want. White and Brown Leghorns, Rhode Island Reds, Barred Rocks, Anconas. Also hatching eggs. Safe delivery guaranteed. Write for circular. Stubbe Poultry Ranch and Hatchery, Palo Alto.

FINEST HATCHERY IN THE WORLD—CHICKS, White Leghorns, Rhode Island Settings—1000's—hatched right in our $60.000 brick and concrete hatchery from our Hoganized heavy layers. Stock,—eggs. Pebbleside Poultry Farm, Sunnyvale, California.

BOOK YOUR ORDER NOW for S. C. White Leghorn baby chicks from hens from a trapnested strain of 192 to 297 eggs. My hens are noted for their exceptionally large eggs. Price, $15 per hundred chicks. Mrs. L. A. Benoit, Rt. C., Box 183, Modesto, Cal.

SPRING CHIX—Rhode Island Reds, Barred Rocks, Buff Orpingtons, Black Minorcas, Buff, Brown, and White Leghorns, from Hoganized stock, bred to lay. Satisfaction and safe delivery guaranteed. Tobener Poultry Ranch, Washington Ave., San Jose, Cal.

ATKINSON'S PEERLESS ANCONAS lay more and eat less than other breeds. 50 big husky cockerels $5 and up. 200 pullets, trios and pens for sale. Hatching eggs. Catalogue free. J. W. Atkinson, Box B, 130 Willard street, San Jose, Cal.

TAGGART'S ANCONAS—Winners in Fancy and Egg Laying classes last six years and still winning. Eggs, utility, $2.00, $3.50. Fancy, $5.00, $7.50 per 15. Supply limited. Order now. Good hatch guaranteed. 1620 55th Ave., Oakland, Cal.

WHITE, BROWN, BUFF LEGHORNS
Large or small lots—exceptional quality in breeding stock. Reasonable prices.
Circular Free.
Mission Hatchery, Box 17, Campbell, Cal.

HATCHING EGGS—White Leghorns, Light Brown Leghorns, Dark Brown Leghorns, White Rocks, $2 50 per 15; $10.00 per 100. All bred to highest possible standard of beauty and utility. Mahajo Farm, P. O. Box 597, Sacramento, Calif.

BRED-TO-LAY BARRED ROCKS my specialty. The birds that won the 5th National Egg contest. A few excellent breeders. Reasonable prices. Eggs, $3.50 per setting. Stanley S. Foote, 3923 San Rafael Ave., Los Angeles, Cal.

S. C. RHODE ISLAND REDS EXCLUSIVELY—"Pacific Coast Aristocrats." Hoganized flock. Booking orders for day-old chix and hatching eggs. Order early. Rosedale Poultry Farm, Motor A, Box 200A, Ceres, Cal.

SANTA CLARA VALLEY HATCHERY has the chicks for you from six different standard breeds, all bred for egg yielders. Can furnish references from my old customers if desired. Lincoln Ave., San Jose, Cal.

SUPER QUALITY WHITE LEGHORN CHICKS—Hatches March 6th and every 10 days thereafter. Newton Poultry Farm, Los Gatos.

EGG BRED—Buff, Brown, White Leghorns, Golden Campines, Dark Cornish. Winners wherever shown. Send for circular. Percy Ward, 3142 Ward St., Fruitvale.

FOR SALE—White Leghorn chicks from heavy laying stock. Hatched right. Prices right. Madera Hatchery, Madera, Cal.

S. C. WHITE LEGHORN EGGS for sale, from heavy-laying, prize-winning strain, headed by males from 280-egg stock, range raised. Setting, $1.50. Hundred, $8.00. Mrs. Sanders Hayes, Longvale, Cal.

BABY CHIX R. I. REDS
My specialty. Bred for eggs, size, color. Hens on free range means strong chix. 16c. each; 15c. in 1000 lots. Denton Poultry Yards, Box 360, Campbell, Cal.

RAISE CHICKENS, rabbits and pigeons on half acres with city conveniences. Market at the door. Profits by intensive cultivation will surprise you. Write for information F. R. Caldwell, Broadmoor, San Leandro.

BABY CHICKS—Hatched from our S. C White Leghorns, a result of many years' careful selection and breeding. San Jose Poultry Yards, Fifteenth and Margaret streets, San Jose, Cal.

BABY CHICKS—Hatched from our own stock in our own hatchery. Hens are of S. C. White Leghorn utility stock, bred for commercial laying. H. A. George, Route 2, Box 29, Petaluma.

FOR SALE—Bourbon Red turkeys and eggs for hatching, $5.00 per setting of 13 eggs. Book your orders early. Albert E Balmer, Alhambra Valley, Martinez, Cal.

WHITE WYANDOTTES—Eggs for hatching from our heavy laying prize-winning stock. Baby chix. Choice breeding cockerels. R. W. Stawetski, Route B, San Jose, Cal.

BABY CHICKS—from Hoganized breeders. 180 egg type and up. White Orpingtons and Sicilian Buttercups. Order early for future delivery. M. S. Woodhams, San Mateo, Cal.

BLACK LANGSHANS—Crabtree's Imperial Strain. Winners everywhere. 250-egg type. Choice hatching eggs, $3, $4, and $5 setting. Jas. Crabtree, 1836 57th Ave., Oakland.

MODEL POULTRY FARM—White Leghorn specialists. Our fifteenth year. Baby chix and hatching eggs for sale. Our prices are right. W. C. Smith, Prop., Corning, Cal.

SELECTED S. C. W. Leghorn and Barred Rock eggs for hatching. Hens typed to lay 200 to 260 per year each. $6.00 per 100. $1.50 for 15. Jay Maxwell, Madera, Cal.

BARRED PLYMOUTH ROCK EGGS for sale. Good range flock headed by cockerels from 260 to 290-egg stock. $1.50 per setting. Mrs. J. A. Vassar, Laytonville, Cal.

ANCONAS—Sheppard strain direct. Hatching eggs, $4.50 per 50; $2.00 per 15, plus postage. White Leghorn, $6.00 per hundred. A. S. Wilkinson, Winton, Cal.

EASTMAN'S "BRED-TO-LAY" Hoganized and trapnested Barred Plymouth Rocks. Baby chicks. Eggs; cockerels. Fairmead Poultry Farm, Fairmead, Cal.

WHITE LEGHORN CHICKS—Dozen to thousand. Hatched from our own thoroughbred stock. Eastside Poultry Yards, 255 S. 18th St., San Jose.

BABY CHICKS—We have the large heavy-laying S. C. White Leghorns, severely culled last year. Send for prices. Tupman Poultry Farm, Ceres, Cal.

R. I. REDS, Silver Spangled Hamburgs, Speckled Sussex. First prize stock. Eggs and baby chicks. Mrs. A. Golden, 643 S. 8th St., San Jose, Cal.

BABY CHICKS—Booking orders for spring deliveries. White and Brown Leghorns, Rhode Island Reds, Barred Rocks. E. W. Ohlen, Campbell, Cal.

BABY CHICKS (White Leghorns) shipped on approval before remitting. No weak ones charged for. Schellville Hatchery, Schellville, Cal.

BABY CHICKS—(White Leghorns) from good laying strain of Hoganized and trapnested stock. Rose Hill Hatchery, Turlock, Cal.

THOROUGHBRED BUFF ORPINGTON EGGS from heavy laying stock. Settings, $1.50. Mrs. M. Lopes, Lathrop, Cal.

CHICKENS, DUCKS, GEESE, GUINEAS, Pea Fowl, Pigeons. Wm. A. French, 545 W. Park St., Stockton, Cal. Stamps.

BLACK MINORCA EGGS—$1.50 per 15. Special mating, $2.00. Edward A. Hall, Rt. 1, Box 39, Watsonville, Cal.

FOR SALE—Two Petaluma Electric Incubators. Capacity, 108 and 216 eggs. Kenneth L. Euans, Gilroy, Cal.

BUFF ORPINGTONS, BUFF DUCKS, BOURBON RED TURKEYS—The Ferris Ranch, R. 2, B. 144D, Pomona, Cal.

FOR THE BEST laying strain of White Plymouth Rocks and Rhode Island Reds, write W. H. Carpenter, Oakley, Cal.

BRONZE TURKEY EGGS—Limited number for delivery in April. No more stock. Albert M. Hart, Clements, Cal.

FOR SALE—One pen Buff Ducks, fine large birds and very good layers, $3.00 each. Mrs. M. Lopez, Lathrop, Cal.

RHODE ISLAND RED EGGS for hatching. Mrs. Richard Holdridge, P. O. Box 282, Dixon, Cal.

LIGHT BRAHMA EGGS—13, $2.00. Stock for sale. J Dolan, 146 Wyandotte, Stockton, Cal.

RABBITS.

FLEMISH GIANTS of fine quality, around 15 to 17 lbs. at maturity and in marketable condition. Stock I had selected for personal use until changing conditions required closing. Ask closing prices. S. Arms, Byron, Cal.

STEEL GRAY FLEMISH, NEW ZEALANDS—Breeding does and bucks. Prices reasonable. Golden State Rabbitry, 2522 Hopkins St., Oakland.

NEW ZEALAND REDS—Pedigreed, registered and utility stock. Write your wants. E. Peppin, 86 Cambridge, San Leandro.

NEW ZEALAND REDS—First-class utility breeding stock and young for sale. F. R. Caldwell, Broadmoor, San Leandro.

DR. B. HEARN, VETERINARIAN—Breeder New Zealand and Flemish Giant Rabbits. R. R. 2, Porterville, Cal

MONEY IN RABBITS—We are now paying $6 per pair for all you can raise. Send stamp for particulars. H. E. Gibson Co., Arcadia, California.

R. & S. RABBITRY, 2922 35th Ave., Oakland. Fine utility Flemish and New Zealands. Stamp for reply.

WHITE MICE for laboratory purposes, $3.00 dozen. Also Guinea pigs. Neidhardt, 6 Hull St., San Jose

HATCH ANCONAS ALL YEAR ROUND

We have always read that it does not pay to hatch chickens in July, August or September, and I had always felt that way myself until this last few weeks. But this year, owing to meat being so high, I decided to set some of my Ancona eggs so we would have cockerels for fryers and young roasters in the winter months. Much to my surprise, at brooding time I found I had mostly pullets. Nevertheless, what few males I did get came in mighty handy and solved the meat problem many times, and the pullets grew so good that I kept them and at five months and three days old they laid their first eggs, and by January 31 they were all laying.

Now I must attribute this fine development at this time of the year to the breed, for I have not given them any special care, such as I have my old hens that were molting. They are all full weight for pullets according to standard, too. So hereafter I can recommend my hatching eggs to customers all the year round and am going to keep pens mated for just such a purpose.

While the United Ancona Club and the able work of its secretary, Mr. Van Hoesen, has done wonders to bring the Anconas to the front, you must have the goods or they won't stay there, and we all have to admit that they are sure staying there. I have never had a customer tell me that they were not all that has been claimed for them, and every person that has purchased from me in the last six years that I have come in contact with lately is still keeping them, while most have or are disposing of their other breeds.

The above may not be news to the old Ancona breeders, but it will help others to decide what is an ideal fowl for them to have in their backyard or on their ranch. The Ancona has proven to me that they are hardy and grow and develop any month in the year, and they don't need that fussy treatment that is so tiresome to most poultry raisers with other breeds.—A. C. Taggart, Oakland.

POULTRY AND PET STOCK NOTES

[By Walter Hickling.]

James Crabtree, Oakland, the well-known breeder of Black Langshans, is enlarging his poultry plant to accommodate a new flock of Anconas.

To help meet the demand for chicks, the McDonald Poultry Farm, San Jose, is enlarging its hatchery to a capacity of 15,000.

One doe, bred every three months, averaging six young to the litter, the young weighing five pounds at three months, will produce 120 pounds of meat per year or twelve times her weight.

A. L. Wise, San Jose, a Cornish breeder, is working to get the cooperation of the Cornish breeders of the Coast to support the poultry shows together, so as to have a better display of these birds.

Cottage Grove Rabbitry, San Jose, J. Villar, owner, has recently bought a larger place near town. A crew of carpenters is busy building a model rabbitry and a display room, where rabbit skins and furs will be on exhibition.

In the district around Livermore many of the old poultry breeders have quit. One plant that used to carry 5000 birds is now used for hog breeding. Around San Jose and Haywards there are many new poultry plants being established, creating a heavy demand for eggs and stock.

All through Oakland, San Leandro, Haywards and San Jose districts dozens of rabbitries are being built to supply the demand for breeding stock and rabbit meat. There is at present an exceptional demand in the Middle West and East for California rabbits of all varieties. This demand will not show any decrease for some time to come, especially for New Zealand Reds, as the variety is a California creation and the demand for this stock has just come from England.

A CASE OF BLACKHEADS.

To the Editor: What is the matter with my turkeys? Their heads turn black and they have yellow diarrheoa and usually die in a few days. I have examined them and find their liver covered with yellow spots. Is this cholera? What can I do?—H. C., Wallace, Cal.

Your turkeys have "blackhead." It is a liver trouble brought on by indigestion. The remedy is to clean up and burn all droppings and refuse, spade up the ground, and spray the sleeping quarters with a good disinfectant. Feed nothing but a little warm mash or milk and bread, in which put enough powdered charcoal to start correction of crop, but not enough to make the feed look dark and uninviting or they will not eat it. Give ten drops of tincture of nux vomica in a quart of drinking water and don't allow them any other water to drink. Keep it up until recovery sets in, but be sure to clean up and stop feeding heavily. If possible, mix all food with boiled milk, but do not make it sloppy—just crumbly moist. It will take time to cure those that do not die.

WIDE ADVERTISING EMBARRASSING—SOMETIMES

To the Editor: Your paper must be very widely read. We have enjoyed it for many years and profited greatly by the wisdom contained in its pages. However, I wish the individual who advised that the Kearney Vineyard has peafowl eggs for sale (February 8th issue, page 202) would send us about $1 worth of stamps so that we can answer the inquiry for eggs. We have no peafowls or eggs for sale. We do have the fowls at Kearney Park, perhaps for the reason given by the late Henry Miller when asked why he had so many peacocks on his various ranches. He said: "It makes me feel so d—— rich!"—Kearney Vineyard, per S. P. Frisselle, manager.

THE ART OF CAPONIZING.

To the Editor: Can you give me any information on "caponizing," or advise as to where such information may be obtained? Do you know of any place near where caponizing is done?—O. C. H., Orosi.

The very best way to learn caponizing is to see it done. Most likely some one in your neighborhood can do it. All makers of caponizing tools give book instructions on How to Caponize, but though I have bought several makes of these tools, I have my first success to score. I know women who can do it, but few are willing to show others. The government puts out a bulletin on "Caponizing." If you write to the Department of Agriculture, Washington, D. C., for their Bulletin on Caponizing they will send it.

Hatcheries in the neighborhood of Haywards report orders for all chicks they can hatch up to April 1.

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32x4	18.55	21.85	3.75
33x4	19.35	22.80	3.85
34x4	19.80	23.30	3.95
34x4½	26.20	29.90	4.80
35x4½	27.00	31.20	4.95
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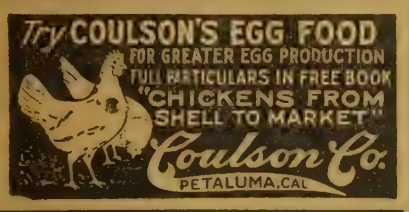
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So he bought a copy of our poultry book and in less than two weeks his hens had quit lying and gone to laying. They were shelling out enough extra eggs to pay for the book in less than two days.

California Poultry Practice Tells How

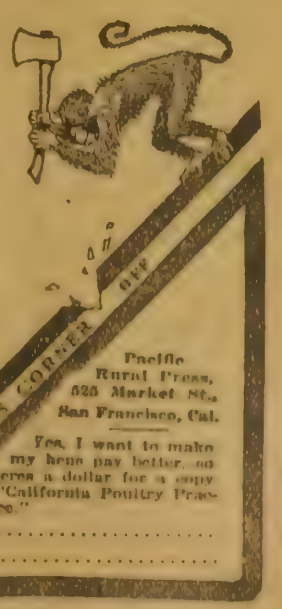
This great book will do as much for you. It was written by a Californian for Californians. The author, Mrs. Susan Swaysgood, after years of successful experience, has succeeded in showing the farmer how to make poultry raising more profitable. She knows what to tell and how to tell it. She deals out hard-headed poultry sense and still has every paragraph full of snap and sparkle.

The book deals with actual conditions—not theories—and covers every phase of the industry. It gives advice about location, buildings, equipment; choice of breeds, best way to begin, how to select stock, etc. There are valuable instructions for incubating, brooding, culling, feeding, breeding for heavy laying, showing, treating diseases, marketing products, etc. You will find everything necessary to insure your success.

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TO THE WIFE—A TRILOET.

In her soft shining eyes
My love's reflected;
The past and future lies
In her soft shining eyes.
Love alone makes mortals wise.
By love all ills corrected;
In her soft shining eyes
My love's reflected.

When I return from work
Love is my greeting;
In me the devil cannot lurk
When I return from work.
Ready is the knife and fork
At our vesper meeting;
When I return from work
Love is my greeting.

—Ian Todd.

A WINDOW-FARM.

When Millie and Dillie called for Aunt Sue last Sunday—they always do stop in for her on the way to Sunday school—they had no sooner got into the sitting room than Millie began to wrinkle up her nose and Dillie began to sniff; for, oh, how perfectly delightful something did smell on auntie's flower shelf!

"It must be vi'lets," cried Millie.

"No, it's roses," declared Dillie.

"Never!" concluded Millie: "it's lemon-verbena."

Just then Aunt Sue came in, when the twinnies eagerly inquired what made the air so very, very sweet, she took them to the sunny back bay-window and showed them two small dark green and glossy-leaved trees. One of them had four and the other had seven little white and waxy-looking flower stars on it, and the fragrance was almost overpowering in its sweetness. "Orange blossoms!" cried Millie; "and, oh, auntie, where did you get them?"

"Come along, dearies," said their aunt, "or we'll be late for Sunday school; but I'll tell you all about my little trees on the way."

The little trees were two years old, and had come up from pits which Auntie Sue had just carelessly popped into an old flower pot in a corner of her window-garden. There were nine of them originally, but these two had been much the biggest and most robust-looking, so auntie had transplanted them to separate good-sized pots, had watched and watered them, and, when they had grown about a foot high, she had taken them to a florist who "grafted" them and kept them for a month or two. He sent them back when these first few blossom-buds were just opening, and after a while there would be—instead of the perfumed white stars — real oranges ("dwarf oranges," the gardener had called them) on the tiny trees. Just to think of it!

"Oh, auntie," said Millie, "isn't it just lovely to watch those dear little treesies? Just like a tiny little orchard right here in your own room! I wish we had some little trees growing where we could watch them every minute!"

"Well, why in the world shouldn't you?" laughed auntie. "What's to hinder you two small girls, with a perfectly splendid sunny playroom window, from having a full-fledged orchard—yes, and a prosperous farm, too—growing in flower pots right under your two little rosy noses? Just you get together all the big flower pots you can find and have them ready for me on your window shelf, and on Tuesday I'll be in and help you fill them. Now let's be just as quiet as mice and as good as gold as we walk into the Sunday school room."

When auntie arrived on Tuesday with a large and shallow flower pot and a lot of small parcels, she gave each twin a dime with which they bought from the nearest florist some good rich soil, with which they filled the flower pots—four good-sized ones and quite large, besides Aunt Sue's contribution — and then the three of them went to work.

They divided the large shallow pot into quarters by heavy cardboard "fences." In the one part they sowed six orange pits, in the second six apple pits, in the third six lemon seeds, and in the fourth six of the pits of grandma's breakfast grapefruit. They set that pot in the one corner of the broad window-sill; and that pot is their orchard.

They fenced off the next biggest pot in the same way, and sowed the four different wedges with mustard, radish, grape, and flax seed from the little paper packages auntie had brought, and set that pot in the other window corner.

"This pot is your pasture land," gaily exclaimed Auntie Sue, "and it's bound soon to be green with little plantlets. You may gather those for mother's canary bird, and see how glad he'll be!"

They planted the four smaller pots with beans, peas, a quarter of a potato, and an onion starting to sprout right there in mother's onion basket! and ranged two "fields" of their "farm" at one and two at the other end of the long window-sill.

"This middle space," declared auntie, "is for your flower garden. Now, if you'll borrow a glass bowl from mother, we'll half fill it with some of those pretty seaside pebbles you gathered last summer—like this, dearies—and right in the very center, with just enough water to cover it, we'll plant this Japanese lily bulb. This is your center garden bed, and, if you'll fetch me a carrot and a sweet potato from the pantry, we'll start some 'shrubbery."

Auntie hollowed out both potato and carrot, filled them with water, and hung them from two nails above the window-sash. "Keep them filled always," she advised, "and in a little while the one will come out in fine light green feathry leaves and the other in leaves like delicate green ivy—the prettiest sort of natural hanging-baskets. Likewise keep your orchard, pasture, farm and garden well watered and where the sun will get at them, and see what will happen. Watch out, Millie and Dillie, for the awakening of all the seeds and pits you've laid to sleep in the brown soil; for in a week or two some of them will peep out and cry a glad good morning to you."—Kate Hudson.

HEALTH RULES FOR CHILDREN.

The prevalence of colds and influenza make these suggestions for children very timely:

Never spit on a slate, floor or sidewalk.

Do not wet the fingers in the mouth when turning the leaves of books.

Do not put pencils, money, pins nor fingers in the mouth—in short, put in nothing but food and drink.

Do not swap candy, chewing gum, half-eaten food, whistles, nor anything that has come in contact with the secretions of the mouth.

Never cough nor sneeze in a person's face. Turn your face to one side.

Keep your hands and face clean; wash the hands well with soap and water before each meal.

TO IRON NAPKINS.

When the napkins are dry, do not sprinkle them, but dip and wring out every third napkin in clear, warm water. Place each wet napkin between two dry ones, fold, and roll the three napkins tightly together. In twenty minutes they will be ready to iron, all equally damp from hem to center. If there is embroidery, they must be pressed on the wrong side first, but to secure a good gloss, they should be ironed on the right side.

THE SPRING FASHIONS.

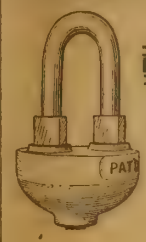
It really seems as though we were to have a change in the styles. For several seasons it has hardly mattered whether one had new clothes or not, for the styles have been so similar from one season to another. Now, though, there is a marked tendency to a smaller, lower waist-line and skirts that have more than a suggestion of narrowness around the feet. In evening gowns, there is drapery which confines the garment to the body, revealing the body-lines, and in street dresses, the skirts are very scant. The length of the skirt seems still unsettled—some houses showing quite long skirts and others to the shoe tops. The very short skirt seems to have had its day.

The Prayer of the Women

Hear us, Father, we are the millions of women;
We are the homeland army, the patient ones.
Take the work of our hands, take our secret weeping,
We who have given our husbands, our brothers, our sons.

Make our courage clear as herald angels' singing;
Keep our hopes high as the star that stood above
A mother leaning, long ago, over a manger cradle . . . .
The strength of men is their might, but a woman's strength is love.

—Sara Teasdale.



The Natural Thing—

The natural thing always brings immediate results—It's simple and easy and no effort required—Therefore, in obeying a natural law the line of least resistance is followed and perpetual results obtained.

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HAM RECIPES.

Ham and bacon are much less wasteful than some meats, for they may both be used to the last scrap and the fat tried out in cooking is valuable for shortening. Even the ham bone may be utilized to give a meat flavor to cabbage or bean soup.

Currant Sauce.—Currant sauce is served with baked ham and is made by heating together 1 cup water, 1/3 cup vinegar, ½ cup cleaned currants for 10 minutes, then add ½ cupful sugar or currant jelly and thicken with 1½ tablespoons flour mixed smooth in a little cold water.

In using ham and bacon freely in the menu, it must be borne in mind that while they are muscle builders they also contain a percentage of fat, so it is not necessary to use at the same meal with them so much butter, or a rich salad dressing, or a dessert calling for whipped cream.

Bacon in Crumbs.—When slicing bacon, be sure it is cold and the knife very sharp in order that it may be sliced evenly. Dip the sliced bacon in fine bread crumbs and fry gently in a medium hot pan. Or, another method is to soak the bacon in milk for half an hour, then dip in flour and fry until crisp.

Baked Ham in Dough.—Skin the ham. Pour boiling water over it, allowing it to cool in the water; transfer to kettle, cover with cold water, bring to boiling point and simmer for one hour, then drain. Sprinkle ham with a little granulated sugar, pepper and ground mace. Stick cloves at inch intervals into fat side of ham, then cover ham with half-inch layer of paste made of flour and water. Bake three or four hours in a very moderate oven. Remove crust and serve ham either hot or cold.

Ham Omelet.—One cup minced cooked ham, 1 tablespoon flour, 1 cupful milk, 5 eggs, 1 tablespoon melted ham fat, 1 teaspoon salt, ⅛ teaspoon pepper. Separate eggs, beat yolks until lemon colored and whites until stiff and dry. Add flour and seasonings to yolks, then stir in milk and ham, combine with whites and pour into slightly heated frying pan containing melted ham fat. Cook gently until brown on bottom, then put in oven and cook until top is spongy or dry but not brown. Cut at right angles to pan handle, fold over and serve very hot.

Fried Ham with Spaghetti.—One-half pound ham sliced thin, ½ pound spaghetti, 1 pint canned tomatoes, mushrooms if convenient, 1 onion minced fine, 2 cloves garlic minced, 1 tablespoon flour, 2 tablespoons ham drippings, ½ teaspoon sugar, 2 cloves, salt and pepper. Melt drippings, add onion, garlic and mushrooms (if used), fry gently until yellowed. Then add tomato, sugar and seasonings, together with flour rubbed smooth in a little cold water. Let boil up. In meantime cook spaghetti until tender, stir this into the tomato sauce mixture and let stand while ham is being fried. Arrange spaghetti on a deep platter and garnish with the ham cut into portions for serving.

FRESHENING THE BEDROOMS.

If you have an old house with dark woodwork, nothing will improve the looks of the bedrooms like painting or enameling the wood. A professional painter will tell you this is a job that cannot be done by an amateur, but on that point everyone does not agree. Perhaps the work may not be as finished as a professional would do, but it can be done carefully enough to be reasonably successful. Three coats should make a good finish—two of paint and one of enamel—and each coat must dry thoroughly before the next is applied.

Gray woodwork is very good style now, and preferred by some people as not being so trying to the eyes as white. If the walls are tinted, a border of paper in harmonizing or contrasting colors gives a pretty finish. These come with a narrow border to be applied just above the base-board also.

Many of the good paper houses will order for you cretonne of the same pattern as the border to be used for window hangings or for decorative purposes on dresser scarf or bed cover. Some of these designs are to be appliqued on, while others are applied in strips.

Iron beds can be much improved by enameling, and this work needs to be done carefully, so the paint will not run. At this season of the year, nearly all good stores are having sales in furnishings, so that draperies for the windows, candlesticks with fancy shades for the dresser, and copies of good pictures for the walls may be picked up for much less than ordinary.

NEW USES FOR PANCAKES.

The average household thinks of pancakes in connection with the morning meal, made of different mixtures of flours and served with butter and sugar or syrup.

But pancakes may be served as the solid dish for luncheon or as a dessert for dinner. At some of the French restaurants, a favorite dessert is a rolled pancake with an attractive sauce.

At home, the frying of pancakes is many times accompanied by a disagreeable lingering odor, which may be overcome if a proper method of frying is observed. Heat the griddle slowly and not too hot. Then rub lightly with the griddle greaser, being sure there is no surplus fat. In reality the pancakes are baked, not fried, when done more slowly on a cooler griddle. Breakfast cakes afford an excellent opportunity to use up left over cereals—if cold and solid, they should be thoroughly mashed before adding to the batter. If maple syrup is not available, try serving corn syrup hot, cooked with a little batter.

In making luncheon pancakes, vegetables left over from dinner the day before may be added to your favorite batter recipe. A cupful of coarsely chopped cooked cauliflower, or a cupful of chopped cooked celery, or squash or tomatoes, or any favorite vegetable may be added just before frying. Serve these cakes in piles of two or three with a sauce poured over them. This sauce is a rich white sauce with the same variety of vegetables the pancakes contain. A dash of paprika is an addition to the appearance.

A SOUTHERN RECIPE FOR RABBIT.

After the rabbit has been skinned and cleaned, let cool thoroughly and then cut in pieces for frying and soak for two or three hours in a reasonably strong brine to draw out the blood. When ready to prepare for dinner, drain and dry well, roll in flour that has been salted and peppered, and brown delicately in hot fat, either drippings or oil.

When all the pieces are brown, pour over enough milk to cover and put in a moderate oven in closely covered skillet or dish for about three-quarters of an hour. By that time the milk will all be absorbed and the rabbit well browned on the top. Do not have the oven too hot. After removing the rabbit from the dish, add more milk and thickening for gravy, which is delicious with mashed potatoes.

FISH CHOWDER.

Three pounds of fish, 4 tablespoons drippings, 1 medium onion, chopped fine, 1 quart sliced potatoes, 3 cups hot milk. Skin and bone the fish, cut into cubes. Cover the bones and trimmings with cold water and let simmer for one-half hour. Cook the onion in the fat for five minutes, then pour into a stew pan.

Parboil the sliced potatoes for five minutes, then drain and add layers of fish and potatoes to the fat and onion in the stew pan. Season each layer with salt and pepper.

Strain the liquor in which the fish bones have been cooking over all, and cook about twenty minutes, until fish and potatoes are tender. Then add the scalded milk. If desired thicker, sprinkle a little cornmeal between each layer of fish and potatoes.

The meat grinder leaves an unsightly mark where it is clamped to the table. To avoid this, put a pad of cloth or paper between the clamp and table before screwing down.

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Market Comment

Apple Growers Jubilant.

Due to the removal of sugar restrictions and the embargo on shipments to England, the demand for apples is much improved. The market was strong before, owing to the light shipments of other fruits, but now the markets are exceptionally favorable. Prices have been good, with a steady inclination upwards. Barreled stock rose from $4 to $4.50 in October to $7.50 to $7.75 for cold storage fruit in February. Boxed apples did not have this phenomenal advance. Extra fancy Winesaps from the Northwest ranged from $1.85 to $2 f. o. b. in October, and with gradual advances reached $3 in January, when they mounted to $3.50 a box. Early shipments of apples were unusually heavy this year. To January they were one-third heavier than to date the year previous. The heavy shipments by carloads foreshadows an early exhaustion of the available commercial supply for distant shipment. The total shipment of apples from California in 1917 was 3,522,000 boxes and the estimate for 1918 is 3,381,000 boxes.

Bean Situation Still Hopeful.

Bean growers are again assured that the Grain Corporation is sympathetic and that foreign governments are abandoning official buying so that trade will seek ordinary channels, as stated in a telegram from President G. A. Turner of the California Bean Growers' Association, who is in Washington to seek opening of bean markets. Mr. Turner has cabled Mr. Hoover about the situation. A meeting of California and Michigan dealers and others is to be held in Washington next week to arrive at a definite policy. R. L. Churchill of the California Lima Bean Growers' Association states that there were 850,000 sacks of limas still in warehouses on February 1.

A Strong Eastern Hog Market.

The release of Atlantic shipping for the carriage of foodstuffs in large quantities and the arrival of a number of vessels in Eastern ports for cargoes has inspired confidence anew in the hog market. It is reported that markets east of Chicago are practically bare of hog products and instead of straining a point to hold the market for live hogs up to the Government price of $17.50 it has gradually forced itself up to $18. The future movement of hog products to foreign ports promises to continue heavy, and packers' supplies are being rapidly depleted. The strong Eastern market undoubtedly buoys up the Pacific Coast market and tends to hold up quotations here despite heavy receipts all over the Coast.

Hops Are High.

Hop buyers are predicting that the price of hops of the coming season's crop will go to 50c or 75c a pound. Sixty thousand dollars' worth has been shipped into Woodland for storage. Of our 1919 crop the following estimates are made out: England wants 50,000 bales; South America 30,000 bales, and France 30,000. The estimated output for the Pacific Coast cannot exceed 100,000 bales. Prices being paid in Europe are said to be now close to $1 a pound. England has announced the plans of the Government to remove the restrictions on the manufacture of beer.

Tomato Growers to Set Price.

Mark Grimes, president and manager of the California Tomato Growers' Association, said recently that the association now controlled about 75 per cent of the tomato acreage of the State, and that the delegates from the various districts would meet on March 15 and set a price for this year. The price that the grower is to receive for his product this year will be governed to a large extent by what the future outlook is regarding the crop. Accurate knowledge of the acreage to be planted and data on market conditions in the United States are to be obtained.

THE MARKET REPORTS

Figures Given Are Independent and Reliable.
Prices Quoted as Paid to Producers.

SAN FRANCISCO

San Francisco, February 19, 1919.

WHEAT.

In selling wheat to the flour mills the Grain Corporation is now charging the flour mills from 8 to 10 cents per bushel above the regular Government price "for carrying charges." As a consequence flour has been advanced 40c a bushel. This has no effect on the official wheat prices.

The following prices were announced by the Federal Grain Corporation last year and are still in effect. They are figured f. o. b. San Francisco, Los Angeles, Seattle, Tacoma and Portland and guarantee the grower a minimum of $2 f. o. b. shipping point:

Per bushel—	
No. 1 hard	$2.20
No. 2	2.17
No. 3	2.13
No. 1 soft	2.18
No. 2	2.15
No. 3	2.11
Club or Sonora, No. 1	2.16
do, No. 2	2.13
do, No. 3	2.09
Recleaned for seed, per ctl.—	
California Bluestem	$4.15@4.25
Early Baart	4.15@4.25

BARLEY.

Barley is weak at last week's quotations. Some barley is said to have changed hands at a fraction under these quotations, but the amounts dealt in are so small that they cannot be regarded as affecting the market.

Choice feed, per ctl	$2.05@2.10

OATS.

The wet weather has delayed somewhat the planting of oats, and seed is somewhat stronger on the prospect of increased demand. Otherwise the market is not changed.

Red feed, per ctl	$2.22½@2.30
Red for seed	2.70@2.80
Black for seed	Nominal
Recleaned Red or Black for seed	$3.15@3.20

CORN.

Corn is dull and unchanged.

California	$2.70@2.75
Egyptian, choice	2.75@3.00
Milo	2.70@2.75

HAY.

Receipts of hay this week were 1398 tons compared with 929 tons the previous week. This increase was somewhat surprising in view of the wet weather. Although the trade is somewhat light, adverse weather conditions have added a little strength to the market, though quotations are not changed. Export trade is looking better than for some time past and interior trade seems to be looking up.

No. 1 wheat, per ton	$22.00@24.00
No. 2 wheat, per ton	16.00@20.00
Choice tame oat, per ton	21.00@23.50
Wild oat, per ton	16.00@18.00
Barley hay, per ton	16.00@18.00
Alfalfa, per ton	16.00@19.00
Stock hay, per ton	14.00@17.00
Barley straw, per bale	.50@ .80

FEEDSTUFFS.

There is little demand for feedstuffs. Wheat by-products are somewhat higher on account of the fact that the mills are paying more for their grain to the Grain Corporation. Bran is quoted at $41 to $42; middlings, $49 to $50, and shorts, $43 to $44. Cracked corn is weaker at $68 for the top.

POTATOES, ONIONS, ETC.

Trade in California potatoes is now confined to the River variety, which is quoted at $1.50 to $2. Potatoes are now coming in in large quantities from the neighboring states, especially Oregon and Idaho. While these potatoes sell at approximately the same price as California potatoes, it is expected that they will go lower and carry the whole market down with them. Stocks on hand are increasing rapidly, with no corresponding increase in demand.

String beans	25c
Lima beans	None
Carrots, per sack	$1.00@1.25
Rhubarb, San Jose, per box	3.00@3.50
do, Strawberry, per lb	10c
Cucumbers, hothouse, box of 30	2.50@3.00
Los Angeles, lugs	3.00
Eggplant, per lb	20@25c
Lettuce, per crate	$2.25@2.75
Celery, crate	5.00@7.50
Tomatoes, Southern, per crate	2.00@3.00
do, Mexican	3.00@3.50
Sprouts, per lb	6@8c
Potatoes—	
Rivers	$1.50@2.00
Oregon	1.75@2.10
Washington	1.75@2.00
Idaho	1.85@2.00
Sweets, per sack	3.00@3.50
Onions, Warehouse Stock—	
Yellows	None
Australian Browns	$1.50@1.75
Garlic, new	25@35c
Green corn, Alameda, per sack	None
Okra, per box	None

BEANS.

Beans continue downward. Local dealers point out that the Lima Bean Association figures 850,000 sacks of lima beans on hand at the present time and that the organization is worried as to how it can dispose of its surplus at a fair price.

Bayos, per ctl	$7.00@7.10
Blackeyes	3.75@4.00
Cranberry beans	6.50@6.75
Limas (south, recleaned)	$7.75
Pinks	$5.50@5.60
Mexican Reds	6.25@6.50
Tepary beans	3.00@3.25
Garbanzos	9.50@9.75
Large whites	7.00@7.25
Small whites	7.75@7.90

POULTRY.

The poultry market is very strong. Only one car arrived from the East during the past week, probably on account of the approach of the laying season and also because of the big storm in the Middle West, which tied up all traffic and made it difficult for farmers to get their stock to the railroads. Another feature of strength is the approach of the Jewish holidays and also the demand for poultry which always develops at Easter. A firm market is predicted for some time to come.

Turkeys, live, young spring, lb	34@36c
do, old	30@34c
do, dressed	40@42c
Broilers, 1½ to 2 lbs	50@52c
do, 1¼ lbs	55@58c
do, ¾ to 1¼ lbs	58@60c
Fryers	42@45c
Hens, extra, per lb., colored	37@38c
do, Leghorn	38@40c
Smooth young roosters, per lb. (3 lbs. and over)	36@38c
Old roosters, colored, per lb	23@24c
Geese, young, per lb	32@35c
do, old, per lb	30c
Squabs, per lb	65c
Ducks	33@35c
do, old	30@33c
Belgian hares	18@20c
Jack rabbits	$2.50@3.50

BUTTER.

A firm market for butter developed this week with steadily increased prices. The same conditions prevailed in the Eastern markets as here, and they are attributed to increased consumption and a falling off in production. The prospects for a continuation of the present firmness throughout next week seems to be assured. Following are exchange prices, with discounts deducted:

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extra	50½	52	52	52	51½	51½
Prime first			Nominal			
Firsts			Nominal			

EGGS.

Eggs have developed further weakness this week. After the preliminary drop extras reacted 2 cents to 37½, then lost their gain in one day and closed at 36, only a half cent above the low. Extra pullets failed to react after the first decline and closed at 30½, the lowest price of the year. Following are exchange prices, with discounts deducted:

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	35½	37	37	37½	35½	36
Extra 1sts	Nom.	—	—	—	—	—
Firsts			Nominal			
Extra pullets	34½	33½	33	33½	31½	30½

CHEESE.

Cheese reacted strongly to the higher prices in butter. Fancy California flats advanced 2½ cents and first sold 1½ cents higher. The prices given (except in the case of Monterey, which is the street quotation less commission) are the exchange quotations less the usual 10 per cent commission.

Fancy California flats, per lb	26½c
Firsts	24c
Oregon triplets, fancy	35½c
Oregon Y. A. fancy	36½c
Monterey cheese	23@26c

FRESH FRUITS.

Apples continue strong and some slight advances have been made on some varieties. The quotations given, however, cover the range of all varieties. Demand continues excellent.

California apples	$2.00@2.75
Northwest apples	2.00@3.50
Winter pears	2.00@3.50
Persimmons	None

CITRUS FRUIT.

Oranges are weaker, owing to a falling off in the demand. Four dollars is now given as the top price, while good oranges are sold as low as $2.75. Grapefruit is also weaker, although the best still commands the $3 price. Lemons are weak in sympathy but prices on them have not been lowered.

Oranges, navels	$2.75@4.00
Mandarins	1.75@2.25
Tangerines	2.75@3.25
Lemons, fancy	4.00@4.50
do, choice	3.50@4.00
do, standard	3.00@3.50
Lemonettes	2.00@3.00
Grapefruit	2.00@3.00

HONEY.

It is reported here that the Honey Growers' Association has about 10 cars of honey which it is trying to dispose of. An offer of a car of light amber at 21 cents a pound was made to a local dealer and he was asked to bid on the car. He declined to submit a bid. It is feared that as soon as shipping is available a large amount of the Australian honey will enter this market.

DRIED FRUITS.

There were no developments in the dried fruits this week, and conditions are reported unchanged.

LOS ANGELES

Los Angeles, Feb. 18, 1919.

BUTTER.

There was a further and sharp advance in this market the past week. The receipts were good, yet they were all wanted. The arrivals for the week were 313,200 pounds against 255,600 pounds the same week last year. With the severest weather of the winter in the Central West and East the past week, the market there advanced sharply and this had a sympathetic influence upon the market here. Then, too, the home and nearby out-of-town trade bought quite freely. The result was fresh extras on 'change advanced 4c by Thursday and Friday a cent more was added, influenced by the upward movement of the San Francisco market. The cold storage holdings are now down to 5195 pounds and most of this sweet butter. Hence from thisforward the trade must depend upon the current receipts to supply its demand.

We quote—

California fresh extra creamery	55c
do, prime first	53c
do, first	52c
Same week last year—	
California fresh extra creamery	46c
do, prime first	44c
do, first	45c

Daily quotations—

1919—	Tu.	Wed.	Thu.	Fri.	Sat.	Mon.
Extra	50	50	54	55	55	55
1918—						
Extra	48	48	48	48	48	48

EGGS.

There was a little firmer tone to this market the past week. Receipts were very good for the week—9645 cases against 11,145 cases the same week last year. As eggs are now cheaper than meat, there has been a marked increase in the consumptive demand. Not only is the home trade buying freely, but a good out-of-town demand was had throughout the week. There was a break of 3c the first half of the week under free offerings, but since Thursday the market has been stronger and closed Monday much the same as a week ago. The cold storage stocks have been exhausted, the holdings now being only 58 cases. Hence the trade must depend upon fresh receipts altogether hereafter.

Daily quotations—

1919—	Tu.	Wed.	Thu.	Fri.	Sat.	Mon.
Extra	41	40	38	39	40	40
Case count	40	40	37	39	39	40
Pullets	40	38	37	37	38	38
1918—						
Extra	40	40	41	41	41	41
Case count	39	39	40	39	39	39
Pullets	38	38	40	40	40	40

POULTRY.

Local receipts the past week were light and a very good demand was had for all offerings. Dealers had to get in during the week a couple of cars of Eastern poultry with which to piece out their supply with mostly hens and turkeys. Ducks scarce, firm and in demand.

We quote from growers:

Broilers, 1@1¼ lbs	40c
Broilers, 1½@1¾ lbs	43c
Fryers, 2 to 3 lbs	35c
Roasters (soft bone), 3 lbs. and up	30c
Stags and old roosters, per lb	26c
Hens	30@32c
Turkeys	33@35c
Ducks	30@32c
Geese	28c

VEGETABLES.

The tone of this market the past week was hardly so firm, though all good to choice fresh stuff met with a fair demand. Potatoes came in less freely and the market ruled steady for Burbanks, while Idaho under lighter offerings gained a little over last week's extreme low prices. Sweets are coming in less freely and the best brought a little more money. Onions were in better supply and the market was hardly so firm. Cabbage slow sale but steady. Cauliflower was offered more freely and the market was sharply lower. Celery in fair demand and steady. Squash and pumpkins met with a little better demand, but prices no higher. Peas coming in more freely and market weaker. Some rhubarb in and met with ready sale.

We quote from growers:

Peas, per lb	10@12c
Potatoes, northern, per cwt	$1.80@2.25
do, Idaho Russets, per cwt	1.65@1.75
Sweet potatoes, per cwt	2.35@3.00
Garlic, per lb	50c
Onions—	
Australian Brown, per cwt	$1.75@1.85
White Globe, per cwt	7.00
Cabbage, per 100 lbs	.90@1.00
Celery, local, per crate	4.00@7.00
Celery, northern, per crate	8.00@9.00
Cauliflower, standard crate	.85@1.25
Hubbard squash, per cwt	$1.00
Banana squash, per cwt	1.00

Special Citrus Market Report

Los Angeles, Feb. 18, 1919.

There has been no notable change in the market for California oranges during the past week, except that shipments have been heavier from Southern California. Due to difficulty in determination of the free-from-frost fruit suitable for shipment, an illustrated pamphlet is being prepared for distribution among shippers. This will eliminate existing confusion arising from misunderstanding in various communities. Some independent shippers and brokers have petitioned the U. S. Bureau of Markets for supervised inspection at shipping points, but no action has resulted. Florida shipments are about cleaned up. The market is firm. California navels range from $3.50 to $5 for choice fruit, delivered.

The market for lemons continues steady. The price averages from $4 to $4.50 a box, delivered. There will be no foreign lemons available for some time.

The total shipments of oranges to date this season are 8,858 cars, as compared with 5,681 cars to date last season. Lemon shipments total 2,243 cars this season, and to date last year, 954 cars.

Pumpkins, per cwt.....50@75c
Rhubarb, per 30-lb. box $2.25

FRUITS.

Apples continue to make up the deciduous fruit market. Offerings fairly good but the demand was equal to the supply and prices remain steady. Fancy Newtown Pippins are getting scarce and they brought more money. White Pearmains also showed a little improvement.

We quote from growers:

Apples—
King Davids, Northwest pack..$2.75@3.00
Black Twigs, Northwest pack.....3.00
Baldwins, Northwest pack.....2.75
White Pearmains, 4-tier .....2.00@2.25
Yellow Newtown Pippins,
4 tier .....2.50@2.85
Bellefleur, 4 tier .....2.00@2.25
Bellefleur, 4½ tier .....1.75@2.00
do, 3½-tier .....1.85@2.00
Jonathans, Northwestern pack. 3.00@3.25
Winesap, loose, per lb.....6@6½c
Roman beauties, Northwestern,
per peck .....3.00@3.25

HAY.

Not so much in the past week, and under lighter offerings buyers took hold more willingly. The demand, however, was largely from the dairy people and mainly for alfalfa. Horse hay as dull as ever.

We quote f. o. b. Los Angeles:
Barley hay, per ton.....$21.00@24.00
Oat hay, per ton .....25.00@28.00
Alfalfa, northern, per ton.....20.00@21.00
Alfalfa, local, per ton.....21.00@23.00
Straw, per ton .....9.00@10.00

BEANS.

The bean market remains as dull as ever. The past week failed to produce any noticeable improvement. Everybody has beans to sell and no one wants to buy. A few small Eastern orderes were filled for limas during the week, but that was all. No movement in anything else. Prices, however, remain unchanged.

We quote from growers:
Limas, per cwt.....$8.00
Large White, per cwt.....7.00
Small White 7.00
Pink, per cwt.....5.50
Blackeyes, per cwt.....3.50
Tepary, per cwt.....3.50

COTTON.

There was a better feeling in the cotton market the past week. The low prices at which the market closed last week caused better buying the past week both on domestic and export account. A report that all restrictions on the export of cotton had been removed also had a bullish influence. The current week not only opened a number of points higher, but both mills and exporters showed more willingness to take hold. March closed Monday in New York at 22.70c and May 22.60c in New Orleans March closed 24.96c and May 23.37c.

Special Livestock Market Report

San Francisco, February 19, 1919.

No change in prices from last week. Consuming markets uncertain.

CATTLE—Receipts have been fairly heavy with but few from ranges; mostly small lots. Beef market is very poor, the demand being mostly for cheap cuts and cheap carcasses, possibly due to increase of unemployment.

Steers—
No. 1, weighing 1000@1200 lbs...12¾@13c
do, weighing 1200@1400 lbs...13@13¼c
do, second quality .....11½@12c
do, thin .....9@10c
Cows and heifers—
No. 1 .....9@10c
do, second quality .....8@9c
do, common to thin.....6@7c
Bulls and stags—
Good .....6½@7½c
Fair .....5½@6½c
Thin .....4½@5½c
Calves—
Lightweight .....11½@12c
Medium .....10½@11c
Heavy .....8 @10c

HOGS—Hogs are coming freely, a little too heavy in weight, but the quality of a large part is soft and unfinished. Condemnations for tuberculosis have not been bad, but when milk-fed hogs begin to come, the condemnations seasonally do increase. Several hog raisers in California send in well finished, smooth hard, stock. One of these, the Chowchilla Farms, recently sent in their first shipment of registered Durocs. These dressed an average of 78.6 per cent, which is about the average of eastern corn belt hogs. Such stock easily brings ¼ cent premium and costs less to produce.

Hogs—
Hard, grain-fed, 100@150 lbs.....16c
do, do, 150@250 lbs.....16½c
do, do, 250@300 lbs.....16c
do, do, 300@400 lbs.....15½c

SHEEP—Mutton is not much demanded, though short yearling lambs sell moderately well. Dealers and butchers are unable to guess what is ahead in the produce markets and are not offering inducements for any heavier shipment.

Lambs .....14@14½c
Yearlings .....12@12½c
Sheep, wethers .....11½@12c
do, ewes .....8½@9¼c

Los Angeles, February 18, 1919.

CATTLE—Prices show no change from a week ago. The tone of the market, however, is distinctly weaker. A very dull meat market, causing packers to reduce their killing and plenty of steers are being offered. Good to choice cows are scarce, firm and in demand. Calves in good demand and firm under a light supply.

Per cwt., f. o. b. Los Angeles:
Beef steers, 1000@1100 lbs.....$11.00@13.00
Prime cows and heifers..... 9.50@10.50
Good cows and heifers..... 8.00@9.00
Canners ..... 6.00@ 6.50

HOGS—More coming in and quality very good. While prices have not been lowered, yet killers in buying judge more closely and the tendency of the market is downward, the high prices of meats causing a light consumption.

Per cwt., f. o. b. Los Angeles:
Heavy, av'rging 275@350 lbs..$14.00@15.50
Mixed, av'rging 225@275 lbs... 15.00@16.00
Light ..... 16.00@16.50
Rough docked 20 lbs., piggy sows 40 lbs., and stags, 40 per cent.

SHEEP—A dull mutton market the past week caused killers to take fewer sheep and lambs than for some time. But as the offerings were light what few coming in brought steady prices.

Prime wethers .....$9.50@10.50
Prime ewes ..... 8.50@9.50
Yearlings ..... 10.00@11.00
Lambs ..... 14.00@15.00

Portland, Ore., February 14, 1919.

The receipts of livestock at the North Portland Union Stock Yards for the week to date has counted in 1200 head of cattle 100 calves, 5400 head of hogs, and 1300 sheep. The market for the past few days has held generally steady and is closing the week in a healthy firm condition with an undertone of strength.

CATTLE—Best steers, $12.50@13.50; good to choice steers, $11.50@12.50; medium to good steers, $10.50@11.50; fair to good steers, $9.00@10.50; common to fair steers, $8.00@9.00; choice cows and heifers, $9.50@10.50; good to choice cows and heifers, $8.50@9.50; medium to good cows and heifers, $5.75@6.75; canners $3.50@5.00; bulls, $6.00@9.00; calves, $9.00@13.50; stockers and feeders, $7.00@11.00.

HOGS—Prime mixed, $16.50@16.75; medium mixed, $16.25@16.50; rough heavies, $14.50@15.00; pigs, $12.00@14.00; bulk, $16.65.

SHEEP—Prime lambs, $13.75@14.25; fair to medium lambs, $9.00@11.00; yearlings, $10.00@11.00; wethers, $9.00&10.00; ewes, $6.50@8.75.

Chicago, February 17, 1919.
(U. S. Bureau of Markets.)

HOGS—Receipts, 52,000; market mostly steady; closed dull, weak to 10c lower; early top, $17.95; practical top late, $17.80.

CATTLE—Receipts, 18,000; market generally 25c to 50c higher; beef cattle: Good, choice and prime, $16.75@20.00; common and medium, $10.75@16.75; butcher stock: Cows and heifers, $7.40@15.50; canners and cutters, $6.00@7.40; stockers and feeders: Good, choice and fancy, $11.25@15.00; inferior, common and medium, $8.25@11.25; veal calves, good and choice, $15.25@15.75.

SHEEP—Receipts, 11,000; market generally 25c to 50c higher; lambs, gaining most; lambs, choice and prime, $17.85@18.00; medium and good, $16.00@17.85; culls, $13.25@15.00; ewes, choice and prime, $11.60@12.00; medium and good, $9.75@11.60; culls, $5.50@8.50.

WEEKLY BUTTER AVERAGES.

Cents per pound for Extras.

Week Ending		San Francisco 1918	San Francisco 1919	Los Angeles 1918	Los Angeles 1919
Jan.	2	50.40	66.10	50.16	63.16
"	9	51.08	61.50	50.00	64.00
"	16	52.33	61.70	50.50	64.16
"	23	52.50	55.83	52.00	62.16
"	30	53.00	44.91	51.83	49.00
Feb.	6	50.80	43.58	49.66	47.33
"	13	52.00	46.80	48.00	47.60
"	20	51.41	51.58	48.00	53.16
"	27	51.30	....	49.33	....
March	6	50.66	....	50.00	....
"	13	51.16	....	49.50	....
"	20	47.83	....	47.00	....
"	27	46.30	....	43.30	....

WEEKLY EGG AVERAGES.

Cents per dozen for Extras.

Week Ending		San Francisco 1918	San Francisco 1919	Los Angeles 1918	Los Angeles 1919
Jan.	2	52.80	75.60	48.16	69.50
"	9	60.91	69.91	50.66	66.66
"	16	65.66	59.70	55.00	62.41
"	23	65.66	52.58	58.00	54.66
"	30	61.25	48.75	54.00	52.33
Feb.	6	58.50	42.00	51.66	43.00
"	13	44.40	40.90	44.83	37.80
"	20	44.75	36.41	40.83	39.33
"	27	42.40	....	39.58	....
March	6	36.83	....	35.66	....
"	13	37.91	....	38.00	....
"	20	40.66	....	39.63	....
"	27	39.50	....	40.00	....

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FOR SALE—Cunningham Land Pulverizer. Practically new. As a pulverizer and mulcher the "Cunningham" has no equal. It also conserves moisture, which is of vital importance to all farmers and orchardists. Address, Room 1120, Merchants National Bank Building, San Francisco.

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All sizes standard pipe and wrought iron screw casing. All kinds of fittings. Guaranteed good as new. Write for prices. Weisbaum Pipe Works, 160 Eleventh street, San Francisco.

PEAFOWLS—VERY TAME—for sale. 20 months old, $25 pair. Trio $35. 8 months old, $17.50 pair. Trio $24.50. Crating extra. Eggs in season, $1.00 each. Also Mammoth Spanish Jacks and Jennets. A. Everett, Moorpark, Cal.

FOR SALE—1600 ft. of 11 inch No. 20 gauge galvanized iron pipe, part of it used for one irrigation, balance never used. 20 per cent off present market price for quick sale. A. H. McHuron, 519 California St., San Francisco.

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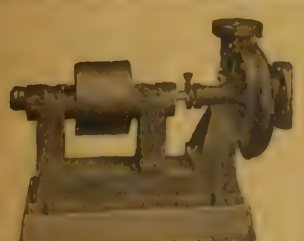
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THE PACIFIC RURAL PRESS

Forty-ninth Year

SAN FRANCISCO | FEBRUARY 29, 1919 | LOS ANGELES

Retail Cold Storage for Farmers' Supplies

Written for Pacific Rural Press by R. E. Hodges

COLD STORAGE at retail makes living better and cheaper for a great many farmers around Chico. J. H. Guill Jr. is one of them. On our recent visit, he had just killed two hogs and was ready to cut them up, store the pieces he wanted to eat fresh until he should want them, and smoke or salt the rest, putting that also into cold storage because it does not dry out so much there nor get rancid or wormy. Mr. Guill kills a veal occasionally and keeps it in cold storage until it is all used up. He also keeps cream and butter there. All this would cost him at present rates $1 per month. "I don't figure so much on reduced cost of supplies," says Mr. Guill, "as on knowing what I am eating, so I kill and bank my own meat."

Another farmer we saw cutting up a hind quarter of beef to put into the retail cold storage. "This meat cost me 16 cents a pound," said he. "It would cost an average of 30 to 35 cents a pound at the meat markets, and some of it would cost a good bit more." He was cutting it into pieces the size he would want on future occasions and wrapping them in paraffine paper. Instead of going to the meat market next summer, he will go to the cold storage plant and get perfectly good meat.

Farmers who have been eating backbones, spare ribs, and other choice parts all at once just because they wouldn't keep; farmers who have wasted hearts, livers, and other parts because they could not eat them soon enough; farmers who have had hams and bacon get rancid and wormy; all feel the need of better preservation of their meat. And this is not all. The joys of butchering in cold weather have disappeared, for animals may be killed when it is comfortable outdoors to care for them. Difficulty in getting animals ready for butchering at certain seasons do not worry cold storage patrons.

When the spring chickens are right for friers they can be killed and stored away — fried spring chicken in the fall! Automobiles and motor trucks permit even remote farmers to have all the benefits of cold storage.

What Is This Retail Cold Storage?

The idea has been developing in the mind of H. A. Eames of the Chico Ice and Cold Storage Co. for eleven years, that the cold storage which was so profitable to middlemen and which also stabilized prices for consumers and enabled them to have produce of various kinds after the season was over, would be more profitable to producers and consumers if it could be provided conveniently for them at low cost, because it would eliminate the middlemen. The ice plant had and still has big rooms in which hang many carcasses of frozen beef for months at a time until they are needed. Mr. Eames showed us several of such rooms used by local meat and produce men. One butcher of Orland uses such a room here. One room is kept for egg storage at a different temperature. Butter is kept in a separate room. Though practically only farm products were stored here, farmers did not use it in former days and do not to this day use cold storage elsewhere. But wholesale cold storage would not be satisfactory for a single family, and a certain frailty of humanity made it impossible to have a large number co-operated in renting such a space.



Interior of Retail Cold Storage Room. Each box has an individual lock and the door to the room is never locked. Meat and produce are stored here at 10 to 15 degrees above zero.



Freshly killed carcasses are brought to the cold storage plant at any time of year. They are chilled and cut into suitable pieces, then put into cold storage boxes on the safe deposit plan.

Safety Vault Plan.

A year ago last March Mr. Eames fitted up a room with racks on which were placed 470 paraffined fir boxes about 1x3 feet square and able to hold about 100 pounds of meat. He rented these at a cent a day and within two months every one of them was rented. Each box has its own lock, furnished by the renter, and no one else can get into it, although the door to the room is open all the time, day and night. The rent has since been raised to $4.50 per year. Eighty boxes, holding about 800 pounds of meat each, have since been added to the same system and they rent at $24 per year. Mr. Guill rents one of these with his brother, dividing the expense. The room is kept at a temperature ten to fifteen degrees above zero.

In practice, a farmer butchers or buys a freshly butchered quarter or carcass and brings it while still warm to the plant. He hangs it in a cooling room at about freezing temperature if he wants to before cutting it up. The ice plant furnishes blocks on which farmers may often be seen cutting their meat into the size to be used in one day. The plant furnishes paraffine paper at cost, so each piece is wrapped separately to prevent odors escaping or being absorbed from smoked meats or perchance from meat too long kept fresh and warm. In the early days of this experiment a good many folks seemed to figure that cold storage would make rank meat sweet, but they found that the sweet tempers of other patrons became rank and this abuse is seldom practiced now.

Cold Storage in Every Community.

This plant, which is the only one of its kind in the United States now, has 1000 customers, who bring meat and farm produce from a radius of 35 miles. Mr. Eames believes that every country town ought to have a farmers' free market with a retail cold storage plant nearby. This would enable farmers themselves and consumers to buy cheaply in large quantities, and whenever a temporary local surplus of any kind

(Concluded on page 326)

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EDITORIALS

ACTIVITY IN ANIMAL INDUSTRY.

WE HAVE recently thrown a number of boquets at the animal industry as fundamental in the support of the other specialties of California agriculture and of general State development. It appears that superstructures are likely to rise rather rapidly on this foundation. Current local gossip is that Swift and Armour, two of the group of kings who rule the American packing industry, were "with one accord in one place" last week, and that place was San Francisco. As overland trains, with current danger of snowdrifts in the Rockies and imminent peril of McAdoo dinners in the diners, certainly promise less that is salubrious and sumptuous than steam-heated palaces in Chicago afford, it is rather a violent assumption that these kings of packerdom are traveling merely for pleasure or for their health. There may be debate on this question, of course, for it is always pertinent to claim that the joy of being in California has great preponderance of pleasure over the discomforts of getting here, even as the railways are now disposed toward pleasure travel. Therefore, we are not startled by this rumor in one of the dailies last week:

There will be an executive session of the two principals of the "big five" among the meat packers, which, it is rumored here, will be of interest to the companies on the Pacific Coast. It became generally known today that one of the primary reasons for their visit was the approval of plans for a new $2,500,000 plant for the Western Meat Company—but the distinguished visitors refuse to be interviewed.

The last clause of the foregoing statement seems to us quite significant, for we remember distinctly that two decades or more ago these same parties, or their forebears, were in the habit of making a winter call on California sunshine and had no objection whatever to being interviewed—in fact, they seemed to wear their heartfelt emotions about California's future on their sleeves for journalistic daws to pick at, and there appeared in the press visions of great packing plants all the way from South San Francisco to South San Joaquin—each vision centered in an ocean of town lots, all of which had either prosperous wet goods emporiums or butcher's bungalows projected on them for the attraction of lot buyers. In other words, our visiting packers from the Middle West two decades ago really came to California for recreation and, just to make it interesting, were wont to take a hand in a real estate game with a packer's dream of stockyards, abattoirs and packing houses to gild the sales' maps and circulars. Under those conditions visiting packers would not "refuse to be interviewed." They would recline on hotel lounges, inhaling cigar smoke and exhaling hot air as long as the slowest cub reporter would prop his ears open to receive it.

LESS PUBLICITY, MORE TRANSACTION.

IT SEEMS to us that to "refuse to be interviewed" is almost equivalent to an announcement that really something is doing. It has been that way in the past. When free investment and real development of such actual enterprises as the Western Meat Company and other packing businesses began in this State, there were no more Havana lighthouses blazing for the guidance of cub reporters and the real estate boomers were driven into the slaughter pens. Real things were done in a business-like way and San Francisco and Los Angeles began to have something different from the "wholesale butchers" of pioneer days and something different also from the old style of buying meat animals and retailing of meat products. California awoke to find herself in the swim of national meat production and trade and, though not nearly all that is desirable for the prosperity of the stock grower has yet been secured, it may be frankly admitted that things were notably improved in some ways and our animal and meat trades started toward achievements which would have never been attained under the pioneer policies of stock buying, killing and distribution to consumers. And what is coming now? We do not know. The most promisng thing we see in the situation is that the projectors "refuse to be interviewed."

There are some things in the situation that we can guess at with some degree of confidence. The "great packers," whom one would judge from Mr. Heney's proclamations to be a bunch of marauding Prussians and from their own statements to be a group of world-saving woodrows, have really reached a more adequate conception of the geographical and commercial relations of California to the meat production of this Coast and the meat trade of the new world of the Pacific, and have started toward an expansion of their interests and activities in this State in which the industry of the cub reporter would be of no advantage and possibly of real detriment to them. They propose to make themselves solid for greater undertakings than they have hitherto entered upon in California. They propose to enroll our Coast production of animals, and their product trade from the terminals and ports of this State, in their enlarged scheme of economic world conquest through international trade. They intend to include Pacific Coast outputs in their current publicity campaign for fuller recognition of the desirability of meat products in building up a stronger and more efficient physical phase of American citizenship through a freer consumption of strength-giving foods, as higher compensation makes it possible for our great masses of working people to buy them. It is really wonderful what is being done in this line for the development of meat-product consumption. We probably do not know a hundredth part of it, but when we receive from the Armours a descriptive publication about their killing and manufacturing plant which looks like the illustrated catalogue of a national art gallery, and from Swift a "year book" which looks like a de luxe thesis from a college of economics—we conclude that the packers are giving their producing establishments the color of the rainbow and the odors of a rose garden. Of course, the critic will claim that they are camouflaging their manufactures with beauty, wholesomeness and dietetic value and their motives with philanthropy and patriotism, which neither products and purposes actually involve, but our judgment is that they are playing a game of publicity which is at least as pure and fair as the political game of those who are trying to impeach it.

PACKERS' OPERATIONS AND GROWERS' INTERESTS.

OUR judgment is that packers' expansion, in product, in trade and in publicity to win consumers' patronage, is fundamental to the development of the capacity for stock growing which belongs to California. It is fundamental because it is indispensable and incapable of being attained in any other way. It may not have been fully proven that stock growers cannot profitably pursue the elaborate manufacture and sale of products and by-products, but such experience as they have had indicates that. It seems that growers cannot, or at least have not, co-operatively organized for successful competition with the incorporated packers. There remain, then, two things which are under discussion: first, Government operation of packing plants; second, stock growers organization to secure protection against unfairness from incorporated packers. The former seems to us only a dream of nationalistic socialists—both impracticable and undesirable. The latter is both feasible and desirable. It includes Government inspection, regulation and publicity concerning operations, and possibly ownership and operation of stockyards. At least it seems desirable that stockyards should adhere to the function of transporation and no longer exist as adjuncts of packing plants—either in ownership or operation. If stock selling can be made fair, open and free from entangling alliances and if the operation of packing and distribution can be assured profit and prevented from profiteering, it seems to us that the existence of these corporations, and the fullest promotion of their proper activities, must be considered as fundamental and indispensable to both the growing and consuming interests of the country. If this can be secured, packers should be hailed as patriotic contributors to general prosperity and they may "refuse to be interviewed" as much as they like.

How can this be done? We see only one way and that is by growers' co-operation—to do what they can for themselves: to get what they need from legislation. This is a matter to which our Mr. Whitten is giving particular attention—reflecting upon it all the light to be drawn from current fact and thought. Stock growers are doing and thinking many things. No one can tell what item of experience or flash of thought may be the real illuminator of the future—therefore we are setting forth in these columns everything which seems to be germane and pertinent. This is our line and the line on which we shall fight it out. We are even more patient than was Grant, because we shall fight it out on this line if it should take several summers!

ON THE EDGE OF THE MILLENIUM!

ARE we, then, now entering upon those galleries of time which extend beyond human sight and thought, but at the portals of which we can catch whisperings of the coming apotheosis of mankind? Is there for us, as for Halleck, a voice sounding

> —like a prophet's word:
> And in its hollow tones are heard
> The thanks of millions yet to be?

Or, to put the matter more concretely, do the packers and all other great aggregations of capital, facilities and efficiency which intervene between the farmer and the consumer, intend to be good from this time forward and thus deserve the thanks of all coming generations? Nothing but the eye of faith can discern the answer, and as each man's faith is, so shall the answer be to him—for he will strive to realize it and thus, in some measure, the answer will be the product of his life and action. And there is certainly a practical lesson in that view of the outcome of the present struggle to arrange the economic affairs of men on a better basis of fairness to all concerned. We do not know whether our anticipation of an angelic change of heart and business purpose among the rulers of the packing industry is warranted or not—"they refuse to be interviewed." But even the anticipation itself yields a lesson. If their current publications and their pleas for fuller publicity for their operations are true and not camouflage: if they are really turning from their evil ways and if they see better business in fairness to stock growers and meat-product consumers and more effective promotion of it in publicity than in the brand of secret diplomacy which they have hitherto practiced, it is really possible that we are on the edge of the millenium! And the principle involved is everlastingly true whether the packers have yet reached the discernment to embody it in their business policy or not.

And all other intervenors between production and consumption have the same lesson to learn, for the same principle will bring success, and the violation of it will bring disaster, to all of them. We believe all mankind and all their activities are on the edge of a millenium of economic fairness in which justice will prevail and greed will be destroyed. We are continually urging and promoting organizations of producers because we believe they embody in actions and motives the principles which will prevail in the economic millenium to which we allude. If, however, the projectors of any of them are so blinded by greed and commercial ambition that they cannot see this great white light of justice and fairness to all concerned, they are just as bad in their ways as

trusts and monopolies are reputed to have been in theirs. Any producers' co-operation which undertakes business cruelty and oppression to crush others in its line of production for the exclusive advantage of those of its own fraction thereof, is just as bad in principle and culpable in action as any corporation or other combination is. The principle of co-operation is so true and its transactions so fair that the light of heaven shines from it and woe be to any organization which steals "the livery of the court of heaven to serve the devil in."

QUERIES AND REPLIES

By the Editor.

Inquirer Must Give Full Name and Address.

Potatoes or Garlic?

To the Editor: I have 10 acres of land in Solano county which I intended to plant to American Wonder potatoes. but have been advised not to do so by people living in that neighborhood for years. As it gets pretty warm there in summer, I am asking you for some advice about the culture of garlic. Does it need lots of irrigating or cultivating? —H. E. M., East Oakland.

Your neighbors ought to be better judges of your potato scheme than we, for they know the land and we do not, but we can say that if you wish to tackle something which will probably drive you crazy while you are at it and into bankruptcy at the end of it, ten acres of garlic will do it. Garlic is more exacting in soil and moisture suitability than potatoes are and, even with these all right, garlic will call for probably at least twenty times as much labor. Figure out how long it will take to stick down those little "cloves" six inches apart in rows two feet apart (for horse cultivation) and how long to hand-weed all those rows just as often as weed and grass start, etc., etc. Garlic is harder to get in and bring along than onions, though similar in cultivation requirements. If you get a crop, which would be rare for a person who does not know how to grow it, there is no telling how little it might be worth, for the demand is very small and irregular and the recovery of your labor-cost would be very doubtful. Try an acre or a fraction of an acre first and see how you come out.

Almost a Grape!

To the Editor: One of our county papers recently printed this statement: "The Zante currant is almost a grape and is the finest currant in the world. Alameda county has always been the greatest currant county in the State." And then the writer argues that Livermore wine grape vines can be profitably grafted over to Zante currants. What do you think of the statement?—R. C., Haywards.

It is a queer mixture of fact and fancy. The "Zante currant" is, as Paul said, "not almost but altogether" a grape. It is not the "finest currant in the world" because it is not a currant at all in the horticultural use of that word. It is true that Alameda "is the greatest currant county in the State," but the general inference from that fact is a misfit. No currants are grown in the Livermore district where grapes do well and there are practically no grapes grown in the west side of the county where currants do well. It is quite possible that Corinth grapes can be profitably grown and cured into what are commercially known as "Zante" or "English currants" in the Livermore district, which grows good grapes and has a good fall climate for drying them, but it is not possible that they can be profitably grown where the currants are now grown, because there are no grape vines there to graft them into and because the autumn climate on the west side of the county is not suited to drying them.

Vine Cuttings Upside Down.

To the Editor: I was told to set Thompson cuttings upside down in the ground and cover them with an inch of dirt (until planting time), so as to give the roots a start. I intend to set the unrooted cuttings 7 feet by 12 feet out in the field and keep plenty of water on them. Do you think this advisable?—A. J. S., Visalia.

It is a good plan to invert and cover the cuttings as you describe, if the soil is of a character to prevent water gathering in the trench or pit you make for them. It is for the purpose of promoting the growth of callus on the ends which will be planted downward in the vineyard. It is not desirable to hold the cuttings inverted too long. When callused they should be planted as soon as the ground is deeply moist. Do not "keep plenty of water on them"—just irrigate sufficiently to keep them growing well. The distances you mention are all right for a medium soil: if the soil is rich, a little more space would be desirable—say 8x14 feet.

Training Mammoth Blackberries.

To the Editor: I have had poor success with my Mammoth berries, which are in rows nine feet apart and the plants 10 feet in the row. I have posts about 20 feet in row and 3½ feet high, with cross piece carrying two wires, the vines trained on them rope fashion. I have done some pruning, cutting off weak runners and shortening some, but I often put up long runners. Should I not cut all runners back to seven or eight feet and do some thinning? The berries do not develop well and last year did not bloom as full as they should. I have plenty of water and the ground has been fertilized with stable manure and well worked in with harrow and light cultivator.—J. E. C., El Cajon.

From what you say about training the new canes on the wires "rope fashion," it seems possible that you are not cutting out the canes which have already borne fruit, but have been twisting the new canes over the old—for that would make a rope and it would interfere with thrift and good bearing, because the laterals which bring the fruit would not have light, air and space to develop freely. If you wish to tie up the new growth to a wire as it grows, do not use the same wire which is carrying the previous season's growth which is then bearing. If you keep the two growths separate (in this way or some other), it will be very easy to cut away all the spent canes without having to disentangle them from the canes which you wish to keep for the next crop. In handling this new growth there is usually considerable thinning of canes to save space for the stronger ones and these should be shortened so as to force fruit bearing laterals from the strongest parts of the cane and to escape too much overlapping on the wires, which will make them look too much like a rope and crowd the laterals too much.

Facts About Inoculation.

To the Editor: In your issue of February 1 it is stated that legumes will only take nitrogen from the air if "the seed is inoculated at time of planting or natural inoculation exists." What is "natural inoculation"? Does natural inoculation exist where bur clover grows wild? If ground is sown with inoculated seed of one variety of clover, do other varieties of clover benefit? In my case the land was sown with inoculated seed of melilotus last fall. No melilotus but lots of bur clover appeared.—Subscriber, Cupertino.

Natural inoculation is the occurrence of the germs in the soil at the time of sowing. It does occur if there is a free growth of bur clover. Inoculated seed of one clover helps another clover—if the germs were alive. If you saw no melilotus plants at all, it is possible that you bought bur clover seed—by mistake. If you have a heavy growth of bur clover, you do not need to buy either melilotus or germs.

Replanting Dormant Buds.

To the Editor: I have some apricot seedlings that did not grow well the first year of the nursery planting and were budded one year later than the first grown. They are on apricot root. We are digging out the good trees for orchard setting now. Would it hurt the late budded trees to dig and replace them somewhere else, for I want to plant corn on the land? What is the best thing to do with them? The buds are set, but the stock has not been cut yet.—L. J. B., San Jose.

Dig up the "good trees" and the others having dormant buds at the same time. Plant the good ones as you propose and plant the dormant buds in nursery rows, wherever it is convenient for you on good land. After planting in nursery rows, cut back the tops of the stocks considerably and after the buds have grown out a few inches cut back closer to the new shoots.

White Figs Dropping.

To the Editor: I have a white fig tree, seven years old, and when the figs get about half grown they dry up and drop off. Is there any remedy for this? If not, could I graft some other fruit on it?—J. L., Los Gatos.

How could you have dodged all the bullets with which our caprification machine-guns have been raking our readers at least once a month for the last few decades? Your tree needs a wild fig planted near to it, and when it bears it must be supplied with fig insects and these will make your white figs stay on and develop. On a fig tree you can graft nothing but another kind of fig.

Increase Your Income

Are you satisfied with what you are earning? If so, don't read this, for it is intended only for red-blooded men with the fire of ambition burning in their hearts.

If you are a failure at your present work, we can't use you. But if you are succeeding and feel that you can do even better in a line offering greater opportunities, we want to talk with you. We can use you in our circulation department, looking after renewals and getting new subscribers.

Permanent work; straight salary; no investment except that you must have an automobile. Write today for particulars and tell us a little about yourself.

Killing Sparrows.

To the Editor: Please give a recipe for poisoning English sparrows. There are only a few here and this is the first winter for them. They are a nuisance in the barn.—G. W. C., Grabners.

We have published many ingenious ways of poisoning sparrows with powdered strychnine mixed with cornmeal, dissolved in water, etc., but none of these seem to get many sparrows. Probably poisoned wheat as used for squirrels will get as many as any other poison, but one has to look out not to kill other things. The small "gee-whiz" mouse traps are very effective and shooting is sure if one will keep at it. Destruction of nests and raiding roosting places with a lantern or electric light-shooter are also effective.

What Is an A. R. O. Cow?

To the Editor: What is meant by A. R. O. cows?—Subscriber, Bethany.

The term A. R. O. is used by the Holstein-Friesian Association for the purpose of distinguishing the classification of a cow and is an abbreviation for the words, "Advanced Registry Official." Only such cows as have made officially authenticated butter fat records in a sufficient quantity to meet the minimum requirements for a given age are eligible to the A. R. O. division. These requirements are carefully drawn and are designed to classify candidates for registry on a basis of equality in preparedness for the different "age-forms."

Volunteer Oat Hay.

To the Editor: In January, 1918, I sowed red oats for hay. In June I cut two tons of fine hay per acre. I flooded part of the land and planted Egyptian corn, making about 12 sacks per acre. The land which I did not flood I did not plow and after the rains the oats put out a fine growth which I have pastured all winter. I would like to know if it will pay to leave this second growth and cut it for hay.—W. H., Lathrop.

It surely will—if you can see a good stand of plants on the land. The way the rains are coming it ought to push up a good volunteer crop, but much will depend upon the spring rains, of course. In any case it ought to give you more than a late sowing.

Garden Rhubarb.

To the Editor: I have some rhubarb plants that went to seed last year. Will this hurt the plants in any way for producing stalks this year? Should the plants be taken up, divided and reset? —R. C., San Mateo.

Bearing seed stems will not keep the plants from going on, although it is better to cut them out as soon as seen and not let the roots waste their time that way. Cover the crowns with a good lot of stable manure and watch them break through later.

California Weather Record

The following rainfall and temperature record is furnished the Pacific Rural Press by the United States Department of Agriculture Weather Bureau at San Francisco for the week ending at 5 p. m., February 26, 1919:

Stations—	Rainfall Data: Past Week	Seasonal To Date	Normal To Date	Temperature Data: Max'm	Min'm
Eureka	1.40	26.29	30.83	59	36
Red Bluff	1.16	21.95	17.25	56	30
Sacramento	.80	14.19	13.69	58	38
San Francisco	.64	20.51	15.99	58	43
San Jose	.44	14.62	11.12	58	32
Fresno	.10	5.25	6.33	60	36
San Luis Obispo	.57	13.66	13.63	64	38
Los Angeles	.08	5.76	10.68	66	44
San Diego	.14	6.03	6.03	64	40
Winnemucca	.46	5.25	4.81	42	12
Reno	.12	7.88	7.36	46	16
Tonopah	.02	.....	5.17	44	16

SNOW ON GROUND.

Sierraville, 8 inches; Squirrel Inn, 12 inches; McCloud, 6 inches; Yosemite, 8 inches; Portola, 15 inches; Huntington Lake, 61 inches; Cascada, 6 inches; Summit, 122 inches; Emigrant Gap, 62 inches; Truckip, 54 inches.

Have We a Place for the Milking Shorthorn?

Written for Pacific Rural Press by R. H. Whitten

THE "grand old Durham cow" of a generation back no longer exists in California. She has been "bred out" by crossing either with inferior beef grades or with dairy stock. But in traveling about the State one cannot help but notice the large number of red cows, showing a preponderance of Durham or Shorthorn blood, and the question arises—can these herds be bred up to the point of greatest efficiency by using Milking Shorthorn bulls instead of those of the strictly dairy breeds? Or, to put the question in a broader way, has this meat-milk breed a place in California livestock farming?

To find a satisfactory answer, let us review the history of the breed and see how it has been developed. We find that from the beginning both sides of the Shorthorn were developed. One group of breeders, led by the Booths, bred for heavy fleshing qualities; while another group, led by Thos. Bates, turned their attention to the milking qualities. Both sides started with the same foundation stock, but eventually there were two types—one possessing marked ability to fleshen up, the other famed for its milking propensities. These same types exist today. Scotch cattle, bred by followers of Cruickshank, have carried out the work of the Booths, making the Shorthorn one of the world's leading beef producing breeds. The other type has been equally well developed, and in England it supplies from 75 to 80 per cent of all the milk and dairy products used.

We see from this that one Shorthorn can make beef and another milk, but can one animal make both? The adherents of the Milking Shorthorn answer in the affirmative most emphatically; and they reason that since both of the types were developed from common ancestors it is reasonable to suppose that the two types can be brought together. And they claim that the proof of this supposition lies in the fact that this has already been done.

HIGH MILK RECORDS.

In England, where Milking Shorthorns are more numerous, they have made enviable records. At the show of the Royal Agricultural Society, milk yield classes were provided for the different breeds and the average number of points gained by the first and second prize winners were: Shorthorn, 83.07; Jersey, 74.78; Holstein, 74.09; Ayrshire, 71.70; Red Poll, 71.33; Guernsey, 64.35. In the butter test competition, for cows over 900 pounds in weight, the results in points were: Shorthorn, 55.00; Jersey, 41.20; Guernsey, 32.45; Holsteins, 31.05. For individual milk production probably the highest record is that of 22,348 pounds of milk in twelve months, made by Model Maid.

In this country Milking Shorthorns are young in the testing game, but it is claimed that in their first eight years of testing they have made approximately 25 per cent more official advanced registry records than did the Holsteins in the same length of time; more than did the Ayrshires in their first sixteen years of testing.

It is claimed that the average advanced registry records of the Milking Shorthorn exceed those of the Jersey and Guernsey, and are only slightly exceeded by those of the Ayrshire. It is admitted that the Holstein is in a class by itself insofar as high production is concerned, but it is claimed that such records are, in general, made regardless of cost.

The highest milk producing cow of the breed in this country is Rose of Glenside, in the Otis herd at Willoughby, Ohio, with a record of 18,075 pounds milk and 624 pounds butterfat. In a catalog of this herd we notice that, of 87 cows listed, 39 have records over 10,000 pounds, 19 more over 9000, and the balance between 8000 and 9000. The average test of cows was 4.2 per cent fat, but for the breed we believe the average is 4.5 per cent. In this herd the world's champion two-year-old was developed, with a record of 415.81 pounds fat from 10,080 pounds milk. In a Minnesota herd a cow produced 657.7 pounds fat from 15,608 pounds milk—a world's record for fat.

GREAT LONG-TIME AVERAGES.

It is pointed out that Milking Shorthorn records were made on real farmers' farms, under ordinary farm conditions, generally milking only twice a day. As a result, the animals were not burned out with over-feeding and one year did not end their usefulness. A strong point is made of the long-time averages, some of them being: Charlotte B, 10,118 pounds per year for 8 years; Mamie's Minnie, 15,160 pounds average for 3 years, and 11,867 pounds for every milking period of her life; Mamie's May, over 10,000 pounds yearly for 4 years. Both Mamie's Minnie and Mamie's May were daughters of Mamie Clay 2nd, who averaged 10,640 pounds for 5 years.

Even though English breeders show their stock during the greater part of the year, which is not conducive to high yields, the cow Dorothy averaged 10,536 pounds for 11 years and won many prizes. Darlington Cranford 5th averaged 10,174 pounds for 10 years and was never out of the money. Darlington Cranford 6th averaged 12,493.5 pounds for 5 years and made extensive winnings. Strawberry averaged 10,500 pounds for 15 years, and produced well and bred regularly until 27 years old.

GOOD AT MEAT-MAKING ALSO.

And now for results in terms of meat. The Otis herd showed two steers at the Wisconsin fair in 1917—one by a son of a cow with a record of 10,877 pounds and out of a 10,579-pound cow; the other by the Otis herd bull and out of a grade cow that milked over 50 pounds per day. They won second and third prizes in the fat steer class, competing against the best strictly beef Shorthorns in the country.

At the International in 1917 a Milking Shorthorn stood second in his class and next to the grand champion, and had four sisters in the Record of Merit. He was the champion steer at Toronto and dressed 65.9 per cent. Iowa State College, University of Missouri and Cornell University all have herds of Milking Shorthorns and it is claimed that they have demonstrated beyond a doubt that cows, besides yielding a good profit from milk, can also bear calves that will prove market toppers when grown out and fattened. Thos. Harrison of Santa Rosa tells us of a 1500-pound cow here in this State that had her calf taken away at birth, proved a profitable milk cow, and the calf, without ever being with a nurse cow, weighed 1900 pounds at two years old.

POPULAR IN CORN BELT.

Prof. Judkins, who made extensive investigations throughout the Corn Belt, found that most of the farmers keep dual-purpose cows and that the Milking Shorthorn is the favorite dairy cow in Iowa. She produces the vast amount of butter turned out by the State, and also provides the beef for which Iowa is famous. Thos. Harrison refers us to an investigation by the Department of Agriculture of over 500 farms, showing that farmers keeping dual-purpose cattle are making the most money.

CONDITIONS CHANGING HERE.

Why, then, do we not have more Milking Shorthorns? Mr. Harrison answers as follows: "First, farming has been in a state of transition, resulting from the changes that are inevitable in a new country. The majority of farmers start out to sell their crops direct. Their fertility costs them nothing, as they draw upon the stores of previous ages, and until their crops begin to fail them they scout the idea of mixed farming and the 'slavish labor' involved in milking. Second, the price paid for meat has been low, and only the man on the range who got his pasture free could make any profit raising beef cattle. These conditions, however, are changing. Our population is increasing, the demand for meat is increasing, and prices are going higher. But the supply of meat from the ranges cannot be increased because so much of the range country is being turned into agricultural land. There is only one source for an increased supply of meat, and that is the arable farm.

"The question then arises—which breed will produce meat most cheaply? Certainly not the straight dairy cow, for her mission is to produce milk alone, and if she did more she would be no longer a dairy cow but a dual purpose cow. Not the straight beef cow, either, for she will not return the profit on high-priced land that the dual-purpose cow will.

"The bulk of the meat must come from the Milking Shorthorn. She is the largest of the dual-purpose breeds. She will consume the roughage and waste, will raise a calf on her skim milk, and still will bring as good a monthly cream check as most cows of the dairy breeds. Also, by the time she has finished her milking period, she will have fleshened up to such an extent that if her owner wants to sell her he can get a high price."

DEMAND GREAT; PRICES HIGH.

The demand for stock is keen and record prices are being paid; in fact, one convincing proof of the popularity of the breed is the fact that calves and foundation stock cannot be purchased at the prices at which similar animals of the strictly dairy breeds are being advertised.



"The history of the Milking Shorthorn reads like a romance. Special breeds, each one fitted for some particular branch of farming, come and go, but the good old Milking Shorthorn still remains the most serviceable combination animal in the world."

A few years ago $200 was considered a fair price for a mature animal of the breed, while at a sale in Pennsylvania a few months ago the average was over $1,000, and at the 1918 Otis herd sale 31 head averaged $1,101. Lady of the Glen, in this herd, sold for $5,500. The bull Imp Knowsley Gift was bought by Flintstone Farm, Massachusetts, for $4,500, and the prices of from $1,000 to $1,500 for cows and heifers are quite common. In England grade cows have been bringing from $300 to $500 per head for use in dairies.

CALIFORNIA'S PROBLEM.

And now let's get back to the question—can the Milking Shorthorn be used to good advantage in breeding up common herds in California? W. B. Hopkins of the Petaluma Cooperative Creamery, says "No," and he sends us the records of the Sonoma-Marin Cow Testing Association, showing that, although by far the largest number of cows under test were Holsteins and Durhams (Shorthorns), out of 141 cows producing enough to deserve special mention only one was a Durham.

R. M. Dunlap, the well-known cattle dealer, who has followed the game in California for years, says that this is not convincing proof, and that the Milking Shorthorn has not been given a fair chance. He points to the fact that 35 years ago such pioneers as E. W. Howard and Robert Ashburner had large herds of Durhams weighing from 1600 to 1700 pounds that would milk from six to eight gallons. But their descendants did not keep these herds pure. They brought in bulls of other breeds and crossed and crossed until today the red cows that we see in so many herds have just enough Durham blood left in their veins to give them this color, but not enough to perpetuate the good qualities of the breed. He claims that if good Milking Shorthorn bulls were used on these cows they could be quickly brought back, and most profitable stock would result.

Thos. Harrison claims that the use of a Milking Shorthorn sire on a grade herd of any dairy breed is most marked. The bull imparts size and fleshing qualities, and Mr. Harrison has never known the milk production to be lessened by such a cross. He mentions that there is now at the Jack London ranch a cow, out of a registered Jersey, that produced 6000 pounds of 4 per cent milk and her calf, sired by a Milking Shorthorn bull, produced 7000 pounds of 5 per cent milk.

An argument in favor of Milking Shorthorns seems to be the fact that the wealthiest States in the Union have the most dual-purpose herds—Iowa 979 and Illinois 494. California shows up with only seven herds, but our few breeders make up in enthusiasm what they lack in numbers.

Assistant Farm Advisor Scribner of Los Angeles county is a Milking Shorthorn enthusiast. He judged dairy cattle at the State Fair last fall, and pronounced the cows in the Innisfail Farm herd, owned by Alexander & Kellogg of Suisun, the finest lot of Milking Shorthorns he had ever seen. This firm, instead of striving for high records, is content with an 8000-pound average, testing about 4 per cent, and aims to maintain the dual-purpose character of the breed. It is claimed that cattle of this capacity have the desired natural fleshing qualities and are kept more economically than heavier milkers of more raw-boned type.

B. O. Cowan of Los Angeles, who judged beef cattle at the Liberty Fair, says: "The average farmer not only should require an abundance of dairy products from his herd, but should have good meat making cattle as well, and as a dual-purpose animal the Milking Shorthorn is the farmer's cow par excellence."

Making a Canning Strawberry

Written for Pacific Rural Press by Albert F. Etter, Ettersburg, Humboldt County

TOO MANY people in this world a strawberry is a strawberry, providing you let the cream go with it, and quantity is the ideal a variety must measure up to. The market grower will go further and insist on a variety possessing appearance and carrying qualities, and he can be happy and prosper.

CANNER MUST HAVE A HIGH CLASS BERRY.

But the most critical field of all to fill is a berry of strictly high class for canning purposes. I doubt not that such a variety would meet all requirements a strawberry is usually expected to serve, for it must be productive and possess great firmness and extreme high quality. When we get such a berry there will be a market waiting to take all that are offered at advanced prices, because the manufactured product will always find a ready market.

When I first began experimenting with strawberry hybridizing at Ettersburg, I was looking for something that would come into fruit quickly because fruit was scarce. I readily realized, too, that all strawberries did not bear canning equally well. I sensed an ideal of a perfect strawberry for canning purposes years ago, but it is one thing to dream a dream but quite another to crystallize a dream.

THE PROCESS IS SLOW.

I have all the parts, that if one could put together as one would put machinery together, to make an ideal canning strawberry, but the process of combining the necessary characters found in half a dozen different varieties is a long-drawn-out task. Of course, one may make a lucky strike and get the best there is, and do it by a simple cross, and that, too, where no such result was expected, just as I did when I hybridized the Alpine with the Cape Mendocino beach strawberry. Here is a hybrid, Ettersburg No. 121, between two wild species that today is about as near an ideal canning strawberry as exists, so far as quality goes; but it has serious faults. However, there is good prospects to grow it profitably in many places along this coast if one gets the right location. In general it would seem to favor rather poor land to do its best. I have seen the 121s growing on land too poor to grow wild grass and weeds, and producing bountiful yields, while in the same climate and locality, where they were on rich land, they simply indulged in riotous living and did nothing worth while. On the poor land the berries set abundantly, while on the rich soil all except the primary blossom on the truss were male flowers and produced nothing. On the poor land the berries were quite an inch in diameter, while the well-fed plants, five times as large, produced small berries only.

POSSIBLE COMBINATIONS ARE MANY.

Could we blend Ettersburg No. 121 and Trebla, and get all that is good in the No. 121 berry on the Trebla plant, it would be a good combination. This might work readily, and again it may never be attainable at all. The greatest fault of Trebla is its depressed seeds, which leaves its exterior easily marred. The center or mealy part of the berry is all that could be desired.

Another promising combination is with "Rena" beach. This Rena is a variety grown from Point Arena beach strawberry seed naturally hybridized with something, God alone knows what, as there was many hybrids, by-hybrids and multo-hybrids growing all around it. As is often the case, it is quite unique. It has strikingly beautiful foliage, very clean cut, dark green and glossy, very ornamental. In fruit it makes a fine, well-turned oval berry for every blossom, and it is productive, too. But the berries are pink and fragile like the beach strawberry. These are only faults, however, and a cross with No. 121 or Trebla may make a great combination.

Another variety of possible breeding timber is "No. 121 Jr." This is a variety well within the canning type, in many ways resembling No. 121 and, like it, has all its faults, too. But it has a wonderful root system—deep and growing heavy like briar roots. Roots such as these would help out any variety, especially on poor land.

Several other varieties having special characters desirable in a canning strawberry have been used in crossing last season, but it will be 1921 before we will know the results. I may get what I want, and it is more likely I will get some freaks I have not looked for.

STRAWBERRY BREEDING A LONG-WINDED GAME WITH MANY RELAYS.

It may look to the average person like strawberry breeding is a long, tedious process that one must have a wealth of patience to follow up. Unless life itself is a great care to one's own self, I fail to reason it out that way. The average mother spends more nerve force and has more worry and patience rearing one child than I have in ten years breeding for new forms of strawberries. First, it takes about two minutes to hybridize a strawberry blossom, then there is nothing doing for about sixty days. The ripened berry, enclosed in its cheesecloth covering, is then collected and sometimes within six months the seed is washed out ready for planting. Sowing is done under perfectly natural conditions in an elevated seedbed, and all that is necessary for a whole year is to keep free of weeds and water the plants about twice a week. The next year is field culture, and sometimes I don't see the plants closely in several months. The next year is a little more cultivation, and waiting to sample the fruit, providing there is any to sample that seems worth sampling. Four season's work to see what you have got, you see, and there is no crying, no squawking, no colic, earache or anything to grate on one's nerves—just a pleasant anticipation, waiting to see if a trump card turns up. Nor does it require that wealth of "patience," as a Scotchman once remarked, "as does spending $600 a year trying to educate a six-bit boy." As for strawberry plants, today one may have them, but tomorrow one, too, may destroy and forget them. The patience required is synonymous with a species of love, directing by intelligence nature to assume more useful forms for the benefit of one's fellowmen.

Sometimes the road to valuable varieties is decidedly short and easy. As an instance, Ettersburg No. 121 is a simple hybrid between the wild Alpine and the Cape Mendocino beach strawberry. Fendall, a pistillate variety of Eastern origin, was hybridized with No. 121. The two most likely varieties coming from this cross are the varieties I named Fendalcino and Fantastic. The former is a berry of Fendall type with a plant about five times as vigorous as its parent and exceedingly productive. The Fantastic has the high quality of No. 121 and much of the form of Fendall. Both are berries of great beauty and high quality, and seem to be of exceedingly robust constitution.

A PEDIGREE THAT REACHES BACK TO THE BEGINNING ON BOTH SIDES.

As illustrating a long road to reaching the top, I will mention "No. 412," a variety that if it keeps on doing what it has been doing for the last three years is going to be known as the "Red Cross." It is not at all pretentious as it goes about its work, but in the field, as one eats it from the plant, it is the best ever. The past two seasons have been distressful to most varieties here, but No. 412 came through with a bountiful crop of perfect berries, seeming to be, like the Red Cross, "perfectly at home in the midst of distress," so the proposed name is well merited.

The berries are almost globular, except that they are somewhat necked and quite flattened on the off end. They grow on delicate slender stems, quite unlike ordinary strawberries, and are brilliant red. The whole plant is delicate and refined, but the key to its robustness is its long, deep, penetrating roots, a unique form even among hybrids, borrowed from the Cape Mendocino beach strawberry.

The record says it is a cross between "No. 216" and Trebla. No. 216 is a berry of luscious quality, and such robustness that it fruited only on very poor land—a remarkably strong plant. It was a cross between No. 84 and No. 70. No. 84 is a cross between a Rose Ettersburg-C. M. Beach and a R. E.-Californica. This particular plant was "No. 20." No. 20 was produced by crossing R. E. with Cape Mendocino beach strawberry, while Rose Ettersburg is a cross between Peruvian beach strawberry and a third generation, Sharpless and Parry. The Rose Ettersburg-Californica was the same, except that the Californica was used instead of the Cape Mendocino beach strawberry. No. 70 is Crescent and No. 20.

The above is the mother's side of the house. Trebla, the male parent of No. 412, is more complex and adds to the above blood Michel's Early and Alpine. Surely some mixture on both sides, with much blood of high quality. Just one more claim No. 412 has to "Red Cross," it has in the last three seasons ripened a week or more in advance of all other varieties—"first in the field," something very characteristic of the Red Cross.

Spray vs. Fumigation for Citrus Grey Scale

By F. R. Brann, Horticultural Inspector, Lindsay, Cal.

DURING the past five years there has been a great deal of controversy regarding the relative merits and demerits of the various spray formulas and fumigation for the control of the grey scale (Coccus citricola). There has been a great variety of arguments used on the citrus grower to induce him to use certain spray formulas. On the other hand fumigation has been voluntarily adopted by a large percentage of the experienced and progressive citrus growers on the strength of its merits and on the advice from our State University experts and State and county horticultural officials. Comparatively little soliciting for fumigation has been done, and only during the late spring and summer months. The investment necessary to operate as a sprayer is very light compared with that for fumigation, consequently many have entered the field as commercial sprayers, prompted mainly by commercial gain.

The Horticultural Commissioner and his local inspectors are always willing and anxious to advise the use of a method which has been thoroughly proven to be advantageous to the grower and equally willing and anxious to protect the grower to the extent of their authority against formulas which may prove detrimental if used.

The wide-awake grower will not "experiment" with a new formula on an acreage scale, as a few trees will show the results just as well, if given time, and probably at a tremendous saving. The paramount issue regarding the use of a certain treatment on citrus is: Does it constitute an investment to the grower who uses it? How shall we determine this? How many years does it require? And who shall pay for the experiments? These questions are of vital importance, and I do not believe that we can evade them.

There have been many spray formulas offered for the control of the grey scale on citrus during the past four years, none of which have yet proven to be as efficient as, or cheaper than, fumigation. The reasons for this are very evident. We have but three methods of artificially controlling insect pests and one natural method, viz.: (1) Arsenical, poisoning through the digestive organs; (2) contact, chemical dissolution of bodily tissues; (3) repellant, direct killing by deadly fumes, or producing unpleasant living environments; (4) parasitical, employment of natural parasites.

It is necessary that we acquaint ourselves with the habits, especially the eating and hatching habits, of the insect pest which is troubling us, in order to determine which of the three artificial methods we should use as a means of control. Also what effect will the treatment have upon the citrus plant itself?

After classifying the insect regarding its eating and hatching habits, we find it just as essential to classify the various chemicals regarding their effect on citrus vegetation.

OUR EXPERIENCE IN TULARE COUNTY WITH SPRAYS.

We find that arsenate of lead act as a stimulative poison on citrus. Oils are injurious to the citrus leaf because of the tendency to close up or seal over the leaf cells, reducing the functioning power of the leaf in admitting carbon dioxide. Oils containing acids produce severe injury, but even though the acids are removed it is not beneficial to the citrus leaf to have on its surface any material which would have a tendency to retard its functioning powers.

Another consideration we cannot afford to overlook is that arsenical sprays are very apt to destroy beneficial insects or effect disagreeable living environments, thus allowing its host, if a sucking insect, to increase unhindered.

Scale insects are not affected by the surface application of arsenate of lead, bluestone, Paris green, etc. Many of our beneficial insects are affected. Arsenate of lead is of extreme value for controlling certain insect pests on deciduous stock and gives wonderful efficiency if used at the proper time, but is out of place when used on citrus.

I will give some data which I personally secured from two orange groves in the Lindsay district on which arsenical sprays were used.

A certain spray formula containing as a base arsenate of lead and copper sulphate (bluestone) was applied as a spray on a 10-acre grove of 10-year-old Washington navel and Valencia trees twice. One application was made early in June, 1916, the other in September, 1917. On

(Concluded on page 311)

Organization---Control of Water by Users

FRESNO, more than any other county in the state, realizes what organization means. When her growers of grapes and peaches were in despair owing to increasingly desperate conditions in marketing their products a few years ago, they did organize—first the raisin men and afterwards the peach men. Instead of disaster, which confronted them before their own co-operative agencies were established, they have, by their own efforts, extended their markets and placed their industries on a living and profitable basis. Every town, every district, and every business man in the San Joaquin Valley profits by the improved conditions, while the money spent in roads, parks, and other public improvements testify to a condition of prosperity. And this condition is now universally recognized to be due to organization on the part of the growers.

A mass meeting of farmers was held in the Fresno Auditorium on Tuesday, February 18, to organize the Fresno Irrigation District for the purpose of purchasing their own irrigation system. Some 120 delegates were present (besides a number of non-delegates), who represented thousands of Fresno water users.

George C. Roeding, who was elected chairman of the meeting, outlined again the reasons for the necessity of organization at this time He said in effect that the development of Fresno county was due to an abundance of water and to the colony system which had kept land at a reasonable price. It was the first place where the colony system was started, due to district co-operation. The contracts for water at a fixed price with the present privately owned systems expires in two years' time and then the water user will not know where he stands.

CONTROL OF WATER AS WELL AS LAND.

By the formation of an irrigation district the canals and laterals would be under the control of the land owners. The district will not be obligated to furnish water outside its own boundaries. The Fresno Irrigation District will be independent of any other district until it votes to join the others in the Kings River Conservation District. Organization will not only put land owners in control of the water, but also of drainage—a matter next important to water. There are 40,000 acres unfit for cultivation around Fresno because of alkali or a waterlogged condition. Water levels are constantly changing and all this land can be reclaimed if the Pine Flat project is accepted.

Wylie M. Giffin, president of the Associated Raisin Growers, Inc., said that he formerly favored private ownership, but he had owned lands in the Alta district, where growers control their own irrigation system, and he is now heartily in favor of public ownership. The Alta district gets its water as cheaply as Fresno, has good service and some bonds have already been retired. Mr. Giffin then made a motion that "we proceed to organize the Fresno Irrigation District under the Wright law."

THE WRONG NOTE.

An amendment was proposed to consider whether the Wright law or some other form be used in organizing the district, the speaker asking, "What has the Consolidated Canal Company got that I want to buy?" A farmers' organization is only concerned in "we." Organization is democratic and is not looking out for any individual, but for the supposed good of the whole community—as the State did about the wine-grape growers.

The growers' delegates present knew exactly what they wanted and what their instructions were. After many questions were asked, which were discussed and satisfactorily disposed of, the chairman explained that there were only two laws under which they could organize. That was a detail to be discussed after organization was complete. The Pine Flat project could not be developed now—it could come later—but by organization now they could create a vehicle to acquire control of their water and drainage.

ORGANIZATION ADOPTED.

Mr. Giffin's motion was carried with a rousing chorus of ayes by the delegates from some 43 colonies and districts representing about 240,000 acres of land.

A motion was made and passed that 10 cents an acre be assessed to raise $24,000 for the purpose of completing the organization. A committee of 11 men was elected to appoint a committee of five to provide ways and means to carry the undertaking to a successful conclusion.

Good Roads and Schools vs. Hot Air

[Written for Pacific Rural Press by John J. Fox.]

The writer has been gathering opinions on taxation for road-building purposes from various farmers in journeying around the State. The majority of the opinions from leading growers is condensed as follows:

We do not mind paying out money for the improvement of our roads and highways, provided the extra money is spent on them and not frittered away on other things. Good paved roads and good schools attract new settlers of the right class more than anything else—men who are able and willing to improve their properties. With good roads and schools we can well dispense with the penny-a-liner, hot-air stuff that is sent away to the East from every county to attract new blood.

Some of those highly-optimistic, "all loin and no shin" publications are very expensive and often convey wrong impressions. We can afford to be absolutely truthful about California and beat the best at that.

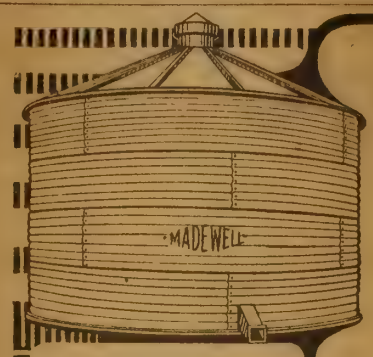
Most farmers are in favor of cutting out peddling the "bull" and applying the money to county improvements—particularly as regards roads—roads and schools. The wayfarer will not be importuned to stay with us then. He will be glad enough to "put up" in order to be "allowed" to stay in a land where he can trundle his little old Ford into town any day in the year without miring and without the frost busting his radiator.

Peach blight is reported to be quite in evidence this year in Kings county orchards. The lime-sulphur spray is being recommended by Fred Howard, Horticultural Commissioner, and next fall more men will use the November spray.

Spray Apples When Buds Swell

This is a good time to spray your apples with lime-sulphur because it is one of the best insecticides as well as being a fungicide. This is what it will do if put on just as the buds swell: Kills red spiders (and the first hatch is the worst, as it is the precursor of multitudes), kills thrips (which are even found on apple trees), kills San Jose and Greedy scale and others, blister mite, green apple aphis and the purple apple aphis. So much for the insects.

But this same lime-sulphur at the same strength—one gallon stock solution to ten of water—used at this time, as the buds swell to bursting, is the best remedy against apple scab and the first spray against powdery mildew. When the weather turns warm, trees "wake up" very quickly. Get your spray material on hand without delay, no matter whether you have apples, pears, peaches or apricots.



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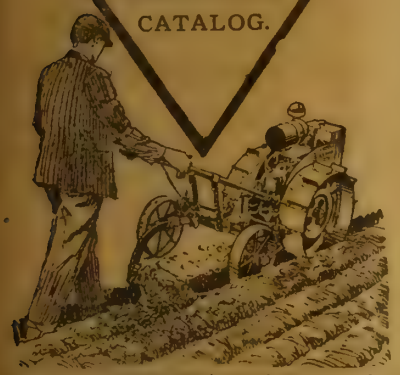
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SPRAY VS. FUMIGATION FOR CITRUS GREY SCALE.

(Continued from page 309)

February 25, 1918, the trees were simply covered with cottony cushion scale (Icerya purchasi) from the ground, up the trunks and to the outermost twigs, not merely a few trees here and there affected in this way but on all trees throughout the grove. Not a live Vedalia could I find after a thorough search. After the heavy rains of February and March I again searched the grove, but could find no Vedalia.

RAPID WORK OF VEDALIA CARDINALIS.

On March 25 I received two tubes of adult Vedalia from the State Insectary, Sacramento. These tubes contained 50 and 75 Vedalia, five of which were dead. I released 120 of these valuable little beetles in the grove, distributing them pretty well over the entire 10 acres, and on June 17, 1918, practically all cottony cushion scale were dead.

This 10 acres is the south half of a 20-acre grove, the north half of which was not sprayed. The whole acreage was worked as one grove, with no avenue separating, yet no cottony cushion appeared on the trees of the north 10 acres. On the south and west the orange groves adjoining were not sprayed and were not infested with cotton cushion scale.

But the severe infestation of cottony cushion scale was not the only trouble on this 10 acres. A still more serious condition resulted from the use of this spray. The leaves dropped until one could see through the trees plainly, and at the present date the trees have not shown signs of improving. I took Prof. H. J. Quayle of the Riverside Experimental Station to see this grove on June 26, 1918, and he stated it was one of the most severe cases of cottony cushion infestation he had ever seen.

Another grove of 10-year-old Washington navel trees was sprayed late in February, 1917, with an arsenate of lead and copper sulphate solution, five rows in the center of the grove being left unsprayed. On the sprayed portion, during the blooming period, enormous numbers of aphids were present, and seriously hindered the setting of the fruit, while on the five unsprayed rows there were very few aphids and these trees produced nearly three times as much fruit per tree as the sprayed portion..

This condition resulted from the lead arsenate killing the common red ladybird (Hippodamia convergens), allowing the unhindered development or propagation of the aphids. Afterward the sprayed trees became quite defoliated on the south sides, but the five unsprayed rows appeared perfectly normal and did not drop their leaves. Both of these growers told me that if they had known what effect the spray would have they could not have been hired to use it.

The oil sprays are not being used in this district to any degree, for, as with "shure-kil," most all growers are "wise to it" and have it properly classified. Practically the only oil used on citrus today is the small amount which is used with lime-sulphur. There is a considerable amount of lime and sulphur spraying on citrus at the present time and it is due to the following reasons that so many growers are spraying with it: First, it can be used without causing tree injury, if used during cool weather; second, on account of the exceptional weather conditions of the season 1917; third, the initial cost is less than fumigation.

The natural death rate of citricola scale during the summer of 1917 was enormous, far more than of any previous year, and splendid results could be obtained so far as scale killing was concerned with almost any kind of material. In fact, commercially clean results occurred on many groves throughout the district where no treatment at all was given. If a treatment had been used on these groves, it would have naturally received the credit of the full efficiency.

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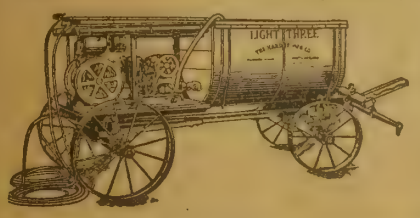
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Walnut Orchard Demonstration

[Written for Pacific Rural Press.]

At the walnut demonstration lecture and discussion, which took place on Judge Lieb's ranch at Cupertino, January 31, Professor Ralph E. Smith of the University of California, who was the lecturer, opened his remarks by pointing out the fact that the walnut was still a tree of mystery; that we had yet much to learn concerning every phase of its propagation, management and improvement; that it is unlike the prune, apple or pear, in the development of which trees our ideas are more or less fixed by wide experience. He pointed out the three separate systems employed in Judge Lieb's orchards: (1) grafting on the trunk of the black, (2) top-working the headed black at eight years and (3) the nursery grafted tree.

There was a large attendance of interested men at this meeting and they asked numerous questions. As is usual there was a diversity of opinion with regard to results obtained—an earnest of the close attention growers pay to these matters. The professor was asked about Wiltz Mayette, which in this district makes a good tree and a handsome nut with half the weight meat.

The reply was that the tree had turned out to be a shy bearer and that it was at present difficult to get a premium for fancy varieties. Quantity is what is wanted as well as fair quality. That is one reason why they are planting more Santa Barbara Seedlings in Santa Barbara for it is easier to sell these at 30 cents a pound than to get 35 for Franquettes, and the southern nuts bore heavier. "Budded nuts" has come to mean Plancentia Perfection with the trade, who knows exactly what to expect under this name.

GRAFTS ON MATURE BLACK.

An eight-year-old walnut tree bearing one-year grafts was an object under discussion. Each limb had been grafted with a single scion on the under side of the branch, because the sap flow is stronger there. The grafts had made a very large growth as sprouts had been kept rubbed off, but the new growth was drooping, curled and tangled.

The lesson we learned here was that it paid to put in two grafts instead of only one. That is, one each side of the cleft. Because the upper side of the stub was dead and in condition to rot; and a walnut stub rots very easily. Both grafts in such a stub should be allowed to grow until they heal over the wound and then one can be cut off if it is found to be superfluous. Another lesson we learned was that it pays on such strong growing grafts to tie them up to stronger supports and make several ties as you would on a young vine. A few small laths had been tacked on to prevent the grafts being blown out by the wind, but no effort had been made to train them. They will now have to be pruned into shape which seems a far greater waste of time than the simple tying. The professor showed us how this should be done.

OPINIONS OF GROWERS.

Here are some of the opinions expressed by growers: "Planting the nut in place and grafting at eight years takes too long to be good business. It also makes an orchard too expensive by the time it comes into bearing." "I like to cut off the tap-root from the black walnut nursery stock because I believe the branching of the tap-root from the cut end will tend to result in more fruit and less wood growth." "I like to train my trees up more and get them to fruiting earlier." "Nursery stock for me." "The head wants more spacing than is easy to obtain in a black."

Many observations of a like nature were heard, all based on specific reason, deduction and observation—sometimes on theory.

PRUNING AND SPACING.

With regard to pruning, Professor Smith said that trees in the South have become too thick and brushy, in consequence of which, where this is the case, all the inside fruit wood is dead and unproductive. The trees should be opened up to overcome this. Also the trees have been planted too close together—they should be not less than 50 or 60 feet apart on real walnut land. In some commercial orchards in the South alternate trees are being taken out in order to admit more light and air. In a few years more nuts are obtained on the reduced number of trees. Where the trees by being too brushy have lost all but outside bearing wood, old laterals should be cut out and a new set of fruit wood induced, the tree being kept open enough for air and sunlight to penetrate but not enough to lay the limbs open to scald.

The nursery tree should be built for two years after planting, just the same as a prune tree—growing about six leaders — then cutting again the third year according to wood growth and to balance and shape the tree. Of course if the tree is out of condition it will have to be cut down low and a new head formed.

EXPERIMENTS IN GRAFTING.

Mr. Frank Lieb, who was present, said that in grafting the trunk of a six or eight-year-old black it takes three to four years to make a good head. When the trees are top-worked at eight or nine years, only the south side is grafted the first year, as the growth is weakened by the heavy cutting. The prevailing winds here coming from the north, this side being left helps to protect the grafts as well as helping to preserve the balance of leaf surface. The east and west sides are grafted next and the north side last of all. Mr. Lieb does not care to graft till the trees are eight or nine years old.

He said that if a man's pocketbook permitted it such waiting paid, though few of those who spoke to each other in the circle seemed to think they would care to risk such a long run. He also said that he would plant grafted nursery trees on black ten feet apart to form a fence row and the main part of the orchard in black walnuts. The grafted trees in the fence row should be of varieties definitely decided to plant and these trees will furnish grafts for the blacks when the time comes, also act as windbreaks. The limbs of orchard trees should be kept high enough to be able to run the weed-cutter before harvest. Mr. Lieb was asked about alfalfa with walnut trees. The reply was that he tried it once and lost four years at it.

THE GUMMING OF PRUNE TREES.

[Written for Pacific Rural Press.]

We were talking with a large prune grower in one of the northern counties a short time ago and discussing the gumming of prune trees which is not uncommon at three and four years of age. Besides the heavy pruning which seems one reasonable cause at this stage, the grower in question said: "Poor drainage and excess of moisture in the soil through the winter may be also responsible for this exudation of gum in beads and patches. These may appear on the north and east side of the young tree as well as on the sunny sides. I have noticed this condition is presented in a greater degree in the low-lying and relatively poorly drained sections of my young orchard, where also the trees have made less growth."

Good drainage naturally provides a larger feeding area and an extended root system. Growers are taking more pains in the matter of surface and tile drainage than ever before, knowing the futility of planting any fruit tree in a water hole—excepting a quince. Opening up the surface drainage ditches alone, to a good depth, often works wonders.

SUBTLE.

"I paint things as I see them," said Dobbster, complacently, as the Critic inspected his "Moonlight on the Hudson."

"Interesting!" said the Critic. "Have you ever thought of consulting an oculist, Dobbster?"

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MANAGEMENT OF LARGE LEMON ORCHARD.

[Written for Pacific Rural Press.]

The second week in January we visited the 850-acre citrus orchard belonging to the James Mills Orchard Corporation a few miles west of Maxwell, in Colusa county. Nearly 800 acres of this is in lemons, only about 60 acres being in grapefruit and oranges. These orchards are planted on sloping hills rising from the valley floor. The contour work in terracing is a good piece of engineering both for irrigation and working. There are miles of cement pipe leading from stations on the high points of the rises and distributed by the overflow system. Only one furrow is run, on the upper side of the tree in each terrace or on the highest side on the slope. Three irrigations a year are given, each irrigation and subsequent working taking about three weeks to accomplish. Water is pumped from the S. V. I. canal.

EUREKAS WERE SELECTED.

These trees were all planted in 1912 and 1913, and are well grown thrifty trees. The lemons are all Eurekas. We noticed some trees where the tips of the growth had been frosted, probably about 100 acres out of 850. These were the only ones where frost injury was apparent after the coldest snap experienced for many years. This is the first year of shipping a commercial crop from these 6-year-old trees. There will be 22 carloads all told of oranges, lemons and grape fruit. The lemons were going about 500 to a box and a carload was being prepared while we were there. The lemon trees had been interset with almonds—Drakes, Nonpareils and Texas Prolific—which will be allowed to remain and fruit until they interfere with the well being of the lemons. Then they will be scrapped. They looked as though they would be ready to bloom by the first of February.

FERTILIZATION.

D. B. Macoun, the superintendent who accompanied the writer, said that this fine young lemon orchard was grown entirely with cover-crops; no manure or artificial fertilizer had been used. There is a heavy cover-crop of weeds, bur clover and grain on it now, which is being plowed under. Mr. Macoun says the first consideration is the conservation of moisture. That it is impossible to replace winter rains with irrigation and have the soil in as good condition. He dwelt on that one word "condition," which means friability, moisture content, and retention, drainage, etc., and considers the proper working of the soil and thorough incorporation of cover-crops the main end to be worked for in the production of both trees and crops. He also pointed out the fact that up to the present his orchard is absolutely free from scale or other pests and he has only lost two trees from gummosis.

This large place is worked with three Yuba tractors and 18 horses, though if a season caught them behind it was sometimes necessary to hire some teams in order to get plowed in time to conserve moisture. On this 6000-acre ranch, 8000 head of sheep are kept and enough hay raised for them and the work stock as well—both alfalfa and grain. Lambing takes place in December and January and there is lots of stubble and green alfalfa till the hills are in good grass.

SPRING BLOOMING AND JUNE DROP.

Mr. Macoun said that he had observed that there was practically no June drop of lemons that bloomed in fall and winter, while the lemons from spring blooming drop freely. This he attributes to the cool weather while blooming and setting and an even moisture in the soil. He favors an early irrigation to start with and considers it a great mistake to let citrus trees get so dry as to show distress before applying water—it always results in a heavy drop. The growth on these young trees is very vigorous and strong. Another year will, from all indications, mean a large production of lemons from this orchard.



No. 5

TOP DRESSING TALKS

When should ARCADIAN Sulphate of Ammonia be applied to citrus crops?

For Oranges. On lighter types of soil, the application of from 400 to 600 pounds of ARCADIAN Sulphate of Ammonia per acre is advised, where it is the only source of nitrogen used, and on heavier types of soil about half as much. The total amount should be made in several instalments rather than one: first, early in March; the second when the fruit begins to "set"; a third about the middle of June and a fourth some time in September. The last application is to help "size" the fruit as well as aid wood and bud growth for the next season.

For Lemons. As they are in continuous bearing, it is advisable to increase the number of applications to six consisting of from ¾ to 1½ pounds per tree.

For Grapefruit. It is necessary that they size up well. The bulk of the Sulphate should be applied during the latter half of the growing season, the application being generally a third larger than for oranges on a similar soil.

Arcadian Sulphate of Ammonia

ARCADIAN Sulphate of Ammonia is the well-known standard article that has done you good service in your mixed fertilizers for years past. Especially kiln-dried and ground to make it fine and dry. Ammonia 25¼%. Made in U. S. A.

For sale by Hawaiian Fertilizer Co., Limited, San Francisco
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Pacific Guano & Fertilizer Co., San Francisco and Los Angeles
Agricultural Chemical Works, Los Angeles

For information as to application, write The Barrett Company Agricultural Department

510 First National Bank Building, Berkeley, Cal.



Write for Our "After-the-War" Proposition

Effective Now, on Special 6 H. P. Tractor

A GUARANTEE BOND protects you against repairs for your first season of 90 days. That is one of the features of our **new 1919 proposition** on the 6 H. P. Bean TrackPULL Tractor built especially for orchard work. The guarantee bond reflects the high quality of materials and workmanship in this great machine.

Our "After-the-War" Prices, Effective Now, place the BEAN in reach of every grower, and these new prices are guaranteed until June 30th, 1919. If lowered before that date, the difference in price will be refunded to the purchaser; so all growers may buy now, and get the benefit, if any, of any reduction before June 30th.

Our 1919 Easy Terms permit buying practically at **your convenience.**

34 years experience in manufacturing special orchard machinery is built into the TrackPULL Tractor. When as many are in use this tractor will be as famous as the noted Bean Power Sprayer.

BEAN TrackPULL Tractor

Send Now for the details of our "After the War" Proposition. We have built this tractor to meet orchard needs especially and you can't afford to overlook this remarkable combination. Mail the coupon for convenience. Do it now so you can have your tractor early. Asking for our complete proposition doesn't obligate you.

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250 W. Julian St., San Jose, Cal.
Name
Street
City
County State
No. of acres
See the Bean Tractor at stores of our branch houses, 121 N. Los Angeles Street, Los Angeles, or J Street, Fresno

Here and There in the Fruit Business

[Written for Pacific Rural Press.]

Who Suffers?

Owing to the high cost of labor and the demand made, many farmers are getting to be afraid to put in crops that need much hand labor and are turning their attention to crops that can be handled with tractors and machines. Intensive cultivation means largely increased production. To illustrate: One man near Sacramento had about decided to plant 40 acres of spinach for the canneries. Later he got cold feet on the labor conditions and will put in corn, potatoes and alfalfa. Yet the 40 acres in spinach would have given employment to scores of workers in the field and the cannery and brought so much more money into the county. Who suffers if such conditions grow? The laborers themselves first, then the business men and the consumer. Reduced production means less money expended for labor and increased prices to the consumer because of scant supply.

Experiments with Deciduous Fruit.

The great necessity of pollinators for most varieties of fruit has been conclusively shown after 13 years of investigation at the Oregon Experiment Station. This applies especially to such fruits as the Spitzenberg and Winesap apples and the Comice pear. Later investigations determined that not only were the Royal Ann, Lambert and Bing cherries sterile, but they would not interpollinate each other, which explained why so many commercial cherry orchards were failures. Many of the orchards planted to the varieties named are having grafted into them enough scions of good pollinators to bring them into a profitable setting of fruit.

Almonds at Oakdale.

Many of the young almond orchards at Oakdale have been set out in the following order: Two rows Texas Prolific, two rows of Drake's seedling and two rows of Nonpareil or I. X. L.—generally three varieties in the smaller orchards. The C. M. Dunn orchard of 63 acres, 10 years old, have turned off an average of 22 tons of nuts for the last three or four years without irrigation, according to W. F. Wheeler. The trees looked as though they could be made to average half a ton to the acre right along. More spraying would pay growers in this district, as in many others where red spider thrives.

Load Cars Heavier.

The Western Freight Traffic Committee has recommended the following minimum weights per cars: Oranges and lemons straight or mixed in ventilator or refrigerator cars from California and Arizona, 7 boxes wide, 2 boxes high, boxes on end full length of car. Fresh fruit and vegetables, including canned stuff and dried fruit, minimum weight accepted for car 60,000 pounds. If a car will not hold 60,000, it will be loaded to its visible capacity.

Another Large Cannery.

Combining dried fruit and canning industries has just been organized, to be known as the Richmond-Chase Company. Elmer E. Chase will have charge of the canning department and E. N. Richmond of the packing end. The paid-up stock (already subscribed) will consist of $400,000, with an additional $200,000 added in the form of cumulative 7 per cent preferred stock. Operations will commence at once toward the erection of a cannery.

Muirs at Modesto.

A. L. Rutherford has 10 acres of Muir peaches, 18 years old, that have yielded an average of eight tons to the acre ever since they were five years old. One year a yield of 10 tons to the acre was obtained—when the trees were six years old. This orchard is still giving profitable crops, which demonstrates what good spraying and careful handling can accomplish.

Paying for Apples.

A letter to the Glasgow Citizen (Scotland) says: "We were informed through the press that the price of apples would be seven pence per pound for all kinds (14 cents). They are still selling at anything up to half a crown (60 cents) per pound. A little enlightenment on this anomaly would be much appreciated."

Santa Margarita Ranch Sold.

This fine stock ranch of 26,000 acres, lying about 30 miles south of Paso Robles in San Luis Obispo county, is reported sold for $1,000,000 to the syndicate which developed the Atascadero Colony. This ranch is to be cut up into small holdings and settled up.

Miller & Lux Lands.

It is reported that this company is to cut up its enormous land holdings into small farms and subdivisions, with the exception of land necessary for pasture, grain and fodder for their cattle. Miller & Lux lands extend from the Canadian border to Lower California.

Orange shipments from Redlands up to February 18 brought the season's shipments up to 1082 cars.

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Disappointments
Avoid
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Get This Booklet



By planting the kind of alfalfa best suited to your soil and moisture conditions you not only insure heavier yields but also longer-lived fields.

There is one kind of alfalfa best suited to your conditions. This booklet tells you, and shows you which one of our selected kinds to plant.

Conditions Are Ideal for Planting this spring. Write today for this booklet and our latest price list. Delay now may be costly later.

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(Desk B)
725 Tenth St. Modesto, Cal.

WASHINGTON ASPARAGUS
GROW THE BEST
Bred by Government experts for improved size, color, quality, and rust resistance, using as a basis the English Reading Giant asparagus imported for this purpose by A. D. Shamel, Government plant breeder, now of Riverside, Cal.

IDA L. PRESCOTT, Concord, Mass.
32 MONUMENT ST.

POSTAL STORES
INCORPORATED

new food prices

The American housewife can save the world by cutting her daily expenditures.

New food prices are ready for the housekeeper to take advantage of.

If you pay more than these prices for the articles listed here, you are encouraging waste. You can even anticipate your needs and put in a supply for the future by ordering in dozen lots, thereby saving more time and effort.

The brands listed here are all well and favorably known to every careful and thrifty American.

You owe it to your own good judgment as well as to your pocket to put your order in the mail now.

TO TAKE ADVANTAGE OF THIS GREAT MONEY-SAVING OPPORTUNITY, BE SURE TO READ THE LIST OVER CAREFULLY AND ORDER TODAY. COMPARE PRICES WITH PRICES YOU NOW PAY.

NAME	Size	Pack	Price Pkg.	Price Doz.
Royal Baking Powder	Ones	can	$0.39	$4.52
Rumford Baking Pwdr.	1 lb.	can	.27	3.00
K. C. Baking Powder	25 oz.	can	.21	2.35
Del Monte Ketchup	1 pt.	bot.	.23	2.70
Postum Cereal	Reg.	pkg.	.20	2.30
Quaker Oats	2 lb.	pkg.	.13	1.52
Cream of Wheat		pkg.	.23	2.65
H. O. Oats		pkg.	.16	1.90
Grape-Nuts		pkg.	.12½	1.45
E. C. Corn Flakes		pkg.	.10	1.15
Kellogg's Corn Flakes		pkg.	.13	1.52
Quaker Puffed Rice		pkg.	.13	1.52
Quaker Puffed Wheat		pkg.	.13	1.52
Quaker Puffed Corn		pkg.	.13	1.52
Fancy Apricots	2½s	cans	.29	3.15
Fancy Peaches	2½s	cans	.32	3.75
Fancy Pears	2½s	cans	.32	3.75
Fancy White Asparagus	Lge.			3.25
Del Monte Asparagus	Lge.	white	.33	3.90
Del Monte Corn, Fancy			.23	2.65
Del Monte Peas	2s		.18	2.10
String Beans, Std.	2s		.14	1.60
String Beans, Fancy	2s		.20	2.40
Tomatoes, solid pack	2½s		.18	2.10
Tomatoes, Standard	2½s		.15	1.80
Dunbars Shrimps	Small		.17	1.98
Dunbars Shrimps	Large		.32	3.75
Vermicelli	1 lb.	pkg.	.10	
Salmon, Medium Red			.22½	2.75
Salmon, Pink			.18	2.10
Red Salmon	1 lb.	can	.24	2.80
Oysters, Fancy	1s		.18	2.10
Oysters, Fancy Large	2s		.33	3.90
Tuna, white meat	½s		.20	2.35
Tuna, white meat	1s		.35	4.00
Seeded Raisins		pkg.	.13	1.52
Seedless Raisins		pkg.	.13	1.52
Currants	1 lb.	pkg.	.32	3.75
Knox Gelatine	Reg.	pkg.	.17	1.98
Jell-O, any flavor	Reg.	pkg.	.10	1.18
Lye	1s	can	.09	1.08
Chloride of Lime			.11	1.30

NAME	Size	Pack	Price Pkg.	Price Doz.
Coleman's Mustard	½s	pkg.	.47	5.60
Coleman's Mustard	1s	pkg.	.95	11.30
French Prepared Mustard			.12	1.35
Toilet Paper, Rolls	7 oz.	pkg.	.09	1.05
Macaroni	per lb.	pkg.	.10	
Crisco	1 lb.	can	.32	
Olive Oil	Qts.	can	1.60	
Olive Oil	Gals.	can	6.25	
Cotton Seed Oil	Gals.		2.40	
Beechnut Peanut Butter	Jar		.12½	1.45
Corn Starch, best	1 lb.		.12	
Gloss Starch, best	1 lb.		.12	
Salt, Shaker	2 lbs.		.08	
Campbell's Soups	Reg.	can	.11	1.30
Hominy, Canned	3s		.14	1.60
Del Monte Tom'to Soc.	8 oz.		.08	.95
Log Cabin Syrup	Small	tin	.28	
Log Cabin Syrup	Medium	tin	.56	
Karo Syrup, blue	1½s	can	.15	1.75
Karo Syrup, red	1½s	can	.18	2.10
Babbitt's Soap	Reg.	cake	.07½	.90
Octagon Soap	Reg.	cake	.08	.95
Lennox Soap	Reg.	cake	.06	.70
Fels Naptha Soap	Reg.	cake	.08	.95
Strycker's Sand Soap	Reg.	cake	.04	.45
Sapolio	Reg.	cake	.08	.95
Bon Ami	Reg.	cake	.09	1.05
Lux Soap Chips		pkg.	.12	1.40
Ivory Soap	Small	cake	.07	.82
Palm Olive Soap	1	cake	.11	1.25
Sunny Monday Soap	1	cake	.08	.95
Crystal White Soap	1	cake	.07	.85
Tea, green		per lb.	.40	
Lip'on Tea	½ lb.	pkg.	.40	
Old Dutch Cleanser			.08	.95
Babbitt's Cleanser			.07	.83
Octagon Cleanser			.07	.95
Matches, Safe'y			.12½	1.50
Prophylactic Tooth Brushes			.25	2.90
Pebecco Tooth Paste			.36	4.25
Bicycle Playing Cards			.35	3.90
Cough Drops, Pine Needle			.04	.45

Ghirardelli's Ground Chocolate		1 lb.	pkg.	.31
Ghirardelli's Ground Chocolate		3, 5 or 10 lb.	tins	.29 lb.
Ghirardelli's Breakfast Cocoa		1 lb.	pkg.	.37
Schepp's Shredded Cocoanut		1 lb.	pkg.	.39 4.60
Extra Quality Coffee, best ground or bean		1 lb.	pkg.	.32
Aunt Jemina's Pancake Flour, Regular		2 lb.	pkg.	.14 1.62
Extracts, Pure Vanilla or Lemon		1 oz.	bot.	.11 1.30
Extracts, Pure Vanilla or Lemon		4 oz.	bot.	.33 3.90
Extracts, Pure Vanilla or Lemon		8 oz.	bot.	.60 7.10
Extracts, Pure Vanilla or Lemon		16 oz.	bot.	1.15 13.50
Lea & Perrins Worcestershire Sauce		Small		.30 3.50
Arm & Hammer Baking Soda		1 lb.		.08 .95
Milk, Carnation, Alpine or Libby's		Large		.14 1.55
Milk, Carnation, Alpine or Libby's		Small		.07 .76
Proctor & Gamble's Naptha Soap		Reg.		.08 .95
Twenty Mule Team Borax Soap		Reg. cake		.07 .83
Blacking, Shoe—Black or Tan Shinola		10c can		.08

Delivery costs you as much on FIVE dollars' worth as it does on TEN, therefore, the larger amount YOU order, the more money YOU save.

Send your order now accompanied by bank check, postoffice money order or express money order. If you send currency, you must register the letter, or we are not responsible for same.

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With Planet Jr tools you can do more thorough, more rapid cultivation, save time, labor and money, and get bigger and better crops because of their superior design and scientific construction. They last a lifetime. Fully guaranteed.

No. 41 Planet Jr Orchard Cultivator does such thorough work in orchard, vineyard or hopyard that bigger and better crops invariably follow. Exceptionally light draft adds to the ease of operation and rapidity of cultivation. The strong frame carries teeth, sweeps, irrigating steels, plows, alfalfa teeth and special weeders. Has tree-shield, side-hitch for low trees, and fore-carriage if wanted. Works deep or shallow, and cuts 4 to 6½ ft. wide.

No. 8 Planet Jr Horse-Hoe does a greater variety of work in corn, potatoes, and other crops requiring similar cultivation, and does it more thoroughly, than any other one-horse cultivator made. It is stronger, better made and finished. Lasts longer. Its depth regulator and extra long frame make it steady-running. Cultivates deep or shallow and different widths of rows.

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Illustrates Planet Jrs doing actual farm and garden work, and describes over 55 different tools, including Seeders, Wheel-Hoes, Horse-Hoes, Harrows, Orchard-, Beet- and Pivot-Wheel Riding Cultivators. Write postal for it today!

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Clean Potato Seed

Hundreds of potato growers are availing themselves of the opportunity to get clean potato seed that has been dipped in a solution of corrosive sublimate by

Aggeler & Musser Seed Company
620 South Spring Street, Los Angeles, California.
Write for their 1919 Catalog.

Horticultural Jottings

Horticultural Commissioner H. P. Stabler is distributing resistant grape roots through his office to growers.

Spain produces about 75,000 tons of almonds a year. Wait till we go into the almond paste and wedding cake business!

Eight hundred dollars an acre for ten acres of six-year-old Bartlett pears has just been paid to H. M. Henning at Tehachapi.

W. R. Nutting of Fresno has, by selection from early varieties, propagated a date which is said to be a specially early ripener.

To avoid breaking Seedless grape vine canes when bending them to tie onto the wires, give the canes a twist when you bend them.

The State Convention of Fruit Growers, that was postponed, has been tentatively announced to take place at Riverside on May 31.

Twenty-two thousand five hundred and sixty-one cars laden with California fruit were shipped East during the first ten months of 1918.

Vine grafting demonstrations are to be given by Professor F. Bioletti on March 15 under the auspices of the Fresno County Farm Bureau.

From 300 to 400 parcels post packages of nursery stock are inspected each month by the Sacramento County Horticultural Commission.

Graft walnuts any time after the first of March and if the work is well sealed and kept sealed the graft will grow. Don't let suckers smother them out or starve them.

About three thousand acres of grapes—chiefly Thompson Seedless—will be planted out this year in Kern county, according to Horticultural Commissioner Norman H. Buhn.

Claude Van Dyke, Horticultural Commissioner of Mendocino county, has resigned to go into ranching. E. W. Dutton has been appointed to serve in his place, as he was already qualified.

Pruning demonstrations in connection with the Farm Bureau have been conducted in the various fruit districts of Madera county by Prof. J. C. Whitten, pomologist of the University of California.

Visalia will hold the eighth Tulare County Citrus Fair this year. The opening date will be slightly earlier than usual to permit of better displays of fruit and to avoid possible bad weather.

Sixty thousand pounds of pickling olives were shipped from the 22-acre orchard of Dana Perkins of Rocklin this season. These 22-year-old Mission olive trees are looked upon as a model of good care.

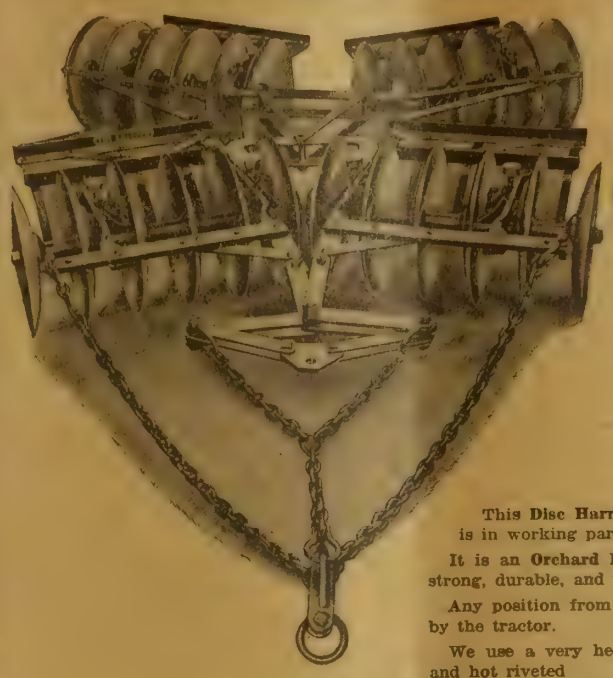
A mass meeting is slated by the California Grape Protective Association, to be held on March 8, in the assembly hall of the Phelan building, in connection with submitting the Sheppard amendment to the voters at the next general election.

About forty 55-gallon drums of bisulphide of carbon and 120,000 waste balls will be used by the Daniel Hayes Company, owners of the 35,000-acre Chowchilla ranch in their individual campaign against the ground squirrel. This will treat the estimate of 170,000 burrows.

Fig growers of California at the annual Fig Institute, held at Fresno last week, decided to organize as a co-operative and marketing company along the lines of the California Associated Raisin Company. A committee of ten was appointed to take the necessary steps for incorporation.

The big winery at Wineville, Riverside county, is being converted into a cannery. The machinery has been ordered and will be ready to operate on apricots. Charles Stern & Co., the owners, expect to sign up 10,000 acres of products. Nearly 1000 cases are already planted to peaches and apricots (formerly grapes). Tomatoes will be the biggest crop canned and orange marmalade may also be made.

The KILLEFER AUTOMATIC DOUBLE-DISC HARROW





Automatically Straightened

The small cut shows the Automatic Double-Disc Harrow, automatically straightened. To accomplish this, the tractor is backed up until the hook on the draw chains can be placed in the hole on the front end of the adjusting swivel; then, by going ahead about 18 inches, the disc is drawn straight. To set for working position again, pull out the hook and go ahead. This can all be done by the driver from the seat of most tractors.

A Real Tractor Disc

This Disc Harrow is built especially for tractor work. Every pound of material in it is in working parts.

It is an Orchard Disc, and a Field Disc, that has never been excelled. It is low down, strong, durable, and the adjusting feature is very simple and positive.

Any position from straight to almost a plowing angle may be obtained. This is all done by the tractor.

We use a very heavy disc and heavy material throughout, well braced and hot riveted

Built in All Sizes From 5 Ft. to 12 Ft.

This Disc, along with our complete line of Tractor Tools, will be demonstrated at the Tractor Show to be held at Sacramento the first part of May.

The Killefer Manufacturing Co.

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THE distance between farm and town today is a matter of tires. Goodrich Tires will shorten the distance for you—shorten it in cost, and shorten it in wear and tear of the trip.

Were Goodrich Tires made expressly for country roads, they could not better meet the special needs of the automobile on the farm.

Their extra thick, extra wide SAFETY TREAD, with the Goodrich interlocking safety bars spreading to the sidewall, lay more tough rubber and more non-skid safety tread on the road—their overlapping tread and side strip fortify the sidewall against the grinding and scraping of deep ruts—and their whole burly, broad shouldered structure fits them for farm service.

For a high-powered car use Goodrich Silvertown Cords.

In your heavy hauling, Goodrich Truck Tires furnish the same low cost full-work-day service.

A farm on a Goodrich basis saves money.

Buy Goodrich Tires from a Dealer



GOODRICH TIRES

"BEST IN THE LONG RUN"

Cross-Pollination of Cherries

[Written for Pacific Rural Press.]

One of the many interesting lectures at the recent Cupertino short-course was one given by Professor W. L. Howard, pomologist at the University Farm at Davis, on the above subject. We have not been getting the returns from many of our cherry orchards that the quality of the soil and size of the trees have warranted. Dr. Howard's lecture on cross-fertilization and the results of his experiments therein may explain to many growers why their efforts have been disappointing.

Now a good old every day apple tree (or pear or plum) will settle itself down to almost any conditions, adjust itself to circumstances and turn off some fruit anyway. It may be small, wormy or scabby, but it is fruit that is good to the small boy. But the cherry, the dainty, elusive cherry is very particular as to her location and her company. Leave her alone and she simply puts on her mantle of green and gives nothing. But put her in the company of her own choice and in suitable soil and she at once becomes generous.

Dr. Howard said that the four main subjects necessary to the success of the cherry, viz: soil, spraying, pruning and fertilizing, he should pass over and proceed to the best results to be obtained by cross-pollination of different varieties. The experiments have been carried over three years, 1916-17-18, in different parts of the State. He divides the varieties into two classes—those whose effective bloom is early, and those in which it is later. The period of effective bloom is when most of the flowers are at their full glory. The amount and quality of the pollen varies largely in different varieties and in all of them the early scattering blooms are apt to be weak and infertile. This has been tried out by experiments. In cross-fertilizing the pollen is always first of all tested in the laboratory to see if it is fertile and strong. Some twenty varieties have been tested—most of them commercial varieties—and all have proved to be self-sterile. This list includes the Royal Ann, Black Republican, Black Tartarian, Bing, Early Chapman, Purple Guigne, Lambert, Rockport. Also Pontiac, Advance, Burr's Seedling and Wood varieties.

POLLENIZATION IS NECESSARY.

And pollen carriers are necessary. The very best pollen carriers are bees. Therefore the first step for success in pollenization is to get some bees, unless there happen to be plenty of these in the immediate neighborhood. There are other pollenizing agents, but none so active and ubiquitous as the bee, if there are enough colonies to provide for the acreage. One grower told us at the meeting that a corner of his cherry orchard nearest a neighbor who kept bees always bore heavily, while the other end of his orchard was always light. He is going to rent bees this year—if he can—and place one colony to every twenty-five trees.

SAN LEANDRO EXPERIMENTS.

Dr. Howard told us that at the San Leandro experiment station it was found that the Black Tartarian, Burr's Seedling, Royal Ann, Rockport and Governor Wood all pollinated the Black Republican.

The above varieties will also pollinate the Black Tartarian.

The Black Tartarian, Burr's Seedling, Pontiac, Black Republican, Rockport and Governor Wood will pollinate the Royal Ann, and the Royal Ann will pollinate the Pontiac.

The Black Tartarian, Burr's Seedling, Royal Ann and Governor Wood varieties may be used with the Rockport.

AT VACAVILLE.

The Black Tartarian and Pontiac are used on the Bing and the Black Tartarian crosses the Advance.

Black Tartarian and Black Republican cross well, the former being also the best pollenizer for the Purple Guigne, Early Chapman, Advance and Blackheart.

Black Tartarian and Pontiac cross the Lambert, the former being preferable. Royal Ann's best performance was with Pontiac.

Advance is no good to Rockport, nor is the Early Purple.

The result of these experiments will prove of value not only to men who are setting out orchards, but also to men who have orchards that are not giving results and will need some top-working. The above crosses if carefully studied should give the planter a good line on how to set his rows to the best advantage both for picking and cross-fertilizing.

BEES EFFECTIVE FOR POLLENIZATION.

[Written for Pacific Rural Press.]

The demand for bees on the part of orchardists for the purpose of increasing the setting of fruit blooms is becoming quite widespread. We have been repeatedly asked by orchardists where bees can be secured for a few weeks. They seem to be willing to pay from $1 a colony up for the rent of the bees, owner of colonies to do the handling. This seems to be a good proposition. The time will doubtless soon come when every orchardist will keep his own bees and have a beeman come around if necessary to handle them all—maybe look after a whole district. Twenty cents a pound for extracted honey and only 20 pounds to a colony would more than pay for the labor expended, though 20 cents is of course a high price. Send to the University of California for Circular No. 185, "Bee-Keeping for the Fruit Grower and Small Ranches."

SHE DOESN'T EXPECT MUCH.

He—A maid must not expect such lovers as she finds in books. Few men are paragons.

She—Oh! I should not expect a paragon, I should be satisfied with a lover, young, handsome, brave, noble and unselfish.—Dayton (O.) Journal.

Almond Trees { Nonpareil, Texas, Peerless, Drake Seedling

On Almond and Peach Root.

Peach Trees { Tuscan Cling, Muir, Lovell

Prune Trees { French, Imperial, Stuart

Pear Trees { Bartlett on Japan Root

Olive Trees { Mission, Manzanillo

These trees are budded from carefully selected bearing stock and are guaranteed true to name.

Our prices are right and within the reach of every grower.

Ripon Nursery & Improvement Co

RIPON, CALIFORNIA.

BOLTON ORCHARD HEATER



You may have escaped loss by frost thus far, but who knows where the loss will occur next? Be protected—the Bolton Heater is

The Cheapest Insurance Against Frost

Burns a long time on one filling of cheap fuel oil. As soon as the danger has passed, put on the cover—the fire is extinguished, and the remaining oil is as good as ever. Economy!

Send For Booklet B-1

Tells you all about frost prevention. Filled with valuable information for the grower.

W. R. AMES COMPANY,
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Largest stock of Surface Irrigation Pipe and Pipe Equipment on the Pacific Coast



Olive Trees
such as these are grown only on our foot-hill locations.—Note the good roots—for hardiness they have no equal.

We have a fine lot of Mission and Manzanillo trees, both on Picholine roots and grown from cuttings. We have had splendid success on all Olive plantings—a most important assurance to you.

Submit a list of your tree wants for special quotation. Do it right now.

We have also a complete assortment of Shipping Plums, Cherries, Prunes, Bartlett Pears, Fall Pears, Peaches, Almonds, Apricots, Walnuts, etc.

Our foot-hill grown trees are free from root diseases common to other localities. Our trees insure your future profits in fruit growing.

And remember—we will accept Liberty Bonds as full or part payment for trees. Write us today.

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SILVA-BERGTHOLDT CO.
Newcastle—Cal.
"Behind each tree is our guarantee"

Almond and Pear Trees

Choice, well-grown Almonds on Bitter Almond Root. We can furnish the following varieties:

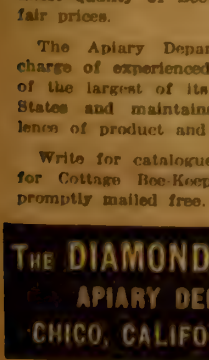
Texas
Drake Seedling
Nonpareil
Peerless

Splendid BARTLETT PEAR STOCK on Japanese and French Pear root.

Prices on Request.

James Mills Orchards Corp.
HAMILTON CITY, CALIF.

SULPHUR



It has been proven and so recommended by the University of California that if you sulphur your grape vines and orchards 6 times they will not be affected by MILDEW or RED SPIDERS.

ANCHOR Brand Velvet Flowers of Sulphur, also EAGLE Brand, Fleur de Soufre, packed in double sacks, are the fluffiest and PUREST sulphurs that money can buy; the best for vineyards; the best for bleaching purposes, LEAVING NO ASH.

Try our new brand of VENTILATED Sublimed Sulphur, 100 per cent pure, for making Paste—(Atomic Sulphur) and for Dusting.

For Lime Sulphur Solution, use our DIAMOND S Brand Refined Flour Sulphur. We can furnish you this sulphur at such low price that it will pay you to mix your own solution.

To create additional available plant food, drill into the soil 100 to 400 pounds per acre of our Diamond "S" Brand Powdered Sulphur.

It has been proven that sulphur has increased various crops up to 350 per cent.

SAN FRANCISCO SULPHUR CO.
524 California St., San Francisco, Cal.

We are equipped to make immediate shipment. Send for illustrated booklet, price list and samples and please state for what purpose you use the sulphur, quantity needed and date of shipment preferred. Tel. Kearny 871.

ETTERSBURG STRAWBERRY PLANTS

Ettersburg No. 80, 84, 89, and 121, and Eureka, Trebler, Ossie, Nor-j, Fantastic, and Fendalcino, the cream of 30 years of strawberry breeding. All originated by the undersigned, mostly from wild species. Big, strong plants, 25 of any variety, for $1.00; 100 in one to four varieties, $3.00, delivered free by mail. Order early as stock is limited. Descriptive catalog for the asking.

Monanthos Lentils, 20c. per lb.; 5 lbs. or more, 15c. per lb., by mail, prepaid anywhere in California.

ALBERT F. ETTER
Ettersburg - California



Bee-keepers can obtain from the Apiary Department of the Diamond Match Co. the finest quality of Bee-Keepers' Supplies at fair prices.

The Apiary Department, which is in charge of experienced Bee-Keepers, is one of the largest of its kind in the United States and maintains a constant excellence of product and unsurpassed service.

Write for catalogue and if a beginner for Cottage Bee-Keeping, which will be promptly mailed free.

THE DIAMOND MATCH CO.
APIARY DEPARTMENT
CHICO, CALIFORNIA, U. S. A.

THE SEBASTOPOL BERRY GROWERS.

About 1,500,000 pounds of berries were shipped East by the local Berry Growers' Association last year. Varieties as follows:

Logans, 311 tons; net price to grower, $230 a ton.

Mammoths, 132 tons; net price to grower, $201 a ton.

Raspberries, 12 tons; net price to grower, $265 a ton.

Lawtons, 275 tons; net price to grower, $196 a ton.

The berries shipped to canneries were as follows: Logans, 805 tons; Mammoths, 570 tons; Lawtons, 1070 tons; total tonnage, 2445 tons. So far the association has paid growers on cannery berries $100 a ton and there is another payment to come.

President Hotle of the association said that it would be only a matter of time till the unsanitary chest and slide be done away with. That Manager Bill had investigated several containers and that one of them would probably be adapted to eliminate the expense of shipping back crates. To every 100 tons of berries shipped 40 per cent is chest weight.

THE ORANGE SHOW AT SAN BERNARDINO.

The large number of citrus fruit growers who attended the institute at the National Orange Show at San Bernardino declared it to be the most successful one ever held. Five hundred representatives from all districts in California appealed for the continuation of the show through future years and legislative support for the citrus industry's only exposition. Next year it is suggested that an effort should be made to take the orange show to New York, Chicago, Boston and Philadelphia for the entire fruit marketing period. The growers voted to form a permanent organization for the holding each year of a citrus institute at which experts from all over the world will lecture. The weather has been favorable, as it generally is when a holiday is called here, and the Orange Show of 1919 has been a big success.

GRAPE STAKES BETWEEN VINES.

[Written for Pacific Rural Press by Chas. Barnum.]

A common mistake is in placing a stake at each Thompson Seedless grapevine. A. E. Thompson of Fresno county will avoid this by setting stakes midway between vines he expects to plant in April. Two vines will be stretched on them so the vines may be spread out, getting more sun to the grape clusters and helping to avoid mildew. With stakes midway between vines, the weight of grapes will exert less strain on the wires, which are ordinarily frequently found broken in the fall.

The Inwood Farm Center has tackled the job of getting a road from their charming valley to Cottonwood. A committee of their members recently met there with the district supervisor, representatives of the Shasta County Development Association, and the supervisor of the Lassen National Forest. They will make application for Federal aid in building the road.

The California Peach Growers have sold practically the entire crop and only have the Government stuff to clean up.



The DEALER says= "the GIANT mark protects you from imitations"

"It pays me to give my customers what they ask for," says the retailer who knows what's what. "When they ask for 'Giant Powders' I give them GIANT Powders—the real Giant, made by The Giant Powder Co., Con. I don't tell them that 'I have the same thing, only under another brand name,' because it is not true.

"The name 'Giant' on a case or a stick of powder is evidence that the powder is made by the company that originated Giant Powders. Remember this: You can't get Giant results when you use ordinary dynamites that look like Giant but aren't marked Giant."

Look into the new, money-saving methods of clearing land, blasting tree beds, ditches, boulders, etc. They are all described in our up-to-the-minute book, "Better Farming with Giant Farm Powders." A post card will bring it by the first mail.

THE GIANT POWDER CO., CON.
"Everything for Blasting"
216 First National Bank Bldg., San Francisco
Branch Offices: Denver, Portland, Salt Lake City, Seattle, Spokane

GIANT FARM POWDERS
STUMPING EUREKA

Tree Protectors



—THAT REALLY PROTECT
Fitted with galvanized wire ties that go all the way round the tree.

Prices per Thousand:

10 in. long, 7 in. wide	$9.00
12 in. long, 7 in. wide	9.50
14 in. long, 7 in. wide	10.50
16 in. long, 7 in. wide	11.50
18 in. long, 7 in. wide	12.50
20 in. long, 7 in. wide	15.00
24 in. long, 7 in. wide	17.50
30 in. long, 7 in. wide	20.00

See your nurseryman or write us for discounts and free samples.

ANGELO & SON, Bay and Mason Sts. San Francisco

Dealers—Write us today for our Sales Proposition.

CALIVADA Sheep Manure Steer

From highest nitrogenous feed.

Decomposed and concentrated by age in their own liquids, containing the highest percentages of Nitrogen, Phosphoric Acid, Soluble Potash, and readily available Humus.

Shipped commercially dry. Cars average 22 to 24 tons. Saves four-fifths labor in application. Thousands of tons now being shipped to citrus and deciduous growers in California.

Write for samples, prices and particulars today to insure prompt deliveries.

CALIVADA FERTILIZER COMPANY,
423 Citizens National Bank Building,
Phones 65043
Los Angeles, California.

TREES

PEACH APRICOT ALMOND
PLUM PRUNE PEAR
APPLE CHERRY OLIVE
FIG ORANGE Lemon, Etc

More Than a Million High Class Fruit Trees per Year to California Planters

KIRKMAN NURSERIES

Established 1888
Incorporated - $100,000

Fresno, California

Status of Agricultural Bills

[Written for Pacific Rural Press by R. E. Hodges.]

Power Department at University Farm

The bill which proposes to appropriate $25,000 for equipment of the farm power department at University Farm has not been pushed in the Legislature but has created some stir among the tractor and implement people. Their committee has presented authorized written endorsements from Secretary G. M. Walker to the Governor, the State Board of Control, Assemblyman Lee Gebhart (who introduced the bill), to Chairman E. S. Rigdon of the Senate Agricultural Committee and to Chairman Ivan H. Parker of the Assembly Agricultural Committee. The Finance Committee will also be notified of the endorsement. Legislators seem favorable, but the appropriation, being unauthorized by the Board of Control, must have convincing arguments made in its favor and must have plenty of support from farmers to be benefited.

The Legislature reconvened on February 24, after its constitutional recess, and at this writing (Tuesday evening) is getting settled in the harness. Committee meetings and discussion of bills are running as per schedule and the arena is open. We mix our metaphors purposely, because this legislative activity is not only intense work but it is also great sport. Bills which the Pacific Rural Press favors or opposes are going in the right direction yet. All of those carrying appropriations must be referred to the finance committee before final action may be taken. Finance committee chairmen are Assemblyman T. M. Wright and Senator W. J. Carr.

LIVESTOCK AND DAIRY BILLS.

The feed-labeling bill, introduced by Senator Rigdon and Assemblyman Cummings, has obtained vigorous and unanimous endorsement from livestock interests and from some of the largest milling interests. It is to be amended by inserting a provision which requires a statement of the maximum amount of ash and by another which requires a statement of the percentage of all the various ingredients whenever corn cobs, rice hulls, and similar materials are used. It is to be discussed informally by all interests and amended to the best advantage, and then sent to the Legislature with a favorable recommendation.

Mr. Prendergast's oleo bill is considered by the dairy interests to be much worse than Mr. Prendergast thought it was, and the dairymen have brought strong pressure to bear on the legislators, so that its end seems close at hand. It was referred to the committee on manufactures, but is to be re-referred to the committee on livestock and dairies, which is known to be unfriendly. Labor interests and city interests, however, are supporting it and there may be quite a scrap.

The bill to prohibit use of oleomargarine in State institutions was introduced into a Legislature some of whose members were elected on a reduction-of-State-expenses platform. As the Board of Control wants to reduce the high cost of feeding, this anti-oleo bill will not get through unless it is well greased.

Assemblyman Kasch's estray bill must be amended or it will never get through. The amendment proposed is to except specified livestock counties where such a law would work unnecessary hardship. The present estray law does except six or seven counties by name. Mr. Kasch is willing to have such an amendment and the "cow counties" are willing to pass it as amended. Senator King's bill requiring everybody to fence against stock is farther on the other side, and will be subject to amendment or execution.

The sentiment regarding Senator Rush's dog licence bill, to protect livestock, is very lively, as evidenced by petitions, letters and resolutions, mostly from city folks, against the measure, partly because they do not understand it, and the petitions, letters, and resolutions of farmers and Farm Bureaus endorsnig it. Strangely the Wool Growers' Association has not indicated its approval yet.

FRUIT AND AGRICULTURAL BILLS.

With practically no opposition up to date, the seed bill seems to have a clear path to the Governor, with a possible holdup in the finance committee.

The deciduous fruit experiment station bill, introduced by Senators Benson and Jones, has been considered favorably in committee and $50,000 for this purpose is practically assured. But a strong effort is to be made for $150,000. It is now in the finance committee, where the extra $100,000 may be hard to obtain.

Miss Broughton's bill, which would permit irrigation districts to manufacture and sell electricity, has been favorably considered at a conference of irrigation officials. Some minor amendments are to include provision for elections for separate bond issues for electric development where there is not enough surplus in the irrigation district treasury. Assemblyman J. Stanley Brown of El Centro, who is chairman of the irrigation committee, is in full sympathy.

THE BANKS EVAPORATOR

(Patent applied for.)

Built especially for fruit growers. Most economical and practical evaporator on the market. Handles 10 to 15 tons fruit per day. Price, $1550, San Jose. Hauling and freight charges to distant points extra.

For further particulars apply to

J. C. THORP

45 Auzerais Building, San Jose.
Phone 810.

PERSIMMON TREES

Are one of the coming fruits for California, used fresh, dry, and in confections.

We are booking orders for the following standard varieties, subject to arrival and being unsold. One to twenty trees at 40c. each; larger quantities at $30.00 per 100.

Hachiya, Hyakuma, Gosho, Tani-Nashi, Okami, Zangi and Yemon.

All grafted stock. To arrive about March 15th.

Morris & Snow Seed Co.

439 S. Main St., Los Angeles, Cal.

THORNLESS

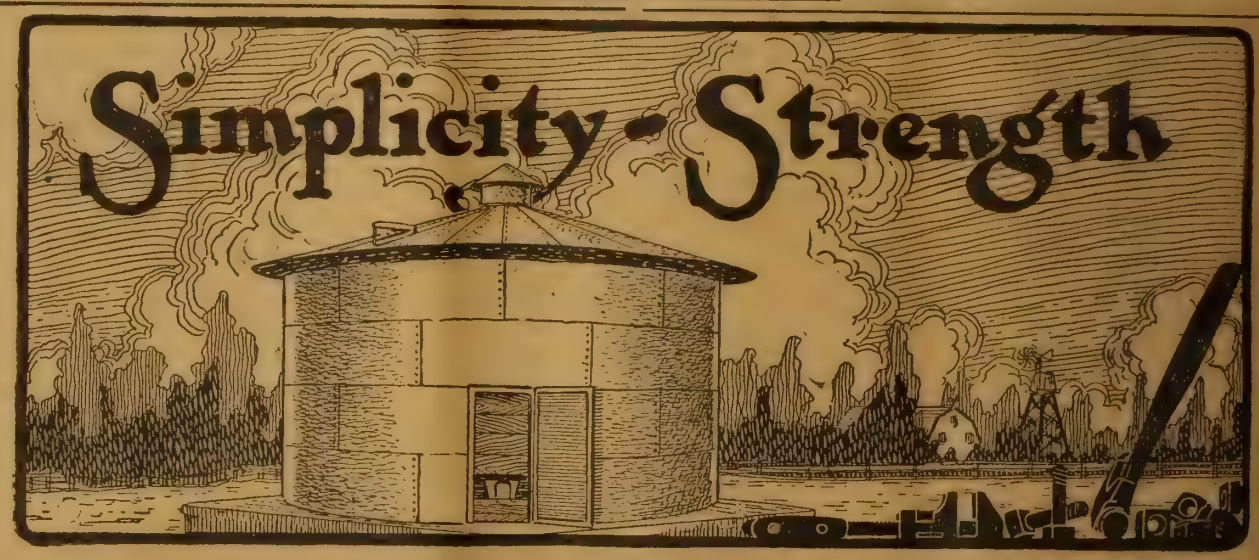
Vigorous, prolific, delicious. Let us tell you about this

BLACKBERRY

EKSTEIN NURSERIES

MODESTO, CAL.





YOU and one of your hired men can erect a Calco Grain Bin—easily and quickly. No need to go to town and hire an "expert."

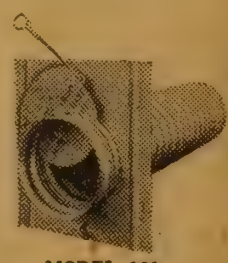
If you can hit where you look and hold a monkey wrench in place, and if you understand how a stove bolt works—you are quite expert enough to put up your Calco Bin.

Calco Grain Bins are made of Armco galvanized iron—strength. Engineers designed them to be simple in construction. In simplicity there is added strength.

Interchangeable sections are shaped and punched to fit—they lap right into each other. The door fits exactly. The manhole fits exactly. The roof fits exactly. The ventilator cap fits exactly.

It's this "fitting exactly," a good piece of designing, that makes the Calco Bin so simple to erect and so sure in strength. It's a hold-together-and-stay-on-the-job bin.

Calco Bins are made in capacities of from 600 to 5450 bushels—a size for every farm. Write for the free booklet, "Calco Grain Bins." It tells how to cut your harvesting expense.



MODEL 161

Armco Iron Irrigation Gates

An inexpensive, reliable metal gate. Diameters from 8 inches to 15 inches. Furnished with or without bulkhead. Write for price list.



MODEL 150



MODEL 153

Armco Iron Lateral Headgates

Easily operated, durable metal gates; diameters 8 to 36 inches. Hand or screw lift supplied with either type of bulkhead. For use under varying heads of water to a maximum of 6 feet. Details on price list—ask for one.

Gates are supplied in connection with rust-resisting Armco Iron corrugated pipe in any length required.

California Corrugated Culvert Company

LOS ANGELES
417 Leroy Street

AMERICAN ARMCO IRON

BERKELEY
406 Parker Street

CALCO GRAIN BINS

Field and Garden

One Variety of Cotton.

To keep out of various districts all varieties of cotton except one, efforts continue to be made, notably in the southern San Joaquin Valley. Leaders of foresight are proposing that the lesson of the Mebane in Imperial Valley shall yield its results in newer cotton sections without the all but irredeemable experience. Mebane there is no longer the Mebane, but a variable scrub whose offspring no one can foretell, except that it is likely to be less valuable each year. When varieties of any plants are cross-pollinated, it takes generations to fix desirable characteristics in the seed so they can be depended upon to be reproduced in future crops. Several varieties of cotton have been planted promiscuously in Imperial county until there is but little chance of getting pure seed of any variety there. Why should it be impossible to show the insurgents who propose to grow other varieties in the San Joaquin Valley than the ones selected by majority vote at their community meetings that whatever gain they may make by growing varieties of their own choosing will be more than offset by the difficulty and expense of separate ginning and selling of the several varieties, in addition to the disadvantage of mixed seed!

Aphids Threaten Peas.

Aphids have been multiplying in the moist pastures around pea and bean fields in Alameda county, according to A. J. Garin, who has 50 acres of peas. He says that if three days of foggy weather should come the aphids would be over the entire field. The only practicable remedy known is the use of ladybirds, which are now supplied by the State Insectary of Sacramento up to the limit of their ability to collect and distribute them. Aphids are a serious menace to the field vegetables which they feed upon. We have seen whole fields destroyed.

Tomatoes in Santa Clara County.

Tomato growing in the Mountain View district of Santa Clara county is being reduced in order to rotate with other crops; but a great deal of new acreage is to be planted around Menlo Park and Palo Alto, according to Chas. N. Lake, who has contracted to grow 65 acres at prices based on association prices. The plants are already an inch or two tall. Ponderosa or Beefsteak tomatoes are grown for the canneries and Stones for the early city market.

California Wheat to Italy.

Most wheat for macaroni making is imported into Italy in normal times, according to American Consul Carroll, who is stationed in that country. Mr. Carroll goes on to say that the wheat required is of "special quality of hard grain, rich in gluten. California wheat is preferred to all other qualities by the proprietor of one establishment visited, as being of the best quality, hard, large, and very clean."

Japanese Rice Crop Short.

The rice crop of Japan, which forms the chief part of the Japanese meal, is reported 30,000,000 bushels less than the average, and serious troubles are feared on this account. California rice growers, however, will hardly worry about that, although it may temporarily relieve part of their fear that Oriental rice may demoralize our markets unless Congress puts on the import duty they ask.

STATE CERTIFIED
SEED POTATOES
British Queen and American Wonder Varieties.
Grown from hill selected seed in cool coast climate. Give excellent yields throughout the state.
$3.00 PER CWT.
CARL NIELSEN, Grower
Sebastopol, Cal.

"Old Number One" Still on the Job

IT was F. Gasperich, owner of OilPull No. 314, one of the first 30-60's built—and also still on the job—that first told us about "Old Number One."

"There is a bit of sentiment attached to the OilPull machine, familiarily called 'Old Number One,'" he wrote. "It has been in our vicinity ever since its purchase in 1910 and is still on the job, running better than many new tractors of other makes. It is owned by Frank Schultz, of Agar, S. Dak., and I don't believe there is a man in this state who has done more plowing and threshing with OilPull machines. Recently I had an opportunity of witnessing the performance of this old OilPull and I will say that it is still a marvel of reliability."

So we asked Frank Schultz to tell us of his experience with the pioneer OilPull, and he writes as follows:

"I have done more work with my 30-60 OilPull tractor than any other engine around this part of the country. I don't know just how many hundreds of acres it has plowed or bushels it has threshed, but she's always been on the job and never lacked for power.

"Some of my neighbors have so-called oil burning engines, but when they get down to a hard pull, they're a lot better on gasoline. Many a time I've had 'Old Number One' running on heavy load all day without a stop and she never overheats. This I don't believe any other tractor owner in this part of the country can say. As far as burning kerosene is concerned, it is the only real kerosene burner that I know of.

"And the OilPull has a lot of reserve power, which a fellow needs going up steep hills breaking sod in South Dakota. It's the only engine I know that is under-rated.

"The OilPull has more bearing surface and larger shafts than any tractor I've ever seen. I also like the heavy foundation to hold the motor and gearing in place. The carbureter is as simple a mixing device as can be made.

"When you see the OilPull work in the belt you realize the power it develops—how steady the power is and how easily it handles the largest separator.

"In my day I've operated a good many different makes of tractors, but I have yet to see one that will last and stand up like the Rumely OilPull. All the repairs that have been bought for 'Old Number One' would not amount to $200."

What a tractor can do is best told by what it has done. What "Old Number One" OilPull has done during all these years sets a record for tractor performance that anyone can well use as a standard by which to judge any tractor made.

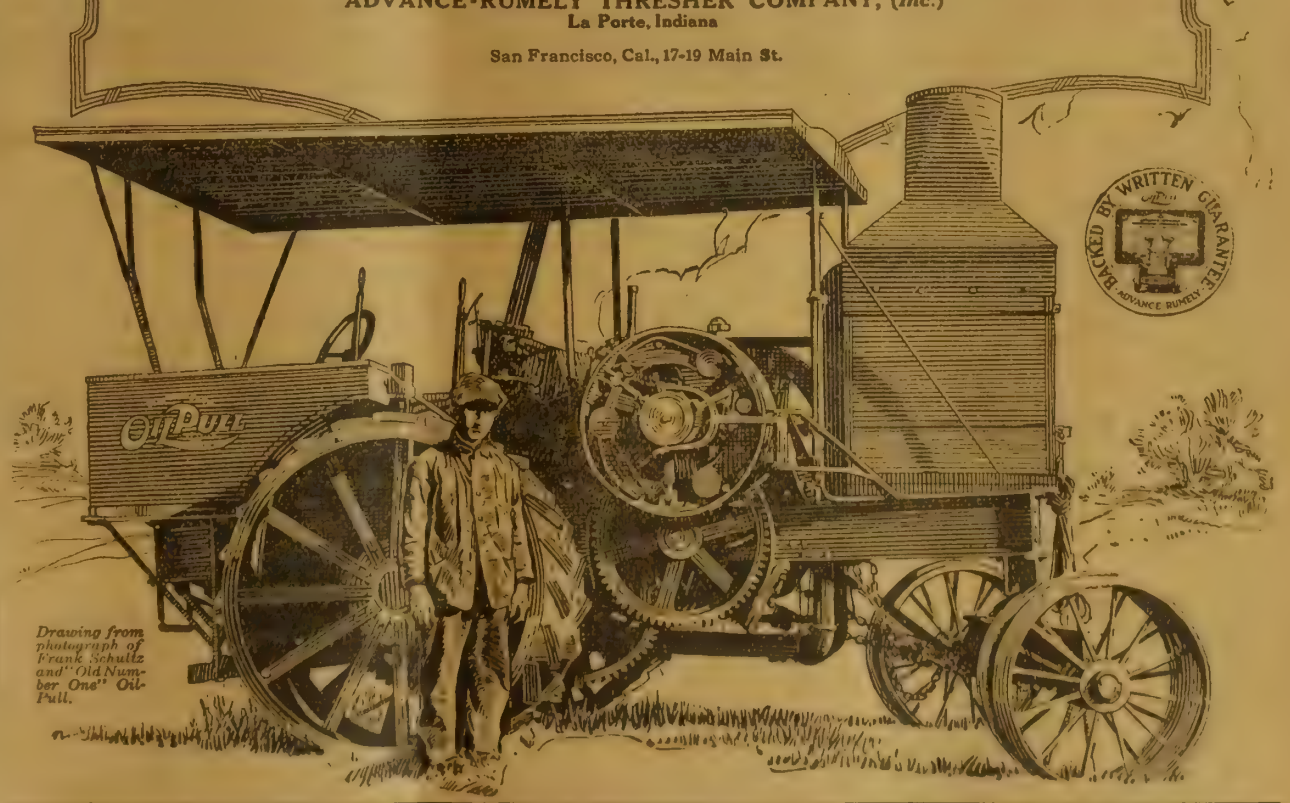
Moreover, into every OilPull is built the same long life, dependability and economy that "Old Number One" has proved out—it's just an example of what OilPull tractors are doing today for over 8,000 owners.

You can get a Rumely OilPull in a size to fit your farm—anywhere from 3 to 10 plows. And Rumely service is within reach of your telephone—no matter where you are—through 26 branch houses, at which are maintained constantly a full stock of machines and repair parts.

Let us send you the OilPull catalog.

ADVANCE-RUMELY THRESHER COMPANY, (*Inc.*)
La Porte, Indiana

San Francisco, Cal., 17-19 Main St.



Drawing from photograph of Frank Schultz and "Old Number One" OilPull.

SEED POTATOES
1000 SACKS OF SELECT BRITISH QUEENS
Absolutely clean. Grown on sandy soil. Good producer.
Price, $1.75 per 100 lbs. Send for sample.
EUGENE ELPHICK, GROWER, SEBASTOPOL, CAL.

SEED POTATOES
We specialize in selected SEED POTATOES: Certified White Rose, American Wonders, British Queens, Burbanks, Garnet Chilis, and other varieties. Also fancy, recleaned Alfalfa Seed. Write for prices.
400 FRONT STREET
WM. A. CURTIS CO. - San Francisco, Cal.

FOR SALE
100,000 FLORIDA SOUR SEED BED STOCK
Twenty to thirty six inches in height, guaranteed free of scale. This stock is going very fast. If you are in the market, get your orders booked as soon as possible.
WALKER-HUBBARD NURSERY COMPANY
FIRST NATIONAL BANK BLDG. SAN FERNANDO, CAL.

BITTER ALMOND SEED
FOR SALE
California Almond Growers Exchange
No. 311 California St.,
SAN FRANCISCO, CAL.

Hay and Grain in the Livermore Valley

[Written for Pacific Rural Press.]

The rains which have been prayed for and received with thanksgiving by most farmers might easily have proved a disaster to grain-hay growers of the Livermore and Altamont districts while at the same time giving promise of a yield of wheat for 1919 that will surpass any crop within recent years. The rains which made cattle feed plenty, by that very fact deadened the market for the grain hay raised in this district, except for wheat hay, which normally goes to the bay cities. The slow movement of hay and the plenteous rains, along with the guaranteed wheat price, have led to a heavy increase in wheat acreage for grain. Wheat is roughly estimated by C. M. Nissen of Livermore as occupying about 70 per cent of the grain acreage in that county, with oats occupying perhaps 8 per cent and barley the rest. It is said that a great deal of wheat seed already sprouted was sown, and it either died or continued to grow weakly. Some of the wheat sowing was done just previous to a month of cold weather and much seed rotted in the ground. In certain areas, cutworms have cut it off, especially on the adobe soils; but, generally speaking, the prospects are fine at this writing.

There is more hay in the local warehouses this latter end of February than at the same season in many years. Government orders, which took 3000 tons of the 1917 crop, were entirely lacking this year. Still, according to Mr. Nissen, his firm is carrying less farm credit on its books, the farmers are more nearly out of debt, and the local bank deposits are increasing. This is because livestock has saved the finances of more farmers than the dead hay market has injured.

Tractor Association Meeting

Emphatic endorsement of the bill now in the Legislature to appropriate $25,000 for equipment of the University Farm Agricultural Engineering Department was repeated, February 22, by the California Tractor and Implement Association at its annual meeting in San Francisco. A committee is to exert every effort to convince the State Board of Control, the Legislature, and the Governor of the immediate necessity of such equipment.

The proposed site for the annual tractor and implement demonstration at Sacramento, May 6 to 11, contained only 458 acres. Since this had proved too small for the large number of exhibits already assured, the demonstration committee has selected another site, containing 1000 acres, near the Country Club, six miles out the paved highway from Sacramento toward Roseville. The suggestion of having all tractors of similar horsepower to operate in the general demonstrations close to each other was not favored, and each company will have all of its tractors together as heretofore. The general demonstration, in which one tractor of every size and model will plow all at once, will this time take place from 10 o'clock until noon, giving more time for comparison while all machines are at the same kind of work. All plowing is to be six inches deep and no tractor will be allowed in the general demonstration to plow at more than 10 per cent above its catalog plow speed. The name and horsepower of each tractor and the kind of fuel it is burning will be posted conspicuously on the tractor during the demonstration. Each tractor is to have land frontage in proportion to its rated drawbar horsepower, enough to keep the tractor busy two hours, and each plot will be 500 feet long.

Demonstration Manager R. M. O'Neill already has bids on the city of tents that will be required. One big tent will be devoted to accessories and 6000 square feet of this have already been taken. A motor truck tent of huge dimensions will be required, as one firm alone has asked for 1000 square feet and several other firms have so early as this reserved space for their exhibits.

Each tractor or implement dealer will have a headquarters tent on a plot of land as large as he can use well in private demonstrations which will be carried on all of each afternoon. Ampler lunch facilities will be provided in the shape of a restaurant and a cafeteria operated by caterers experienced in feeding such crowds as will be at this demonstration. Large maps will be posted so that visitors may quickly locate on the mammoth field the machines they want to see.

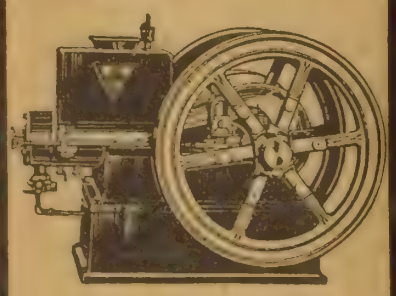
The association elected officers for the year to begin at the meeting after the demonstration. F. H. Poss of the Avery Company of the Pacific Coast is the new president, succeeding W. H. Gardner of the Yuba Mfg. Co., who has served several terms. Douglas Boswell of the Wallis tractor was elected vice-president in place of C. E. Witherell, who is now on the sea in Uncle Sam's service. G. M. Walker of the Holt Mfg. Co. was re-elected secretary-treasurer at more than double the previous allowance for the expenses of his office, after refusing nominations for the presidency and vice-presidency.

LAND BANK PROSPEROUS.

W. H. Joyce, president of the Federal Land Bank of Berkeley, writes: Our loans today are $10,300,000, and we are going along with our business in a surprisingly uniform manner; in fact, during the past eight or nine months the amount of closed loans has averaged almost exactly $500,000 per month, also the total amount of applications received has varied very little one month with another.

Our income increases every month and our expense remains stationary. It begins to appear now that by April 1st we will have absorbed our entire initial organization expense and the bank will be on an even keel. After this date, therefore, we ought to begin to build up a surplus account, and when this has reached a satisfactory amount, to begin the payment of dividends.

ALPHA



PUMPING ENGINES

A superior line of engines built up to one standard of quality—the highest—from the 1¾ H. P. to the 18 H. P. size.

Compare the Alpha with any other engine. It is much more carefully made—you can see that at once. Alpha Quality means—longer life, better satisfaction, lowest operating cost, no troubles, better results. The easiest starting most perfectly balanced engine made.

Send for the Catalog.

De Laval Dairy Supply Co.

61 BEALE ST., SAN FRANCISCO.

Big Money In Stump Land



H. G. Hunzicker, of Foster, Wash., pulling a 24-inch fir stump with deep tap roots out of hard ground.

This man made $35 Land Worth $200 an acre Pulling Big stumps by hand

CLEAR your stump land cheaply—no digging, no expense for teams or powder. Your own right arm on the lever of the "K" Stump Puller can rip out any stump that can be pulled with the best inch steel cable. I guarantee it. I refer you to U. S. Government officials. I give highest banking references.



Showing easy lever operation

HAND POWER K Stump Puller

One man with a "K" can outpull 16 horses. Works by leverage—same principle as a jack. 100 lbs. pull on the lever gives a 48-ton pull on the stump. Made of best steel—guaranteed against breakage. Has two speeds—60 ft. per minute for hauling in cable or for small stumps—slow speed for heavy pulls. Works equally well on hillsides or marshes where horses cannot go.

Write me today for special offer and free booklet on Land Clearing.

Walter J. Fitzpatrick
Box 12
182 Fifth St.
San Francisco, Calif.

Weight, without cable, 171 pounds

No Stump Too Big For The K



Turn Waste Into Power

A motor with poor piston rings is like a steaming teakettle—it lets power escape unused. A loss at every stroke of the piston.

Stop this drain—convert your waste into power. Install a full set of

McQUAY-NORRIS LEAK-PROOF PISTON RINGS

Increase Power—Decrease Carbon
Save Gas

The rings with a record of eight years successful performance behind them. Power producers because they create uniform pressure all around the cylinder wall, leaving no place for the power to slip past.

Wherever you are you can get McQuay-Norris LEAK-PROOF Piston Rings to fit any car, truck and tractor. Jobbers and supply houses in over 300 distributing points carry complete stocks of standard sizes and over-sizes, backed by a factory stock of 2,000 unusual sizes. The rings are ready, awaiting your order.

Send for Free Booklet
"To Have and to Hold Power"—a simple, clear explanation of piston rings, their construction and operation.

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McQUAY-NORRIS Superoyl RINGS

A special ring for engines that pump oil.

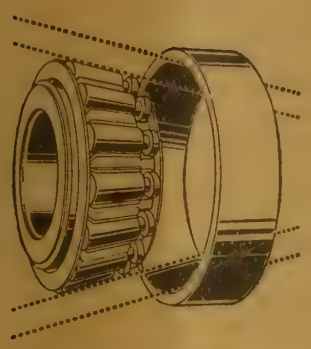
Used in top groove only of pistons to control excess oil, with McQuay-Norris LEAK-PROOF Piston Rings in lower grooves to insure maximum compression and fuel economy.

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Now Best Time to Plant

Should return from $1,000 to $1,500 per acre first year. If interested in Rhubarb or Berries, write for special prices. J. B. WAGNER, Rhubarb and Berry Specialist, Pasadena, California.

TIMKEN TAPER



Dotted lines show how the inside of the "cup" of a Timken Bearing is *tapered* to fit over the *tapered* rollers.

It's in Your Auto

It Ought to be in Your Tractor

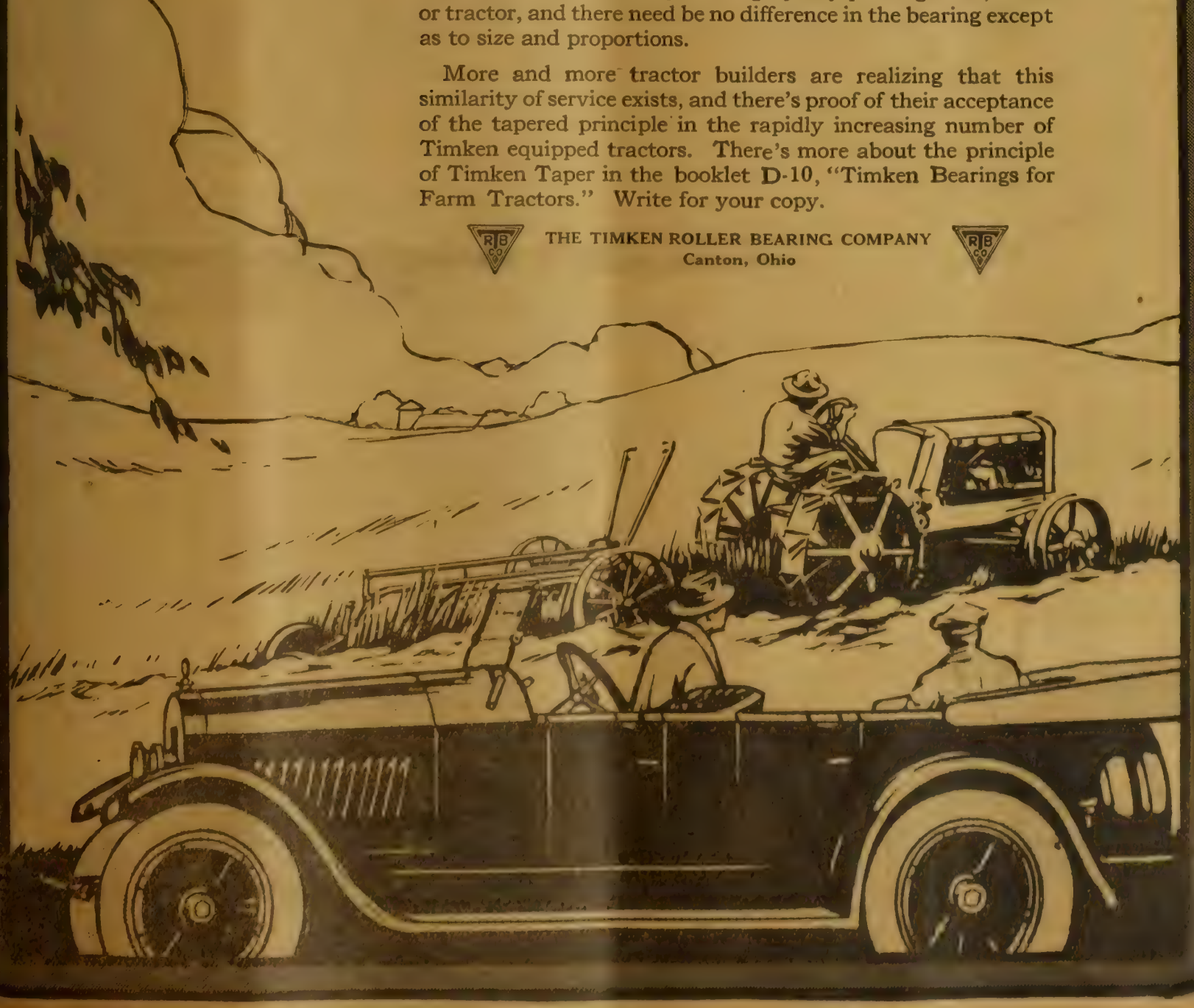
Timken Taper has for years been a principle of motor-car bearings that has enabled them to stand up under the continuous hammer, strain and end thrust that always exists as the car rushes along the road.

The Timken Taper *principle* has been tested out over hundreds of thousands of miles—on all sorts of roads—in nearly every make of passenger car on the market. It has been further proved by tests that only the heaviest trucks could impose.

This same principle of Timken Taper is correct, too, for the tractor. For there is not the slightest difference in the *kind* of load that is put on any bearing by any passenger car, truck or tractor, and there need be no difference in the bearing except as to size and proportions.

More and more tractor builders are realizing that this similarity of service exists, and there's proof of their acceptance of the tapered principle in the rapidly increasing number of Timken equipped tractors. There's more about the principle of Timken Taper in the booklet D-10, "Timken Bearings for Farm Tractors." Write for your copy.

THE TIMKEN ROLLER BEARING COMPANY
Canton, Ohio



Germination Percentage in Seeds

[Written for Pacific Rural Press by A. W. Hincks of C. C. Morse & Co.]

A seed which will not grow is of no use to a planter and of not much use to anybody except for food. Of course, it may be kept in a glass bottle and used to identify its species—and that's about the best place for weed seeds.

Not all seeds have the same percentage of vitality, nor on different years will the percentage be the same for the same species. In some years of exceptional drought the seed may not be properly developed, and again early rains may injure seed waiting to be threshed. All seed should be tested before being planted if any extensive planting is contemplated. In but few articles will the test be 100 per cent, but there are some. In the case of beet seed the test will be from 150 to 200 plants for every 100 seeds planted. This is because each seed is really a little ball containing several distinct seeds. Nor are these extra seedlings an advantage, for they always come up too thick and must be taken out. Much effort has been expended to get a sugar-beet seed which would give only one plant per seed.

Germinating percentages for this year, taken from C. C. Morse & Co.'s tests, show the following: Beans, 96 to 100 with most varieties at 100 per cent; beets, 152 to 240; cabbage, 92; carrots, 70 to 85; corn, 90 to 100; cucumber, 86; lettuce, 75 to 95; watermelon, 70 to 85; onion, 88 to 96; peas, 100; pepper, 86; spinach, 90 to 92; tomato, 70 to 72; alfalfa, 76 to 99; rye grass, 92; timothy, 81. These tests are low in several instances and notably good in several others. On an average they are good.

A question which is often asked is whether the seeds from one year will be good the following season. We will suppose that the seeds have been well kept—that is, that they have been where it is dry and where the air can circulate moderately. In this climate then most seeds will be perfectly good. They should be good about as follows: Parsnips and chervil are the shortest lived and may or may not be good for the next year, also peanuts and spinach; buckwheat, onion and salsify are good for another year, but may not be good after that, and all of the others are good for two years following.

Our company (C. C. Morse & Co.) handle their seed tests in the following way: Twice each year samples are sent to our testing house and are planted in soil and the number of seeds which germinate in 100 are recorded. Seed which is of low vitality we do not hesitate to throw away. It is sold for hog feed, or for bird seed, or even for worm medicine. With a large trade there is not the chance for seed to get old on one's hands which there is with a small trade.

There is a Federal pure seed law applying to imports of agricultural seeds which all farmers get the benefit of, but of which many do not know. Before grass seed which is imported may be sold samples must be sent to Washington and the seed must pass a satisfactory purity and germinating test. If the seed does not come up to standard, it is deported like any other I. W. W. "I Won't Grow" is what it means for seeds.

Oregon has a pure seed law, and Morse's seeds are welcomed into Oregon. Washington State also has a similar law, and there is one proposed at this Legislature for California. The seedsmen are just as desirous for such a law as the farmer. An honest seedsman does an honest business, and he wants protection from unscrupulous competition just as much as the farmer wants protection from defective seed. Let's hope the law passes.

Review of the Potato Situation

[Written for Pacific Rural Press.]

Over two-thirds of the 1918 crop of California potatoes are out of growers' hands now. This may indicate hopefulness for the marketing of those remaining before new potatoes displace them, but the new potato season is none too far off and potatoes already out of growers' hands may yet compete with those still held. Moreover, we had our best opportunity to sell while the northwestern potatoes were embargoed by cold weather. That is largely past now. Acreage-yield is so much higher in Idaho, Colorado, etc., that the remarkably inferior prices now quoted for their crops still pay the growers as much as our growers are getting in proportion to the cost of production per sack. It is reported that several of the biggest Delta potato land holders are losing money this season, having taken over the crops of their tenants in lieu of the rent, which the latter could not pay because their potatoes did not sell. Land rents here are said to be higher than in the regions of greater production per acre.

While prices are only a little over half in other States of what they are in California, the difference is maintained largely because of freight rates and loss in handling and because leading California dealers themselves are heavy producers, so they naturally protect the markets for their own crops.

There seems to be no hope for large exportation of our crops because England raised an excessive tonnage under high prices guaranteed by the Government, and many of these will probably go to continental Europe.

THE HORSE BEAN HARVEST.

To the Editor: How are horse beans harvested?—Subscriber.

[Data furnished by A. J. Garin, Hayward.]

They are picked green to be eaten about like string beans, pod and all, or when too far advanced to eat the pods. They sell at about the price of green peas, and are ready along in May. In June or July they are ready to harvest as dry beans. Since the pods are brittle, the stalks must be handled gently or the beans shatter out. They are cut off underground with a heavy hoe or other implement. The ground is often too hard and dry at harvest for bean cutting sleds. The crop is hauled to a threshing sheet on a cloth-bottomed sled which catches what beans shatter out on the way. Individual crops are so small and the beans so large and variable in shape and size that mechanical threshers are seldom used. Canvas is laid on soft ground to preserve it from bruises and cuts. The bean stalks are put on this and tramped out by unshod horses or flailed out. Then a fanning mill cleans them easily because they are so heavy. Many horse beans are harvested entirely by aphids and many others are weevily when harvested as above.

Timely Garden Work

From no less an authority than the author of "California Garden Flowers" comes the statement that taking California as a whole, February and March are the greatest months of the year for sowing and planting.

In digging in the garden, do not clear before spading—turn under all vegetable refuse to promote richness. Cut out all weak wood in shrubs and shorten the growth to good strong buds. Take cuttings for new rose bushes, put in all common geranium cuttings and subdivide all border plants like violets. Keep the spring flowering bulbs growing well with manure—continue planting gladioli and the like and plant seed for perennials. Watch for plant lice on all plants and dose them with soap sprays or insect powder.

High Power-Low Cost-Easily Controlled

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ORIGINAL KEROSENE TRACTOR



In placing the power rating of the Waterloo Boy Tractor at 12-25 we have made due allowance for the need of reserve power in all farm work. Farmers who own Waterloo Boy Tractors find that its 8-horse pulling power at the draw bar is ordinary and that it pulls a 10-horse load when occasion demands. Its belt power is conservatively rated to operate a 24-inch to 26-inch thresher, but owners of the Waterloo Boy report that they operated a 28-42 thresher successfully at a fuel cost of 15 gallons kerosene in a 10-hour day. Filled 30-foot silo without a hitch or balk.

Because of Waterloo Boy Dependability you can take quick advantage of favorable weather and ground conditions for plowing, harrowing, seeding, harvesting, threshing, silo filling, hay baling, grinding, hauling, etc.

Does Double Duty When Called For On the farm of Col. Samuels, near Dallas, Tex., the Waterloo Boy pulled a 4-disc plow 7 inches deep, cutting 40 inches wide in "Texas Black Wax" and dragged a 5-foot harrow, leaving ground in fine condition, in one operation.

The Waterloo Boy is noted for its success as an economical kerosene burner, for simple, strong construction, for easy control and ready response to every power demand.

Investigate this tractor. Write us for free illustrated catalog which gives construction details and proof of its efficiency in the hands of many farmers.

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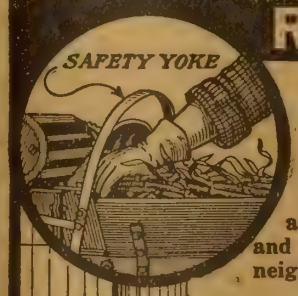
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More Real Agriculture in Schools

[Written for Pacific Rural Press.]

Of the 135 bills introduced into e Legislature two or three men- on agriculture and these only in- dentally. There are reasons for is fact. Farm boys already know e elements of agriculture which e taught in a hundred, more or s, of the high schools of the State. nyhow, they to generally prefer fit themselves for other work in hich there seems more opportunity cause our courses today do not ake farm opportunities apparent ough. City youth, however, are ore enthusiastic in enrolling in rricultural courses, and perhaps lf of them stick to the end. eedy, disreputable school gardens roughout California proclaim se- ous lack of interest in present urses which we believe could be medied.

Omission of agricultural provis- ns in the bills now before the gislature is also partly due to the istence of the Federal Govern- ent's Smith-Hughes Act, provis- ns of which have been accepted the State and by many school stricts, whereby all of these agen- s co-operate in supplying agricul- ral instructors and courses in our blic schools.

That there is great need for ade- uate teaching of agriculture to ys and home work to girls is not sputed. City folks need this to prove their outlook on the beau- s around them. Country folks ed to have city folks get at least glimpse at the complexities of rriculture in order to make them ore sympathetic and reasonable in eir efforts to regulate farmers. ountry folks need the education emselves in their own lines of siness, as amply shown by boys' d girls' agricultural club work in is State. The boys and girls un- r right instructions have gener- ly shown their dads some things hich the life work of the latter d not previously revealed to them. There is no doubt that farming generally done at a worse loss of fficiency than the poorest gas en- ne you could buy on the market day. That loss of efficiency, chiefly e to lack of fundamental knowl- dge and to lack of business-like anning, is putting many farmers the discard and is responsible for e apparent lack of opportunity farming.

REAL BUSINESS FARMING

Wherever selling prices get close costs of production in any busi- ess, the man's living and profits ust be maintained by greater vol- me of business or by reducing costs productoin or by raising the sell- g prices.

By proper action, farmers who ave long been ground between the illstones, can improve their living nd profits in all three ways. The ird object is accomplished by or- anization, about which we have ng preached. The second and first re to be worked out by more head ork based on better knowledge of ndamentals of fertility, irriga- on, plant growth, and animal nu- rition and breeding. How to plant adishes and flowers, instead of be- g very prominent features of agri- ultural education, are really only esirable as little illustrations of ndamental hidden facts of plant rowth not apparent to farm chil- ren at home. The compound mi- roscope and chemical apparatus ould be far more interesting to ountry boys than the elementary uff they usually get in a school gricultural course.

The Smith-Hughes co-operative ppropriations should yield such in- truction and probably will. Tem- leton, San Luis Obispo county, is ne district going ahead in this line s we understand.

One of the bills in our Legisla- ure which apparently deserves full upport is the one introduced by Assemblyman Harry Polsley of Red Bluff. It provides for agricultural nstruction to be required at least ne hour per week in seventh and ighth grades; and if ground for ome work for each pupil is not pro- vided the school authorities must furnish it. Such home work or school practice on the soil must be counted as part of the school work required before graduation.

The intense interest and great value disclosed by boys' and girls' agricultural club work among the farm youth is evidence that real advanced instruction, coupled with animals and land to work it out on, still would have a place in our schools which would not languish for lack of students.

It is reported that three-fourths of the Merced barley crop has been sold.

"My WADE Saws Four Cords an Hour"



"The Wade is certainly the farmer's friend. I have cut 1600 cords of yellow fir wood with it, and it's as good as the day I bought it."—Dan Ross, Corbett, Oregon.

Why break your back sawing wood by hand, when the powerful little Wade Portable Gasoline Drag Saw will *outsaw 10 men at one-tenth the cost!* Light, simple, economical. Cuts wood of any size. Averages 8 cords to a gallon of gasoline. Thousands of Wades now in use. When not sawing wood, the 4 h. p. engine will operate other light machinery.

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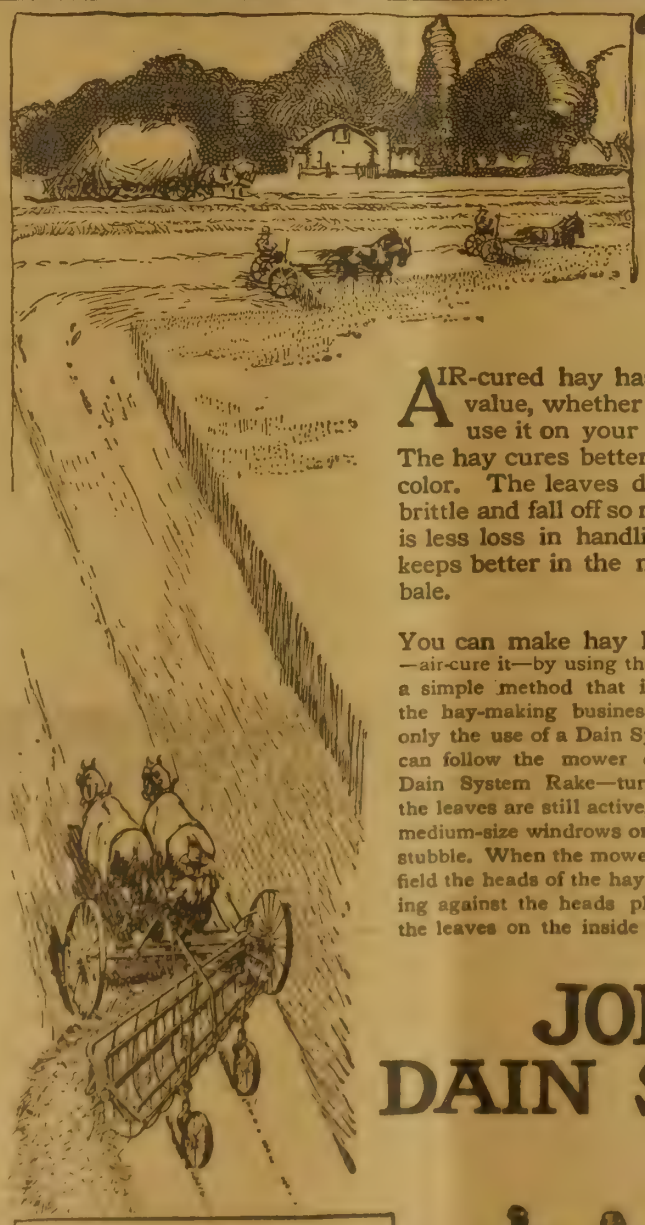
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"Nature's Way" of Air-Curing Hay The Dain System

AIR-cured hay has the greatest value, whether you sell it or use it on your farm for feed. The hay cures better and holds its color. The leaves do not become brittle and fall off so rapidly. There is less loss in handling. The hay keeps better in the mow, stack or bale.

You can make hay Nature's Way—air-cure it—by using the Dain System—a simple method that is revolutionizing the hay-making business. This requires only the use of a Dain System Rake. You can follow the mower closely with the Dain System Rake—turn the hay while the leaves are still active, delivering it in medium-size windrows on clean, dried-out stubble. When the mower passes over the field the heads of the hay fall back. Raking against the heads places the bulk of the leaves on the inside where they cannot sun-scorch, and the stems outside, insuring thorough evaporation of moisture.

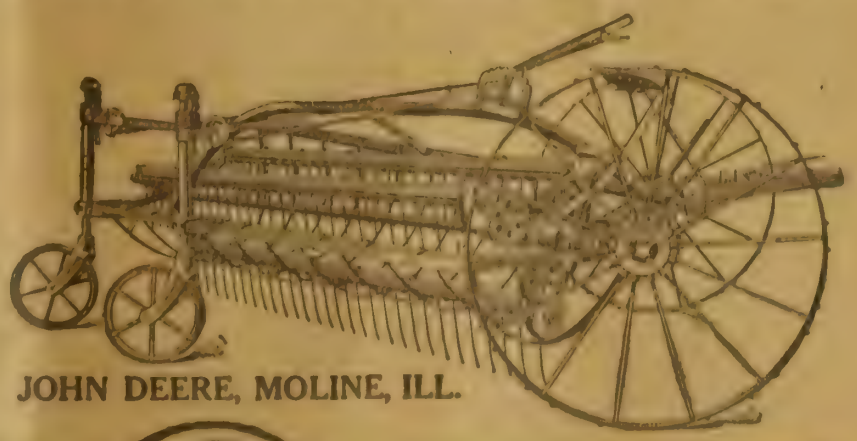
By adjusting the angle of the teeth, the density of the windrow is controlled, allowing free circulation of air. AND THE DAIN SYSTEM RAKE HAS THE WIDEST RANGE OF TOOTH ADJUSTMENT.

It is an easy rake to operate. You can put machine in and out of gear, change the angle of the teeth and raise or lower the raking head with levers that are easily accessible from the seat.

The Dain System Rake has unusual capacity. This is made possible by the high steel arch and an exclusive feature—the inclined frame, which is highest at the point where the windrow is largest.

The Dain System Rake is enabling thousands of farmers to make hay that grades high. Get this extra profit out of your hay land by employing the Dain System of air-curing hay.

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GET QUALITY AND SERVICE — JOHN DEERE DEALERS GIVE BOTH

State Has 18 Kinds of Ground Squirrels

[Written for Pacific Rural Press.]

Eighteen kinds of ground squirrels known to inhabit California are subjected to critical inspection from every viewpoint that would seem to offer assistanco in controlling them in a special number of the Monthly Bulletin, issued by the State Commission of Horticulture for December. The article, entitled "Natural History of the Ground Squirrels of California," is prepared by Dr. Joseph Grinnell, director of the Museum of Vertebrate Zoology of the University of California, and Joseph Dixon, economic mammalogist on the staff of this institution. The bulletin is illustrated with five full-page colored plates drawn by Louis Agassiz Fuertes, America's leading bird and mammal artist. There are 30 figures in the text, which illustrate and emphasize many of the points set forth in the discussion.

METHODS OF CONTROL.

It is the purpose of the publication to supply full information about the life histories of these animals so that the facts may be available to all who are concerned with the development and application of methods of control.

As to the plan of treatment, each species of ground squirrel is taken up separately and the following points with regard to each dealt with: Scientific names, local names, distribution, field characters, mannerisms, voice, tracks, workings, burrows, nests, sanitation, hibernation, breeding, enemies, food, feeding habits, relative abundance, population per acre and square mile, and economic status.

FACTS ABOUT SQUIRREL CONTROL.

The following facts are emphasized as being of special importance from the viewpoint of ranchers and all others who are concerned with the problem of ground squirrel control:

1. Of the 18 kinds of ground squirrels which occur in the State, only four are of special economic importance. These are the California (or Beechey), the Oregon, the Fisher, and the Douglas ground squirrels, here named in estimated order of importance.

2. The Oregon ground squirrel, which inhabits parts of Siskiyou, Modoc and Lassen counties, though only half the size of the California ground squirrel, occurs in much greater numbers per acre, and since it is a grass eater rather than a grain eater, it comes into sharp competition with cattle interests. These squirrels hibernate for several months each year and on account of this and their grass eating habits cannot be effectively controlled by the methods which have proven effective with the "digger" squirrels (California, Fisher and Douglas squirrels).

3. The California ground squirrel is the species most widely distributed and occurring in greatest aggregate numbers, there being an estimated population of one squirrel per acre throughout its range, or a total of 32,000,000 squirrels of this one species in the State.

4. The Douglas, Fisher and California ground squirrels, all belonging to the "digger squirrel" tribe, average 1¼ to 1½ pounds in weight and are easily able to consume ½ ounce of dry grain or 2 ounces of green forage at a meal and hence, when present in numbers, are able to inflict serious loss.

5. Ground squirrels have strong food preferences, although their diet varies greatly from place to place. Any successful method of poisoning must necessitate the use of a bait acceptable to the squirrel. In several places squirrels have been found to pass up barley altogether for the burs of bur clover, and this suggests a likely way of improving poisoning methods locally.

6. There is evidence that a greater or less proportion of the digger squirrel population hibernates each winter. The old breeding squirrels are the ones that hibernate; the young of the year are active all winter. These hibernating squirrels are not reached by poisoned grain, and it is doubtful if gas would be effective under these conditions.

7. The unknown length and irregular course of the burrow is a frequent cause of failure in gassing ground squirrels.

8. The California ground squirrel reproduces rapidly. The average number in a litter is 7.2, with 4 and 11 as extremes. One litter per year is the rule.

9. These animals are very successful in the battle for existence. They are strong on the "come back" and prosper just as soon as any natural check is removed.

10. Squirrels, like scale bugs or weeds, must be watched continually and dealt with regularly from year to year.

11. Natural rather than political boundaries should be hewn to in eradication campaigns. A forest ranger does not follow township, county or property lines in constructing fire breaks. He studies the natural lay of the land and fights fire accordingly.

12. "Squirrel weeks" should be fixed in accordance with the breeding habits of the squirrels, their food preferences, bait available, and probable weather conditions.

CALIFORNIAN TO HEAD FARM MANAGEMENT.

The announcement is made that Prof. R. L. Adams of the University has been appointed chief of the office of farm management, United States Department of Agriculture. After occupying successfully several important administrative positions in connection with California agricultural enterprises and gaining much experience and wisdom therefrom, Prof. Adams was made associate professor of agronomy at the University and made an excellent record, both in instruction and investigation in farm management. During the war he has lead the farm labor investigations and conference for the State Council of Defense.

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For Pumping

Why purchase an engine for pumping only. CUSHMAN engines run smoothly, steadily, almost noiselessly. They use gasoline or distillate, with guaranteed economy. High speed, with throttle governor and perfect balance, gives smooth, continuous flow of power and insures uniform speed, so that the pump or machines gives out its fullest capacity.

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When pumping is over use your engine for other work. Being light, compact and with wide range of speed, it is easily and quickly adapted to any work. All sizes furnished with friction clutch pulley, Schebler carburetor, throttling governor, forced water circulation, battery or magneto ignition.

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Ever since the first days of rubber-tired vehicles, farmers of America have used Firestone Tires.

The quality which long ago gave Firestone Tires the lead, means more than ever in truck service.

With an increasing number of trucks going into Farm Service, users have the assurance of long mileage, protection to trucks, and protection to loads in equipping with Firestone Tires.

In the wide range of Firestone types, solid and pneumatic, there are tires exactly suited to *your* trucks and *your* roads. See the Firestone dealer near you.

FIRESTONE TIRE & RUBBER CO.
Firestone Park, Akron, Ohio

Branches and Dealers Everywhere

The Preservation of the Water Tank

To the Editor: In answer to "Worth While to Dope a Tank": No compound containing carbon in any form should be used on galvanized iron or tin. Whenever water or dew forms on such a metal surface and carbon is present, then electrolytic action is started, resulting in the dissolving of the tin or zinc coatings. Soon the iron underneath becomes exposed and then rusting takes place. If "J P." has already coated his tank, it will pay him to wash off the asphaltum with gasoline and clean it thoroughly. There is only one paint which is effective and durable on such metal surfaces and that is "red lead" mixed with linseed oil. Manufacturers of sheet metal often send warnings to their customers not to use carbonaceous paints. The theory being, of course, that in the presence of water, which is never perfectly pure, you are making a battery, the zinc forming one pole and the carbon the other pole of the battery.

ASPHALT GOOD FOR WOOD.

While on the tank subject, let me suggest a good and inexpensive way to repair old wooden tanks that are beginning to leak and shrink badly. Take some asphalt-saturated roofing felt, such as is used for the so-called tar and gravel roofs. Dry out tank, coat it with melted asphaltum and put on a layer of this saturated felt, give the felt a coat of melted asphaltum and put on another layer of felt. Repeat until you have at least four layers, and finish the last layer with a smooth, heavy coat of melted asphaltum. When the third layer of felt has been put on drive shingle nails or large-head roofing nails about six inches apart all over the surface. Put the felt on the hot asphaltum immediately so as to cement the layers to the tank and to themselves. Only coat the width of a sheet at a time, as the melted asphaltum cools quickly. A tank thus treated, if covered so the rays of the sun do not strike the asphaltum or the felt, will last a lifetime. The asphaltum is insoluble in water, will not make the water taste or discolor it and is itself quite lasting, as will be noted when you remember that it was in ordinary asphaltum that the bones of the saber-toothed tiger were found.

If your staves shrink badly, you will have to nail laths or battens on the outside of the tank over the cracks, as the direct rays of the sun will eventually disintegrate the asphaltum. If you have a silo that leaks air and spoils the silage, try putting on this roofing felt similarly. It will make it air and water tight and as far as present knowledge goes the silage liquids will not affect the asphaltum.—A. W. Smith, Oakland.

ASPHALT INSIDE GALVANIZED TANK.

To the Editor: Tell "J. P., Pleasant Grove," to coat his galvanized water tank on the inside with refined asphaltum. It will last for years if it doesn't get warm enough to run off. I know of leaky tanks that have been in use over twenty years since the asphaltum was applied. I think it is the only absolute waterproof mixture in existence. They use it to back cement walls in basements below water level in San Francisco and other cities.—A. V. Gibson, Chico.

TANK ASPHALTED FIFTEEN YEARS AGO.

To the Editor: If tank has no holes, asphaltum is a good success. I have treated several with hot asphalt on the inside only and where the tank had not leaked before I had fine results. But if the tank is leaking in several places and very rusty inside, the best plan is to throw it away and forget your troubles. If a good coat is applied, it will save the tank for any number of years. I have one that I treated fifteen years ago and it looks like it is good for that much more. But the asphalt was applied when new, which is the most business-like way after all.—R. Lauppe, Antelope, Sacramento county.

ASPHALT AND PLUGS FIXED OLD TANK.

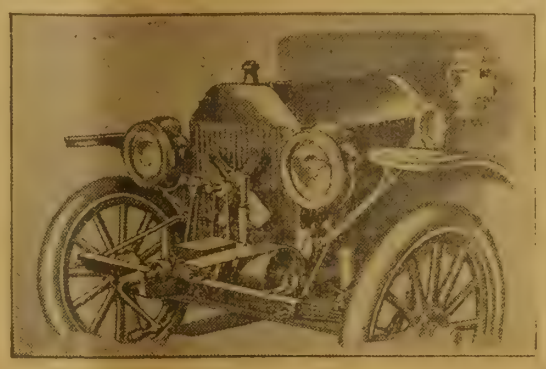
To the Editor: I have a 3000-gallon galvanized tank. In seven years the water ate the southwest side full of holes. That is where the hot sun hit it. I built a fire inside the tank, heated my asphalt smoking hot and painted it all over three years ago. It is now as good as new, except where the holes are. I sharpen a plug and drive it into the hole. Some hot days when water is low the sun warms the asphalt and when pressure comes on again a plug may shoot out. All I need to do is to drive another one in. I never would put up another tank without asphalt inside. Asphalt outside would make no difference if the galvanizing is not off.—J. W. Richman, Gilroy.

NEW MILKING MACHINE.

Milking machines new to most Californians are the Universal, being introduced by the California Hydraulic Engineering and Supply Co. Features of these machines are the simple durable pulsator adjustable for various speeds, the solid aluminum bucket, and the sanitary teat cups, which are guaranteed for a full year against defective material or workmanship.

Your Ford

Made into a 12-Horse Portable Farm Engine in a few minutes' time. Has an auxiliary cooling fan, is connected direct to engine with clutch pulley in front, making it easy to line up anywhere with the machine you want to drive.



The Perfection Belt Power Attachment

Saws wood, grinds feed, fills silos, husks corn, and a thousand other things. Better and more economical than a gasoline engine.

SPECIAL PRICE for a limited time only and a chance to make a little extra money besides. Ask us about it.

THE ASHLAND PRODUCTS CO., 50 E. Eighth St. Ashland, O.

Water

WHERE and WHEN you want it the year 'round. For house, barn, field, any place. BORE YOUR OWN WELL with our time-tested

Standard Well-Boring Outfit

Easily operated by hand. Bores wells 8 to 16 in. dia., up to 100 ft. deep. One man bored 48-ft. well in 5 hours. Another bored 5 wells averaging 75 ft. each and wrote "its a humdinger."

BORES 100 ft. WELLS by hand

Thousands used during war by U. S. and English Governments.

ONE DAY'S WORK PAYS FOR OUTFIT

Easy to get 50 cents to $2 per ft. —make $20 to $30 per day boring wells for neighbors. One man bored 47 wells — another 75 and another bored 35. Satisfied users in 46 states. Every claim *guaranteed* and *proved*. Write now, TODAY, for full information.

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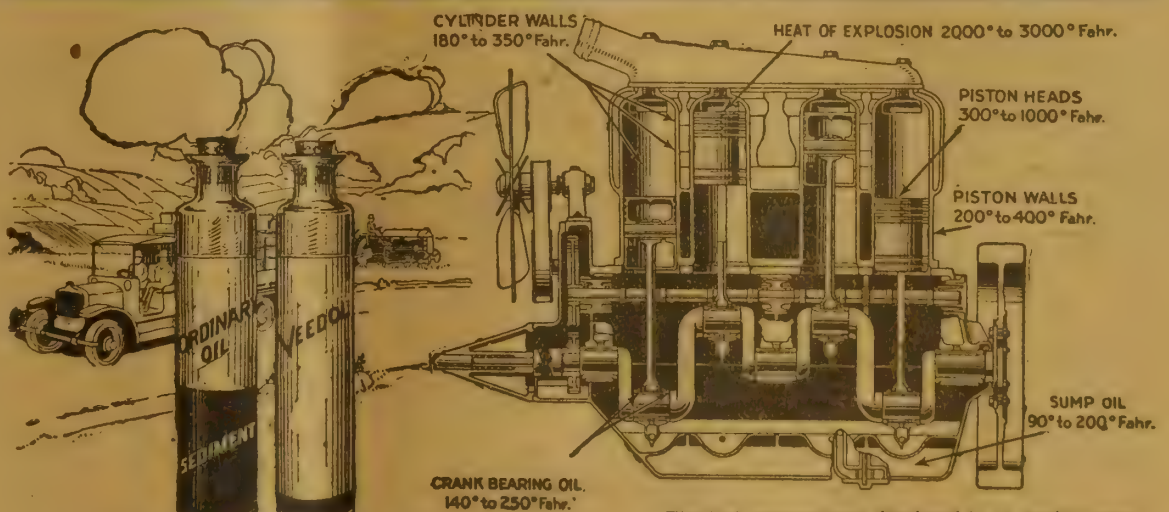
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Sizes 2 to 30 H-P.—Select Your Own Terms—Direct-from-Factory prices. Write your own order—Save $15 to $200. Prompt Shipment. Big new catalog, "How to Judge Engines" FREE—by return mail, Postpaid.

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Money Back if not satisfied on my New 90 Day Engine Offer



Ordinary oil after use *Veedol after use*
Showing sediment formed after 500 miles of running

The high temperatures developed in an engine cause inferior oil to form large quantities of sediment. This is why ordinary oil causes 90% of engine trouble.

Will the engine in your car run 50,000 miles?

NINE out of ten cars go to the scrap heap long before they reach the limit of usefulness which the maker built into them. These are the cars which have not been properly lubricated.

Experts say that an automobile engine, even in the least expensive cars, should last for 50,000 miles without excessive repair costs. With proper care and attention, it will give this length of service. How to get such life from your engine and keep it running at minimum cost for upkeep, is mainly a problem of lubrication.

Ordinary oil breaks down

Under the intense heat of the engine—200° F. to 1000° F. —ordinary oil breaks down quickly, forming a large proportion of its bulk in black sediment, which has *no lubricating value.*

Sediment crowds out the good oil on the metal-to-metal surfaces and prevents it from efficiently lubricating the fast moving parts. Loose bearings are almost always the result of using poor oil. Engine knocks, broken connecting rods, slapping pistons are an inevitable result.

After years of experimentation, Veedol engineers evolved a new method of refining by which a lubricant is produced which resists heat. This —the famous Faulkner process—is used exclusively for the production of Veedol, the lubricant that resists heat.

How Veedol, the scientific lubricant, reduces the formation of sediment by 86% is shown in the two bottles illustrated above.

Buy Veedol today

Your dealer has Veedol or can get it for you. If he cannot supply you, write us for the name of the nearest Veedol dealer. Enclose 10c for copy of the 100-page Veedol book which describes internal combustion engines and their lubrication. It will save you many dollars and help you to keep your car running at minimum cost.

TIDE WATER OIL COMPANY
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Branches or distributors in all principal cities in the United States and Canada





Get Big Crops With Less Effort

The long levers on Disc Harrows make gang shifting easy. Not only is handling easier but the work is better. The E-B Disc Harrow is quickly and easily adjusted and has great flexibility and increased penetration. This insures thorough pulverization of the soil, better seed bed, larger yield.

E-B Disc Harrows

The E-B Disc Harrow is a modern necessity for the man who wants big results and all the crop profits he's entitled to. Powerful and dependable, this disc harrow will give you years of satisfactory service. Have your dealer give you full details of this harrow.

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WALLACE CORCORAN COMPANY, Portland, Ore.
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THE E-B LINE

THE H. C. SHAW COMPANY, STOCKTON, CALIFORNIA
Distributors for
OSBORNE HARVESTING MACHINERY
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E-B TILLAGE IMPLEMENTS

We Manufacture Levelers for Any Power From 6 Horses to a 75 H. P. Tractor

A Schmeiser Leveler
of the "Giant" Type
WILL WORK WONDERS ON YOUR FARM



Moving immense amounts of dirt daily, and working on ground too tough for horses and Fresnos to tackle, SCHMEISER POWER LAND LEVELERS are now being used with utmost success by a great many ranchers, large and small—also by contractors—saving their owners time, labor and money.

WE SEND THEM ON THREE DAYS' TRIAL.

So extremely simple, a child could operate one, as a simple twist of the wrist raises and lowers the bucket or holds it stationary, as the case may require.

YOU SHOULD
send for our latest catalog, J-600, which is full of interesting information on Labor Saving Devices and machines for moving the earth.

Schmeiser Manufacturing Co.
12 Mechanic Street DAVIS, CAL.

Manufacturers of
Sure Pop Almond Huller and Separator, 3 sizes; McGarvin Fruit and Olive Graders, any size; Schandoney & Harrington Equalizing Hitches, any size; Diamond Special Harrows, Baker Clips, Clevises; and Schmeiser Portable Automatic Hay Derricks. We sell the Martin Ditcher and Grader.

Mechanical Power on the Farm

Users of tractors, engines, pumping plants, motor trucks, automobiles, electric motors, and other mechanical farm power are invited to make this department an exchange of their experiences and troubles.

PNEUMATIC-TIRED TRUCKS.

A 44-12-inch tire is an armful over three feet around, and an uncommon sight, but that is the size the Goodyear people are making for five-ton motor trucks. Visitors to the Pacific Automobile Show were interested in several makes of motor trucks equipped with air on the wheels. Most of these were of the smaller sizes. Pneumatic tires for trucks cost more than solid tires, but, as pointed out by W. R. Hughes of the Pacific Nash Motor Co., they outlast several sets of solid tires and really cost but little more by the time they are worn out. Advantages are that they do not shake the engine, frame, and transmission as solid tires do; they give far better traction and thus permit the load to be distributed more evenly on the four wheels, which of itself reduces the power used, especially on bad roads. They give seven or eight miles per hour greater truck speed with the same engine speed and do not bounce the truck so much. A two-ton Nash truck fitted with 40x8 tires behind and smaller ones in front costs $300 extra. The tires themselves cost $195 each, allowance being made for the solid tires when pneumatics are put on. Several 40x8-inch tires have already run 18,000 miles, according to Mr. Hughes, and they have saved a lot of gas and upkeep of the trucks.

Other trucks at the Show with pneumatic tires were Grants, Oldsmobiles, and Reos.

STARTING COLD ENGINES.

USE PRESTO GAS.

To the Editor: There is only one way to start a cold gas engine. Put one end of a small hose onto a Presto tank such as is used for auto lights. Stick the other end into the air intake of the carbureter or the manifold and turn on about as much presto gas as you would for auto lights. You will have no trouble starting if you have a good spark and fair compression.—Thomas Wilson, Santa Ana.

QUICKLIME BETTER THAN FLAME.

To the Editor: I have had ten years' experience operating all of the leading tractors in California under all conditions. I never considered James Koeber's system much ahead of the flatiron stunt which he criticises in your issue of February 8. This thing of cutting your lubrication with kerosene or distillate to make cranking easy is not good. You simply lose your compression and then you are up against it proper. To use an open flame or torch, as he suggests, is crude as well as extremely dangerous. I don't care how careful you might be, any flame used in the proximity of gas is taking a big risk.

Now, I am ready to show my hand. Provided you are handy at soldering, it will cost you about ten cents to "break in." Get some sheet metal (copper is best). Cut a strip about four inches wide by eight inches long. This varies with size of manifold to be fitted. Cut and bend this to form a receptacle fitting snugly over the manifold, large enough to hold some quicklime. A little water will warm things up in three minutes and you can warm up the priming gas, too. I have never known this way to fail. On the coldest morning the third or fourth flop is enough.—F. J. Austin, Willows.

VERSATILE ELECTRIC MOTOR.

A 7½-horsepower electric motor performs many operations for J. H. Guill Jr. of Butte county. It is set on skids, which may slide sidewise several inches to change the belt from one machine to another. A three-inch centrifugal pump lifts water into a tank for domestic and livestock use or can be cut directly into the garden for irrigation. By changing the belt to a five-inch centrifugal, water is pumped for farm irrigation.

In the opposite direction a belt is run through a hole in the pump house to a circular wood saw outside. The saw is easily removable, its frame being simply set over four permanent stakes. The silo stands close by and the silage cutter is set alongside in season for the motor to run.

MORE PIPE, MORE POWER.

To the Editor: I have a running stream 400 feet from point where I want to set my 2-horsepower Fairbanks morse engine and three-inch centrifugal pump. Can I run a 1¼-inch pipe from pump to stream—which has a 12-foot lift to top of bank? Then I want to pump the water 30 feet high to a tank.—J. A. S., Wells, Ore.

The general rating of centrifugal pumps would give yours about 225 gallons per minute or more. The friction of that amount of water in 400 feet of 1¼-inch pipe is greater than the tables we have at hand will show. If you used 1½-inch pipe, the friction would equal a lift of 1800 feet. If you used a three-inch pipe, the friction alone would equal a lift of about 60 feet, which, added to the real lift and the push, would give you a total head of 102 feet and would require 10 horsepower to deliver that amount of water into the tank. To get full efficiency out of your pump while running, and if you do not need a great deal of water, you might put your pump and tank close to the creek, lifting the water 42 feet there, which would require about 4½ or 5 horsepower. Then let the water gravitate through whatever sized pipe you wish to use. With your 1¼-inch pipe 400 feet long and with 30 feet of pressure from the tank, you would get about 15 or 20 gallons per minute at the far end while the pipe is clean.

RETAIL COLD STORAGE FOR FARMERS' SUPPLIES.

(Continued from first page)

of produce might develop, it could be removed by truck to a neighboring cold storage plant. Such local plants, including the equipment for ice making, need not cost over $25,000 for most communities. But they must be made sanitary. The rooms ought to be of tiling and the boxes of galvanized iron for easy cleaning and non-absorption of odors.

Mr. Eames makes everybody welcome to freely inspect the entire plant at any time. He has visitors from all over California and one man made a trip from Chicago to see the outfit. Letters have been received from all over the United States and some from Canada. Now, why shouldn't farmers and townspeople join to raise capital and enjoy everywhere the advantages Butte county people have in their Chico plant?

ENGINE HEATS WATER FOR DAIRY.

[Written for Pacific Rural Press by Charles Barnum.]

Quite a mechanical genius is E. C. Graham of Fresno county, who lets his gas engine heat water to wash the cream separator and milk cans. Using a double unit Empire milking machine on 30 cows, he has installed a water reservoir and circulation pipes to the milking machine engine. All the time he milks, the water is getting hot. When milking is finished, he shifts the belt to start the separator. While this is running, he draws off the hot water and washes the cans, milking machines, tubes, and all. By the time the separator runs down, enough more water is heated to use on it. Seems a good way to utilize the heat usually lost from a gas engine.



BOTH ARE GOODYEAR TUBES

GOODYEAR'S ability to build tubes that last long and hold air unfailingly is dramatically related to the fact that Goodyear is also a successful manufacturer of balloons and dirigibles.

There is sound basis for such assertion. Both tubes and gas bags present problems of inflation.

For nine years, Goodyear has pioneered the furthering of aeronautics in this country.

In constructing these giant gas bags the problem of inflation is exceedingly complex.

For the gas of the balloon is more elusive than air; harder to hold within rubber.

But it has been conclusively established that stout, light fabric, impregnated with rubber and *built up layer-upon-layer*, forms the most practical container for this elusive gas.

Is it not quite logical, therefore, that this same *built-up* principle of construction should be successfully applied to tubes whose sole function it is to hold air?

Goodyear Heavy Tourist Tubes are built on this principle and their valve-patch is *vulcanized-in*. Built up as they are with several plies of pure gum, they are the best air containers we know of.

There are thousands of passenger-car owners who use Heavy Tourist Tubes exclusively, gladly paying the slightly added cost in the firm belief that they thus protect and get more mileage from their tires.

More Goodyear Tubes are used than any other kind.

The Goodyear Tire & Rubber Co., Akron, Ohio

GOODYEAR

AKRON

Settlers Attracted by Pumps

Subdivision of large estates has become so universally recognized as a highly desirable activity from the standpoint of the State that many laws are on the statutes and others are in the Legislature to promote such subdivision. These take the forms of surtaxes on uncultivated land, permission for counties to subdivide large tracts by right of eminent domain, State land settlement, and supervision of private land settlement.

In all of these subdivisions it is taken for granted that irrigation must be developed before small farms may be sold. While gravity water is generally cheaper and has some other advantages, many areas cannot be economically irrigated that way. Many settlers prefer pumping systems at greater cost because the water is available the instant it is needed, there is seldom any worry about its playing out late in the summer, and it does not distribute weed seeds or disease germs from other people's land. A beautiful, gently rolling, oak-studded area of 15,000 acres, about four miles wide, along the Sacramento river, near Orland, in Glenn county, is known as the Capay Rancho, being part of a much larger Spanish grant to a Mr. Capay in the early days. Grain has been practically the only crop, and until a year ago there was scarcely a house on it except the headquarters. A year ago last April the first piece was sold from this ranch and there are now about 100 families settled on a landscape as beautiful as one would look at. They are busy planting grain, orchards, and alfalfa.

A PUMP ON EVERY EIGHTY.

Pump water made this settlement possible, and every 80 acres has its own pump. Probably the biggest order ever undertaken by the Layne & Bowler Corporation was to furnish pumps and equipment for this subdivision. One hundred and eight of their deep-well turbines are already discharging water whenever it is needed, and others are being installed as the wells are drilled. All but two or three of these wells are 12 inches in diameter of casing and are throwing as much as 1000 gallons per minute, being run by electric motors. The entire installations are put in by the California Farms Co., which is selling the land, and are guaranteed to throw at least 600 gallons per minute for each eighty acres. Only six or seven of the wells have failed to give the required flow, and these were supplemented by drilling additional holes. Last season, when gravity systems were short all over the State, it is claimed that water never failed here.

As told us by Mr. Moore, one of the well drillers, the depth runs from 150 to 400 feet generally, going through several strata of gravel and clay, and the best yielding wells getting their water chiefly from a blue sandstone. Water rises within seven to forty-five feet of the surface. The entire project is being equipped with cement irrigation pipe. Settlers being mostly new on the project this year, are raising grain more than anything else; but they will soon learn that with dependable water and a fixed minimum charge for electricity they can make much more money by growing crops which produce more value per acre.

TRACTORS PROVING VALUE.

Meanwhile a demonstration in grain growing by power farming has been carried out on the unsold portion of the ranch. Two tractors were used, deeper plowing and better seedbed preparation were accomplished, and we are told that over 20 sacks of grain per acre were raised on this old, old grain land in each of two successive seasons just past, when Uncle Sam needed the grain. Not slow to see the point, several settlers have already bought smaller tractors and were using them when the writer drove over the ranch recently.

TRACTOR SCRAPER FILLED DITCH.

It was only after failing with eight horses and a 12-foot scraper to make satisfactory progress in filling a long slough that L. R. Bassman of Lovelock, Nevada, allowed a dealer to try out a 12-25 tractor on the same scraper. It did more work in the first five hours than the eight horses had done on the two preceding days. The slough or ditch, as described by Percy A. Chappuis, started about the middle of one end of a 20-acre field and ran in a very crooked line to a corner at the opposite end. It was ten feet deep in places, with very steep banks and a wet bottom, while in other places it was shallow and dry. Mr. Bassman estimated that it would take six inches average from the entire field to fill the slough, but that didn't worry him because the good soil is deep. He bought the tractor and used it at odd times to complete the job.

TRUCKS HELP SELL TRACTORS.

Motor trucks occupy an important place in the sale of Beeman Garden Tractors. The latter are loaded up and hauled to the gardens or ranches of people who inquire about them. There they are demonstrated; and if the work to be done is suitable for this machine, which delivers 1¼ horsepower and runs either astride the rows or between them, a sale is usually made. Almost every conceivable sort of cultivator and even small plows are used with this smallest commercial tractor on the California market.

DEMONSTRATION OF TRACTORS IN THE SAN JOAQUIN.

San Joaquin Valley tractor and agricultural implement dealers have arranged for a great tractor demonstration to be held on the Mordecai ranch in Madera county, midway between the cities of Fresno and Madera, from April 24 to 29, inclusive. The demonstration will be conducted by the Central California Tractor and Implement Dealers' Association and arrangements have been made to bring to this show practically every known make of tractor.

After the demonstration has been concluded, those tractors will feature the California Raisin Day celebration in Fresno on April 30 by hauling the floats in the big parade. Those who visit this show will not only see the machines lined up on display but will see them in practical farm work.

The Common Sense tractor, shown at the Davis and Los Angeles demonstrations, has been withdrawn from Pacific Coast territory.

THE BEST RUBBER BELT EVER MADE

TEST SPECIAL

Special booklet, mailed free upon application, describing construction of Test Special Belt. Sample also sent. Tell us your belt troubles.

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519 Mission Street, San Francisco.

Ditching Made Easy

With this Simplex Ditcher

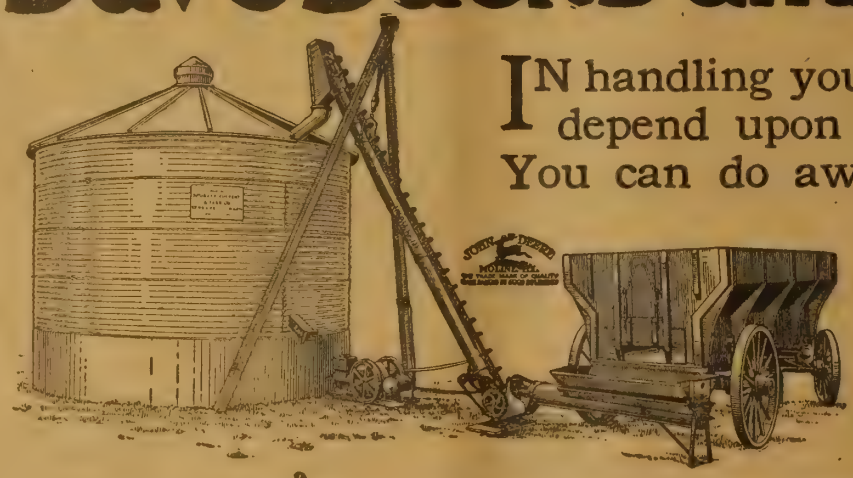
Fine For Irrigation. Can't be beat for cutting laterals and cleaning out old ditches. Works in any soil Digs V-shaped ditch down to 4 ft. Practically all steel. Reversible. Equal to 100 men. Pays for itself in a day. Also grades roads. Fills gullies. Back fills and levels ground. Write for Ditching book and money back guaranty

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THE H. C. SHAW CO., Stockton
B. HAYMAN CO., Los Angeles
Distributors.

Save Sacks and Backs



IN handling your grain crop, don't depend upon expensive sacks. You can do away with this big yearly expense item for all time to come. Make the change now. Handle your grain in bulk with a

JOHN DEERE
TUBULAR STEEL ELEVATOR



Illustrating the Raising Receiving Hopper



Elevator in position for elevating from the tank into the wagon

The saving you can effect in sacks, time and labor, will soon pay for this equipment. The John Deere Elevator is not a temporary means of meeting the present shortage of sacks—it is permanent equipment that will continue to save you money for years to come.

Ease of Operation—Low Operating Cost—Years of Satisfactory Service Absolutely Assured

It handles all small grains—wheat, oats, rye, barley, shelled corn, flax, rice. It has big capacity—it elevates 15 to 20 bushels per minute—handles the biggest load in six to ten minutes time.

It elevates from the wagon into tanks, granaries or cars. It elevates from tanks or storage bins into wagons. Operated by a team of horses or 2½ H. P. gas engine or larger.

The hopper can be folded up out of the way when the load is driven up. Backing the wagon is unnecessary. Hopper is provided with an adjustable feed—you can quickly adapt the capacity of the elevator to the power you apply.

Built of steel almost entirely, it will not warp or decay. The elevator proper is made of $\frac{3}{16}$ in. steel well-casing, 6¼ in. in diameter. It will never wear out. Portable outfit furnished for large ranches where quick transportation is required.

Because of the many years it will serve you and its extremely low maintenance cost, the John Deere Tubular Pony Elevator is decidely the most economical elevator to purchase. It is a real solution of your grain handling problem. Buy now, while your dealer is in position to supply your needs. Save money by getting the best—the John Deere. Elevators carried in stock by John Deere Houses at Portland, Spokane, Seattle, Boise and San Francisco.

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And get literature fully illustrating and describing this labor-saving, money-making elevator, also big 156 page catalog "Better farm implements and how to use them"—a real farm text book worth dollars. Both free. Write today.

JOHN DEERE, MOLINE, ILLINOIS

JOHN DEERE PLOWS Make Better Seed Beds

California Livestock in the Limelight

The map of the purebred world is being changed and California is becoming the fountainhead for good stock. Many times during the last year we have announced sales made for shipment to the East and to foreign countries, and every month these sales become more numerous. Breeders are coming here in large numbers from all directions to buy foundation stock and new blood.

Only about two weeks ago we announced that H. H. Gable of Diamond G Ranch, Esparto, had sold his entire crop of yearling Hereford bulls for shipment to Hawaii, and since then we have been informed of a shipment from San Francisco to Panama of two California-bred registered Guernsey bulls and one heifer. We understand that it is intended to try out this dairy breed under the climatic conditions existing at and near the Isthmus, and also to experiment by crossing the bulls on the native cattle used at present for dairy purposes, to discover what improvement can be obtained from this cross.

The same concern that handled this shipment has orders for 28 head of cattle and several hogs that cannot be filled at present because the buyers are on the enemy trading list. To most persons the war is a closed event, or at least they think that we are free to trade with the people of any country except Germany. They would be surprised to read over the enemy trading lists published by the War Trade Board and find that there are thousands of persons in South America, Central America, Mexico and other neutral countries with whom we are forbidden to trade. When peace is finally declared and all trading restrictions are removed, we may expect to do a much larger livestock business with foreign countries.

In answering the questionnaire that we sent out for our swine issue, several breeders stated that they had received inquiries and orders from South America, Hawaii and the Orient, and Prof. Thompson of the University Farm reported an inquiry for ten head from the Philippines.

Probably the most stirring event in swine circles is the recent purchase by Paul F. Krause of a carload of registered Berkshires for Sycamore Farms, Douglasville, Pennsylvania. The significant fact about this purchase is that it was a repeat order for California Berkshires. About two years ago Milton R. Thomas, then proprietor of Sycamore Farms, purchased Grand Leader 2nd and 20 sows from A. B. Humphrey of Grapewild Farm, Escalon. Afterwards Mr. Thomas entered the army and Mr. Krause became manager. So well did he like the stock that he decided to come to California for more.

Ten gilts, two sows and two boars were purchased from Mr. Humphrey; four gilts from George M. York, Modesto; eight gilts and a boar from Butte City Ranch, Butte City; four gilts from Anchorage Farm, Orland; two gilts from Maplewoode Ranch, Calistoga; and the boar, Winona Lee Champion 6th, from W. J. Sandercock of the Natomario Rancho, Sacramento. A few more head will probably be purchased to fill the car.

Mr. Krause says that other Eastern breeders are contemplating making purchases in California, and because our fall pigs develop so much better than those farrowed in the East he believes that we can do a big business in furnishing Eastern breeders fall stock to put in their sales the following year. We can, and we will.

New Cattlemen's Publications

The California Cattlemen's Association has just issued several interesting publications. A circular letter has been sent out to all members telling of the accomplishments of the past year and the aims for 1919. An energetic membership campaign is now under way and it is hoped that at least 60 per cent of the cattlemen of the State can be induced to join. After twelve months' work the association has a membership of 800 cattlemen, representing about 400,000 cattle, or nearly 25 per cent of the entire stock cattle in the State. The prospects are that these figures will be at least doubled within the next few months.

The association is giving active support to the bills being introduced in the State Legislature for feed inspection, pure seeds, purebred bulls on open ranges, and a modification of the vehicle act. The estray law is being investigated and the association is against the enlargement of the Sequoia National Park.

Improved market facilities are considered of paramount importance and a marketing committee has been appointed. Information is being secured on marketing methods employed in Great Britain, Australia and other countries, in some of which co-operative systems are in vogue, and it is thought that an analysis of the different methods will reveal some practical suggestions which can be applied to our own situation.

Generally speaking, feed prospects for 1919 are good, although the effect of conditions in the first part of 1918 have not been wholly overcome, and many cattle stunted through the drought period will never regain what they lost. The beef shipments to Europe will prevent any material surplus accumulating in the United States for a long time to come and prices for 1919 grass cattle will probably be staple, but at a figure below the current prices.

The association has just issued a new booklet telling of the objects of the association and containing an appeal to cattlemen who are not members. Also it has issued a genealogical tree or "pedigree" of the association, which explains its activities. It shows the division of the State into zones and gives all of the zone and State officers. These publications can be obtained by addressing the secretary, David J. Stollery, 320 Sharon Building, San Francisco.

CAN WE BEAT THE BELGIANS?

We can learn a wonderful lesson of thrift from the people of Belgium? Farming in that country is like gardening on a large scale. The soil for the most part is thin, yet so carefully does the Belgian farmer cultivate every inch of ground that the crops per acre are often double those raised in our country.

Before the war Belgium had 156 head of cattle to the square mile, which is a greater number than in any other country in Europe. The most scientific methods are followed; the health and productiveness of each cow are carefully guarded, and great pains are taken that there shall be no wasting of the milk and cream.

Of all the independent nations Belgium is among the smallest, being less than one-fourth the size of New York State. Twenty-three countries the size of Belgium could be placed in Texas. But in exports and imports this small country holds sixth place, and in wealth it stands eighth.



AUCTIONS

Sell your stock or implements at public auction. I can get big prices for you. Have cried successful sales in all parts of the State. Customers always satisfied. Write for terms and dates.

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Purebred Stock Sales a Specialty

Sales Conducted in All Parts of California.

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AUCTION SALE

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REGISTERED AND GRADE HEREFORD AND SHORTHORN

Consisting of

30 head of Reg. Hereford Bulls from Fairfield, Iowa.
40 head of Reg. Shorthorn Bulls.
30 head of Reg. Shorthorn Heifers.
50 head of Grade Hereford Bulls.
50 head of Grade Shorthorn Bulls.

All the above stock from 12 to 18 mo. All cattle tuberculin tested.

AT

RENO, NEV., 15th and 16th of MARCH

EVERYTHING GUARANTEED AS REPRESENTED

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Purebred Registered Rams and Ewes.
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[Written for Pacific Rural Press by Thos. F. McConnell.]

ECONOMICAL PRODUCTION OF MEAT AT ORMONDALE.

Ormondale Company of Redwood City endeavors to produce meat economically, first by having Shorthorn cattle and Duroc hogs of supreme quality and then by feeding them as far as possible with materials grown at home.

Two silos holding over 150 tons of corn silage each are reservoirs of excellent feed, without which the economical production of beef animals at this place would be almost impossible. It is said by some that growing Indian corn in California is not practicable, but last year at Ormondale Farms on 18 acres of ground, without irrigation or any rain after the corn was planted, 325 tons of silage corn was grown. In order to do this it was necessary to plow the ground as soon as it could be worked in the spring and cultivation kept up at frequent intervals until the growth of the corn interfered. A good coat of stable manure had been applied before plowing, which was the only practice out of the ordinary, except more than the usual amount of cultivation. There was a very heavy, even crop all over the field. It ranged from 12 to 15 feet in height, with plenty of ears, so that the silage was rich in grain.

Ormondale Company expects to have 12 head of Shorthorns in the coming sale at Davis. Five yearling heifers, which will be among the 12, show up wonderfully well and ought to bring top prices. They are by the herd bull, Golden Goods Jr., who is an excellent sire, as proved by the young stuff about the place. It cannot be said, however, that all credit is due to the sire, as the female side of the herd is composed of about 35 cows bred "in the purple" and showing beef form supreme. Among the matrons May Flower 4th and My Sweetheart are two aged cows that would be near the top in any company.

A junior yearling bull calf out of Mayflower 4th and sired by Radium, the great Eastern show bull, is a great son of such illustrious parentage. He is a red roan and, while he is showing plenty of masculinity, he has plenty of quality, as evidenced in his wonderful handling.

This herd of Shorthorns has recently been tested for tuberculosis and found to be absolutely free from the malady.

ADVERTISERS TELL WHERE YOU LIVE.

Breeders who live some distance from their postoffices would confer a favor on prospective customers by giving condensed traveling directions in their advertisements. For instance, "Route B, Box 189" is all right for correspondence, but it does not furnish much of a clue to the whereabouts of the advertiser. The postmasters are forbidden by the postal department to furnish any information regarding the home location of any of the patrons of their offices, and often it is unsatisfactory to be obliged to inquire along the way.

To illustrate what we mean, Miss M. M. Holdridge is well known among Holstein breeders, but she only recently moved to San Jose, and probably very few persons in the city know where her ranch is located. So, under her postoffice address, "R. D. A., Box 173, San Jose," in her ad, she runs another line reading, "Two miles out on North First Street." Consequently, when a prospective purchaser reaches San Jose he merely needs to find out where North First street is, and he can then locate Miss Holdridge's ranch without bothering every Tom, Dick and Harry.

How does your ad read? Can prospective purchasers find you without any trouble?

HOME-MADE RUBBING POST.

Fred Gatewood, the Poland-China breeder of Fresno, has a plan of a crude oil rubbing post that is excellent from either a theoretical or a practical standpoint. A large redwood post is firmly anchored in the ground so that the largest hog cannot loosen or break it. A hole two inches in diameter is bored vertically in the upper end of the post deep enough to hold a supply of oil that will last for several days. At the bottom of the vertical hole he bores three or four small holes horizontally, connecting this oil reservoir with several thicknesses of burlap wrapped about the lower portion of the post that is above ground. In order to prevent too rapid seepage of the oil supply, especially in hot weather, these small holes are partially stopped with the porous centers of some of the larger weed stalks. The burlap is firmly bound around the post with baling wire. It is a good plan to nail the burlap here and there so that it will not work down.

Mr. Gatewood has set the post at an angle so that the animals can get the oil directly on their backs from the under side of the post and underneath their bodies from the upper side. A proper arrangement of the seepage holes can easily be made for such a post.

CALIFORNIA HOLSTEINS GOING STRONG.

Notwithstanding the scarcity of testers, the latest Advanced Registry report of the Holstein-Friesian Association shows that California breeders are testing a comparatively large number of cows and that good records are being made. The report covers records entered between December 11 and January 19 and in this time reports on 77 California cows were received.

Among the leaders receiving special mention were Changeling Tidy Abbekerk Gem, owned by A. W. Morris & Sons, Woodland, who made 639.2 pounds milk and 28.043 pounds butterfat in the full-aged class; Piebe Laura Ormsby of Vina, owned by Bridgford Company, Knightsen, who made 642.3 pounds milk and 26.227 pounds butterfat; Pauline Soldene De Kol 3rd, owned by W. J. Higdon, Tulare, who made 572.2 pounds milk and 24.713 pounds butterfat, and Ormsby Segis Marie, owned by Toyon Farm Association, San Jose, who made 510.5 pounds milk and 24.493 pounds butterfat.

In the senior four-year-old class, Spring Farm Pontiac Maid 2nd, owned by Bridgford Company, led all cows in the United States with a record of 625.7 pounds milk and 28.529 pounds fat.

In the senior three-year-old class, Susie De Kol Concorde 3rd, also owned by Bridgford Company, pro-



Retained After-birth

Cows can be made to clean easily without using force.

When cows do not clean properly after calving, it indicates a germ infection which is likely to run through the entire herd and result in Abortion and Barrenness.

The after-birth should be removed at once without force by means of the B-K douche and the cow treated to prevent her becoming an aborter or sterile. Authorities state that while there is no absolute cure for abortion and sterility, nevertheless the infection can be controlled by prompt treatment and the animal saved for successful breeding.

B-K is scientifically correct for this work. Used as a douche for the uterus, it quickly brings the after-birth, dissolves the slimy albuminous matter, kills the germs, stops discharges and controls the infection. B-K does not cause straining, but is soothing and heals the tissues.

Send for "evidence" and free Bulletin No. 52 "Contagious Abortion." If your dealer does not have B-K send us his name.

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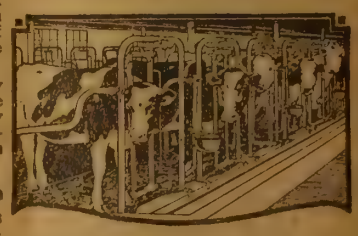
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We have just prepared a number of STAR Barn Plans based on the newest methods of barn construction. These are entirely new plans—not one of them over a few months old. Send us your name and let us mail them to you—FREE. STAR Barn-Plan Service is "different." It saves you money in building. It will give you the latest and best known labor-saving methods in barn work. It's free—yours for the asking. Write and let us tell you more about it.

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Barn Equipment
Litter Carriers
Water Bowls
Feed Trucks
"Harvester" Hay Tools
Door Hangers
Garage Equipment
Coaster Wagons
Tank Heaters and
Other Farm
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—Litter Carriers
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MAKE YOUR WINTER BARN WORK EASY

You can no more afford to clean out your barn with a wheelbarrow than to cut your wheat with a cradle. One cuts into your legitimate profits just as surely and as deeply as the other—**it robs you of money** which should be in the bank, and of luxuries which should be in your home.

LOUDEN'S LITTER CARRIER OUTFIT

stops the waste. Makes work lighter and life pleasanter—*especially in winter.* Saves daily many hours of the hard disagreeable work—*barn cleaning with a wheelbarrow in cold, wet weather.*

Catalog, barn plans, and full information FREE. Write today.

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You are not going through another season without ample silo capacity. No, you can't afford to. A good silo will save you from one-third to one-half in your feed bill.

WE HAVE THE SILO OF SILOS

The simplest, cheapest, and best.
No hoops to get loose and fall off, and yet it is always tight.
You can add to it as your herd grows.
You do not need a scaffolding to put it up.
It can be taken down and moved without damaging it in the least.
The original cost is less than most other makes.
Besides all these exclusive features it is the **PERFECT SILO** in that it will keep your silage perfectly for any length of time that you desire.

Write for free booklet and prices.

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Dept. C. 1st National Bank Bldg., San Jose, Cal.

60 REGISTERED 60
Holsteins
AT PUBLIC SALE

WALTER F.
MITCHELL

VISALIA, CALIFORNIA

sells his entire milking herd of registered Holsteins at public sale on his farm,

THURSDAY, APRIL 3, 1919

This is a choice herd of well-bred individuals, and the sale will include
14 COWS AND HEIFERS with official records up to over 31 lbs. butter in 7 days.
19 GRANDDAUGHTERS OF SEGIS PONTIAC DE KOL BURKE, two of whose 2-year-old daughters hold the California records for yearly butter production.
39 COWS AND HEIFERS bred to the great young sire, PRINCE HISKE WALKER, who will himself be sold.
Every animal tuberculin tested and sold subject to retest.
Catalog free on request.
Auctioneer — Col. Ben A. Rhoades, Los Angeles.

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Your Veterinarian can stamp them out with Cutter's Anti-Calf Scour Serum and Cutter's Germ Free Blackleg Filtrate and Aggressin, or Cutter's Blackleg Pills.

Ask him about them. If he hasn't our literature, write to us for information on these products.

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for officially authenticated butterfat records is offered by the Holstein-Friesian Association of America for the purpose of furnishing reliable data as to the merits of the Holstein-Friesian breed as butter producers. This method has demonstrated the unequalled ability of the breed. These cows hold all A. R. O. records for amount of butter.

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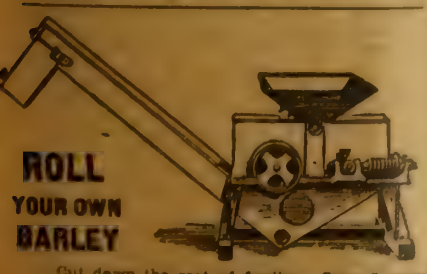
Calf Profits

Are you getting them? Calf profits mean more to you now than ever before.

Blatchford's Calf Meal

has been known since the year 1890 as the complete milk substitute. Costs less than half as much as milk or powdered skimming; promotes early maturity. Sold by dealers or direct from the makers.

Write for New Data See actual figures showing you how to increase your calf profits
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ROLL YOUR OWN BARLEY

Cut down the cost of feeding. Save 3 cents per pound and the hauling. Do the work at your leisure. The No. 22 rolls 10 to 15 sacks with 3 to 4 H. P. engine. Other sizes to meet your requirements. Write for circular.

THOMAS R. BROWNE
Factory Representative, Stockton, Cal.

duced 496.9 pounds milk and 21.353 pounds fat.

In the junior three-year-old class, Valdessa Clarkhurst Pietertje 2nd, owned by Toyon Farm Association, led all cows in the United States with a record of 507.4 pounds milk and 20.701 pounds fat.

In the senior two-year-old class, Finderne Jondine Pontiac, also owned by Toyon Farm Association, was second in the United States with a record of 422.9 pounds milk and 17.730 pounds fat. In this same class, Walker Segis Inka, owned by F. W. Kiesel, Sacramento, produced 377 pounds milk and 13.946 pounds fat. Laconner Pontiac Bess, owned by Toyon Farm Association, produced 393.6 pounds milk and 13.914 pounds fat.

In the long time full-aged class, Laurameka, owned by Palo Alto Stock Farm, Palo Alto, led the whole United States with a record of 18,313.9 pounds milk and 653.5 pounds fat in 201 days.

In the long time junior three-year-old class, Johanna Princess Mooie 2nd, also a Palo Alto Stock Farm cow, led the entire United States with 20,325.2 pounds milk and 734.096 pounds fat in 280 days.

Thelma Hartog Sunland De Kol 4th, also owned by Palo Alto Stock Farm, was fifth in the senior two-year-old class with 14,036.3 pounds milk and 368.578 pounds fat in 222 days.

In considering these records it should be borne in mind that the official figures show the butterfat, while the breeders generally give the records of their cows in pounds of butter. As this computation is made on the 80 per cent basis, the butter records of these cows would be considerably greater than the butterfat records here given.

IMPRESSIONS OF THE EASTERN SHOWS.

H. M. Barngrover of San Jose, owner of the Veramont Stock Farm, promised to give our readers some sidelights on the two big eastern stock shows, but was so busy after his return that not until a few days ago did he find time to write us. He says:

"The great shows were bewildering, for when one sees a lineup of from 20 to 40 head of real show cattle in each class, fitted to the minute, one begins to realize that it is a long jump from the scrub to these aristocrats of the breeds, and it was a headaching job to try to pick the winners.

"I was very much impressed with the fact that proper care and feed are great factors in developing these wonderful cattle, and that if we of the Pacific Coast want to get into the procession we must pay closer attention to these matters.

"A very hopeful feature was found in the great number of really excellent bulls among the great beef breeds, indicating that we can find plenty of real herd-headers if we but look for them and are willing to pay a reasonable price. The wonderful form and substance of Repeater 7th Model, and the fact of his having been fitted and sold by a new breeder—a boy in his 'teens—showed conclusively that the $24,000 paid for him was not due to pedigree craze.

"The uniformity in color of the Herefords was closely approximated by their uniformity of form and type. This is wonderfully encouraging to the breeder, not only because it is pleasing to the eye, but it is perpetuating these good qualities in this great beef breed.

"I feel more than ever that we have a fine field for Herefords on the Pacific Coast, and that it is up to us to put common sense and energy into the care and breeding of our herds; and that to build up the breed as we would like to see it, we must keep our cattle in good condition all the time, and must fit and show them at our shows and fairs, where the cattleman can realize the possibilities in the breed and imbibe a spirit of emulation and do as we breeders should do—strive for quality rather than quantity production."

SAVE
~~$10.00~~ TO ~~$15.00~~
$20.00 TO $30.00
per cow per year
with a
DE LAVAL
CREAM SEPARATOR

Formerly, with butter-fat at 25 to 35 cents a pound, a De Laval Cream Separator saved $10 to $15 per cow per year over gravity skimming.

Now with butter-fat selling at 50 to 65 cents a pound, and even higher, the saving with a De Laval is doubled.

If you have only two cows and are selling cream or making butter, a De Laval will soon save enough to pay for itself.

With butter-fat at present prices you need a De Laval more than ever before, and if you already have an inferior or half-worn-out separator, your cream loss with such a machine is too big to be neglected.

The best cream separator you can get is the only machine you can afford to use these days, and creamerymen, dairy authorities and the 2,325,000 De Laval users all agree that the De Laval is the world's greatest cream saver. They know from experience that the De Laval skims the closest, lasts the longest and gives the best service.



Order your De Laval now and let it begin saving cream for you right away. See the local De Laval agent, or, if you don't know him, write to the nearest De Laval office as below.

DE LAVAL DAIRY SUPPLY CO.

THE LARGEST DAIRY SUPPLY HOUSE ON THE PACIFIC COAST

Alpha Gasoline Engines — James Barn Equipment
Ideal Green Feed Silos — Viking Rotary Pumps
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EVERYTHING FOR THE DAIRY
Catalog of any of these lines mailed upon request
61 BEALE STREET, SAN FRANCISCO
Over 2,325,000 De Lavals in Daily Use.

Where
Milking Shorthorns are
There Is Prosperity

They are coming to the front rapidly. Come and talk over their possibilities and inspect our herd.

CORRESPONDENCE SOLICITED.

Thomas Harrison, Santa Rosa, Cal.

Pacific Coast Representative for the famous Otis Herd of Milking Shorthorns of Willoughby, Ohio.

INNISFAIL DAIRY SHORTHORNS



ALL Won at Sacramento:
Championships,
Grand Championships,
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22 OTHER PRIZES, INCLUDING 15 FIRSTS.

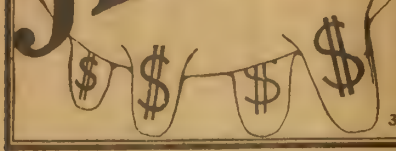
We offer for sale a few choice young bulls sired by Glenside Royal and out of large cows of good milk production.

Entire herd tuberculin tested.

Alexander & Kellogg, Suisun, Cal.
Farm on Grizly Island.

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Grand Champion, Sacramento, 1916-1918, and at P. P. I. E.

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How much are a cow's teats worth?

This depends on how much it costs to fill the udder and how rich the yield in butter fat. Jerseys are famous for the richest let-down at the lowest possible up-keep. Jerseys are known as "the profit breed" because they are natural money makers. Beautiful and hardy, their perfection has been standardized for over two hundred years.

Ask breeders for pedigrees and prices. Let us send you some very unusual information about this record-breaking breed.

THE AMERICAN JERSEY CATTLE CLUB
388 West 23rd Street New York

N. H. LOCKE CO.
LOCKEFORD, CAL.
Choice young bulls of King's Valet Blood, backed by Records.
Call at the ranch and make selection.

VENADERA HERD REG. JERSEYS
Herd headed by Altama Interest, Grand Champion 1918 State Fair. Awarded two other championships and 10 firsts, including Aged Herd Breeders' Young Herd, and get of sire. Young bulls for sale from dams and granddams in Register of Merit.
GUY H. MILLER, Modesto, Cal.

LEONARD FARM JERSEYS
Bulls for sale from Register of Merit cows. Write for information.
W. J. HACKETT, CERES, CAL.

T. B. PURVINE & SONS
PETALUMA, CALIFORNIA.
Breeders of
Registered JERSEYS
Young bull calves for sale. Fine individuals with Register of Merit backing.

RANCHO SANTA MARGUERITA, D. F. Conant, Prop., Modesto, Cal.
Register of **MERIT JERSEYS** A limited number

FOR LARGE AND ECONOMICAL PRODUCTION
Get one of my young Jersey bulls from a high producing dam. They are rich in the blood of Gertie of Glynllyn and Lady Letty Lambert. Occasionally one old enough for service.
A. A. JENKINS, TULARE, CAL.

Bull Calf
Dam: 430 lbs. fat in 9 mo. 16 days on alfalfa alone, carrying calf entire time.
Grand Dam: 690 lbs. fat in one year.
Sunshine Farm E. E. GREENOUGH Merced, Calif.



This Champion Brown Swiss

—a five-year-old, has made the remarkable yearly production record of 16,804.4 lbs. of milk and 727.64 lbs. of butterfat. Every dairyman has cows that could produce far more than at present, if they were as perfect in health as this animal.

No matter how well you feed your dairy cows, remember they have vital organs that get out of order. And nowadays there's

A Premium on Health!

Never before has it paid so handsomely to get every extra pound of milk from every cow in the dairy. You can see the profit in milk, now.

The digestive and genital organs are the seat of practically all disorders in cows. Barrenness, Abortion, Scouring, Retained Afterbirth, Lost Appetite, Bunches and other cow ailments usually arise from "forcing" the cow's production without aiding nature in the rebuilding process.

KOW-KURE has met with great success in the treatment and prevention of cow diseases. It acts on just the organs that the troubles start in—toning them up and aiding the cow to produce and reproduce with regularity. Its effect on the milk flow is direct and positive.

Send today for your free copy of our book,

"The Home Cow Doctor"

It gives much general information of value to dairymen.

Buy KOW-KURE from feed dealers and druggists; 60c. and $1.20 packages.

Dairy Association Co.
Lyndonville, Vt.

KOW-KURE



HOLSTEIN BULLS
A few young bulls sired by Aaggie Cornucopia Pauline Count, and out of our A. R. O. cows.
Prices Reasonable.
A. M. BIBENS, Modesto, Cal.

REGISTERED HOLSTEINS
Creamcup Herd offers service bulls and bull calves of 34-lb. breeding. Females offered for foundation stock. Tuberculin tested.
M. M. Holdridge, San Jose, Cal.
R. D. "A," Box 437.
Two miles out North First Street.

What Shall We Feed Our Stock?

One of the greatest problems that confronts the stockman during this time of high prices is the question of what to feed. Not being, as a rule, an expert mathematician or enough of a scientist to work out a ration when figures are given in proteins, carbohydrates, calories, etc., he is often at a loss to determine what feeds are best to buy considering their food value.

So the following table, prepared by Prof. V. C. Bryant, of the College of Agriculture, will throw some light on the question. The price of barley is now hovering around the $40 mark, so the table gives the approximate value of different feeds as compared with barley at $40 per ton. That is, if barley is $40 per ton the farmer can afford to pay the prices stated for the different feeds, other things being equal.

Names of Feed	For Sheep and Beef Cattle.	For Hogs.	For Dairy Cattle.
Alfalfa hay	$18.80	.....	$20.00
Alfalfa, green	4.50	$ 3.00	5.00
Barley	40.00	40.00	40.00
Barley hay	17.00	.....	17.00
Bean straw	7.50	.....	7.00
Buttermilk	.....	(1) 6.50	.....
Beet pulp dried with molasses	40.00	.....	40.00
Beet pulp dried	38.00	.....	38.00
Carrots	6.00	5.50	6.00
Cocoanut meal	40.00	38.00	40.00
Cottonseed meal	50.00	.....	50.00
Indian corn silage	5.65	.....	6.00
Indian corn, cracked	43.15	43.15	42.00
Linseed meal	50.00	50.00	50.00
Mangel wurtzel	3.20	(1) 3.20	3.20
Molasses—cane	38.00	(1) 38.00	38.00
Milo, cracked	38.00	39.00	38.00
Oats	38.00	30.00	38.00
Oat hay	18.00	.....	18.00
Pumpkins	3.50	3.50	3.50
Rice bran	35.00	32.00	35.00
Rice polish	43.00	43.30	43.00
Sudan grass hay	17.20	.....	17.00
Sure milk	36.50	35.00	36.50
Skimmed milk	.....	(1) 6.50	.....
Sorghum silage	5.00	.....	5.00
Tankage	.....	(2) 120.00	.....
Wheat bran	35.00	28.00	36.50
Wheat shorts	40.00	38.00	.....
Whey	.....	(1) 3.50	.....

(1) When fed with grain. Worth much less if fed alone.

(2) When 9 per cent of grain ration is tankage. If hogs are on alfalfa pasture use only 5 per cent.

It should be borne in mind that the value of any food depends a great deal on how it is fed. It is readily affected by the amount the animal receives, and also by the combination of foodstuffs that are fed together. For example, wheat bran would be worth more than beet pulp if fed to a dairy cow receiving barley hay, while beet pulp would be worth more than the bran if the cow was being fed alfalfa hay. So the table is not absolute, and is given only for general guidance.

Are New Estray Bills Desirable?

Whether or not livestock men favor the estray bills introduced at the present session of the State Legislature seems to depend upon the way they are operating. Those who have range stock want small ranches fenced to keep their stock out; those who have small ranches want the owners of stock to be obliged to keep their animals where they belong.

The working of the present law is well explained in a letter received from C. R. Laurence of San Francisco, in which he says: "The present estray law is absurd because instead of putting the costs and the burden of the wrong upon the man who permits his animals to trespass on others property, it puts all the liability upon the man who is injured. For instance, if you have an unscrupulous neighbor who continually permits his hogs to get through your fences and root up your pasture, you can waste a day getting up the hogs to protect your property, and then you have to go through a lot of legal rigmarole, wasting another day, if you live any distance from town, in order to protect yourself. I have a neighbor who continually has permitted twenty or thirty hogs to run on my fenced land, and when he sees or hears me driving his hogs out he comes over and claims them, and of course I have to give them to him under the present law, without getting a cent for the damage. Any reasonable man knows that at times animals will get estray despite their owner's best efforts to keep them in, and when he suffers this class of trespass he does not feel like asking for any damages, but where pasture thieves continually let their animals estray on their neighbor's property, despite warnings and requests to keep them off, the law should give him some protection."

Assemblyman Charles Kasch of Ukiah has introduced such a bill, and he makes the fees great enough to cause owners to be more particular about keeping their stock at home. The present pay is 15 cents a day for horse and cattle stock and 5 cents a day for sheep, hogs, etc. The amendment provides $1.50 per day for horse and cattle stock and 50 cents for the rest. It also allows $5 for preparing the notice which is already required to be filed with the county recorder, and a reasonable cost for publishing it. This is Assembly Bill No. 22.

Another bill introduced by Senator L. M. King of Redlands—Senate Bill No. 34—provides, as an amendment to the Estray Act of 1901, that if your land is substantially fenced and you find estray domestic animals on it, you may charge the owner all costs of taking up and keeping them. A substantial fence is declared to be one of "three tightly stretched barbed wires securely fastened to posts of reasonable strength, firmly set in the ground not more than one rod apart, one of which wires shall be at least four feet above ground." A proviso adds that any other kind of a fence is legally "substantial" if it will turn cattle as well.

The California Cattlemen's Association is having a legal opinion prepared on these measures and is not yet ready to announce the stand it will take, but most of the individual ranchers who have written us urge support of the measures and state that they are imperative to protect the honest farmer against pasture thieves.

LODGE VON HEIM HERD

AT Public Auction ON

St. Patrick's Day MONDAY, MARCH 17 St. Patrick's Day

At KENT, WASHINGTON, Located between Seattle and Tacoma

This Herd of 65 Head of REGISTERED HOLSTEINS is Considered One of the Finest in the World

THE BREEDING IS SUPERB. THE RECORDS ARE ALL HIGH

The individuality is all that could be desired. **A Fine lot of Show Cattle in Splendid Condition.**

Perhaps no other herd of equal size can show so many large and even records, and very few herds in the world, regardless of size, can equal this one for

LARGE RECORDS AND FINE BREEDING.

Think:

How many herds have made **three world's records?**

How many herds have cows that have made **30 lbs. of butter in 7 days?**

How many herds have **eight cows** with **records over 30 lbs.?**

How many herds have **two 2-year-olds** with **31 and 32-lb. records?**

How many herds have **2-year-olds** with **29 lbs. in 7 days** and over **117 lbs. in 30 days?**

How many herds have made records from **18 lbs. as Jr. 2-year-olds** to nearly **35 lbs. as 3-year-olds?**

This wonderful herd at Lodge Von Heim has accomplished the above, a feat to be proud of and accomplished by very few.

Do you want a 32-lb. 2-year-old? Do you want a 34-lb. 3-year-old?

Do you want a 3-year-old with a 32-lb. record that made as a 2-year-old over 25 lbs. and nearly 900 lbs. in 365 days?

Do you want a young bull out of a 30-lb. cow sired by Finderne Mutual Fayne Valdessa, a young bull with world's record breeding?

Then be sure and attend this complete dispersal of Lodge Von Heim. The bull is two-thirds of the herd. Just a word about the **Senior and Junior Herd Sires.**

Colantha Sir Hertog, the Senior Herd Sire, is a bull of wonderful merit. His sire is Aaggie Cornucopia Johanna Lad, the noted son of Aaggie Cornucopia Pauline, 34.32 lbs. and a world's record, when made The dam a 29-lb. daughter of Colantha Johanna Lad. He is a Show Bull of great quality, like his wonderful sire, the greatest show bull ever led into a ring.

Colantha Sir Hartog is getting some very fine heifers and one as a 2-year-old has made 29 lbs. in 7 days, and over 117 lbs. in 30 days. He is making good.

The **Junior Herd Bull is a masterpiece** when **records** and **breeding** are considered. Study the pedigree carefully and you will agree that **Finderne Mutual Fayne Valdessa** is one of the **highest record animals in the world.** His daughters and sons are a beautiful lot, nicely marked, **straight,** and **very refined.** Why not consider him for your Herd Sire or a company bull? Over 100 cows have been bred to him, many of the finest in the West. So he has a wonderful start to become a great sire through his sons and daughters, who are sure to make good, as you will agree when you see them. I might add that a very large percentage of his calves are heifers.

WRITE FOR CATALOGUE

Geo. A. Gue, Auctioneer and Sales Manager
Yakima, Wash.

J. Von Herberg, Owner
Kent, Wash.

Livestock and Dairy Notes

Livestock breeders all over the State are invited to send on postal cards, notes regarding their sales, State and County Fair intentions, new stock, etc.

The Dairy.

L. M. Irwin of Davis has recently sold registered Holstein bulls to the following: Smith & Wilson, Davis; Golden State Dairy Farms, Dixon, and the Schmeiser Ranch Co., Winters.

A new yearly record for Tulare county has been established by Wayne of Rock, owned by W. J. Higdon of Tulare. She produced 802.63 pounds butter from 17,707.6 pounds milk.

Prof. Gordon H. True has selected three registered Guernsey heifers from the Hidden Valley Farm herd of A. J. Welch, Redwood City, for shipment to the University of Hawaii, Honolulu.

Miss M. M. Holdridge, owner of the Creamcup herd at San Jose, has sold a carload of registered Holstein bulls to dairymen in the vicinity of Soledad, the purchases being made on the community plan.

Sunnybrook Ranch, Willits, has recently sold the Holstein bull, Sir Estata Pontiac, a grandson of King of the Pontiacs, to the Millbrae Dairy, and a bull sired by Ruby Gem Canary Lad to W. H. Allen, Hopland.

A. M. Bibens, Modesto, reports that the Holstein cow, Fair Girl Walker, made a record of 14 pounds of fat in 7 days, seven months after calving, the record being made under ordinary dairy conditions, with the cow running with the herd.

Farmers' auction sales were recently held by the California Breeders' Sales and Pedigree Company at Newman and Gonzales. Registered Holstein bulls were consigned by J. S. Gibson Company, Williams; A. W. Morris & Sons, Woodland, and Henderson Company, Sacramento. At Gonzales the average for 17 young bulls was $175 and at Newman the average for 18 was $205.

The Redwoods Ayrshire Farm, La Honda, has added to its herd four registered cows from the McFarland Steybrae herd. The Redwoods are developing a herd of Ayrshires for the production of butterfat and do not plan to show any stock. They selected the Ayrshires for their mountain farm on account of their hardiness, large production of rich milk and a quality of meat similar to the Durham in color and finish.

R. F. Guerin, owner of Sunnyside herd of Holsteins, Visalia, has just completed a record of 25 pounds butter in seven days from Cantate Wonder 3rd. She is a half-sister to Alex. Whaley's Melba Hengerveld, who made 30.38 pounds of butter in seven days. Both are daughters of Arcady Pontiac Wayne Hengerveld, who has 30 A. R. O. daughters. He was the senior herd sire of Sunnyside and has more A. R. O. daughters than any other sire developed on the Pacific Coast.

Guy H. Miller, Rancho Venadera, Modesto, reports the junior three-year-old heifer, Lora of Venadera, has just completed a record of 10,705 pounds of milk and 504 pounds of butterfat made under ordinary farm conditions, being milked only twice daily and running with the herd throughout the year. She is a daughter of the noted prize winning bull, Altama Interest, and her dam is Lorna of Venadera, who has a record of 588 pounds of fat in a year, and was grand champion at the State Fair in 1912.

Beef Cattle.

Carl Reough of Bishop has purchased 20 registered Aberdeen-Angus heifers from the Aberlour herd at Bishop, and a registered bull from the University Farm.

Carruthers Farm, Live Oak, has sold to H. M. Hanman, Crystal Springs, a June Shorthorn calf sired by Count Glory; also nine bull calves to O'Neill Bros. of Santa Ana.

Ormondale Company, Redwood City, recently sold to Mr. McNeil of the Santa Margarita Rancho, San Diego county, five weanling bulls good enough to improve any herd.

Roselawn Stock Farm, Woodland, has sold to the Murdock Land Company, Artois, Humboldt county, two registered Shorthorn bulls sired by Ring Leader and one sired by Gibson's Goods; also two bulls to D. E. Vanone, Eureka, and one bull to M. F. Emerest, Dunnigan.

The Shorthorn sale to be held at Davis, April 8, will include consignment from twelve of the leading breeders of the State, and promises to be the leading event of its kind ever held in this State. Some very high-class animals have been selected and buyers will be given an opportunity to purchase top-notch foundation stock.

Prospects for the Hereford sale at Davis, April 9, are very bright, according to W. R. Madden, secretary of the California Hereford Breeders' Association, and about 75 head are in sight. Among the larger consignors will be: J. H. Cazier & Sons, Wells, Nev., 25 head; William Bemmerly, Woodland, 13 head; W. D. Duke, Likely, 10 head.

R. M. Dunlap has recently purchased from Miller & Lux a young Hereford bull for T. H. Ramsay, Red Bluff. Mr. Ramsay will use the bull on a Nevada ranch which he operates.

Sheep.

Ellenwood & Ramsay, Red Bluff, will consign 25 cross-bred rams, half-breed Corriedales, to the Salt Lake sale to be held next August.

Bullard Bros., Woodland, will consign 25 Rambouillet stud rams and 100 range rams to the fourth annual ram sale of the National Wool Growers' Association at Salt Lake next August.

Livestock Miscellaneous.

N. W. Thompson, draft horse breeder of Patterson, has sold the Percheron stallion Fernando to W. H. Klelway, Newman, and a Percheron and a Belgian stallion to parties in Nevada.

The Newman Ranch at Tulare sustained a loss of about $12,000 on mules which died from eating poisoned wheat which had been prepared for poisoning squirrels and was fed to the animals by mistake. Hogs also were poisoned from eating one of the carcasses which had been dragged into a field.

Swine and Swinemen.

Castleview Ranch, Santa Rosa, recently sold 10 bred Berkshire sows to the Purebred Sow Farm, Natomas District, Sacramento.

Tom M. Bodger of the Uneeda Hampshire Swine Farm, Gardena, reports the sale of a fine young boar to Oswald Ozene, Moneta.

R. C. Sturgeon, the Duroc breeder of Tulare, has recently sold 2 fall gilts and a boar to Mr. Green of San Luis Obispo and a bred gilt to C. E. Taylor, Templeton.

C. B. Cunningham, owner of the Billiken herd of Chester Whites at Mills, has sold a son of Billiken to Ernest Gammon of Hood and 2 sows to F. N. Wood Jr., Menlo Park.

Toyon Farms Association has gone into the breeding of Berkshires at Haviland Station, Yolo county, and have purchased 20 bred sows from Carruthers Farm, Live Oak. All of these sows are bred to Ames Rival 100th.

Lloyd & Tointon, Yorkshire breeders of Santa Rosa, have actually raised and sold an average of nine pigs per litter from their 14 brood

THE GUARANTY SALE

STATE FAIR GROUNDS

SACRAMENTO, CAL.

THURSDAY, MARCH 27, '19

A LIST of the entries in this sale will quicken the enthusiasm of every appreciative breeder of black and whites, in this day when breeding, quality, and individuality in registered Holsteins command the attention of some of the biggest men throughout the world. Look at this partial list of the wonderful animals to be sold, and judge for yourself if such an offering was ever before made in a one-day sale:

A 30-pound granddaughter of Colantha Johanna Lad that milked over 700 pounds in 7 days. Last year she made 21222.3 pounds milk and 971.56 pounds butter in 365 days, and now on yearly test again promises to go well over 1000 pounds. She has a 30-lb. junior 4-year-old daughter that was first prize 3-year-old at the National Dairy Show last year. She is bred to **Judge Segis.**

A 27-pound 3-year-old daughter of Ollie Johanna Sir Fayne, out of a 27-pound granddaughter of Hengerveld De Kol, bred to the $106,000 bull, **Carnation King Sylvia.**

The 37-pound cow, Boweda, the highest record cow ever sold on the Pacific Coast. Heavy with calf to the twice grand champion bull, **King Segis Alcartra Prilly.**

A great 28-pound granddaughter of Colantha Johanna Lad, due to calve the day after the sale to **Chimacum Spring Farm King Pontiac.** She weighs close to a ton and is a wonderful individual.

A 5-year-old cow that made 24.89 lbs. butter in 7 days as a senior 4-year-old, and 21,366.9 pounds milk and 805.46 pounds butter in 365 days as a senior 3-year-old. Due April 3 to **Chimacum Spring Farm King Pontiac.** Her dam is a 26-lb. granddaughter of Rag Apple Korndyke.

A 32-pound granddaughter of King of the Pontiacs, that milked 701 lbs. in 7 days.

A 31-pound granddaughter of De Kol 2nds Butter Boy 3d, that milked 615 lbs. in 7 days. Well along with calf to **King Segis Alcartra Prilly.**

The Grand Champion Cow at 1918 California State Fair. She has a junior 2-year-old daughter now on test with 24.85 lbs. butter to her credit in 7 days.

A 31-pound granddaughter of Pontiac Hengerveld Parthenea, that has twice made above 30 lbs. butter in 7 days.

A granddaughter of Rag Apple Korndyke 8th, that made 23.55 lbs. butter and 636.2 lbs. milk in 7 days as a senior 2-year-old, milking as high as 95 lbs. in one day.

A daughter of Forward Prince Segis out of a 31-lb. daughter of Sir Skylark Ormsby Hengerveld, that made 27,804 lbs. milk and 1127.27 lbs. butter in one year. Bred to **Judge Segis.**

A daughter of Hollywood Lilith Palmyra, out of a 35-lb. granddaughter of Pontiac Korndyke that made 984.83 lbs. butter in one year as a 4-year-old. Due April 15th to **Judge Segis.**

A daughter of the 30-pound cow, Melba Hengerveld, sired by a 30-lb. son of Sir Veeman Hengerveld and bred to the 35-lb. bull, **King Sadie Vale Idyl Segis.**

A 30-pound daughter of King Pontiac Netherland Segis, out of a daughter of Sir Skylark Ormsby Hengerveld.

A daughter of the 25-pound 2-year-old Eldorado Winifred, her dam the 32-lb. cow, Winifred Hotaling 3d.

A granddaughter of Jessie Fobes Bessie Homestead, out of a 28-lb. granddaughter of King of the Pontiacs, bred to the 36-lb. $6500 bull, **King Korndyke Pontiac 20th.**

A splendid 26-pound cow, bred to **Prince Hiske Walker,** full brother to the 34-lb. 4-year-old Lady Hiske Walker.

Four granddaughters of Jessie Fobes Bessie Homestead, all out of 29 to 32-pound dams of outstanding breeding.

A daughter of King Palmyra Fayne, out of a 30-lb. daughter of Duchess Ormsby Butter King, that made 891.4 lbs. butter in one year. Due April 14 to **Judge Segis.**

A 22.71-pound 2-year-old daughter of Hollywood Lilith Palmyra, out of a good record granddaughter of Pontiac Korndyke. Bred to **Judge Segis.**

A great 27-pound cow, now milking around 95 lbs. per day on semi-official test, bred to the $106,000 bull, **Carnation King Sylvia.**

A daughter of King Morco Alcartra, out of a richly bred good record daughter of **King Korndyke Pontiac,** bred to the $4000 bull, **Prince Gelsche Walker Korndyke.**

A daughter of a 31-pound cow, due to calve April 22, to **Prince Riverside Walker.**

A daughter of Forward Prince Segis, out of a 23-lb. 3-year-old granddaughter of Colantha Johanna Lad and Sir Skylark Ormsby Hengerveld, bred to the great **Matador Segis Walker,** who is sire of the 40-lb. senior 3-year-old Matador Hengerveld Bess.

A 22-pound 3-year-old granddaughter of Colantha Johanna Lad out of a 21-lb. daughter of Sir Skylark Ormsby Hengerveld, bred to the $106,000 bull, **Carnation King Sylvia.**

A daughter of Johanna McKinley Segis, out of a good record daughter of King Segis 10th, bred to the $106,000 bull, **Carnation King Sylvia.**

A daughter of Johanna McKinley Segis, out of a 22.69-lb. 2-yearold daughter of King Segis 10th.

A beautiful daughter of a 31-lb. son. of Rag Apple Korndyke 8th, out of a 26.84-lb. junior 4-year-old daughter of Johanna McKinley Segis. Well along with calf to **Matador Segis Walker.**

A splendid daughter of the 36-lb. bull, Kingmaster, out of a great 31-lb. dam.

The Bulls in This Sale

Every bull in this sale is sired by a bull out of a 30 to 37-pound dam and is himself out of a 30 to 41-pound dam. Every one of them is a real herd header of first rank.

The 41-pound bull, King Abbekerk Johanna Segis, whose dam has just made the highest record ever made on the Pacific Coast, 41.03 lbs. butter from 831.7 lbs. milk in 7 days. He is a show bull and ready for service.

The 34-lb. bull, Sir Aaggie Walker, sired by Sir Aaggie De Kol Acme, whose dam made 35.38 lbs. butter in 7 days, 1331.41 lbs. butter in one year on strictly official test, a world's record. The dam of this bull is Lady Hiske Walker, 34.25 lbs. butter in 7 days as a junior 4-year-old; she a daughter of Prince Gelsche Walker. He is a show bull.

The 33-pound bull, It Blonde Pietje, sired by the famous bull, **"It"** and out of the great **Ontario Blonde Pietje,** who made over 30 lbs. butter in 7 days as a 4-year-old last year and increased her record to over 33 lbs. at this freshening.

The 31-pound bull, It Cornucopia Wayne, sired by **"It"** and out of a 31-pound daughter of Sir Sadie Cornucopia.

The 30-pound bull, Toyon Wayne Valdessa, sired by Finderne Soldene Valdessa, 35-lb. son of King Valdessa, and out of a 30-lb. 4-year-old.

The 30-pound bull, Karlray Pontiac Ormsby, by a 31-lb. son of King Pontiac Netherland Segis and out of a 30-lb. daughter of King Pontiac Netherland Segis, her dam a daughter of Sir Skylark Ormsby Hengerveld.

This does not cover all of the top notchers in this sale.

Look for later announcements for more complete details.

Every animal positively guaranteed to be a breeder; every animal tuberculin tested and sold subject to 60-day retest by the buyer.

CONTRIBUTORS:

W. J. HIGDON, Tulare; ALEX WHALEY, Tulare; W. F. MITCHELL, Visalia; R. F. GUERIN, Visalia; A. W. MORRIS & SONS, Woodland; FRED W. KIESEL, Sacramento; TOYON FARM ASSOCIATION, Los Altos; GOTSHALL & MAGRUDER, Ripon; BRIDGFORD COMPANY, Knightsen; McALISTER & SON, Chino; HOLLYWOOD FARM, Hollywood, Wash.; CARNATION STOCK FARM, Seattle, Wash.; ALBERT E. SMITH, Sumas, Wash.; A. J. STALDER, Riverside.

A catalog of the sale will gladly be mailed on request.

Management:

California Breeders Sales and Pedigree Company

C. L. Hughes, Sales Manager, Sacramento, Cal.

Auctioneers: Col. Ben A. Rhoades, Los Angeles; Col. Harry Cranke, Nezperce, Idaho.

sows. Speaks well for the prolificacy of Yorkshires.

J. W. Wakefield, Acampo, reports the sale of the Poland-China boar, King Model by Grand Model and out of Lady Price, for shipment to South America.

Napa State Hospital has sold 20 Berkshire sows to the Preston School of Industry, Ione. The latter institution is now looking around for a Berkshire boar to use as a herd header.

McCarty & Starkweather of Riverina Farm, Modesto, report the following sales of Poland-Chinas: Two boars, 2 sows and 3 gilts to Venice Island Land Co.; 1 boar to L. M. Gobeille, Sutter county; 1 boar to W. S. Greenfield, Modesto.

Fred Gatewood, the live wire Poland-China breeder of Fresno, reports excellent results from his liner ad running in the Rural Press. An investment of $4.80 brought 36 inquiries, through which Mr. Gatewood was able to sell all of his surplus stock.

A great Chester White sales record was recently made at Scribner, Neb., when Maurice F. Black averaged $375 on 40 head, 34 of which were bred to the $6,000 Wildwood Prince Jr. The only sow sired by him went at $1,000, while the top was a sow bred to him that brought $1,150.

C. A. Vaughan of Hanford, has purchased in the Corn Belt a new sire for his registered Poland-China herd. The boar is by Sullivan's Big Orphan and out of a sister of Cald-

(Continued on following page)

LIVESTOCK DIRECTORY.

Rate in this directory 3c. per word each issue.

SWINE.

Berkshires.

CASTLEVIEW GIANT TYPE BERKSHIRES are the thrifty, typey, quick-growing kind that will make larger profits for you. Prizes and championship honors are awarded—by the greatest judges in America—only to animals possessing the essential qualities for economical meat production, viz: heavy bone, good set, broad strong backs, large hams and easy feeding qualities. Our grand champion herd includes Riverby Princess, grand champion sow of the world; Rockwood Lady 100th, 1917 grand champion of America; Mayfield Laurel 7th, 1917 grand champion of California. Bred sows, bred gilts and fine weaned pigs for sale.

Castleview Ranch, Santa Rosa, Cal.

ANCHORAGE FARM.

MONEY-MAKING BERKSHIRES—The prolific, easy feeding kind that make the highest priced pork from the lowest priced feed. They will increase your profits. Prices reasonable; satisfaction guaranteed. Write for free booklet describing our worlds reserve champion, TAR LEADER. We are now making a special offering of bred sows and gilts.

Anchorage Farm, Orland, Cal.

$25.00—$35.00—$50.00
BARON DUKE 201ST
Omaha Grand National Champion
BOAR PIGS, 3, 5, and 6 months old, from 500 pound prize-winning sows. We will sell nothing that we wouldnt use ourselves.
SANDERCOCK LAND CO.,
906 K St., Sacramento.
In charge of Natomas Land sales.

GRAPEWILD FARMS BERKSHIRES A few spring boars and fall pigs by Big Leader, Grapewild Farm Leader and Majestic King.

A. B. Humphrey, Prop., Escalon, Cal.

CROLEY'S BALANCED HOG FEED—The cheapest feed to fatten hogs. Write Geo. H. Croley Co., Inc., Livestock Supplies, 8th and Townsend streets, San Francisco.

BERKSHIRES bred at Imperial Stock Farm are the kind that satisfy. Write us or call and be convinced. R. J. Merrill & Son, Moran Hill, Cal.

BERKSHIRES IN PERRIS — They make money for me. Write for catalogue and prices. J. L. Hall, Perris, Cal.

BERKSHIRES—Sired by Star Leader, the 1500 boar. Koumias Registered Stock Farm, Modesto.

BERKSHIRES by Ringleader 20th, greatest son of Grand Leader 2nd. Geo. M. York, Modesto.

FOR REAL GOOD BERKSHIRES write Frank B. Anderson, R. 724W., Sacramento, Cal.

HOPLAND STOCK FARM—Registered Berkshires. Prices on application. Hopland, Cal.

CARRUTHERS FARMS BERKSHIRES — hoglera immune. Live Oak, Cal.

REGISTERED BERKSHIRES—Write R. D. Stone, Dos Palos, Cal.

BERKSHIRES—Fair Oaks Ranch, Willits, California.

Poland-Chinas.

SOW BARGAINS—We are offering some exceptionally nice tried sows, bred and open gilts, at attractive prices. They are all sired by the undefeated and world's grand champion Superba and out of big type sows, which cost me $200 and over. Investigate before buying elsewhere. Rough's Greenfields, Arlington Station, Riverside, Cal.

NOW BOOKING ORDERS for spring pigs, either sex, from my prize-winning, large type Poland-China hogs. Also will book a few orders for bred gilts, February and March farrow, and a few good, serviceable, aged boars. Hale I. Marsh, Modesto, Cal.

THE BEST IN THE WEST — California Gerstdale and President's Equal are my herd sires. Fall and spring boars now ready to move—each one a corker. Dr. J. A. Crawshaw, Hanford, Cal.

BARGAINS IN POLAND-CHINA SOWS—All immune. Good mothers and prolific. Registered stock. Also boars. Write for details. N. C. Hansen, Coachella, Cal.

ELDERSLY FARM—Big type Poland-Chinas with quality. Young stock from the breed's best big type sires for sale at reasonable prices. J. H. Ware, Live Oak, Cal.

FOR SALE—April boar by Young Jumbo, by grand champion Kings Big Bone Leader. Will ship on approval. A. Buckland & Son, Route E, Box 126, Fresno.

BOOKING ORDERS for spring pigs, sired by "Bob Big Boie" 281289, litter brother of the Junior Champion at Sacramento, 1918. P. E. Mitchell, Atwater, Cal.

WEANLING PIGS, both sexes, Gerstdale Jones and Caldwell's Big Bob blood lines. Booking orders for spring. Forest View Ranch, Paradise, Cal.

YOUNG POLAND-CHINA PIGS — Three months and up, $20 each, either sex; registered. Edward A. Hall, Route 1, Box 39, Watsonville, Cal.

OXBONE HERD offers March boars for sale from King's Big Bone Leader, grand champion at State Fair, 1918. Write F. E. Fay, Tipton, Cal.

BEST POLAND-CHINA BLOOD from hog belt. Immuned September pigs. Line bred Big Bob March pigs. R. W. Jickling, Elmira.

WAUKEEN HERD POLAND-CHINAS—Big type herd boar, the $700 Grand Champion of California. Les McCracken, Prop., Ripon, Cal.

40 SOWS and daughters of Big Bone Bob and I B A Wonder sows for sale. Price right. N. K. Horan, Lockeford, Cal.

BIG TYPE POLAND-CHINAS—Stock from the best herds of the Middle West. N. Hauck, Alton, Humboldt county, Cal.

20 HEAD of Big Bone Bob, Grand Model and I B A Wonder Stock for sale. J. W. Wakefield, Acampo, Cal.

LAKE SIDE STOCK FARM—Large, smooth and big boned Poland-Chinas. Geo. V. Beckman & Sons, Lodi, Cal.

REGISTERED POLAND-CHINA SWINE—Prize winners. Finest stock in the State. M. Bassett, Hanford, Cal.

BIG-BONED POLAND-CHINAS—From Eastern prize-winners. D. H. Forney, Route G, Fresno.

POLAND-CHINA PIGS WITH RIBBONS—Prices right. Johnnie Glusing, Winton, Cal

POLAND-CHINA PIGS — Bernstein, Trewhitt, and Ross blood. B. M. Hargis, Tulare.

POLAND-CHINAS—A few young service boars for sale. R. F. Guerin, Visalia, Cal.

REAOAKS RANCH herd of registered Poland-Chinas. W. J. Hanna, Gilroy.

BIG-BONED POLAND-CHINAS — Stock for sale. E. S. Myers, Riverdale, Cal.

Chester Whites.

THE BILLIKEN HERD of Chester Whites—Practically sold out. Offering this issue: One yearling boar; one bred yearling gilt to farrow in April; five fall boar pigs. Sows are bred for March and early April farrow and will book a limited number of orders for weaned pigs. Nothing better anywhere in the West. Plenty of size and all kinds of quality. C. B. Cunningham, Mills, Sacramento county, Cal.

PUREBRED CHESTER WHITES — August boars. Prices moderate. Cedarhurst Ranches, Route 2, Sacramento.

Duroc-Jerseys.

DUROC-JERSEYS AT IRELAND—Home of Cherry Volunteer II., Grand Champion Boar at Riverside. Ireland's Orion Defender and Orion's King of Ireland are excellent sires in service. Booking orders for spring delivery. Ranch at Owensmouth. City office, 1219 Brockman Bldg., Los Angeles.

DUROCS — SPECIAL SPRING OFFER — March and April registered weanlings, both sexes, good blood lines. Twelve-fifty each; three for thirty-five dollars. Order early. D. & H. J. Baughman, Oakdale, Calif.

WE WON MORE MONEY on Durocs at the State Fair than any other exhibitor. Why not buy some of this winning stock? June Acres Stock Farm, Davis, Cal

DUROC-JERSEYS — Burke's Good Enuff, Golden Model, King's Colonel and Pathfinder blood. Derryfield Farm, National Bank Building, Sacramento

DUROC WEANLINGS for the farmer. Easy feeders; 200 lbs. at seven months. W. W. Everett, River Bend Farm, St. Helena, Cal

OPEN GILTS, weanling pigs, either sex, at $20 each, out of mature sows. F. W. Gardiner, Route 4, Box 735, Sacramento

A FEW CHOICE BRED GILTS, spring boars and gilts of the best blood lines. H. P. Slocum & Sons, Willows.

BOUDIER DUROCS all sold out, excepting some sow pigs weighing 100 lbs. apiece. H. E. Boudier, Napa.

HEAVY-BONED DUROCS — A few service boars for sale. Ormondale Co., Route 1, Redwood City, Cal.

REGISTERED DUROCS — All from prize winning stock. W. P. Harley, Gridley, Cal

DUROC-JERSEYS—October pigs $15.00 to $25.00. Jack London Ranch, Glen Ellen.

REGISTERED DUROCS—Stock for sale. W. J. Fulgham & Sons, Visalia, Cal.

YORKSHIRES.

LLOYTON HERD REGISTERED YORKSHIRES. Bred gilts and pigs from eight weeks up. Lloyd & Tolnton, Llano Road, Santa Rosa, Cal

Hampshires.

MY HAMPSHIRES are money makers. Stock for sale. Buy now. L. A. Denker, Saugus, Cal.

REGISTERED HAMPSHIRES—Fine quality. Two open gilts. Now booking orders for weanling pigs for April. Our 28-months-old herd boar being related to our young sows, will sacrifice at 15c. lb. Tom M. Bodger, Gardena, Cal.

HAMPSHIRE SWINE — Young stock for sale. Ira Hart, Dos Palos, Cal.

Miscellaneous.

O. I. C. BREEDERS' NOTICE—I will sell Ohio Boy, two-year-old imported boar; none better. Also boar pigs ready for spring breeding (sire Ohio Boy, dam Toddler's Beauty, imported). Write for full information. Jas. Little, Wasco, Cal.

LARGE YORKSHIRES—The ideal hog for the progressive farmer. Young stock for sale. A. L. Tubbs Co., Calistoga, Cal.

MULE-FOOT HOGS — Large type. H. T. Bailey, P. O. Box 37, Lodi, California. "The Blue Gums."

DAIRY CATTLE.

Holsteins.

WE OFFER FOR SALE a herd of 9 Holsteins, 4 registered and 5 high-grade animals, for $1500. The herd consists of 5 cows in milk, 3 heifers and a young bull. None are less than 15/16 purebred, all well marked and in good condition and free from disease. Two cows are in calf to Picture Boy Gelsche Walker, two to Prince Juliana Gelsche Walker, while the registered cow is in calf to a promising son of King Mead of Riverside. Two heifers are out of Prince Juliana Gelsche Walker. The bull is sired by Sir Segis Pontiac Mead. We believe the purchaser will find this a satisfactory herd and well worth the money asked. L. N. Irwin, Davis, Cal.

A PRICE ON EVERY ANIMAL.
Herd free from tuberculosis. All sales subject to sixty days' retest. Sons of **Finderne Soldene Valdessa**, whose dam is not only a world record cow in seven-day division, but has two sisters holding world's records for yearly production.
Toyon Farms Association.
679 Mills Building. San Francisco.

HOLSTEIN HEIFERS—For sale, 20 high grade heifers, 1½ to 2 years old. Well marked, fine condition. Part of them bred to freshen this fall to Buttercup bull. C. L. Knestice, Rt. A, Box 236, Reedley, Cal.

HIGH-CLASS HOLSTEINS—I have for sale some sons of Sir Veeman Korndyke Pontiac from A. R. O. dams. Write for particulars or come see them. R. F. Guerin, Visalia, Cal.

SUNNYBROOK RANCH, WILLITS, CAL.—Young registered Holstein bulls. Also 12 head grade Holstein heifers and cows, nicely marked and well bred.

FANCY GRADE HOLSTEIN COWS and heifers from herd testing 100 per cent. Animals qualified for certified dairies. The Lewis Company, San Jose.

THE McCLOUD RIVER LUMBER CO., McCloud, Cal.—High-class thoroughbred Holstein bulls for sale. Write for prices and pedigrees.

PALO ALTO STOCK FARM, Palo Alto, breeders of registered Holsteins. Heifers and service bulls. Reasonable prices.

CREAMCUP HERD — Registered Holsteins, Pontiac bull calves. M. Holdridge, Rt. A, Box 437, San Jose, Cal.

REGISTERED HOLSTEIN BULLS with world's record backing. Kounias' Registered Stock Farm, Modesto.

BREEDERS OF REGISTERED HOLSTEIN cattle and Berkshire pigs. Whittier State School, Whittier, Cal.

F. H. STENZEL, SAN LORENZO, CAL.—Breeder of Registered Holsteins. High test producers.

REGISTERED HOLSTEINS—A. W. Morris & Sons Corp., Importers and Breeders, Woodland, Cal.

REGISTERED HOLSTEINS — Best blood lines of the breed. R. L. Holmes, Modesto, Cal.

GOTSHALL & MAGRUDER — Breeders of registered Holstein-Friesians. Ripon, Cal.

CHOICE HOLSTEIN bulls for sale. No females. Millbrae Dairy, Millbrae, Cal.

BREEDERS OF REGISTERED HOLSTEIN cattle. McAllister & Sons, China, Cal.

HOLSTEIN BULLS and bull calves from A. R. O. cows. C. A. Miller, Ripon.

REGISTERED HOLSTEIN CATTLE—E. E. Freeman, Route B, Modesto, Cal.

HENGERVELD DE KOL BLOOD. High producers. T. B. King, Visalia.

EL DORADO HERD OF HOLSTEINS — Alex. Whaley, Tulare, Cal.

Jerseys.

SUNSHINE FARM JERSEYS — Tuberculin tested. Production counts. E. E. Greenough, Merced.

YOUNG BULLS from Register of Merit cows. W. G. Garnett, Orland, Cal.

Guernseys.

GRAPEWILD FARMS GUERNSEYS.
A 21-months-old bull out of dam with record of 615 pounds in A. A. class, and a few young bulls up to 1 year of age.
A. B. Humphrey, Escalon, Cal.

HIDDEN VALLEY FARM offers for sale 2 young Guernsey bulls ready for service, out of high record advanced register dams. A. J. Welch, proprietor, Redwood City.

EDGEMOOR FARM GUERNSEYS — First in the show ring and in official records. Few animals of either sex for sale. Edgemoor Farm, Santee, Cal.

PALO ALTO STOCK FARM, Palo Alto—Breeders of registered Guernseys; both sexes, prices reasonable.

Ayrshires.

NORABEL FARM AYRSHIRES—Purebred young stock for sale at reasonable prices. Le Baron Estate Company, Valley Ford, Cal.

ELKHORN FARM AYRSHIRES — Choice young bulls at reasonable prices. J. H. Meyer, 110 Montgomery St., San Francisco, Cal.

AYRSHIRES — Registered, all ages. E. B. Garland, 412 Claus Spreckles Building, San Francisco.

MILKING SHORTHORNS.

BREEDERS OF REGISTERED SHORTHORNS—Milk strain, choice young stock for sale. John Lynch Ranch, Box 321, Petaluma.

INNISFAIL DAIRY SHORTHORNS—Registered young bulls for sale. Alexander & Reel Bros., Suisun, Cal.

FOR SALE
600 Hampshire EWES
300 French Merino
With 100% Lambs. Large, prolific sheep, well adapted to range hardships. Write or call for full particulars.
W. F. Rominger
Phone 55 F 22 Woodland
CAPAY, - - CALIFORNIA

SWEET WATER DUROCS
California's Most Popular Big Type Sire.
GREAT MODEL
(By Great Wonder and Model Lady 4th)
M. C. Allen Winsor Ranch. Peters-Lamson
R. M. Allen Bonita, San Diego Co. & Walker

BEEF CATTLE.

AM A SPECIALIST in registered beef cattle and familiar with the best herds in the country. If you need Shorthorns or Herefords, make use of my experience, save money and be satisfied. R. M. Dunlap, Hotel Land, Sacramento.

RANCHO SAN JULIAN SHORTHORNS—Purebred range bulls, unregistered, for sale. Estate Thos. B. Dibblee, Santa Barbara or Lompoc, Cal. John Troup, Supt.

ALAMO HERD REGISTERED HEREFORDS (founded by Governor Sparks). Herd and range bulls. Reasonable prices. W. D. Duke, Likely, Modoc county, Cal.

REGISTERED MILK AND BEEF SHORTHORNS, bulls and heifers for sale; catalogue free. Thomas Harrison, Santa Rosa Stock Farm, Santa Rosa, Cal.

REGISTERED YEARLING SHORTHORN BULLS — Heavy-boned, thick-meated, Scotch and Scotch-topped breeding. Ormondale Co., Route 1, Redwood City, Cal.

THE NEVADA HEREFORD RANCH, Jno. H. Cazier & Son Co., props., Wells, Nevada. Registered Hereford cattle. Breeding stock for sale.

REGISTERED SHORTHORNS—A few choice young bulls, grandsons of Fair Knight. Prices reasonable. Fair Oaks Ranch, Willits, Cal.

JACK LONDON RANCH—Breeders of prize-winning beef Shorthorns. Glenn Ellen, Cal. Eliza Shepard, Supt.

HOPLAND STOCK FARM—Registered Shorthorns. Prices on application. Hopland, Cal.

REGISTERED HEREFORDS—H. H. Gable, Diamond G Ranch, Esparto, Cal.

SIMON NEWMAN CO., breeders of Registered Herefords, Newman, Cal.

GEORGE CALLAHAN, Breeder of registered Herefords, Milton, Cal.

GEORGE WATTERSON—Breeder Registered Herefords, Bishop, Cal.

HEREFORDS—Mission Hereford Farm, Mission, San Jose, Cal.

SHORTHORNS — Carruthers Farms, Live Oak, Cal.

SHEEP AND GOATS.

F. A. MECHAM ESTATE, Petaluma, Cal.—Breeders and importers of Shropshire, Rambouillets and American Merinos, both sexes. Also Red Polled cattle. Take electric car at Petaluma or Santa Rosa for Live Oak Ranch.

WE HAVE FOR SALE 40 pure blood, two-year-old Shropshire rams. Prices reasonable. For particulars address: Parrott Ranch, P. O. Box 1039, Chico, Cal.

SHROPSHIRES FOR SALE—Ewe lambs and matured bucks from Iowa. Non-related. C. J. L. Stonebraker, Route A, Chico, Cal.

FOR SALE—56 yearling ewes out of thoroughbred Shrop bucks and Merino ewes. Box 493, Vacaville, Cal.

DORSETS AND ROMNEYS — Dorset ram lambs for sale. John E. Marble, South Pasadena, Cal.

BISHOP BROS., SAN RAMON, CAL. — Breeders and importers of Shropshires.

KAUPKE BROS., WOODLAND, CAL. — Breeders, importers of Hampshire sheep

CHAS. KIMBLE—Breeder and importer of Rambouillets, Hanford, Cal.

CALLA GROVE FARM, MANTECA, CAL.—Breeders and importers of Hampshire sheep

HORSES AND MULES.

FOR SALE—One of the very best draft stallions in California; cheap. Weight 2150 pounds; 8 years old, color brown. Correspond with W. N. Price, Route C, Box 93, San Jose, Cal.

REGISTERED BLACK Percheron stallion, seven years old, weight about 1700. Terms reasonable. Write John Secrest, Escalon, Cal

FOR SALE — Two Imported Percheron stallions. Reasonable prices. Mary A. Hunter, Bradley, Cal

MISCELLANEOUS.

BUTTE CITY RANCH—Shorthorns, Shropshires, Berkshires and Shetland ponies. Write for prices and descriptions before buying. Butte City Ranch, Box P, Butte City, Glenn county, Cal. W. T. Dwyer and W. S. Gulf, foot owners.

CROLEY'S BALANCED DAIRY FEED—The cheap milk producer; and Croley's Calf Meal, the best California calf raiser. Geo. H. Croley Co., Inc., Eighth and Townsend streets, San Francisco, Cal.

FOR SALE—Eight yearling heifers, 20 two-year-old heifers, twelve cows, one bull—all good grade Holsteins. Rancho del Oso, 18 miles south of Pescadero, San Mateo county. Swanton, Cal.

FOR SALE—Three hundred and fifty head of cutting two-year-old steers and heifers. White faces. John Sigler, Route B, Box 112, Hanford, Cal. Phone 1984

TWENTY HEAD of No. 1 graded dairy heifers for sale from 1½ to 2 years. L. W. Flanders, Cupertino, Cal.

Poland-Chinas Sell High at Hanford

[Written for Pacific Rural Press.]

The seventh semi-annual sale of the Kings County Poland-China Breeders' Association, held at Hanford, February 22, was characterized by everything being in the superlative degree—the quality of the offerings, the high average of prices obtained, the attendance at the sale and the treatment of the visitors. There is no question but what Kings county has become the greatest Poland-China center of the Pacific Coast, not only from the standpoint of numbers but from the high quality of the animals as well.

The top of the sale was Kings Jumbo Lady, consigned by William Bernstein, for which Dallas H. Gray of Hanford paid $460. A close second was May Orange, consigned by M. Bassett, for which Mr. Gray paid $430.

The average of the whole sale of 73 animals was $165.58, which included everything. There were no inferior animals offered, but there were some young enough to be undeveloped and some open gilts. It was easy for one who saw the quality to understand the high average.

One feature was the participation in the buying by the pig club boys from Fresno. The boys have the backing of the banks of Fresno in their venture and it was stated by Mr. Burton, the pig club leader, that these boys expected to buy 25 bred or open gilts at this sale or elsewhere.

While the average of the sale was high, several breeders stated that the next one would be better, and, judging by what has been done in the past, this seems probable.

Col. Ben A. Rhoades of Los Angeles cried the sale in his usual business-like and pleasing manner.

One reason for the success of this association is the team work of the members. No association can be a success unless all pull together for the common good, and the Kings county breeders seem one in both thought and action.

Berkshires Bring Big Bids

The Western Berkshire Congress meeting, held at Davis, February 19 and 20, was a success from start to finish. Harmony prevailed at the election of officers; the banquet was a most enjoyable affair; the barrow show was instructive, and the sale resulted in adding several new breeders to the ranks.

Much interest was manifested in the election of officers, as it was expected that a bitter fight would develop. But President Carruthers induced his forces to nominate A. B. Humphrey of the opposing faction, and Mr. Humphrey was unanimously elected. The complete list of officers was given in last week's news items.

Resolutions were adopted endorsing the movement for more funds for the University Farm, and in favor of the feed inspection, pure seed and dog license bills now before the Legislature. A committee was appointed to investigate the wild-cat "hog syndicates."

Prof. J. I. Thompson judged the fat barrows, and J. Frances O'Connor of Castleview Ranch, Santa Rosa, won with an eight-months-old pig weighing 320 pounds. Sandercock Land Company was second, A. B. Humphrey third and Frank B. Anderson fourth. In high dressing percentages the Humphrey barrow led with a score of 84.3 per cent. The O'Connor barrow was second, Sandercock third, and Superior California Farm Lands Company fourth and fifth. Frank B. Anderson had the first pen of barrows, Superior California Farm Lands Company second, and Anderson third.

The offerings at the sale showed great quality and good prices were obtained. Practically all of the animals went to new breeders or men who are establishing foundation herds. The top was the boar Columbia's Leader, consigned by Frank B. Anderson of Sacramento and bought by R. H. Brown of Marcuse, Sutter county, for $300. He also bought several other good ones. The Del Paso Heights Farm Center purchased several sows, which are to be used by the members of the center jointly.

The average for the sale was $153.75, which seemed satisfactory to both consignors and purchasers. Col. Ord L. Leachman was at his best and cried the sale in a most satisfactory manner.

LIVESTOCK NOTES.

(Continued from Preceding Page)

well's Big Bob, thus representing two of the best strains of the breed.

W. M. Carruthers of Live Oak has sold two Berkshire sows and a boar to J. W. Moffitt of the Union Iron Works, San Francisco, for his ranch at Los Altos; also a sow to George Edwards of Palo Alto.

H. M. and M. B. Cross of Merced, who have a herd of 35 registered Holsteins, are establishing a high-class herd of registered Poland-Chinas and were prominent buyers at the recent Hanford sale.

W. M. Carruthers, Live Oak, has recently sold to H. M. Hanman, Crystal Springs, two fall yearling Berkshire gilts that were in the winning exhibitors' herd at the 1918 State Fair; also a boar to O'Neill Bros., Santa Ana.

W. M. Way & Son of Roe Stein Ranch, Modesto, have sold Durocs to the following, all of Modesto: Service boars to Hoag & Kellogg, W. G. Hoyte, W. L. Bowron and W. H. Arnold; 3 bred gilts to W. H. Arnold and 4 bred gilts to W. F. Beard.

Hampshire hogs brought world record prices at Mattoon, Ill., February 17, when Blue Belle, winner at the last International, brought $4,815 with a litter of nine, and Maplewood Giant 2nd brought a record price of $1,205 for a spring pig. The first 40 head sold brought a record price for the breed.

A. Buckland & Son of Fresno are feeding about one pound of damaged raisins per head to their brood sows in connection with a small ration of ground milo and barley. Through the winter months it is their practice, as well as that of other swine growers in that vicinity, to run their brood sows in the vineyards for green feed.

Johnnie Glusing, who purchased Big Model Lady, the top Poland-China sow at the Gatewood sale, reports that the sow celebrated Washington's birthday by farrowing a dandy litter of 14 pigs, of which 3 boars and 6 sows were saved. Mr. Glusing writes that they are husky little fellows and he expects to get the purchase price of $265 back out of this first litter.

The 17 Poland-Chinas purchased at the Hanford sale by the Fresno Pig Club boys were loaded on a truck and paraded through the town, followed by a procession of autos all blowing their horns. The hogs were then hauled to Fresno, where they were met by a welcoming party in autos, and after parading the streets the hogs were taken to the fair grounds for exhibition.

A. B. Humphrey of Grapewild Farm, Escalon, has sold the junior

DUROC-JERSEYS AT AUCTION

ENTIRE HERD—ALL REGISTERED.

Cream of the breed. Large type, mammoth sows, senior yearlings, 7 feet long, over 36 inches tall. Mammoth Boar, Orion Cherry King, 2 years old, weight 900 lbs. The finest lot of gilts you want to look at. Blue Ribbons and Purple. No better ever offered on the Coast. Young Boars ready for service, big bone, typey fellows. Orion Cherry King and Colonel strains. Come and get them at your own price. Terms cash, or its equivalent paper. MARCH 18, 1:00 P. M. SHARP.

COL. ORD L. LEACHMAN, Auctioneer.

GARDEN CITY SANITARIUM
SAN JOSE

One mile from depot on street car line.



LLOYTON HERD
REGISTERED
YORKSHIRES

DO YOU KNOW

That the Yorkshire Hog produces more pounds of growth for feed consumed than any other? That the Yorkshire is more prolific, hardy, and prepotent than our native breeds?

We have some choice bred gilts; also weaned pigs—8 weeks and up.

LLOYD & TOINTON,
SANTA ROSA, CALIFORNIA

R. F. D. No. 1., Box 402
San Francisco Address: P. O. Box 2250.



UNEEDA QUEEN MODEL,
Grand Champion State Fair, 1918.

Uneeda Glenn County Herd of
Duroc-Jersey Hogs

KEY HERD OF PACIFIC COAST
Won at Sacramento:
Grand Champion Sow, Senior Champion Sow, Junior Champion Boar, seven Firsts, 23 other prizes.

PIGS BY NOTED SIRES
High Orion, the world's record-breaking sire, Great Wonder, Grand Champion Iowa; King Orion Cherry, First Prize Indiana and Ohio, and other best boars of the breed. Get some of their pigs. Few bred sows and gilts left.

H. P. SLOCUM & SON
WILLOWS, CAL.

Grand Champion
Herd of Hampshires

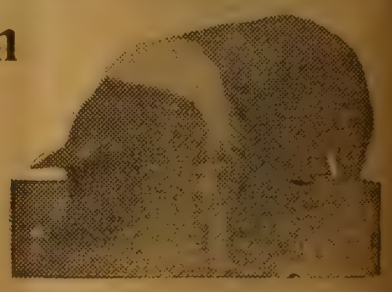
FOR SALE.

Brood Sows, litters at foot. Sows bred for fall litters. Young Boars and Gilts.

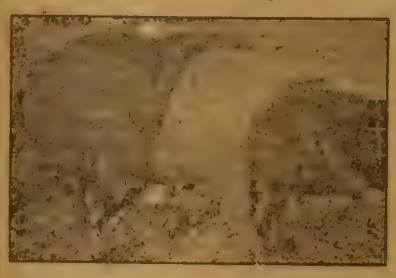
Best families.

Finest individuality and clean-cut markings.

Call or write.



Address F. V. GORDON or F. A. LANGDON, Llano Vista Ranch, Perris, Cal.



THE POPLARS RANCH
Registered
Hampshire Swine

A limited number of three-months old weanlings for sale. Am booking orders for future delivery of young sters by Gen. Tipton. Have a few young boars sired by Duke's Allen Grand Champion, 1917, Sacramento

C. J. GILBERT, Lancaster, Cal.

OAK KNOLL FARM

LAKEPORT CALIFORNIA

We have sold all our young boars and are now booking orders for March delivery. Highlander, the $1,000 Grand Champion Boar, heads our herd of

CHESTER WHITES

SAN FRANCISCO OFFICE, 601 BALBOA BLDG.

DIGESTER TANKAGE

Send for Sensible Folder on Feeding Hogs

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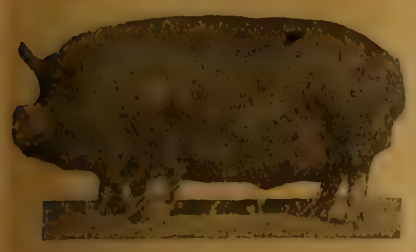
Animal Food Dept. 704 Townsend St., San Francisco

HAUSER'S DIGESTER TANKAGE

Gives Greatest VALUE for LEAST MONEY. IT MAKES THEM FAT.

HAUSER PACKING CO. LOS ANGELES

Grand Champion BERKSHIRES



AMES RIVAL 70TH

We have in our herd the Grand Champion Boar, Grand Champion Sow and First Prize Senior Herd at State Fair.

Forty-three litters this year averaged ten to the litter. Let us supply you with foundation sows and boars to head your herd.

JAMES MILLS CO.
Hamilton City : : California

NEW HARNESS

is cheaper than second-hand, dollar for dollar of cost. Come in and see what we have to offer you in HERCULES HARNESS and Horse Collars. Our own make and fully guaranteed.

Stallion collars made to order.

W. DAVIS & SONS

California's Pioneer Harness Manufacturers
333 Market St., SAN FRANCISCO, CAL.

Catalogue of Harness, Saddlery, Trunks and Traveling Bags sent free on request.

Bred Sows and Gilts

Bred to Iowa Wonder and Model Jones. These are the two best boars I could buy. Their breeding is A-1.

W. D. TREWHITT, Hanford.

REAOAKS SPECIAL
Registered Big Type **Poland-Chinas**

Bred Sows and Gilts, 25c. per lb.
F. O. B. Gilroy.
W. J. HANNA, GILROY, CAL.

TAMWORTHS
(The Bacon Hog)
Largest Herd in the State
DUROC-JERSEYS
Mature Stock and Weanlings of both sexes. Sure to please.
SWINELAND FARM,
W. O. Pearson, Prop. Woodland, Cal.

Get Longer Better Wool

Shear with a machine and leave no second cuts nor scar the sheep. Use a Stewart No. 9 Ball Bearing Shearing Machine. Gets 15% more wool easily and quickly. Removes the fibre completely, making it longer and better selling. Leaves a smooth even stubble for next year's growth. Machine soon pays for itself. Price $11. Send us $2—balance on arrival. Write for catalog.

CHICAGO FLEXIBLE SHAFT COMPANY,
Dept. B 103, 12th St. & Central Ave., Chicago, Ill.

yearling boar, Grand Fashion Leader, to the University Farm, Davis. This boar was sired by Grand Leader 2nd and out of a Fashion Longfellow sow. He will be mated to the University sows, most of which are sired by Star Leader, a son of Grand Leader 2nd.

Young & Clark, Lodi, report Poland-China sales as follows: Three service boars, full brothers of the junior champion sow at Sacramento, to P. Coombs, Chowchilla; P. E. Mitchell, Atwater, and George A. Jabaut, Lodi; 1 service boar to J. W. Wakefield, Acampo; 1 Big Bone Bob bred gilt to R. B. Montgomery, Walnut Creek; and 1 sow bred to I B A Wonder to Mrs. B. L. Creps, Wheatland.

Allen Thompson, Tulare, is selling Durocs like hot cakes. Since the recent breeders' consignment sale he has sold the following at private treaty: Two bred sows and a September boar to M. F. Radabaugh, Tulare; 2 September gilts to W. C. Carpenter, Tulare; 2 September gilts to W. F. Kilbreath, Visalia; 1 September boar to Green Cattle Company, Tulare; and 2 September gilts and a boar to F. C. McMaster, Merced.

C. B. Cunningham, president of the California Swine Breeders' Association and owner of the Billiken herd of Chester Whites at Mills, having completed his work on the livestock commission of the Food Administration, plans to expand his breeding operations and is expecting a consignment of high-class Corn Belt Chesters shortly, having given F. H. Moore, editor of the Chester White Journal, a blanket order to get some of the best he could buy at the sale now being held.

W. F. Sandercock of the Natomario Rancho, Sacramento, is as proud as a boy with his first pair of boots over 12 beautiful pigs farrowed by Princess Leader, the only Berkshire in the world whose sire and dam were both world's champions. The pigs were sired by Baron Duke 201st, the grand national champion, so they combine the blood of two world's champions and a grand national champion. Mr. Sandercock reports that mother and children are doing fine and that the latter are extremely uniform and whales in size.

FARMERS AWAKENING TO THE SCARCITY OF HORSES.

Charles W. Paine, secretary of the California Stallion Registration Board, informs us that during the month of January 100 more stallion licenses were issued than for the same month last year. He considers this a good indication that people are beginning to realize the scarcity of good horses and the demand there will be for them in the near future.

Trucks and tractors will displace horses on farms to a certain extent, but on account of soft ground, lack of skilled mechanics, distance from repairs, and the higher cost of gas, oil and repairs, their use will be limited and there will always be a good demand for heavy draft horses.

However, from a working standpoint the horse must be considered simply as an equine motor, and just as the tractor manufacturer seeks to make his machine as efficient as possible, so horsemen must learn to build better draft horses that will work with less time off for repairs and will give long life and steady service under all conditions.

The good draft horse still remains supreme on the farm, and always will. But the inefficient horse is doomed. Breed good mares to registered draft stallions and you will be playing a safe game.

DESFORD BANKER

(Imported)

This well-known Shire Stallion is for sale. He is sound and a proven sire.

This is probably the only opportunity there will be this season to secure a really high-class Shire Stallion, and is for sale because the owner is absolutely retiring from business.

Also a few imported mares and young stock for sale.

HENRY WHEATLEY, SALVADOR STOCK FARM, NAPA, CAL.

MAMMOTH AUCTION SALE

LIVESTOCK AND IMPLEMENTS

ON THE GLIDE RANCH, ONE-HALF MILE NORTH OF FREEPORT FERRY ON THE YOLO SIDE

Nine miles south of Sacramento on Riverside Road. Two miles south of Glide Station on the O. A. & E. Free transportation from the station. Ranch leased to other parties. Positively a sale—Rain or Shine. Big barn. All to be sold in one day

MARCH 6, 1919, 10 A. M.

200 High Grade Holstein Cows—Every one raised by us and all under 8 years of age.
4 Registered Holstein Bulls.
100 yearling to 2-year-old heifers.
50 big work horses and harness.
1 Belgian stallion
150 fat hogs—150 to 200 lbs.
20 brood sows.

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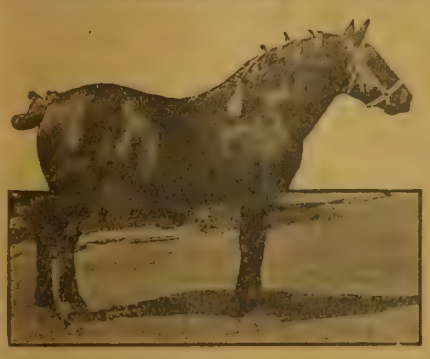
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Chains, shovels, stretchers, forks and other articles too numerous to mention.

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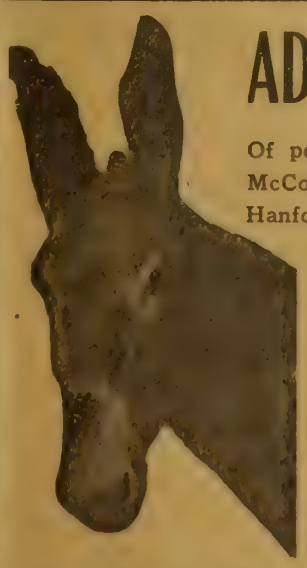
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PERCHERONS - BELGIANS - SHIRES
Stallions



A Large Collection of Stallions ready for service this season.

Heavy boned, ton types, with plenty of style and action. Prize-winners and descendants of prize-winners. No better in America. State certificate of soundness and life insurance furnished with every horse. If your community is in need of a high-class stallion, come to Patterson, California, and see the largest and best collection in the West.

SPECIAL PRICES AND LIBERAL TERMS FOR THE NEXT SIXTY DAYS.
Visitors Welcome. Correspondence Invited.
N. W. THOMPSON, Patterson, California



ADMINISTRATRIX SALE!

Of personal property of the estate of James W. McCord, to be held at the ranch, 2 miles south of Hanford on the Corcoran Highway,

MARCH 12, 1919

3 registered Shire Stallions, 3 and 4 years old.
6 registered Shire Mares.
3 registered Shire yearling Colts.
5 young Jacks. 5 young Jennets.

The above listed registered stock to be sold in connection with 75 head general purpose horses and mules. Terms cash.

BESSIE McCORD, Administratrix

Kings County Jack Ranch



The largest Jack and Mule farm on the Coast. **The best selection.** Can show you the heaviest, biggest boned animals you ever saw.

1100 to 1400 lbs. in weight.
Prices right.

Special Offer: 50 Young Mules

JOHN BURRELL, HANFORD, CAL.

Poultry for Profit

[Written for Pacific Rural Press by Susan Swaysgood, Pomona.]

PROFITABLE COMBINATIONS WITH POULTRY.

All kinds of fruit and vegetables can be grown to a much better quality and quantity by the judicious use of poultry droppings. Only lately I have seen the best combination in small fruits that I have met with for a long time. This is poultry manure and strawberries. The droppings in this case were what we might call "prepared" for the purpose. Instead of putting on in a raw condition, just as they come from the poultry house, the droppings are mixed in with orchard leaves of any kind and finely pulverized soil. After a layer of soil, leaves and poultry manure have been spread, comes a layer or thin sprinkling of finely ground bone meal. This is then left to heat, after the required quantity has been piled up, then when the heat has loosened or set free the ammonia in the droppings, the whole is mixed and applied to the strawberry plants, either by a top dressing and hoeing well around the plants individually or before planting by hoeing well into the soil. The strawberry plants grow in about half the time and set fruits that are as large again as those with ordinary cultivation and fertilizing, and it is claimed the berries are both earlier and sweeter than under ordinary conditions.

THIN OUT TO PREVENT BURNING.

Lettuce can be forced by the same method, but when the raw poultry droppings are applied to lettuce the plants burn, and this is the case with many plants. Poultry droppings are too strong in the raw condition for many plants and trees, and in applying them to fruit trees it is well to keep away from the trunk and to mix them in the soil. The soil then absorbs the ammonia and it is carried to the plant through that medium. The fruit grower's best friends are bees and poultry. All kinds of fruit trees are benefited by these two quiet workers. The bees fertilize the pollen by carrying it around from one tree to another, and the poultry droppings fertilize the soil by furnishing nourishment for the roots.

If you have fruit, but neither bees nor poultry, your crops can be very much improved both in quality and quantity by getting a good flock of poultry and half a dozen stands of bees. I could give you many cases of worn-out orchards being made over practically by the help of a flock of poultry and a few stands of bees.

DON'T WASTE VALUABLE FERTILIZER.

To get the best profits from poultry, there must be no waste, and when the droppings are allowed to lay around until half their value has gone into the air there must be waste. Some will tell you that in our dry climate nothing escapes, but it does. Wherever droppings are piled up without being mixed with the soil the very best elements are escaping into the air. If they are mixed with dry soil and the whole mass used to fertilize the garden or orchard, then you are putting back most of those elements that would have escaped if allowed to stand in a heap to sweat. Even the eggshells that come from the incubators should be put back into the soil, crushed and mixed with a portion of the soil itself, then spread the whole over plants that can use more lime, for eggshells contain a large amount of lime.

THE FLOCKS OF THE DESERT.

The poultry scribbler has been trying out the desert during the past week for a "flu" cure, and I want to say it works like a charm. Yes, indeed, the desert has charms that only those know who have ventured to explore it. Sunday, February 16, a party of friends took me all through the Coachella Valley. We saw the Government date gardens at Mecca and at the lower end of the valley, and before starting on the rise for Brawley we stopped at a farm house on the roadside that bore a sign, "Fresh Dates for Sale." After the whole party had loaded up with packages of delicious dates, I inquired what else they had. They told me goats and Rhode Island Red chickens. So of course I was interested, for be it known I have lately developed symptoms of goatitis. Its about the same as chickenitis or any other "itis," and the remedy is exactly the same—namely, buy, beg, borrow or steal all the goats you can lay hands on, and I now have several.

But to get back to the party. We went out to the chicken yard first and I saw the finest flock of Rhode Island Reds that was ever seen outside of the show room—large, dark-colored and in perfect shape. Then we passed on to the goats, and, to speak in the common language, "they had some goats." Good ones, every one of them, and several had been taught to do tricks. In fact, we thoroughly enjoyed our visit. Then, as is usual with me when we had seen the sights, I asked, "Do you subscribe for the Pacific Rural Press, the best——" Before I could go any further the lady said, "Yes, indeed." "Well," I said, "then you belong to my family. I am the chicken woman." Everybody had a good laugh and the lady gave me her card, which reads: "Oasis Date Ranch, Thermal, Cal."

Now, don't you think that the most appropriate name that could have been found for this place? Oasis, separation, a parting of ways, for this is the terminal of the Coachella Valley—some 120 odd feet below sea level, and the junction at which commences the rise into Imperial Valley. These two valleys are the wonderland of California."

Poultry Breeders' Directory

GIANT BRONZE TURKEYS—Gold Nugget Strain. Prove their superiority by winning Gold Special Sweepstakes for best turkeys at the following great shows: Arizona State Fair, 1916; Texas State Fair, 1917; California State Fair, 1917-1918; Los Angeles Show, 1917-1918; Pacific Coast Land and Industrial Exposition, Oakland, 1918. An unequaled record. Large turkeys can be raised at practically the same cost as small ones. Toms for sale that will increase size and improve any flock. I am the originator of the Gold Nugget Strain. J. Will Blackman, 607 East Third St., Los Angeles, Cal.

SULLIVAN'S FAMOUS BUFF ORPINGTONS—Want the best? Write Sullivans, Specialists. Oldest flock on Pacific Coast. Line bred for 20 years. Said by Walter Hogan, originator of "Hogan System," best layers of this variety he ever handled. Have won thousands gold and silver special prizes, cups and ribbons—more than all competitors combined, on the Pacific Coast. Eggs, $3.00, $5.00 per 15; $12.00 and $15.00 per 100. Breeding stock. Write for prices. Mr. & Mrs. W. S. Sullivan, 100 Market Road, Agnew, Santa Clara Co., Cal. Telephone S J 5205, R. 5.

NEVER SAW CHICKS GROW FASTER—"Your pullets laid through moult." Why? Bred 20 years to lay 200-290 eggs yearly. White, Brown, Buff Leghorns; Anconas; Reds; Barred White Rocks; Minorcas; Orpingtons; clearing customers $5.00. Valuable circular with proof, free. Chicks two-thirds booked to May. Reasonable, yet most week still open. Increasing our hatcheries as demanded (50,000). Many repeat orders monthly, yearly. Breeders, Pullets. J. Beeson, Pasadena, Cal.

WHITE LEGHORNS are the most profitable breed of poultry. If you are in the business for profit, you will eventually have them. Early broilers; early layers; early profits; we sell only **White Leghorn Baby Chix** from heavy laying **Hoganized** hens. Safe delivery of full count live chix guaranteed. Prices per 100: February, $15; March, $14; April, $12.50. The Pioneer Hatchery, 408 Sixth street, Petaluma, Cal.

BABY CHICKS, HATCHING EGGS, BREEDING MALES—Barred Rocks, Ancona, R. I. Red, Black Minorcas, White Minorcas, White Orpingtons, Black Orpingtons, Light Brahmas, Buff Leghorns, Brown Leghorn and MacFarlane White Leghorns. Also Duck, Geese, Turkey eggs. Circular and price list free., Poultrymen's Co-operative Hatchery, D. E. Doke, Mgr., 732 So. Spring, Los Angeles.

BABY CHICKS—We specialize this season on money-making White Leghorns—hatching from stock with high records that are unimpeachable. Also Brown Leghorns, Anconas, Minorcas, Rocks, Reds, Orpingtons, and White Wyandottes. Especially interesting circular with price list ready January 1st. B. W. Archibald, Soquel, Santa Cruz Co., Cal.

GOLDCROFT BUFF ORPINGTONS fulfill every standard and utility requirement. Won San Jose show first, second, third, pullet and cockerel. Eggs, $5.00 and $3.00 from winning pens; $2.00 from general flock; $12.00 per hundred. Stock for sale. Samuel Abrams, Los Altos, Cal.

PEERLESS WHITE WYANDOTTES—Our 200-egg strain, bred for years for show qualities and high egg production. 50 cockerels, 100 pullets for sale. Trios and mated yards. Eggs for hatching. Catalogue free. J. W. Atkinson, Box B, 130 Willard St., San Jose, Cal.

BARRED PLYMOUTH ROCKS—Champion prize winners and wonderful layers. Choice cockerels, hens and pullets for sale. Hatching eggs from twelve grand matings. I have made a specialty of Barred Rocks for over twenty years. That's why I win at all leading shows. "Nothing Better In Poultry" than Vodden's Barred Rocks. Catalog free. Chas. H. Vodden, Box 396, Los Gatos, Cal.

BABY CHICKS EVERY WEEK—Order early and get the date you want. White and Brown Leghorns, Rhode Island Reds, Barred Rocks, Anconas. Also hatching eggs. Safe delivery guaranteed. Write for circular. Stubbe Poultry Ranch and Hatchery, Palo Alto.

FINEST HATCHERY IN THE WORLD—CHICKS, White Leghorns, Rhode Island Settings—1000's—hatched right in our $60,000 brick and concrete hatchery from our Hoganized heavy layers. Stock, eggs. Pebbleside Poultry Farm, Sunnyvale, California.

BOOK YOUR ORDER NOW for S. C. White Leghorn baby chicks from hens from a trapnested strain of 192 to 297 eggs. My hens are noted for their exceptionally large eggs. Price, $15 per hundred chicks. Mrs. L. A. Benoit, Rt. C., Box 183, Modesto, Cal.

SPRING CHIX—Rhode Island Reds, Barred Rocks, Buff Orpingtons, Black Minorcas, Buff, Brown and White Leghorns, from Hoganized stock, bred to lay. Satisfaction and safe delivery guaranteed. Tobener Poultry Ranch, Washington Ave., San Jose, Cal.

RHODE ISLAND RED CHIX or eggs from our Hoganized standard and utility breeding combined. Prices no higher than ordinary stock. Buff Orpington eggs or chix from prize winners. Munier Poultry Yards and Hatchery, Cupertino, Cal.

WHITE, BROWN, BUFF LEGHORNS
Large or small lots—exceptional quality in breeding stock. Reasonable prices.
Circular Free.
Mission Hatchery, Box 17, Campbell, Cal.

PRUSSIAN HILL POULTRY RANCH—A few fine Blue Andalusian Cockerels, $3.00 and $5.00. Hatching eggs. Rocks, Minorcas, Andalusians, $2.00 for 15: Baby chicks at 20c., 25c., and 50c. each. Geo. I. Wright, Mokelumne Hill, Cal.

HATCHING EGGS—White Leghorns, Light Brown Leghorns, Dark Brown Leghorns, White Rocks, $2.50 per 15; $10.00 per 100. All bred to highest possible standard of beauty and utility. Mahajo Farm, P. O. Box 597, Sacramento, Calif.

RHODE ISLAND REDS—Single and rose comb. Stock. Hatching eggs from 220-egg record layers. First prize winners in leading California shows. Baby chicks for sale. Wm. Larm, 3915 39th Avenue, Fruitvale, Cal.

S. C. RHODE ISLAND REDS EXCLUSIVELY—"Pacific Coast Aristocrats." Hoganized flock. Booking orders for day-old chix and hatching eggs. Order early. Rosedale Poultry Farm, Motor A, Box 200A, Ceres, Cal.

FOR SALE—We have a pen of six, five and better fingered White Leghorn hens and a four-fingered cock, all beauties. A chance to breed a three hundred-egg hen. Will receive offers. C. B. Atterbury, Turlock, Cal.

SANTA CLARA VALLEY HATCHERY has the chicks for you from six different standard breeds, all bred for egg yielders. Can furnish references from my old customers if desired. Lincoln Ave., San Jose, Cal.

S. C. WHITE LEGHORN EGGS for sale, from heavy-laying, prize-winning strain, headed by males from 280-egg stock, range raised. Setting, $1.50. Hundred, $8.00. Mrs. Sanders Hayes, Longvale, Cal.

BABY CHIX R. I. REDS
My specialty. Bred for eggs, size, color. Hens on free range means strong chix. 16c each; 15c in 1000 lots. Denton Poultry Yards, Box 360, Campbell, Cal.

RAISE CHICKENS, rabbits and pigeons on half acres with city conveniences. Market at the door. Profits by intensive cultivation will surprise you. Write for information. F. R. Caldwell, Broadmoor, San Leandro.

BABY CHICKS—Hatched from our S. C. White Leghorns, a result of many years' careful selection and breeding. San Jose Poultry Yards, Fifteenth and Margaret streets, San Jose, Cal.

BABY CHICKS—Hatched from our own stock in our own hatchery. Hens are of S. C. White Leghorn utility stock, bred for commercial laying. H. A. George, Route 2, Box 29, Petaluma.

FOR SALE—Bourbon Red turkeys and eggs for hatching, $5.00 per setting of 13 eggs. Book your orders early. Albert E. Balmer, Alhambra Valley, Martinez, Cal.

WHITE WYANDOTTES—Eggs for hatching from our heavy laying prize-winning stock. Baby chix. Choice breeding cockerels. R. W. Stawetski, Route B, San Jose, Cal.

BABY CHICKS—from Hoganized breeders, 180 egg type and up. White Orpingtons and Sicilian Buttercups. Order early for future delivery. M. S. Woodhams, San Mateo, Cal.

BLACK LANGSHANS—Crabtree's Imperial Strain. Winners everywhere. 250-egg type. Choice hatching eggs, $3, $4, and $5 setting. Jas. Crabtree, 1836 57th Ave., Oakland.

MODEL POULTRY FARM—White Leghorn specialists. Our fifteenth year. Baby chix and hatching eggs for sale. Our prices are right. W. C. Smith, Prop., Corning, Cal.

SELECTED S. C. W. Leghorn and Barred Rock eggs for hatching. Hens tyned to lay 200 to 260 per year each. $6.00 per 100. $1.50 for 15. Jay Maxwell, Madera, Cal.

BARRED PLYMOUTH ROCK EGGS for sale. Good range flock headed by cockerels from 260 to 290-egg stock. $1.50 per setting. Mrs. J. A. Vassar, Laytonville, Cal.

EGG BRED—Buff, Brown, White Leghorns, Golden Campines, Dark Cornish. Winners wherever shown. Send for circular. Percy Ward, 3142 Ward St., Fruitvale.

ANCONAS—Sheppard strain direct. Hatching eggs, $4.50 per 50; $2.00 per 15, plus postage. White Leghorn, $6.00 per hundred A. S. Wilkinson, Winton, Cal.

EASTMAN'S "BRED-TO-LAY" Hoganized and trapnested Barred Plymouth Rocks. Baby chicks. Eggs; cockerels. Fairmead Poultry Farm, Fairmead, Cal.

WHITE LEGHORN CHICKS—Dozen to thousand. Hatched from our own thoroughbred stock. Eastside Poultry Yards, 255 S. 18th St., San Jose.

BABY CHICKS—We have the large heavy-laying S. C. White Leghorns, severely culled last year. Send for prices. Tupman Poultry Farm, Ceres, Cal.

RHODE ISLAND RED EGGS for hatching. Mrs. Richard Holdridge, P. O. Box 282, Dixon, Cal.

LIGHT BRAHMA EGGS—13, $2.00. Stock for sale. J. Dolan, 146 Wyandotte, Stockton, Cal.

R. I. REDS, Silver Spangled Hamburgs, Speckled Sussex. First prize stock. Eggs and baby chicks. Mrs. A. Golden, 643 S. 8th St., San Jose, Cal.

BABY CHICKS—Booking orders for spring deliveries. White and Brown Leghorns, Rhode Island Reds, Barred Rocks. E. W. Ohlen, Campbell, Cal.

BLACK LEGHORNS—Silver Campines of good quality. Hatching eggs, $2.00 per 15. Questions welcome. A. C. Hayes, Blaney Ave., Cupertino, Cal.

PIGEONS—Carneaux, Homers, and Hungarians. Mated and banded. Fine stock Reasonable. H. Barnett, 1183 63rd St., Oakland.

SUPER QUALITY WHITE LEGHORN CHICKS—Hatches March 6th and every 10 days thereafter. Newton Poultry Farm, Los Gatos.

BABY CHICKS (White Leghorns) shipped on approval before remitting. No weak ones charged for. Schellville Hatchery, Schellville, Cal.

BABY CHICKS—(White Leghorns) from good laying strain of Hoganized and trapnested stock. Rose Hill Hatchery, Turlock, Cal.

FOR SALE—White Leghorn chicks from heavy laying stock. Hatched right. Prices right. Madera Hatchery, Madera, Cal.

THOROUGHBRED BUFF ORPINGTON EGGS from heavy laying stock. Settings, $1.50. Mrs. M. Lopez, Lathrop, Cal.

CHICKENS, DUCKS, GEESE, GUINEAS, Pea Fowl, Pigeons. Wm. A. French, 545 W. Park St., Stockton, Cal. Stamps.

BLACK MINORCA EGGS—$1.50 per 15. Special mating, $2.00. Edward A. Hall, Rt. 1, Box 39, Watsonville, Cal.

FOR SALE—Two Petaluma Electric Incubators. Capacity, 108 and 216 eggs. Kenneth L. Euans, Gilroy, Cal.

BUFF ORPINGTONS, BUFF DUCKS, BOURBON RED TURKEYS—The Ferris Ranch, Rt. 2, Box 144D, Pomona, Cal.

FOR THE BEST laying strain of White Plymouth Rocks and Rhode Island Reds, write W. H. Carpenter, Oakley, Cal.

BRONZE TURKEY EGGS—Limited number for delivery in April. No more stock. Albert M. Hart, Clements, Cal.

RABBITS.

HIGH-CLASS UTILITY RABBITS of all kinds at reasonable prices. Wanted young or old pedigreed stock of all varieties, especially white, steel and gray Flemish, American Blues, New Zealands. Howe, R. F. D. 207, San Leandro.

MONEY IN RABBITS—We are now paying $6 per pair for all you can raise. Send stamp for particulars. H. E. Gibson Co., Arcadia, California.

STEEL GRAY FLEMISH, NEW ZEALANDS—Breeding does and bucks. Prices reasonable. Golden State Rabbitry, 2522 Hopkins St., Oakland.

NEW ZEALAND REDS—Pedigreed, registered and utility stock. Write your wants. E. Peppin, 86 Cambridge, San Leandro.

NEW ZEALAND REDS—First-class utility breeding stock and young for sale. F. R. Caldwell, Broadmoor, San Leandro.

FOR SALE—Pedigreed fur-bearing rabbits from prize-winning stock. E. J. Kelleran, Route 1, Box 248, Modesto, Cal.

DR. B. HEARN, VETERINARIAN—Breeds New Zealand and Flemish Giant Rabbits. R. R. 2, Porterville, Cal.

R. & S. RABBITRY, 2922 35th Ave., Oakland. Fine utility Flemish and New Zealands. Stamp for reply.



Going to Brood CHICKS?

Then send for the latest KRESKY catalogue, 20. Our latest development of the Liberty Stove has 'em all beaten.

Economy, Efficiency, Convenience

Kresky Brooder Stove Factory

Petaluma, - Cal.

Save the Baby Chick

Our book, "CARE OF BABY CHICKS," and package of GERMOZONE are the best insurance against chick losses. Those formerly losing more than half they hatched now raise better than 90 per cent. To you who have never tried GERMOZONE, we will send postpaid, book and package as above. You pay if satisfied, 75c; 60 days' trial. We trust you.

Druggists and seed dealers sell GERMOZONE, the best poultry remedy and preventive. For old and young,—bowel trouble, colds, roup, musty or spoiled food, limber neck, chicken pox, sour crop, skin diseases etc. Sick chicks can't wait. Do it now.

GEO. H. LEE CO., Dept. 428 Omaha, Neb

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Blake, Moffitt & Towne

37-45 First St., San Francisco
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Blake, McFall Co., Portland, Or.

POULTRY, RABBIT AND PIGEON NOTES.

[By Walter Hickling.]

J. W. Atkinson, Peerless Poultry Yards, San Jose, owner of a fine flock of 1000 Anconas and White Wyandottes, reports an abnormal demand for poultry and hatching eggs and stated that he has obtained exceptional results from his ad in this paper. He also reports the following result for the month of January from a pen of 36 White Wyandotte pullets which were hatched in March:

Jan. 1	15 eggs	Jan. 17	18 eggs
" 2	21 "	" 18	20 "
" 3	20 "	" 19	22 "
" 4	16 "	" 20	24 "
" 5	16 "	" 21	16 "
" 6	19 "	" 22	22 "
" 7	24 "	" 23	19 "
" 8	20 "	" 24	25 "
" 9	18 "	" 25	22 "
" 10	23 "	" 26	27 "
" 11	20 "	" 27	18 "
" 12	18 "	" 28	22 "
" 13	23 "	" 29	23 "
" 14	16 "	" 30	21 "
" 15	24 "	" 31	26 "
" 16	15 "		

Average daily yield 55 per cent. Very few of these pullet eggs weighed less than two ounces each or 24 ounces to the dozen, which is the weight required for extras.

The Runnymede Colony, Palo Alto, egg report for the week ending February 15, 1919, shows a production of 5191½ dozen eggs, for which the colony received $1,774.85.

William Dawson, Runnymede, has purchased the H. Olson poultry ranch and has recently moved in. Mr. Dawson has been out of the business for a few years and says he is glad to be in the game again.

The Santa Clara Valley Hatchery, San Jose, reports a large demand for baby chicks and is planning to increase the capacity of the hatchery from 60,000 to 75,000.

Frances E. Coleman, Los Gatos, well-known breeder of New Zealand Red rabbits, reports a large demand from Texas and New Mexico for pedigreed rabbits at a good price. She has been making steady shipments for some time to these States.

E. A. Lodge, Pebbleside Hatchery, Sunnyvale, has invented an egg tester with which he can test a row of incubator eggs at a glance. This machine saves a great deal of time and labor and is a good machine to have around any hatchery.

J. Villar, San Jose, reports a greater demand than ever from the East for high-class Flemish Giants. It seems that the Eastern climate is not suitable to produce the larger size, which is in great demand.

DISTINGUISHING SEX IN GUINEAS.

To the Editor: We have a couple of guinea fowls and would like to know how you can tell the male from the female.—I. N. M., Clayton.

The color on the male's neck is usually much brighter and richer than in the female; his wattles stand out wider than the hen's and are redder in color. They sometimes cover the beak, while the hen's wattles are pendant, hang down more. The call is different, too. If you listen, his voice is firm, while the hen's is peevish and querulous.

WHY THE INCREASED PRICE OF POULTRY FEED?

To the Editor: Will you please explain? The price of wheat is the same as it was a year ago, therefore bran, middlings and shorts should not be higher. Barley was 50 per cent higher a year ago than now. Wheat products and barley form a large percentage of the ingredients of commercial chicken feeds. Yet a year ago Sperry's Sure-Lay cost us $2.90 per hundred pounds in Modesto, while this month we are paying $3.30 per 100. How is this to be accounted for?—W. P. A., Modesto.

A year ago the Government arbitrarily regulated the prices of all feedstuff, in many cases regardless of what it cost to manufacture and deliver to consumers. At the present time many of these restrictions have been removed and the business once more has returned to a competitive basis. The freight rates have also been greatly increased.

TREATMENT FOR CHICKEN POX.

To the Editor: Will you please tell me what disease my chickens have and also give a cure for them? Sores resembling warts come on their heads, their eyes get sore and seem to fill up with a kind of pus or matter. They will not eat much after they get sick. Am feeding gyp corn, Sure-Lay and plenty of green feed.—Mrs. J. J. E., Acampo.

This is chicken pox. Clean up your houses and yards, get a bottle of Benetol and paint all the warts and sores. Let them dry, then rub carbolated vaseline all over the combs and heads, as well as wattles. Give a tablespoonful of sulphur and one of sulphate of iron in the morning mash for one dozen hens—more in a mash for more hens. Give this once a day and they will soon be all right.

BEANS AS HEN FEED.

To the Editor: Do tepary or other beans cause hens to stop laying? They picked up teparies around the stack, but cooked red beans didn't hurt them fed in mash.—F. A. B., Denair.

Beans are very rich feed. They don't hurt chickens unless fed in too large a quantity, when the chickens will get very fat internally and you may lose some. Fed once a day with plenty of greens, beans will make hens lay. It does not matter what kind if they will eat them; but don't feed too many.



STYLEPLUS CLOTHES

To the boys going back to civilian life



You will need new clothes almost the first thing.

If you were not a Styleplus wearer perhaps these facts will convince you;

—We concentrate our volume which enables us to manufacture at low cost.

—We attach a sleeve ticket on every Styleplus garment at our factory which plainly marks the price.

—Styleplus Clothes have *earned* the reputation of always being exceptional in value and in style.

—Styleplus are for the men who want a reliable quality—and real style—in the medium price range.

Buy your clothes in a *store* where you can *see* the different styles and patterns, try on the clothes and get a satisfactory fit. It is the only way to be sure you are getting exactly what you want.

So, to get *real* clothing satisfaction, visit your local Styleplus Store *today!*

Sold by one leading clothing merchant in most cities and towns. Write us (Dept. AA) for Styleplus booklet and name of local dealer.



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Styleplus Clothes
$25-$30-$35
Each grade one price the nation over

America's only known-priced clothes



THE HOME CIRCLE

THE ROAD THAT GOES WEST.

When from this war my way lies to the west,
Footsore and muddy, wounded, shattered, spent,
Death being past I shall but crave a rest,
A kindly hostel, welcome and content.

Some hope for golden streets and gates of pearl
And some for halos and a sea of glass.
May God forgive me for a thankless churl—
I'd rather have one field of daisied grass.

I am too battle-stained for mansions fine,
Too tired for the flutes and minstrelsy.
A Paradise remote and green be mine,
An English heaven were good enough for me.
—W. M. Letts in the Yale Review.

A GOLDEN MORNING.

The adventure came off just as it was planned, which things very seldom do in this world. Sweetheart had been "good," but not too good. It was a fine morning, flattering the turnip-shaws as well as the mountain-tops—the sort of morning you want to take a drink of, and then smack your lips and say, "How refreshing!"

I waked Sweetheart by rolling her up in her blanket and carrying her to the window.

"O father," she said, her eyes still dusked with sleep, "is it review day?"

"No, Sweetheart," I said. "It is morning, and you are going out to see the sun rise. But don't make a noise. Nobody will be up for hours yet, and we must go out on tiptoe!"

Sweetheart was dressed to the accompaniment of little gurgles of sound expressive of intense delight. Sometimes, when I had a safety-pin in my mouth, she would give my arm a quick, impulsive hug; and say, "De-e-ear father!" This for no particular reason, except that she considered her own a partcularly nice thing in fathers.

When all was finished, we began a raid on the pantry, with enormous caution (Indians on the war-trail!), and captured bread, butter, and slices of ham sufficient for half a dozen. Presently we were outside the door, and the dewy coolness of dawn dropped upon us like the first dip in the sea.

"It's like having your face washed without water!" said Sweetheart, as we made our way up the garden walk between the gooseberry bushes and over the wall. Here I mounted Sweetheart on my shoulders, for the grass was long and dewy. Bees, big and brown, were already booming in the foxgloves, and pearls sparkled on the gossamer suspension bridges that spanned the path. The swifts were busily arranging their family affairs in long, screaming swoops. A little breeze came to us, filtered through miles of dewy woodland. It was a good breeze, and smelt of many pleasant things. Sweetheart on my shoulders clutched my hair, and gave it little involuntary tugs, as she looked all round the horizon. We were mounting the heathery hillside, and there was no trace of the sun to be seen anywhere.

I think that, even at the last moment, Sweetheart expected that he might outwit us. But no; the sun had not stolen a march upon us this time. Only away to the east there was a kind of fire-colored wash in the hollow between two hills.

"I know," said Sweetheart, who always explained everything, "that's his bath getting ready for him. He's going to pop up just there!" I think she expected the sun to shoot suddenly upward like a shuttlecock well hit. At last we had climbed high on the hill-crest, where the rocks were dry and crisp for the feet. I set Sweetheart down. The wash of easterly fire had grown rapidly larger. It spread to the higher clouds, which were flaked with sea-shell pink. Bars of crimson gathered across the sun's path—"as if the horrid things would keep him down if they could!" she said. Then she grew a little frightened at the image she had conjured up.

"But they won't, will they, father?"

I reassured her on this score, and we waited. We had not, however, long to wait now. A red rim, a sort of hush as the hilltop whirled into the westerly bound wave of light, our shadows rushed out thirty yards behind us—and the sun rose. At the same moment a black cloud of rooks was flung high into the air from the woods about the hall, and drifted noisily away toward the turnip fields.

Sweetheart did not say a word till all was over. Then she drew a long, long breath of raptest pleasure.

"How quietly he does it!" she said.

I could not help it: I never can when Sweetheart speaks thus meditatively. I am bound to improve the occasion. It must be some of the "Westminster Catechism" in my blood—the "reasons annexed," as it were.

"All the great things in the world are quiet," I said very sententiously —"dawn, spring, sleep, love." (I was going to add "death," but refrained.)

"But the birds sing out loud," objected Sweetheart, in a cavalier manner. "And, please, if you don't mind, so will I. I didn't have time to say my prayers this morning, you see. So this is instead."

"You may say them now," I suggested.

"No-o." Sweetheart gave the matter due consideration. "No—but I shall sing a little song instead."

"And what shall it be, Sweetheart?"

Sweetheart paused, finger on lip, telling over, as I thought, her roll-call of morning hymns.

"I think 'Bonny Dundee' is best," she said at last.

Alas! that such a thing should be in a Roundhead and Covenanting household! But certain it is that on this particular morning Sweetheart's prayers were compounded for by the stirring strains of Sir Walter's ballad:

"To the lords of convention 'twas Claver'se who spoke,
'Ere the king's crown shall fall, there are crowns to be broke:
So let each cavalier who loves honor and me
Come follow the bonnet o' bonny Dundee!' "

After all, it did not greatly matter. The child's voice carried the intent of worship where many more orthodox matin-hymns do not reach.

"And now," said Sweetheart, with a sharp change of expression, "I'se hungry."

We sat down by a crystal spring in the high, brave morning air, and never did breakfast taste better. We took bite about of the sandwiches; and, when it came to drinking time, I hollowed my palms, and Sweetheart drank daintily out of that cup as a bird drinks at a fountain's edge.

Then we went down, shouting aloud to awake the mountain echoes. The great things of the world are quiet. But we did not want to be great, only to be happy. So we climbed back again into the road, with its fine dust drenched and laid with the dew.

At the turn of the road, on a little patch of grass, a tramp family had encamped. There was a father, a mother, with a young baby that wailed upon her breast, and a little girl, who rose and ran toward Sweetheart.

"We are awfu' hungry," she said. "We have had naething to eat since yesterday morning."

What the Famous

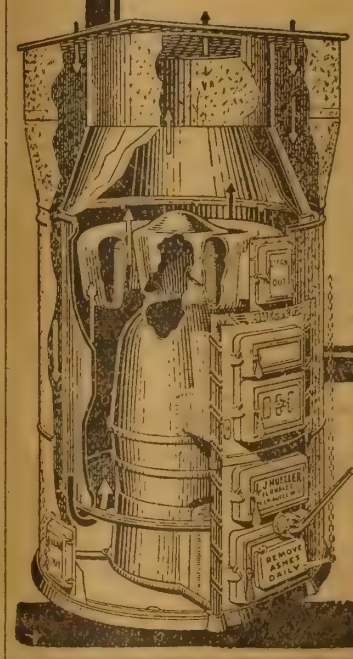
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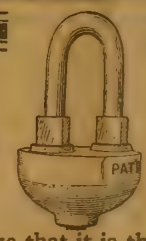
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THE HEART -- VIA  THE PANTRY--

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Federal Land Bank of Berkeley

Berkeley, Cal.

"The shops are not open," said Sweetheart, rising to the occasion. "But come with me, and I'll steal you something out of the pantry. Father won't tell!"

This shows how badly Sweetheart has been brought up, and how little she thinks of a parent's honesty.

So the ragged little girl trotted along after us, Sweetheart looking over her shoulder every now and then, with a reassuring air, as much as to say: "He's all right! He looks very imposing; but, bless you, it's all put on!"

In this manner we came to the house of our lodgment. The door was as we had left it. Not a soul stirred within. This was strange. It seemed the middle of the forenoon to us. Sweetheart entered, and after a while emerged with the ham-bone, knuckly indeed, but in spots capable of repaying attention. To this was added half a loaf, a large pat of butter, and an unopened tin of caviare—all the necessaries and luxuries of life.

"Now can I give the little girl my Saturday's money? Let me, father!" she pleaded.

And whatever was thought by the recording angel of "Bonny Dundee" considered as a morning hymn, there can be no doubt of his opinion of this act of worship; for Sweetheart had cast into the treasury all that she had.

But, as she watched the small tramp rush off, with the ham-bone and the loaf pressed against her breast and the sixpence of sterling silver clutched in her palm, Sweetheart heaved a long sigh.

"And I did so want a new dolly's bonnet for Isabel!" she said.—S. R. Crockett, in Sunday Magazine.

LABOR-SAVING DEVICES FOR THE HOUSEHOLD.

The farmer's wife needs household labor-saving devices even more than the city housewife. In the first place, there are greater difficulties with the servant problem, and in the second place, the farmer's wife must help carry the farmer's burden.

Everything in labor-saving devices that can be procured, should be, but perhaps the most important article is the washing machine.

Why should a woman ruin not only her own health, but endanger that of the next generation by working over a wash-board, when she could save her time and her health by using a washing machine?

In the rural home the washing has to be done at home, where the family wash should be done, and that weekly burden should be lightened by using a washing machine run by electricity, water power, gasoline power or hand power as ones circumstances and location permit.

BACON DRIPPINGS.

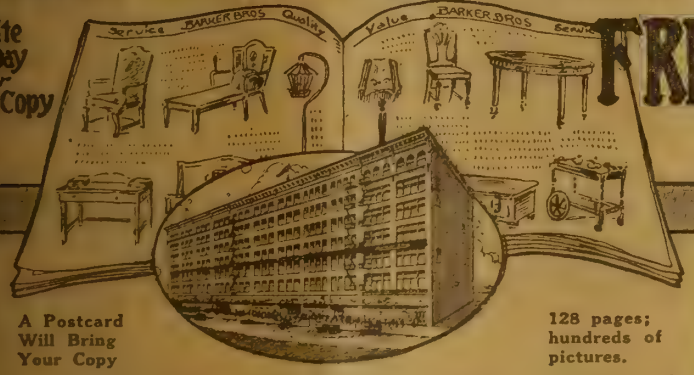
Ham or bacon drippings add a zest to tomato sauce, a boiled fowl or to casseroles of other meat that nothing else can give and can be substituted for lard or butter to excellent advantage for frying purposes.

To try out ham fat, put scraps trimmed from ham, cooked or uncooked, in a pan, in a slow oven, and gently try out the fat.

Burned bacon fat must not be used for shortening for cakes or cookies, for it will flavor them—if not badly burned, it may be used for frying.

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Market Comment

Onions on the Up Grade.

The onion market took a sudden spurt this week on a good demand from the East. The Eastern States have been about cleaned up of onions for shipments to Europe and they are now turning to California to make up their deficiency. Onions advanced 50c this week and they may go somewhat higher, although it is the general opinion that $2.50 will be about the top price for the present crop. Stocks on hand in California are said to be ample to take care of all local demand as well as the anticipated Eastern demand.

Trading in California Barley Open.

In reply to a correspondent's question we re-state the announcement of the California Grain Corporation that the buying and shipping of surplus California barley will be done by the regular exporting firms, as in pre-war times, and the operations of the Grain Corporation in marketing the barley have come to an end. A recent statement places the surplus barley in California warehouses at about 200,000 tons, and this will begin to move through the usual channels after today (March 1)—if bottoms are obtainable.

The Wheat Price Problem Settled.

The wheat guarantee bill recently passed authorizes the President to use existing agencies, or create new ones, to buy wheat of the 1918 and 1919 crops at the Government guarantee price and dispose of it at market prices. The $2.26 a bushel (Chicago base) for the 1919 wheat crop grew out of the necessities of the war situation and was deemed necessary to stimulate production of wheat to the desired amount—and was measurably successful in doing so. The redemption of the guaranty was inevitable.

Hay Production and Meat Prices.

In order to maintain and if possible increase the livestock supply in the United States and thus check the rising price of meatstuffs, the United States Department of Agriculture recommends a 25 per cent increase in the production of hay. The production of this important forage in 1918 was only 90,000,000 tons, as compared with 98,000,000 in 1917, and 111,000,000 in 1916. This falling off was due to unfavorable seasons and to plowing up meadow lands for other crops.

The Cattle Market Erratic.

The best informed livestock authorities agree that the supply of desirable cattle in the country is steadily shrinking and the highest prices in the history of the cattle business now prevail, and this is true of all grades. As there has been much uncertainty as to the exact status of the livestock resources of the country, the market has been fluctuating wildly, according to heavy or light daily arrivals.

Cantaloupe Production Stimulated.

The outlook for cantaloupes is for the largest acreage ever sown in the San Joaquin Valley. The consensus of opinion is that 7000 acres will be put in. The Turlock and Ripon districts will show a marked increase. There will be new districts in Stanislaus, San Joaquin, and Kern counties. Growers and shippers have been stimulated by the high prices of last season.

Dealers Sailing Close to the Wind.

Ever since Governmental restrictions were removed from free trading in foodstuffs, buyers in nearly all lines have become shy, and are evidently playing a waiting game. Only stocks on which there is good prospect of an immediate tomorrow are sought. Increased business activity must follow price readjustment.

Market Better on Canned Fruit.

The markets on canned fruit are reported bare of stock and prices are stiffening. A short time ago this market was rather weak and packers oversold. Now they are reported buying back from wholesalers at an advanced price.

THE MARKET REPORTS

Figures Given Are Independent and Reliable.
Prices Quoted as Paid to Producers.

SAN FRANCISCO

San Francisco, February 26, 1919.

WHEAT.

The following prices were announced by the Federal Grain Corporation last year and are still in effect. They are figured f. o. b. San Francisco, Los Angeles, Seattle, Tacoma and Portland and guarantee the grower a minimum of $2 f. o. b. shipping point:

Per bushel—	
No. 1 hard	$2.20
No. 2	2.17
No. 3	2.13
No. 1 soft	2.18
No. 2	2.15
No. 3	2.11
Club or Sonora, No. 1	2.16
do, No. 2	2.13
do, No. 3	2.09
Recleaned for seed, per ctl.—	
California Bluestem	$4.15@4.25
Early Baart	4.15@4.25

BARLEY.

Barley continues to show weakness. On the exchange May option has sold below $2, but no choice feed of the old crop is reported selling below that figure. Some damaged barley has been bought at $1.75, but by the time it is cleaned for the market it cost the buyer at least $2. His profits come from the seed saved.

Choice feed, per ctl	$2.00@2.05

OATS.

Oats continue to show weakness, with practically no demand. All descriptions sold at a lower level. The demand for red oats for seed has not been equal to expectations and seed sold lower.

Red feed, per ctl	$2.15@2.20
Red for seed	2.60@2.75
Black for seed	Nominal
Recleaned Red or Black for seed	$3.00@3.10

CORN.

Corn continues unchanged. Some stock not thoroughly dried sold at lower levels than the market, but grain in the best of condition was slow in movement and unchanged in price.

California	$2.70@2.75
Egyptian, choice	2.75@3.00
Milo	2.70@2.75

HAY.

The holiday caused a falling off in receipts for the week. Prices are nominally the same, although the light demand caused a heaviness throughout the list. Stormy weather also kept down shipments, but the arrivals were fully enough to take care of all immediate demands.

No. 1 wheat, per ton	$22.00@24.00
No. 2 wheat, per ton	16.00@20.00
Choice tame oat, per ton	21.00@23.50
Wild oat, per ton	16.00@18.00
Barley hay, per ton	16.00@18.00
Alfalfa, per ton	16.00@19.00
Stock hay, per ton	14.00@17.00
Barley straw, per bale	.50@ .80

FEEDSTUFFS.

The market for feedstuffs is dull and all prices remain nominally unchanged. The increase of green feed in most sections of the State is keeping down demand, though many farmers are of the opinion that using their pastures so early in the season will mean a loss later on.

POTATOES, ONIONS, ETC.

The sudden rise in onions is a feature of the vegetable market. Potatoes continue stagnant. So far as can be learned here, there is little prospect of a strong Eastern demand for Coast potatoes. The general vegetable market is inactive on account of the holiday and wet weather.

String beans	25c
Lima beans	None
Carrots, per sack	$1.25@1.50
Rhubarb, San Jose, per box	3.00@3.50
do, Strawberry, per lb	10c
Cucumbers, hothouse, box of 30	2.50@3.00
English, dozen	2.25
Eggplant, per lb	20@25c
Lettuce, per crate	$2.75@3.00
Celery, crate	5.00@7.50
Tomatoes, Southern, per crate	2.00@3.00
do, Mexican	3.00@3.50
Sprouts, per lb.	6@8c
Potatoes—	
Rivers	$1.50@2.00
Oregon	1.75@2.10
Washington	1.75@2.00
Idaho	1.85@2.00
Sweets, per sack	3.00@3.50
Onions, Warehouse Stock—	
Yellows	None
Australian Browns	$2.00@2.25
Garlic, new	25@35c
Green corn, Alameda, per sack	None
Okra, per box	None

BEANS.

Beans continue downward, and lower prices are noted on several descriptions. Small whites show a decline of $1 and large whites of 75c. The local dealers do not seem to take a cheerful view of the outlook.

Bayos, per ctl	$6.50@6.75
Blackeyes	3.50@3.75
Cranberry beans	6.00@6.25
Limas (south, recleaned)	7.40
Pinks	5.50@5.60
Mexican Reds	6.25@6.50
Tepary beans	3.00@3.25
Garbanzos	9.50@9.75
Large whites	6.35@6.50
Small whites	6.75@6.90

POULTRY.

The market for poultry is firm, with higher prices on broilers. Prices in New York dropped about 6c this week, but before they fell all shipments were going to that market and not a car of Eastern arrived here during the week. With lower New York prices, shipments to this point will be resumed and lower prices are looked for next week.

Turkeys, live, young spring, lb	34@36c
do, old	30@34c
do, dressed	40@42c
Broilers, 1½ to 2 lbs	52@55c
do, 1¼ lbs	58@60c
do, ¾ to 1¼ lbs	58@60c
Fryers	42@45c
Hens, extra, per lb., colored	37@38c
do, Leghorn	38@40c
Smooth young roosters, per lb. (3 lbs. and over)	36@38c
Old roosters, colored, per lb	23@24c
Geese, young, per lb.	32@35c
do, old, per lb	30c
Squabs, per lb	65c
Ducks	33@35c
do, old	30@33c
Belgian hares	18@20c
Jack rabbits	$2.50@3.50

BUTTER.

Butter is firm and continues on the up grade, selling 5c higher at the end of the week than at the start. For February butter has shown a gain of 10c. On February 1 extra sold on the Exchange at 47c and on the 26th it sold at 57c. This is the highest price for butter since January 20, when it sold at 60c, after a decline of 6c during the previous week. On January 21 there was a drop of 5½c to 54½c and then a steady decline to 47c on February 1. This month the increase has been continuous, with only one or two reactions of a cent or less.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extra	52	51½	....	54	55	57
Prime first	....		Nominal			
Firsts	48	48	....	48	48	Nom.

EGGS.

Eggs continue firm at higher prices. Shipments of eggs have occurred this week both to the north and south from San Francisco and also at the point of production. This, with the firm Eastern market, has caused a steady increase in price during the week. Since the first of the month extra eggs have shown fluctuations on the Exchange between 44c high on the 1st to 38½c on the 13th

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed
Extras	36½	37	....	37	38	38½
Extra firsts	....	Nom.	—	—	—	—
Firsts			Nominal			
Extra pullets	31	32½	....	33	34	35

CHEESE.

With the exceptions of Oregon triplets and Monterey cheese all descriptions of cheese have shown an advance in prices since a week ago.

Fancy California flats, per lb	29c
Firsts	26c
Oregon triplets, fancy	34½c
Oregon Y. A. fancy	37c
Monterey cheese	22½@25c

FRESH FRUITS.

The fruit market has been quiet on account of the holiday and the disagreeable weather. It is believed present prices will be maintained until near the end of the apple season or until other fresh fruit begins to arrive in quantities.

California apples	$2.00@2.75
Northwest apples	2.00@3.50
Winter pears	2.00@3.50
Persimmons	None

CITRUS FRUIT.

Oranges are firm this week and won back the loss in price noted last week. Both tangerines and mandarins are higher in sympathy.

Oranges, navels	$3.00@4.50
Mandarins	1.75@3.00
Tangerines	3.00@3.50
Lemons, fancy	4.00@4.50
do, choice	3.50@4.00
do, standard	3.00@3.50
Lemonettes	2.00@3.00
Grapefruit	2.00@3.00

HONEY.

Honey continues unchanged. There seems little danger of immediate shipments from Australia and the beemen are apparently determined not to make material cuts in prices to get rid of last season's store.

DRIED FRUITS.

The market is quiet and the dealers continue to pay 14½c for apples. This price will probably prevail until the end of the season. The only apples now available are those which have been put in warehouses in anticipation of selling as fresh fruit. Where these sales are delayed the dealers are able to buy the stock, after drying, at 14½c.

LOS ANGELES

Los Angeles, February 25, 1919.

BUTTER.

The market the past week held up very well and the demand was good. The home and out-of-town trade are both buying quite freely of all extras. The receipts were heavy, but the increase came only on Monday, the last day of our review week, and failed to affect quotations, though it caused a weaker feeling. Receipts for the week were 365,250 pounds, against 253,600 pounds the same week last year.

We quote:

California extra creamery	53c
do, prime first	51c
do, first	50c
Same week last year:	
California fresh extra creamery	50c
do, prime first	48c
do, first	47c

Daily quotations:

1919—	Tu.	Wed.	Thu.	Fri.	Sat.	Mon.
Extra	55	55	55	55	55	55
1918—						
Extra	48	48	48	50	50	50

EGGS.

A fairly steady market was had the past week. Prices now are sufficiently low to encourage free consumption. Receipts for the week were 12,975 cases, against 10,515 cases the same week last year. While these were the heaviest arrivals of the year, they failed to influence prices to any extent, the market closing Monday the same as at the beginning of our review week, though 2@3c lower than the close of the week before.

Daily quotations:

1919—	Tu.	Wed.	Thu.	Fri.	Sat.	Mon.
Extra	37	37	37	38	38	37
Case count	36	36	36	36	36	36
Pullets	35	34	34	34	34	34
1918—						
Extra	41	40	40	40	40	40
Case count	40	39	39	39	39	39
Pullets	40	39	39	39	39	39

POULTRY.

Not much local poultry in the past week and dealers had to get in a couple of cars of Eastern poultry to help out. Demand good for everything and under the light offerings hens, turkeys and ducks were all advanced 2@3c. Squabs are also higher and wanted.

We quote from growers:

Broilers, 1@1¼ lbs	40c
Broilers, 1½@1¾ lbs	43c
Fryers, 2 to 3 lbs	35c
Roasters (soft bone), 3 lbs. and up	30c
Stags and old roosters, per lb	20c
Hens	32@33c
Turkeys	36@37c
Ducks	34@35c
Geese	28c

VEGETABLES.

There was a little more life to this market the past week. Peas were in good demand and higher under better offerings. Cauliflower was also in better request and brought more money. Sweet potatoes steady. White potatoes in excessive supply, slow sale and lower. Onions were rather scarce, in good demand and the best a little higher. Hubbard squash in fair demand and brought a little more money. Celery steady, and the best in fair demand.

We quote from growers:

Peas, per lb	10@12c

Special Livestock Market Report

San Francisco, February 26, 1919.

CATTLE—Receipts of cattle are fully up to the demand. Most of the supplies are coming from Northern California and Nevada. There is an active demand for good cow stuff, of which a scarcity is noted. Some grassers are expected in a couple of weeks. Calves are scarce, and the price situation is strong. Quotations unchanged.

Steers—	
No. 1, weighing 1000@1200 lbs	12¾@13c
do, weighing 1200@1400 lbs	13@13¼c
do, second quality	11½@12c
do, thin	9@10c
Cows and heifers—	
No. 1	9@10c
do, second quality	8@9c
do, common to thin	6@7c
Bulls and stags—	
Good	6½@7½c
Fair	5½@6½c
Thin	4½@5½c
Calves—	
Lightweight	11½@12c
Medium	10½@11c
Heavy	8 @10c

SHEEP—There is not much change in the mutton sheep situation. Receipts are rather light, though enough to meet the meager demand. Well-conditioned lambs are in strong request.

Lambs	14@14½c
Yearlings	12@12½c
Sheep, wethers	11½@12c
do, ewes	8½@9¼c

HOGS—Hogs are coming in in good supply, but of fair quality only. Too much soft stuff is arriving, and packers discount quoted prices 4 cents on carcasses that dress out soft. These carcasses are open to inspection.

Hogs—	
Hard, grain-fed, 100@150 lbs	16c
do, do, 150@250 lbs	16½c
do, do, 250@300 lbs	16c
do, do, 300@400 lbs	15½c

Los Angeles, February 25, 1919.

CATTLE—The market is unchanged. If anything steers were duller and weaker. A good many are offered, while the killing of good cattle continues light under a dull meat market.

Per cwt., f. o. b. Los Angeles:	
Beef steers, 1000@1100 lbs	$11.00@13.00
Prime cows and heifers	9.50@10.50
Good cows and heifers	8.00@9.00
Canners	6.00@ 6.50

SHEEP—But few in the past week and under the light offerings the market held steady. Demand only fair and mainly for choice wethers and fat lambs.

Per cwt. f. o. b. Los Angeles:	
Prime wethers	$9.50@10.50
Prime ewes	8.50@9.50
Yearlings	10.00@11.00
Lambs	14.00@15.00

HOGS—The market continues weak under very good receipts and quality of offerings generally good. While all killers wanted a few hogs for the dressed meat trade there was no demand for hogs for curing.

Per cwt., f. o. b. Los Angeles:	
Heavy, avr'ging 275@350 lbs	$14.00@15.50
Mixed, avr'ging 225@275 lbs	15.00@16.00
Light	16.00@16.50

Rough docked 20 lbs., piggy sows 40 lbs., and stags, 40 per cent.

Potatoes, northern, per cwt	$1.75@2.10
do, Idaho Russets, per cwt	1.50@1.55
Sweet potatoes, per cwt	2.35@3.00
Garlic, per lb	50c
Onions—	
Australian Brown, per cwt	$1.85@2.00
White Globe, per cwt	7.00
Cabbage, per 100 lbs	.75@ .90
Celery, local, per crate	4.00@7.00
Celery, northern, per crate	8.00@9.00
Cauliflower, standard crate	1.00@1.25
Hubbard squash, per cwt	1.50
Banana squash, per cwt	1.25
Pumpkins, per cwt	.50@ .75
Rhubarb, per 30-lb. box	2.25

FRUITS.

Lighter offerings and continued good demand caused a general advance in apples the past week. They continue to make up the deciduous fruit market. Nothing else offering save what comes out of cold storage.

We quote from growers:

Apples—	
King Davids, Northwest pack	$3.00@3.25
Black Twigs, Northwest pack	3.00
Baldwins, Northwest pack	3.00
White Pearmains, 4-tier	2.25@2.50
Yellow Newtown Pippins,	
4-tier	2.75@3.00
Bellefleur, 4-tier	2.00@2.25
Bellefleur, 4½-tier	1.75@2.00
do, 3½-tier	2.00@2.25
Jonathans, Northwestern pack	3.00@3.25
Winesap, loose, per lb	6½@7c
Roman beauties, Northwestern, per peck	3.00@3.25

HAY.

The more active market the last week brought in increased supplies and with more showers caused buyers to hold back. Only dairy people are buying and they sparingly, confining their purchases to alfalfa. Horse hay is dull.

We quote f. o. b. Los Angeles:

Barley hay, per ton	$21.00@24.00
Oat hay, per ton	25.00@28.00
Alfalfa, northern, per ton	20.00@21.00
Alfalfa, local, per ton	21.00@23.00
Straw, per ton	9.00@10.00

BEANS.

It is the same old story in this market. Plenty of beans and little demand and that mainly for limas for shipment.

We quote from growers:

Limas, per cwt	$8.00
Large White, per cwt	7.00
Small White	7.00
Pink, per cwt	5.50
Blackeyes, per cwt	3.50
Tepary, per cwt	3.50

Classified Advertisements

Rate in this directory 3c. per word each issue.

MISCELLANEOUS.

WANTED—Salesmen and agents. Exclusive territory granted. Powerene is equal to gasoline at 5c a gallon. Is guaranteed to be harmless, to remove and prevent carbon, doubling the life of all gasoline motors, saving repairs, adding snap, speed and power. An amount equal to 20 gallons of gasoline will be sent to any address in the U. S. for $1. W. Porter Barnes, Santa Rosa, Cal. Dept. A15

FARMERS with Fords can make extra money until plowing season selling the Ford Ketch-A-Kick (anti-kicking device which prevents breaking arm when cranking). Retails at $1.50. Discount will be allowed you. Write at once. Automotive Exchange, Hippodrome Annex, Cleveland, Ohio.

FOR SALE—Cunningham Land Pulverizers. Practically new. As a pulverizer and mulcher, the "Cunningham" has no equal. It also conserves moisture, which is of vital importance to all farmers and orchardists. Address, Room 1120, Merchants National Bank Building, San Francisco.

REMANUFACTURED PIPE.

All sizes standard pipe and wrought iron screw casing. All kinds of fittings. Guaranteed good as new. Write for prices. Weissbaum Pipe Works, 160 Eleventh street, San Francisco.

PEAFOWLS—VERY TAME—for sale. 20 months old, $25 pair. Trio, $35. 8 months old, $17.50 pair. Trio, $24.50. Crating extra. Eggs in season, $1.00 each. Also Mammoth Spanish Jacks and Jennets. A. Everett, Sloorpark, Cal.

FOR SALE—3-bottom power lift P. & O. tractor plow, $150. Double 6-ft. John Deere disc harrow, $100. 1-ton auto or truck trailer, $100. 8-ft. Dunham double pulverizer, $75. All practically new. Barker, Fortuna, Cal.

FOR SALE—SPALDING-ROBBINS ENGINE PLOWS—One 5-disc and one 6-disc. Fine condition. Do excellent work. Price is right. Terms. Room 1120, Merchants National Bank Building, San Francisco, Cal.

PATENT ATTORNEYS

WEBSTER, WEBSTER & BLEWETT, Savings and Loan Bldg., Stockton, California. Established 50 years. Send for free book on patents.

ALL SIZES OF PIPE and screw casing, both new and second-hand, dipped and unpped. Guaranteed. Prices right. Shecter Pipe Works, 304 Howard St., San Francisco.

FOR SALE—Fourteen 50-gal. oak wine barrels, used but once, like new. Guaranteed to be in fine condition. Price, $4.25 each f. o. b. Watsonville. G. W. Cornell, Watsonville, Cal.

MADE OF REDWOOD, Hawley's Perforated wooden well casing, the best and cheapest well screen made. Send for descriptive circular. G M Hawley, La Mesa, California.

CABBAGE CUTTER—SIX KNIVES—Slices vegetables rapidly. Excellent for potato chips. Prepaid, $1.00; three for $2.00. Lusher Brothers, Elkhart, Indiana.

FULLY EQUIPPED CHEESE FACTORY at Woodbridge, Cal. Located in center of dairying district. For sale or rent. Inquire, Ralph C Clark, Lodi, Cal.

CO-OPERATION (not operated for profit) reduces living expenses. Particulars and catalogue from Co-operative League, Commercial street, San Francisco.

FOR SALE AT A BARGAIN—18-35 Yuba tractor in first-class mechanical shape—farming implements included. Apply D. P. Corgan, Godley, Cal

BATS—I will give thrift stamps for information as to locality of bat roosts. A. B. Howell, Covina, Cal

COUNTRY LANDS.

$6000 BUYS HOME-SITE with good income. Five acre tract on State highway, one mile south of Gilroy depot. 2½ acres prunes, 2½ acres cots 12 years old, in full bearing. Good stand alfalfa between trees. Good well, with centrifugal pump. Income 1918, $1500. Terms, half down, balance twenty-five per cent per year. Interest 6 per cent. E Thomas, Gilroy, Cal

FOR SALE—The famous Bane Almond orchard at Orland. On account of labor conditions, as well as physical condition, I have concluded to sell my almond orchard, either in subdivisions of 10 acres, or as a whole. For particulars address P. D. Bane, Orland, Glenn Co., California

FOR SALE OR RENT—3000 acres of good, level land in Fish Lake Valley, Mono Co., Cal. Good for alfalfa, beets, potatoes, hogs, cattle, sheep. Part for sale at $10 to $25 per acre; part to rent at your own terms. For particulars address, H. Varnell, Watsonville, Calif.

WHAT DO YOU KNOW about Orland? No flood; no hardpan; no malaria; best soil; best water; best locations; best bargains; best terms. Alfalfa, almonds, olives, 10—20—40 acres. Gow irrigations. Avoid the sharks. Address the owner, Hall T Brown, Orland

FOR SALE—Improved ranch with all improvements and cattle. Address, Box 476, Placerville, Cal.

FOR SALE in Klamath Co., Oregon, 600 acres good, level, unimproved land, good for alfalfa, grain or stock. Price $10.00 per acre. Address, W. H. Johnson, 22 Maple Ave., Watsonville, Calif.

FOR SALE—160 acres, 90 in alfalfa, 50 acres in barley. Plenty water. All fenced and cross fenced. $175 per acre. Terms. C. L. Barnett, Shafter, Kern Co., Cal.

FOR SALE—160 acres of first-class alfalfa land in the newly completed Cottonwood irrigation district. Roy Logan, R. F. D., Redding, Cal.

OWNER WILL SELL 70-acre dairy in Tulare county. Stock and implements included. Land right. Price right. Box 211, Berkeley.

SEEDS AND PLANTS.

YOUR ALFALFA SEED should meet the needs of your soil and moisture conditions. One of the seven different kinds of Green Gold brand seed will yield heaviest and live longest because they are selected for particular conditions. Our illustrated booklet tells you all about each kind. Write for it now. Bomberger Seed Company, Desk B, 725 Tenth street, Modesto, Cal.

GENUINE FROST-PROOF CABBAGE PLANTS—Well rooted. Winter grown in open field. Early Jersey and Charleston Wakefield, Succession and Flat Dutch. Postpaid, 250 for $1.00; 500, $1.50; 1,000, $2.50. By express, $2.00 the thousand. Prompt shipment and satisfaction guaranteed. Union Plant Company, Texarkana, Texas.

BUDDED AVOCADOS—Fuerte, Sharpless, Lyon, Dickinson, Blakeman, Puebla, Spinks, Taft Linda, Rey, Queen, Knight, and others. A fine stock of field-grown trees, $2.50 for one. $2.00 each by the 100. 25c per tree for packing. Newbery-Sherlock, 2202 East Colorado St., Pasadena.

EUREKA WALNUTS are the best grafted on Paradox roots. They resist blight. You are sure to get the real thing by placing your order with us. We graft Eurekas only. Geyer Brothers Walnut Nursery, 214 S. Almasor street, Alhambra, Cal.

SUDAN GRASS SEED.

Selected, recleaned Sudan Grass seed at a price that will appeal to you. For price and particulars. J. W. Schuster & Son, Pond, Kern county, Cal.

NEW HARDY HYBRID ALFALFA—Biggest perpetual cropper. Best quality—hay or pasture. Wonderful constant stooler. Grows thick, permanent, profitable fields, etc. Investigate facts. J. L. Lawson, San Jose.

FOR SALE—About one ton of nice Sudan Grass seed at 17½c. per pound, f. o. b. Modesto. Also about a ton of Black Amber Sorghum at $3.75 per hundred, f. o. b. Modesto. C. F. De Witt, Box 427, Modesto, Cal.

YOUR GARDEN THIS YEAR WILL NOT be complete unless you have a few hills of the world's finest muskmelon, "Casad's Special." Send for seed package, 25c. R. C. Casad, grower and originator, Covina, Cal. R. F. D.

TREES! TREES!—Eureka and Placentia walnuts on black; a general assortment of high-grade nursery stock. A. R. Marshall's Nurseries, 1212 Ross street, Santa Ana, Cal.

FOR SALE—Budded Mission Olive Trees; ready for planting; buds selected from choicest trees; special price for large lots. D C. McCallum, Oroville, Butte Co., Cal.

BUY YOUR SUDAN GRASS SEED early, while the price is right and you can choose from a lot of tested seed. For prices write, C. B. Tawney, Ripon, Cal.

ASK FOR SNOW'S GRAFTING WAX—In use all over the State. If your grocer does not keep it, send to D. A. Snow, Route 1, Box 443, San Jose, Cal.

SMOOTH PERUVIAN ALFALFA SEED is worthy of your consideration. Grows earlier, quicker, and weighs heavier. R. O. Reeve, Winton, Cal.

GENUINE FRANQUETTE WALNUT GRAFTWOOD, 3c. per foot. Ogden Bolton, Jr., Route 4, Box 417, Santa Rosa Cal

ONION PLANTS, California Red, 75c per 1000. Now is the time to plant. Monroe, The Tree Man, Orland, Cal

BEET SEED FOR SALE—Choice Giant half sugar beet seed in any quantity. W J. Brown, Route A, Gilroy, Cal

BEET SEED—Golden Tankard for sale. Ten lbs., 30c.; less, 35c., f. o. b. Hopland. C. E Lenk, Hopland

NEW OREGON STRAWBERRY PLANTS—$5.00 per 1000. Mrs Lambert, Newark, Cal

WANTED.

WANTED—Married man to care for registered Shorthorns and Berkshires. One who has had experience in fitting and showing preferred. State wages desired with furnished house, wood, water, milk and garden spot included. Fair Oaks Ranch, Willits, Cal

RETURNING SOLDIERS—Write for particulars how to make $10.00 every day selling Rawleigh's products, with rig or auto. Old established demand. Business healthy, pleasant, permanent. Give age, references. W. T. Rawleigh Co., Oakland, Calif

POSITION WANTED as manager of hog ranch on diversified farm. Experienced with registered stock, irrigated crops and deciduous fruits. Address, H Duvenock, 1004 Paru St., Alameda, Cal.

WANTED—Young Swede with or without wife, to run dairy on halves. 50 Jersey cows. Apply 3501 Washington St., San Francisco

WANTED—Married man with experience to raise Mammoth Bronze Turkeys. Geo A. Smith & Son, Corcoran, Cal

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WALKING TRACTOR

THE operation of the Fageol Walking Tractor is as simple as the running of an automobile—with no wasted time making adjustments during working season.

Utilizing 64 legs, securing positive traction as does a horse, the Fageol delivers a higher percentage of developed power to the implement.

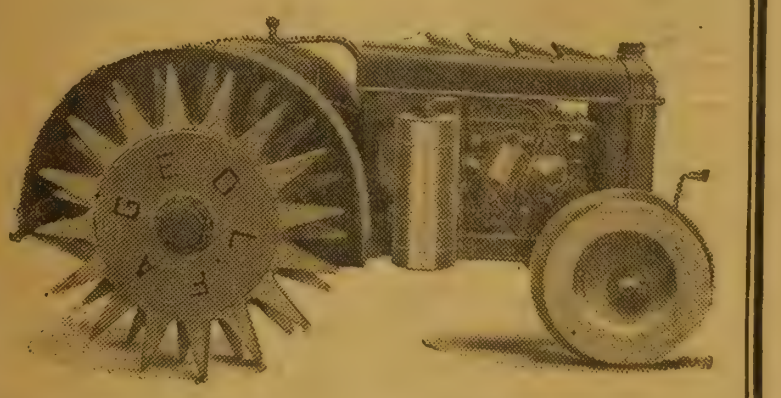
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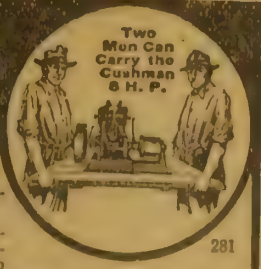
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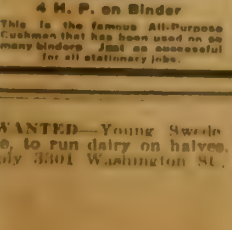
Only 40 to 60 lbs. per H. P.

Cushman Engines weigh only 40 to 60 pounds per horsepower, yet have plenty of surplus power.

They weigh only about one-fourth as much as ordinary farm engines, but they are balanced so carefully and governed so accurately that they run much more steadily and quietly. They are also the **most durable farm engines** in the world, on account of their improved design and better material and construction.

Easy to Move from Job to Job

CUSHMAN Light Weight Farm Motors



4 H. P. on Binder

This is the famous All-Purpose Cushman that has been used on so many binders. Just as successful for all stationary jobs.

4 H. P. weighs only 190 lbs., being only 48 lbs. per horsepower. Besides doing all ordinary jobs, it may be attached to any grain binder, saving a team, and in a wet harvest saving the crop. Also it may be used on corn binders and potato diggers.

8 H. P. weighs only 320 lbs., being only 40 lbs. per h. p. For all medium jobs. Also may be attached to hay presses, corn pickers, saw rigs, etc.

15 H. P. weighs only 780 lbs., being only 52 lbs. per horsepower. For heavier farm jobs, such as 6 hole corn shellers, ensilage cutters, large feed grinders, small threshers, etc.

20 H. P. weighs only 1200 lbs., being only 60 lbs. per h. p. For heavier duty jobs, such as large shellers, hullers, grain separators, heavy sawing, etc.

Cushman Engines do not wear unevenly and lose compression. Every running part protected from dust and properly lubricated. Equipped with Throttling Governor, Carburetor, Friction Clutch Pulley and Water Circulating Pump. Ask for Book on Light Weight Engines.

Cushman Motor Works 956 N. 21st Street Lincoln, Nebraska

Healthy, hardy chicks—do you know the secret?

WHY, OF COURSE, it's an *open* secret! You can sum it up, and boil it down, in two words: *proper feeding*. And proper feeding is an easy or a hard job—depending upon how easy or hard *you* make it! If, for example, you depend upon Sperry Baby Chick Feed—there isn't anything to worry about. For this perfectly mixed ration makes healthy, hardy chicks—and that's no secret, either!

This explains why thousands of chicken raisers are so enthusiastic about it. They realize that, to make money in the chicken business, they must save a big percentage of each hatch. And, what's more, they have proved that chicks fed from the very start on Sperry Baby Chick Feed develop into sturdy, *profitable* chickens.

Remember—Sperry Baby Chick Feed is *absolutely gritless*. (You should, however, add about 5% fine shell and grit when using.) It contains the food values and constituents which Nature has taught the mother hen to scratch for her baby chicks. It is clean, uniform, properly granulated and proportioned for the delicate organs of the baby chick.

Also remember this: the amount of feed eaten by a baby chick during the baby chick period is so small that the slight difference in cost between poor feed and Sperry Baby Chick Feed means nothing—especially when you realize that the saving of a very few chicks more than makes up for it.

So—why take chances, why experiment, when Sperry Baby Chick Feed puts the whole secret in the hollow of your hand? It is a perfectly *balanced ration* that gives your baby chicks *exactly* what they need.

If you want to know just how to feed your baby chicks for better results and bigger profits—send today for the new edition of our booklet, "Makes Hens Happy." Full of practical hints and profit-pointers! Send for your copy at once—it's *free!* Don't bother to write a letter—simply fill in and mail the coupon below. Do it today—NOW!

STOCK AND POULTRY FOOD DEPARTMENT

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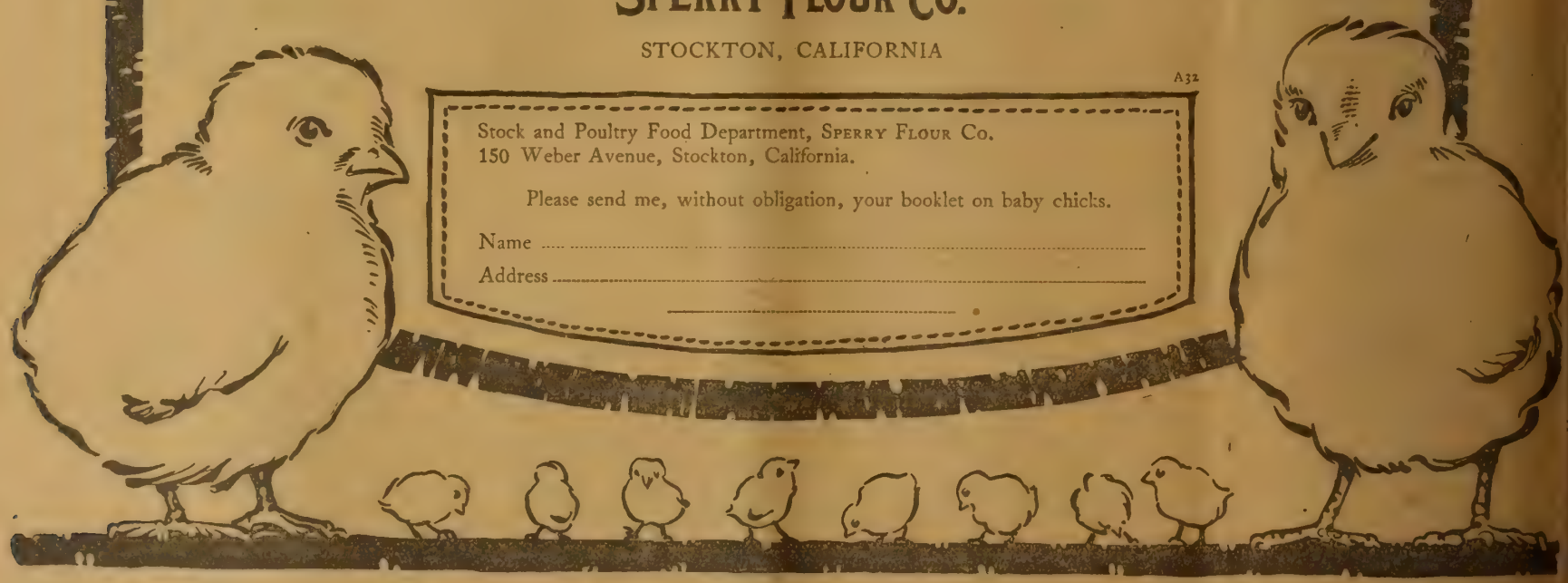
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Vol. XCVII—No. 10

THE PACIFIC RURAL PRESS

Forty-ninth Year

N FRANCISCO | MARCH 8, 1919 | LOS ANGELES

Lighthouses That Guide to Better Farming

Written for Pacific Rural Press by R. H. Whitten

THE SILO SALESMAN had been putting in his best licks, but he couldn't land Silas Small to save him. The old tight-wad said that he had farmed for years without a silo and had made good money, and besides, the thing cost too darned much. Finally the son, who had just returned from agricultural college, saved the day. "Say, ma, peaches will be ripe next week," he said. "You and I will can our share, but we'll let pa's share lie out somewhere to dry. Then next winter we'll eat nice, juicy canned peaches while he's eating dried ones." Old Silas saw the point and he signed up for a silo without a murmur.

If that son of his could be spared from the farm he would make a mighty good salesman for some concern, for an expert could not have hit upon a more fitting illustration. A silo is merely a great big mason jar, made of wood or concrete instead of glass. And it cans corn just as perfectly for the bossys as the mason does for the family.

Fruits and green vegetables are canned so as to supply succulent and palatable foods to the family during the winter. Succulence is just as essential to cows as to human beings. The abundant milk flow obtained from June pasture is due to a very great extent to the succulence of the grass, and a silo provides succulent feed during the winter months when pasture is not available



Don't flounder around on the seas of uncertainty when you can build a lighthouse on your farm that will keep you off the rocks and guide the way to better farming and bigger profits. That lighthouse is the silo. It will prove a sound investment.

The Way Silage Is Made.

How does it do this? Well, in the formation of silage certain chemical changes occur which soften the fiber, make the food elements more digestible, and add new and agreeable flavors. Bacteria pass into the silo with the green fodder and multiply there, favored by the presence of air and moisture, and the material in the fodder upon which they feed. Considerable heat is developed in this process. Most of the bacteria cannot live without oxygen, and the amount of air available determines how far this fermentation process will run. When the supply of oxygen is exhausted the bacteria die and the fermentation ceases unless more air is admitted. This explains why it is necessary for a silo to be air-tight on the sides and bottom. It does not matter so much about the top, as a thin layer of silage will spoil and thus form a seal which will exclude air and keep the remainder of the silage in perfect condition for years.

Thus, aside from the benefit of silage for feeding during the winter months when green feed is not available, a silo will prove an insurance against dry years. The farmer with a good supply of silage knows that he can carry his stock through a long, dry spell with practically no loss of milk flow to his dairy cows, or falling off in the condition of his beef stock, so drought has no terrors for him.

Furthermore, silage has a marked effect on the physical condition of the animals consuming it, keeping the bowels normal, the tissues vigorous, the skin soft and pliable, and the coat glossy, which is a condition that marks the animals as ones capable of making the most of their feed. The acids developed in the silage act as condiments, stimulating the appetite and increasing the consumption of feed, which results in an increased production of milk or flesh.

How about its cost? First of all, the silo should not be considered an expense any more than a barn is an expense. Either one is an investment, but the silo will pay the biggest dividends in the way of reducing the cost of feed. It not only brings the herd the best of summer's feed when pastures are bare, but it stores more rough feed for less money than any other farm building. A silo 14x32 feet will contain approximately the same number of cubic feet as a mow 36x14x10 feet. The silo will hold 100 tons of silage containing 18 tons of digestible nutrients, while the mow will store 11 tons of alfalfa hay containing six tons of digestible nutrients. In other words, the mow must be three times as large as the silo to hold as much feed. It is well for a Silas Small to remember this when he puts off the erection of a silo because of the expense involved; also he should bear in mind that an acre will produce considerably more digestible feed as silage than as hay, and will feed six times more stock than when pastured.

Back in the corn belt the argument is advanced that at least 37 per cent of the digestible material of the corn plant is left in the stover when the ears only are used, while if the corn is ensiled this 37 per cent goes into the silo together with the 63 per cent in the ear, and there is practically no waste. Even if the dry stover is fed as roughage when the corn is raised for grain, it is not saved as completely as in silage. The loss is generally about 25 per cent and sometimes goes as high as 45 per cent. Furthermore, a given amount of corn in the form of silage will produce more milk than the same amount when shocked and dried, even when ears and all are used.

Here in California corn is not raised so extensively as in the corn belt, yet the same reasoning applies to milo, kafir and other popular crops. Indian corn should and will be grown more extensively in many sections of the State, but even where it cannot be successfully grown, most satisfactory silage can be made from other crops, and most of them yield so much heavier than corn that the greater tonnage offsets the slight decrease in feeding value. There has been some dissatisfaction with the sorghums, but this has been due to the fact that they were cut while too green for silage purposes.

Numerous Silage Crops.

Average yields of 10 to 15 tons of green forage per acre have been obtained at the University Farm during the past four years on grain land receiving one irrigation, the crops being Indian corn, sweet sorghum, milo, feterita and sudan grass. All of these crops, when cut at the proper time, produced silage of excellent quality and palatability. Per unit of dry matter, sweet sorghum silage proved slightly more efficient than Indian corn silage, and we understand that in Kansas, the important corn State, about 60 per cent of the silos are filled with sweet sorghum silage.

(Concluded on page 372)

PACIFIC RURAL PRESS

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EDITORIALS

CALIFORNIA, EN AVANT!

ACCORDING to one of the recent extensions of the English "language which is now in the making," California is "going some." Our last issue bore date of February 29 instead of March 1, because the progressive printers concluded to jump the Gregorian calendar and call for the presidential election of 1920 this year instead of next—thus giving the Peace Congress the chance to nominate a President for the United States, from the point of view of world serviceability—all of which is indicative of some speed in this State. And current events justify California in assuming initiative in speeding up the country. In 1918 California stood sixth in the list of forty-eight States in the amount of revenue paid into the United States treasury—advancing from tenth place in 1917. In 1918 also California advanced to third place among the States in the ownership of automobiles and auto trucks with 407,761 of these vehicles, and being beaten only by New York with 462,389 and by Ohio with 415,000! Surely our wheels are going around! It is apparently possible for the whole of the unjailed population of California to go on a joy ride at the same moment—filling all the State highways with motors nearer together than it is usually considered safe to run!

GOOD OUTLOOK FOR CROPS AND PEOPLE.

THE promise for advancement in 1919 indicates that last year's attainment will be considerably surpassed. Over most of the area of the State the rainfall is now from a quarter to a third greater than the normal: the reservoirs are full of water and the mountains are deeply snowed under. According to the figures of the United States Department of Agriculture, California receded in 1918 to seventeenth place among the States, in value of crops produced, from the seventh place which she occupied in 1917. This was chiefly due to water shortage, which has already been made good for 1919, and the State may be expected to regain and possibly improve upon her relative position of 1917; for other States are just as weary as we are of war-speeded crops and our chance to shift profitably to others is at least as good as other States enjoy. Although others may reach deeper into Uncle Sam's wheat pocket than we, we shall have a good chance at a hungry world with our distinctive high-class products and manufactured forms thereof, if the war embargoes are lifted from trade and shipping and our goods thus have a fair chance at open markets.

Favoring natural conditions for production will also have relation to the increased demand for opportunities for investment and enterprise-building which will be a feature of the current year. In spite of the handicaps on tourist travel which Government direction of railways has more or less necessitously involved, the hotels in our resort regions are running over, waiting lists have been installed and hotel extension is proceeding on a large scale. California has received great volumes of desirable publicity during the war through the wider recognition of her special productions, which testify to wide soil capacity and climatic salubrity. Nearly all warriors have sustained weather shock in western Europe, which will impel them to start anew under a better canopy of atmospheric mellowness. We shall have a considerable increase in our enrollment of both employing and journeymen farmers. We are expecting that California will lead the States in the total of post-war development realized in all lines of industry.

BEANS ON THE JUMP.

AND so it is going to be a leap-year even for beans—but they will jump backwards! About the only consolation which the leguminous crusaders from California bring back from their attack upon the holy sepulchre of government food exportation and price-fixing at Washington is that "beans will have to go to pre-war prices and that growers are at liberty to sell them where they can." Unless something else can be done, then, beans which cost the growers perhaps twice as much per pound will have to go at pre-war prices—if they can get them in view of the tremendous over-production which hectic crop expansion was directly responsible for. It looks as though California growers would surely do their full duty in patriotic sacrifice. Col. Weinstock, who went East with President Turner of the Bean Association to help save as much as possible from the bean wreck, suggests that Congress should appropriate ten million dollars to buy two million sacks of beans at 5c per pound. "Such a purchase," he says, "if California were given 65 per cent, would stabilize the market to such an extent that independent business would probably absorb the balance of the crop."

HAVE THEY BEEN FAIR TO OUR BEANS?

THERE is still grave suspicion that the authorities have not been fair to our bean growers. Some of them seem to have put up a game on the growers and left them out in the cold, holding the sack open for impossible quail. In this connection it would be well for the reader to turn back and consider the claims of unfairness made by F. S. Wrinch, a bean grower of Visalia, in our issue of February 15, page 246. Mr. Wrinch suggested that we were possibly giving too wide importance to the claims of local agencies that no Oriental beans were being bought for our army and navy but only allied money was being spent for them. It is now admitted that other army and navy bean buyers, who had no connection with the California Food Administration, have been buying Japanese beans to beat the band, for there now comes, unofficially, from Washington this declaration: "No more Japanese beans are to be bought for army and navy use." This is intended as a comfort and encouragement to California bean growers who are now holding apparently not less than a billion pounds of beans, over and above what the normal trade can be expected to use up before a new crop comes in! Surely these bean figures make the head swim and the heart sick, and the whole country, which called for all possible beans from California to save the world from the Huns, should get under this load of excess munitions and save our patriotic, though perhaps over credulous, producers from being financially crushed. It is a question of the solvency of thousands of people. Our California bank superintendent, Charles F. Stern, has the right idea of the situation, for he telegraphed last week to Senator Johnson and the California Congressmen, declaring that "the Government's moral responsibility toward the bean growers is just as binding as toward the wheat growers, even though no price was fixed," and suggesting "a possible sharing of the financial burden by the Federal Reserve Bank"; pointing out, however, that "this does not clean up the bean market." It seems clear enough that the Government must buy the excess beans which no other customer can compass. It is, as Mr. Stern claims, a moral obligation which, while we seem to be on the point of recognizing moral obligations for all the rest of the world, should not be repudiated with respect to our own people.

ANOTHER QUESTION OF FAIRNESS.

AND while we are trying to get our busin on the high plane of fairness there is a other question which vexes us and that how far is Senator Brown justified in impeachi one of our prominent enterprises in the dai line, which claims to be co-operative, as only operative on the lion-and-lamb basis and th nothing but lion will rise from the accouchemer If Senator Brown should be suspected of utteri a slander upon an enterprise which is being pr moted as co-operative among California cow ow ers and milk producers, he should not claim legi lative freedom of speech, but in the interest all the people should make his impeachment go and thus show that he has uttered no slande but has rather declared the truth for the pub warning and benefit. As we stated plainly la week, we want no monopolies, trusts and priva or corporate profiteering in the uniform of c operation. We are continually urging co-oper tion among food producers because we belie really chaste co-operation is the way to secu from traders and consumers fairness to produce and the way also to develop manhood and Amer canism among producers themselves. But if a enterprise claiming to be co-operative is mere disguising the autocracy of commercial domin tion and control and is thereby stool-pigeonin to win producers to future oppression which wi destroy them industrially and bring to naug really co-operative undertakings which they ha established, it is our ambition to assist in revea ing it to the public in the depth of its comme cial and moral darkness. Therefore, though w have no sympathy with Senator Brown in his ge eral Quixotic attack on producers' co-operatio and believe he will only shiver his lances upo them, it may possibly be that he may find on which is not sound within and may get his spea through its hollow crust of the gleaming armo of co-operation. Senator Brown claims that h has found one which is armor without and Armou within and the important thing is, is it true Upon another page of this issue Mr. Whitten give the results of inquiries he has currently mad toward the solution of this important questio Our interest in the matter springs from our con viction that true co-operation—that which is hon est in its motive to distribute among dairy pro ducers fair rewards above what their operation cost—does not aim to play off one cow-ma against another for the benefit of promoters, cap italizers or distributors: does not undertake t depress producers otherwise organized or unorgan ized: does not set out to exploit consumers fo all the traffic will bear, but to deal all aroun fairly to secure for producers what properly be longs to them—such an organized co-operatio has our admiration and support for the purpose named and others germane to them. If any allege co-operation does not embody these motives an is not proceeding on these principles, the soone the dairy public knows it the better.

TO A "CONSCIENTIOUS OBJECTOR."

TO THE EDITOR: Don't write anything mor about socialism, Bolshevism and labor prob lems. I am not a socialist, but an open minded progressive. I will say, however, that I never knew a socialist to change his belief According to my observations, the reason generally is this: Those who attempt to talk them out of their doctrine know nothing of the subject. And their egotistic display of ignorance would be held in check by a little knowledge of history and present conditions of economic or social questions. If they had this, their opinions and arguments would have some weight. These are questions which all the labor agitators have specialized on and they have more or less knowledge of. Hence, perceiving that those who would have them change their opinions have neither any true idea of facts nor understanding of principles, they take the arguments for what they are worth—which is nothing. A man may be honest but not be able to raise fruit in California, and he may be both a wise fruit man and honest and yet know nothing of the germs that underlie the world's present ferment. Of course, I have no idea you will print this.—C. O., Sacramento.

We are not afraid to print anything which has a lesson in it which we think the public ought to learn. You certainly have written one which shows how hateful are conceit of opinion, arrogance toward the opinions of others and refusal to grant to others the freedom of view which you

laim for yourself. You are worse than a socialist, or all socialists whom we happen to know have one of these attitudes. They contend for what hey believe and they know that truth can only e reached by contention which grants to those f different views the same consideration which hey claim for themselves—until some demonstraion of truth, which all must respect, has been eached. You are arbitrary, condemnatory, imlacable and count as true only the contents of our own noddle. You count as naught what thers may think or believe or may have learned rom their own experience. You are a positivist—ranting no toleration or chance of right thinkng to those who differ from you in their sight f facts or in their judgments of conclusions to be rawn from facts which all may concede. You re an "undesirable citizen" because you have no espect for the American principle of fair play nd no loyalty to the American way of settling uestions of public policy which our constitutions nd laws provide. You slander everybody who ries to see and to think for himself. You slaner even those whom you try to endorse—the labor agitators": because those whom organized abor recognizes as spokesmen for them are not ntolerant, unpatriotic and unreasonable. Those hom they refuse to recognize have your attitude f mind toward their countrymen and by their ejection of such attitude they have gained for rganized labor wide respect and influence in this ountry. We do not know whether you are eligible or admission to the ranks of organized labor or ot. If you are, join them and try to be reasonble. If you are not, try to be a socialist: it will elp you some. In your present state of mind you re a menace to the peace and prosperity of your ountry.

QUERIES AND REPLIES

By the Editor.

Inquirer Must Give Full Name and Address.

Growing Peppers.

To the Editor: I am thinking of growing pepers on second-bench land with a good slope toard the Sacramento river. We have plenty of ater for irrigation and wish to set the peppers n the level ground between the checks in a prune rchard we are planting this month. The soil is ilt loam. Peppers have been grown successfully n small quantities. What varieties do you advise? When should we sow the seed, and when translant? What cultivation is necessary? This ground as formerly been used as a cattle and grain ranch, aising fine grain. What are our shipping marets from here?—B. F. M., Red Bluff.

You should be starting plants now in covered eedbed. The plants are grown and set out much ke tomatoes, but are safe in the open earlier than omatoes because they can stand light frosts. They an also take water and manure to better advanage than tomatoes and must be kept growing riskly. Your natural conditions seem favorable, ut a more important matter is what you will do ith the crop. It is not safe to grow it and trust o the general markets. You ought to have a conract with the nearest cannery or with a Sacraiento firm of shippers. The Pimiento is safest to row for the green trade, because the canners pre-er it.

The Tobacco Problem.

To the Editor: Concerning your judgment that obacco cannot be raised and used in California, I ould suggest that you consult our Guerneville obacconist; who has been raising tobacco and sing it and manufacturing cigars for twenty ears. I send you a sample.—R. N. T., Guerneille.

To the Editor: Where can I get 10,000 bamoo sticks six feet long to use in drying and curing urkish tobacco? I have the impression that there re sections in the San Joaquin Valley where bamoo is used as windbreaks and screens and perhaps could get my sticks from such places.—J. F. K., sparto.

We are aware that country tobacconists have een growing tobacco here and there in Californa for the last sixty years and have made cigars f varying quality—mostly bad. The sample made t Guerneville is the best we have so far tried. ut we are also aware that during all this time ll who have undertaken to grow tobacco for sale s a commercial crop have been disappointed in ne way or another and have as a rule lost their ime and money and have quit. But there are experimental productions still in progress and of course we do not prophesy their failure.

The inquiry from a subscriber at Esparto indicates that there is a new drive on in western Yolo county on the basis of growing Turkish varieties instead of the Cuban, Connecticut and Sumatra varieties, which have been mainly used hitherto. Maybe the Turks will come through: we have to wait and see. Perhaps some reader can get out the bamboo sticks which our subscriber desires. The canes which are most largely grown in the San Joaquin Valley are not true bamboos. They are "reeds" (Arundo donax and not bambusa) and they do not have the strength and durability of bamboos. He will have to determine that before making contracts for supplying the "sticks" which he desires.

Repressive Treatment of Wheat.

To the Editor: Wheat drilled in, or sowed broadcast and disked in, in November or December, on well-worked summer fallow or on land that has grown some cultivated crop, such as corn, beans, potatoes, etc., the previous year, will stool well and grow five to six feet tall and only yield 20 bushels to the acre. I have been told another plowing before seeding will lessen the straw growth and increase the yield of grain. What is your opinion?—H. J. J., Philo, Mendocino county.

We have only a guess or two to give you. A fall plowing in a dry time would perhaps release some of the moisture which you have stored up by cultivation of your summer crop or summer fallow and cause the wheat to make a slower start and lay itself out for less straw. This may be the reason why you are advised to plow before sowing. It seems to us that a similar result would be secured by later sowing or by mowing or possibly sheeping the wheat during the winter, when the ground surface is dry enough for it. But there are other things to consider. Is the variety of wheat which acts this way for you the same that is more fruitful on lands in the same region which give it less growth-impulse? If it is not, perhaps you need another kind which has less natural push to straw and more to grain—for you may be growing a kind which does not know what to do with the prosperity you offer by summer fallow in your district of heavy rainfall. It may be a more prolific wheat on drier land. It is also possible that you can increase your crop without changing either wheat or culture method by application of phosphatic fertilizers, which in the presence of ample nitrogen sometimes produce remarkable results. There are evidently several horns to your dilemma. Readers are welcome to catch onto any which have not pricked our recognition.

Flies and Aphis on Apples.

To the Editor: When my apple trees are in bloom a large fly lays eggs on the under sides of the leaves. When the eggs hatch there are a million little lice-like bugs which affect the apples. Kindly give me a recipe for spraying and tell me what makes the leaves curl up.—P. T., Kerman.

The large fly does not lay eggs from which the lice hatch. If it is like a house fly but larger, it is only there to get honeydew from the lice. If it is a gay large fly, hovering like a bee and laying eggs among the lice, it is a "syrphus fly" and the grubs which hatch from its eggs eat the lice. These syrphus flies have white or yellow stripes on their backs and are easily distinguished from common flies. To kill the lice you should spray, as soon as you see the first of them on the under sides of the new leaves, with blackleaf tobacco extract 40 per cent—using it at the rate of 1 pint to 200 gallons of water. The lice make the leaves curl—though they may also curl from mildew if you see no lice present.

Not All Stone Fruits Intergraft.

To the Editor: I have well-developed seedling cherry trees and would like to graft them with apricots. Is this possible and if so with what success? I have been told that it is practical to graft any stone fruit on stone fruit.—J. G. S., Elk Grove.

It is a popular error that all stone fruits can be successfully grafted on each other. Some can be intergrafted and others cannot. The fact has to be determined by experience in each case and not by rule for the whole. Stone fruits will not always accept relationship with those of their own kind. For instance, cherries can only be satisfactorily grafted on cherries and yet all cherries will not take to each other. The Guigne and Royal Ann will not hold on the Morello, but the Black Tartarian will take both, so it is used in double working when the first named varieties are desired on the Morello root. Some plums will go on peaches, but not all plums, etc. Your cherry seedlings will not take apricots nor anything else but cherries.

Increase Your Income

Are you satisfied with your present earnings? If so, this won't interest you, as it is intended only for red-blooded men with the fire of ambition burning in their hearts.

If you really like this paper and believe you can convince others of its merits, we can show you an opportunity to increase your earnings by taking up our circulation work—looking after renewals and getting new subscribers. Permanent work; straight salary; no investment except that you must have an automobile.

Write us a little about yourself, and we'll tell you about this opportunity that you can't afford to overlook.

Vines in Johnson Grass.

To the Editor: I have 80 acres that I would like to plant to grapes. Parts of this land have considerable Johnson grass. I thought that by putting in grapes and by continued cultivation I could eradicate the Johnson grass. Last year I had in a crop of potatoes and, as long as I cultivated, the Johnson grass would not grow. I think perhaps after a season or two of cultivation the grass roots would sour and die. What is your opinion as to the grapes and Johnson grass?—J. M. O., Bakersfield.

We would not deliberately plan to become the owner of a Johnson grass vineyard. It is bad enough to have one wished onto you. You may keep the middles clean, but chasing the grass around the stumps will make you dizzy. Plant the clean land and put the spots under killing treatment until they are clean also before planting.

High Winter Water Table.

To the Editor: I have a piece of loose creek bottom land. The water never stands on the surface, but the water level seems to be the same as that in the creek and stands two to four feet from the surface in the winter for a month or two and four to seven feet below the surface the rest of the year. Is the water too near the top for fruit trees, and would alfalfa be all right?—H. T. B., Orland.

We should expect pears to thrive on it and if the rise is sure to come when the alfalfa is dormant it would not be injured. The alfalfa might not be long lived, but it could give you a whale of a yield while it is at it.

Planting Milo and Other Sorghums.

To the Editor: What is the proper time to plant dwarf milo maize in the San Joaquin Valley?—F. J., Tulare.

The time in the San Joaquin and everywhere else is to begin as soon as the ground gets warmed up and frost danger is over and to continue as the land has moisture enough during the summer, until there arises the danger of fall frosts killing the plant before it gets growth enough to be valuable. The exact dates depend upon whether the piece of land is apt to be frosty or not.

Too Frosty for the Japanese Plums.

To the Editor: What can I graft on the Burbank plum, which blooms too early for this altitude, which is 3250 feet elevation, and the late spring frosts get the crop?—T. A. M., Pleasant Valley.

You will probably have to forsake the Japanese varieties and rely on the European (domestica), which includes practically all of our common plums, which are much later bloomers. They usually accept the Japanese as a stock.

California Weather Record

The following rainfall and temperature record is furnished the Pacific Rural Press by the United States Department of Agriculture Weather Bureau at San Francisco for the week ending at 5 p. m., March 4, 1919:

Stations	Rainfall Data: Past Week	Rainfall Data: Seasonal To Date	Rainfall Data: Normal To Date	Temperature Data: Max'm	Temperature Data: Min'm
Eureka	1.60	30.89	39.51	62	38
Red Bluff	1.26	23.23	18.10	68	38
Sacramento	1.19	15.81	14.32	60	38
San Francisco	2.40	23.02	16.85	60	44
San Jose	1.42	*16.49	12.12	62	34
Fresno	.49	5.81	6.80	68	28
San Luis Obispo	.80	11.59	11.60	66	40
Los Angeles	.07	6.06	11.30	70	44
San Diego	.18	6.32	7.41	66	44
Winnemucca	.24	5.49	5.02	50	26
Reno	.60	8.48	7.56	52	26
Tonopah	...	....	5.42	48	18

SNOW ON GROUND.

Emigrant Gap, 9 inches; Yosemite, 18 inches; Huntington Lake 67 inches; Cisco, 3 inches; Portola, 28 inches; Squirrel Inn, 10 inches; Summit, 118 inches; McCloud 18 inches, Sierraville, 8 inches, Truckee, 24 inches.

Reasonably Clean Hay Demanded in New Bill

Written for Pacific Rural Press by R. E. Hodges

THAT there are more farmers who buy hay than there are who raise hay to sell can hardly be questioned. That they are entitled to buy hay with no great amount of dirt in it is hardly to be questioned. That hay can be produced and baled with no great amount of dirt in it and at the same time with greater advantage to the producer than if he includes undue dirt will, we believe, be amply proved if by some means a direct swiftly applied penalty may be applied. Our columns have been open to arguments for and against the hay bill, defeated in the 1917 Legislature. Two important lines of opposition seemed to have merit. The idea of tagging the bales with weight at time of baling and of selling later on those weights with a five-pound tolerance was objectionable from many angles, although it was intended to prevent dealers from insisting on a greater allowance for shrinkage. To regulate by law the amount of dirt that may be allowed in hay is one proposition that would stick most any legislator because of conditions as they exist in hay production. But the contention of some people that "dirtless hay can't be did" has not all of the truth in it. In the worst of seasons there is no need of the great amount of dirt that is found in some hay and it is freely charged that the dirt is actually shoveled in. We do not need to consider this charge, because it is not to be denied that in baling from shocks made with drag bucks a great plenty of dirt is likely to be so mingled with the hay that it would cost something to shake it out. It is not to be denied that with gravely soil or cloddy adobe, plenty of dirt will be well mixed in without shoveling it. This is particularly true when an earnest effort is made to clean up all the hay at the end of a setting. But we contend that when hay producers actually feel a pinch on their pocket books in selling dirty hay, they will farm better, with better machinery and less land, but will make more money because the yield of the hay will be greater and markets will be stronger, all other things being equal.



Sixty-nine pounds of rock found concealed in one bale of hay, by George McPhee, Sealer for Orange County.

NEW BILL LESS OBJECTIONABLE.

With these facts in mind, and remembering the great interest shown by our subscribers in the discussion which has been going on in our columns, we believe it is to the interests of our readers to champion the bill which has been introduced by Assemblyman Walter Eden of Orange county. Note the features of it and then write to Mr. Eden at the Capitol, Sacramento, so he may use your letters as an antidote to the opposition that will develop from certain sources. If you dislike certain provisions, tell him so. We know that the proposed bill is favorably taken by a number of legislators who bitterly opposed the bill of 1917. Note that balers' tag weights are not mentioned and therefore no tolerance is indicated. As provided in the bill, all weights on which sales are made must be obtained by weighing within 10 days of such sale. No baler shall put or conceal foreign matter or damaged hay within a bale with intent to defraud. Hay must be sold in one of two ways: by the weight, in which a ton must be full 2000 pounds; or by the bale, in which case the true weight must be marked on a tag securely fastened to the bale. This tagging, of course, is not done by the producer or baler if the hay is sold by the ton. When hay bales become broken during shipment by common carrier their approximate weights may be used in the settlement. Violators are to be fined $50 to $100. The law is to be enforced under supervision of the State Superintendent of Weights and Measures, who states that it will not require any extra officials beyond the force already under his supervision.

POSSIBLE AMENDMENT.

In addition to this, an amendment is likely to be proposed before the bill gets through, providing a thing which looks at first glance like more work for the baler, but is in reality less work and therefore less expense. It will have the long-sought and much-to-be-desired effect of creating a stronger demand and better prices for good hay, will automatically without any prosecutions lead to greater care in keeping dirt or rocks out of hay, and will be a great advertisement for the producer. The proposition is to have tags printed with the baler's and producer's names and locality where grown and a statement whether the hay is baled from stack or shock. Any additional advertisement may also be printed on the tags. This will do away with the troubles of whittling sticks and marking them while the crew waits, and the tags can be stuck onto the tie wire in less time than is usually taken to whittling sticks. Now boost or kick in earnest and at once.

Why Hay Should Be Stacked

[Written for Pacific Rural Press by a Veteran Hay Buyer.]

First: Stacked hay goes through a sweat and is therefore better cured for having been stacked. During 1916, McNab & Smith, San Francisco, purchased from Scott, Magner & Miller 6000 tons of their best stacked red oat hay and they chose it from the total of 17,000 tons which I purchased for Scott, Magner & Miller that year. Any large feeder appreciates and will pay extra for stacked hay, but unless the purchaser sees the hay in the stack personally; unless he is an expert hay buyer, he will not be able to tell at the car door whether it is from shock or stack, but later on he may learn to his sorrow and loss that the hay will not feed properly and that evidently it was not cured by being stacked. Of course this has to do specifically with hay grown and baled in a district where they have considerable fog during the fall of the year.

Second: In some districts where they have lots of fog it is unwise, impractical and dangerous to bale hay from the bunch or shock.

Third: Stacking gives best opportunity to eliminate maximum amount of dirt from the bale.

(a) If hay is short and ground rough, hay can be brought to the stack on the buck rake, one shock at a time and dumped and then if a farmer really wants to keep the dirt out, he will have a man stationed at the stacker and when a little dirt accumulates, he can be a little careful just how deep the fork is set into the hay to be hoisted onto the stack.

(b) When hay is grown in the hills, it is bucked down the hill and if the press is at the foot of the hill and they bring down two or three bunches on the buck rake, a lot of dirt rolls down and is intermingled in the different strata of this lot of hay and if it is then drawn by cable and fork directly onto the feeding table and baled, you will have all this dirt in the bale and it never will come out until bale is ultimately opened at time it is fed.

(c) The only logical or practical way of separating the choice hay from the lower grade, which may be composed of wild oats and weeds which grow in the low places and around the edges of the field and in the poor patches of soil in this field; the only practical way to give the farmer justice and to compensate him for the bother of separating it is to have his men draw hay to two different stacks; the choice shocks to one stack and the off-grades to another stack, and you will find that the off-grade stack will be very small. But the way it is done now, where the farmer gets no extra compensation for trying to hold up the quality of his hay, the weeds and poor grades are delivered to one stack and when the hay buyer comes around, he sees only choice hay. But if he sees the ground on which this hay was produced, he will know that there are patches of off-grade hay contained in the stack that he is looking at.

Fourth: Another good reason for stacking hay is the inability of small farmers to get a hay press at the proper time that the hay in the shock is ready to bale, and I have heard many a farmer say, "Look, I have lost in weight and color and now the hay is still unbaled in the field in the shock, and I don't know when I will be able to get it baled. I am sorry that I didn't take your advice and stack it, for then I would have had no fear about the field getting on fire or about the possibility of early rains, to say nothing of my loss in weight, color, and general appearance of the hay." When hay is stacked it can remain in the stack indefinitely. I have bought hay for L. C. Sheldon from the Miller & Lux estate at Newman that had been stacked eight or ten years. When, several years ago, hay went to $26, they sent me to look over these stacks, and with a little care in the baling we were able to get one of the finest lots of hay from these stacks that I have ever bought. There are certain localities where it is not very important one way or the other whether the hay is stacked or baled from the bunch. This statement holds on all kinds of hay, including alfalfa. For instance, you take a hot climate like the San Joaquin Valley, if the hay is bunched in abnormally large shocks or bunches, say 400 to 800 pounds to the bunch, then this hay is classed, so far as feeding qualities are concerned, just so good as it would had it been shocked in 150 to 200 pound shocks and then stacked. Again, if you have a large field of wheat hay like Thomas McKeown, on the hills above Port Costa, and it is in 400 or 500 pound shocks; if you would disturb these shocks while that wind is blowing (and they do have some wind there) by hauling or bucking to a stack, that very act will lose in color and character of the hay more than you gain through stacking. Another reason for stacking any hay in any district is that practically all the shocks are bleached on top. Of course this depends more or less on the length of time hay remains unbaled in the shock or bunch. But when hay is placed in the stack and is left there long enough to go through the proper sweat, the bleached hay regains its natural color.

A man who is a practical farmer or hay dealer and buyer and a consumer will appreciate this bill, because he will see that the honest farmer will get the best consideration for any added expense he is put to to make his product salable and be adequately paid for his effort for so doing.

Respectfully submitted, having in mind the best interests of all concerned in growing, selling and feeding of hay in California.—Frank L. Look, 509 Van Nuys Building, Los Angeles.

Ornamental Trees for Shade and Beauty

Written for Pacific Rural Press by John J. Fox

DURING the next two months the planting of ornamental trees and shrubs will be taking place. Ornamental deciduous trees, if not yet planted, should be set out without delay—the sooner they are in place the better, as they are waking up to life now. The evergreens can be planted later, as they are balled or shipped in boxes or tubs ready to be planted without disturbance of the roots.

Owners of country and city homes are taking more pains than ever to beautify their surroundings by trees, shrubbery and climbers. The effect is more artistic—and it is cumulative — than the filigree work and gingerbread moulding fashionable on buildings of a generation ago and which the proud owner hated to hide behind a screen of foliage because it was an evidence that he had expended money thereon. Trees and shrubs become a living part of the home, in each of which the owner takes a pride and delight, just as he becomes more attached to a good picture on his walls the longer he possesses it. A well-planted yard, a nicely tended hedge, a friendly avenue of trees produce a kindly feeling in the passerby. They look "homey" instead of being showy.

DECIDUOUS ORNAMENTAL TREES.

A good many people who are undecided what to plant want to know something of varieties. For this reason we will mention a few that are desirable for different purposes to be planted now. For a quick-growing avenue or a street tree the European plane tree (Platanus orientalis) is one of the best for permanent shade and beauty. If these are planted in the hot interior valleys at say 60 feet apart, fillers should be planted between (Balm of Gilead poplar will make a good filler) until the planes are grown so as to need all the room. Then the "fillers" can be taken out and the ground treated to a good dressing of fertilizer to replace in the soil what the Balms have used. As an indication of the rapid growth under the influence of adequate moisture, warmth and soil, there is one of these trees on Madera avenue in Fresno, eight years old, which is 65 feet high and which has a spread of 42 feet across.

The Norway maple is another fine street tree, also for the park or avenue, as it grows in very compact and symmetrical form and has a deep green foliage. The silver maple also makes a rapid growth and should do well anywhere where there is suitable soil and moisture. The leaf is a bright green with a silvery



Whether they be to break the wind, to afford shade or to relieve the eye, the wayfarer is always grateful for these leafy avenues, both in town and country.

nether surface. The sugar maple is not suited to hot, dry sections.

The Balm of Gilead is a very rapid grower and spreads out well, making a good avenue or street tree—good for any part of California—while the Linden or Basswood is good for the coast. This latter tree is very fragrant when in bloom. Also it provides splendid provender for the bees at this stage.

OAK VARIETIES.

Of the oaks, the Red American is one of the most rapid growers and makes a good street or avenue tree or a handsome individual by itself. Its autumn dress takes on the high coloring seen in the East. The acorns are very large.

The tan-bark oak (Densiflora) may be mentioned here, though it is an evergreen. This tree is not only a fine, handsome spreading tree—where it has room—but is one of the most beautiful trees in foliage in the State, the leaves being of a deep, lustrous green above and look a velvety brown beneath. The buds are soft and with a fine "pile" on them, and the growth of an established tree is rapid—for an oak. The Pin oak is another handsome tree for avenue planting and the Scarlet oak—both American citizens. The latter tree has a gorgeous autumn foliage, as its name implies. These are a few useful varieties as a suggestion.

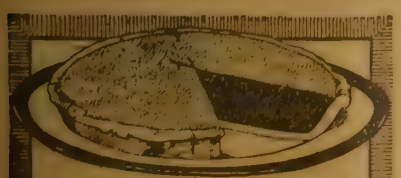
DECIDUOUS SHRUBS.

Of shrubs for the yard, either to fill out a corner or as a massed shrubbery background for flower beds, the Crape myrtle is a strong grower and adapts itself to varying soil conditions. The leaves are a bright green and it will bloom throughout the summer. The Pink, Purple and White myrtles are also fine for grouping—the White being exceptionally well adapted to the interior valley climates.

The elder may be used sparingly as a background. It shows green very early in spring, blooms early and looks pretty with its clusters of tiny grape-like berries, which are used in Europe to make elderberry wine. The Flowering cherry is well adapted for small grounds—the flowers are of that delicate tint that deifies springtide to the Japanese. Sprays from this bush when in flower are very effective alone for table decoration.

Everybody likes the Barberry, with its fine foliage and yellow flowers, which later develop into fine red berries that last well. The Rose of Sharon and Snowdrift (Hibiscus) provide fine generous blooms and are easy to take care of. The Spirea has fine long spikes of bloom, is a medium sized shrub and easy to care for, and the Smoke Tree, which has clusters of pale purple flowers, looks liks a smoke cloud from a little distance. The trees and shrubs we have mentioned in this article are only a few which are easy to start and take care of and which are reasonably bound to please if they are given a fair chance. In our next issue we expect to treat of evergreens. With the express understanding, however, that it is not our business to advise on groupings. That is the specialty of a landscape gardener and varies according to locality, climate, soil, aspect and topography as well as the extent of the yard, park or grounds it is sought to improve. One sees so many beautiful natural settings in California that could be improved with little trouble and expense and so many bare spots in highly productive areas that every lover of the State would fain see clothed with permanent tree and shrub growth—which at once confers an individuality on the spot so favored.

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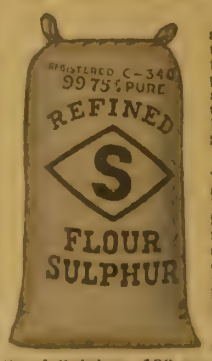
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Spring Orchard Notes

A Bright Spring Outlook.

All the farmers and fruit growers are really feeling pretty nifty these days, only they don't want to show it too much. The rains, so long withheld, have fallen so evenly and bountifully almost all over the State that, so far as water goes, crops—and walloping big ones—are pretty well assured. The snow in the Sierras looks good to the dwellers in our big inland valleys and neither grain nor tree buds are too forward, because of the cold nights. As we came from Sacramento the other day and looked across the brown flood of of the Sacramento at the emerald hills of Contra Costa county, capped with a mist of vapor, a fellow passenger remarked: "That looks like plenty of good feed." And when a man cannot only enjoy the beauty of that magnificent landscape but appreciate its usefulness as well, he surely belongs out of doors. The almonds have bloomed heavily and peaches are breaking in places. It seems to me everybody begins to step high when the California poppy begins to blaze, the filaree is a foot high, and the meadow lark's liquid notes are everywhere. Grain is a good color and generally a fair stand. Truck farmers are busy preparing for the coming season. The new canneries that have been built, as well as old ones that are being extended, promise good markets for all that can be raised. And this promise is sustained by a buoyant feeling in the export trade. Fair prices and not extravagant ones may be fairly looked for, as we have the demand for California canned goods and our genuine country labor is slowly returning to its accustomed channels.

Handling Young Fig Trees.

One of the nurserymen told us the other day that there had been a good run on fig trees this year—of all kinds. His Black Missions were all sold out. Merced, Fresno and Tulare counties have all made extensive plantings. We then talked of trees that had been nipped back by the frost in the nursery and how the injury extends downward through the pithy center, and he advised, wherever nursery trees were frosted, cutting them down to within six inches of the ground and starting them again from there—forming the head during the summer by suckering and pinching out terminal buds where branching was wanted and letting the rest go. He said they always head and shape their young figs in this way, thus practically avoiding winter pruning, and by the end of the growing season no scar or anything can be seen to show where the pinching was done. The milky sap that runs so freely rushes to the point pinched and heals it over in no time. Therefore, he says, always head your young fig trees in summer and keep out undesirable suckers.

Orchard Heaters Ready.

In almond sections where there is any danger of frost, orchard heaters are already in place—filled and ready for business. In certain prune and apricot sections growers are busy putting out their pots or have them in place—we noticed some men putting in their oil supply last fall. One man told the writer that he believed every orchardist in his district was prepared against frost, though not all of them were prompt in getting the plant out. If they believe in them and buy them, and then fail to use then, that is pure shiftlessness and they deserve no sympathy. It is not believed that orchard heaters save the whole situation, but it has been proven that they are a big help, even with a heavy frost.

Nursery Trees Have Sold Well.

The Fancher Creek Nurseries report having had good sales of apricots—Royals and Blenheims were favorites and Tiltons next. They had prepared a large stock and will clear them out. Almond sales are about over and there will be a bonfire from their left-over stock of this variety. Other nurserymen complain of this stock, too. Prunes are sold out pretty well and peaches are depleted. Figs have had a good run and practically none will be left over. Olives are moving well and a very strong demand is now on for ornamental trees and shrubbery. Growers who are deciding to plant deciduous fruit must get a move on and go to their respective nurserymen without delay or they will lose a season.

With Regard to Fertilizers.

Now that plowing is at hand, it is a good time to get the fertilizer down where it belongs if it is not already there. If the soil is a bit shy on nitrogen, that dried blood, nitrate of soda or sulphate of ammonia will quickly get to work if plowed down now. Mixed fertilizers, lime or a little gypsum turned under with the cover-crop, will none of it be lost. For the ground is in splendid condition genrally over the State and we are likely to get more rain yet. We know of one man who has given the cover-crop in his prune orchard one hundred pounds of nitrate of soda to the acre each year for seven years. He applies it about two weeks before plow time generally and believes the nitrogen acts as a sufficient stimulus to set his fruit better—there are more with long, green stems on, the kind that stick on. At any rate, the foliage of the trees show the effects of it and the quality of a crop is governed by the vigor of the tree that bears it if the crop amounts to anything.

Grafting Black Walnuts

To the Editor: I want to graft some walnuts. I have some scions of Mayette and Franquette that I wish to graft on a black walnut seedling. I would appreciate it as a great favor if you would tell me the best way to do it. I read with interest your articles in the Pacific Rural Press. Hoping to hear from you soon.—J. M. M., Inwood, Shasta County.

Your black walnut seedlings up to three inches in diameter will take two grafts, one on each side of the cleft, as with two scions a stub of this size will be nearly healed over in one year. When it is healed, you can cut off the one you don't want to keep. You, of course, understand the necessity of making the inner bark of scion and stock meet and fit. A long cut wedge must be made of the scion, the crack poured full of wax or asphaltum and the whole wound well sealed. This is the chief thing—to keep the whole operation well sealed—even the tip of the scion. Look at it every week and put on a little more wax if there is the slightest crack, until the graft has thoroughly taken hold. Now is a good time to graft walnuts. Your scions should be from one-quarter to one-half inch in diameter and not more than two eyes left to a scion, which should then be not over six inches in length. In splitting your stub have a sharp heavy knife and split one side first a little and then the other so as not to have the bark break ragged. Then a little wedge or grafting tool can be used to hold the split gently open while you insert scions, then wax and seal absolutely. If you use asphaltum, see it is not too hot when it comes in contact with scion—you can rub it round there with your finger. If your stock is over two inches in diameter it will not be necessary to tie—just wax. And if you use wax see that the bees don't get at it before it has performed its function.

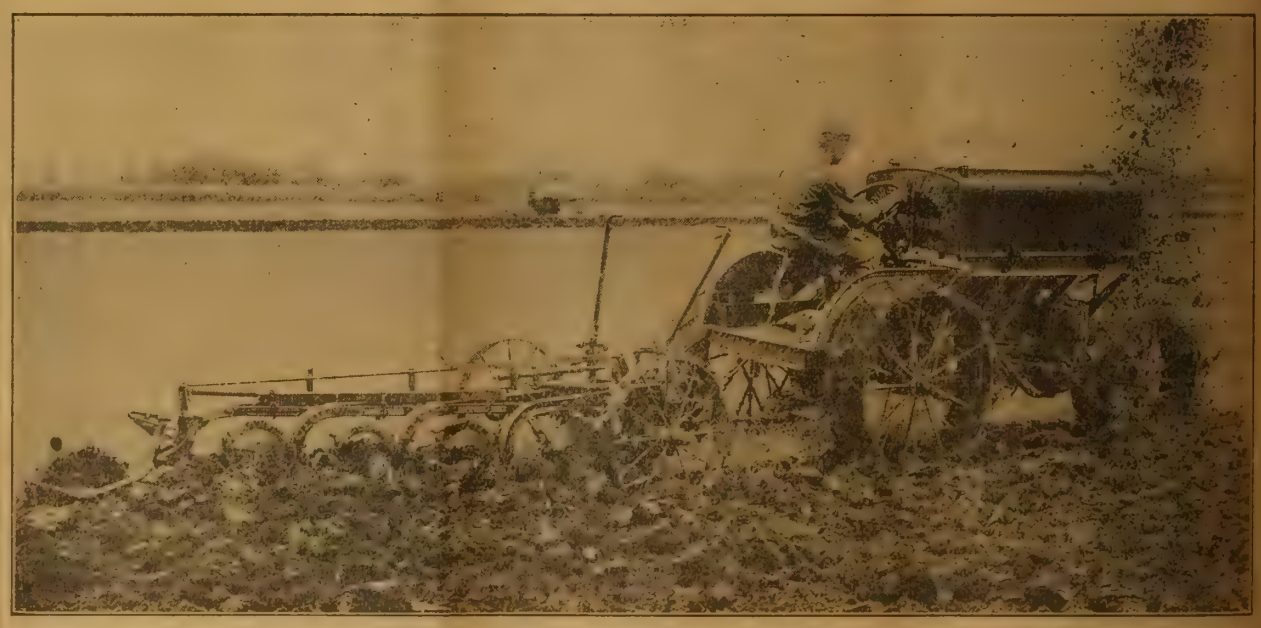
It is not uncommon for people in districts such as yours to tie paper bags over the stubs until the buds open, both as a protection against frost and north wind. After the buds burst the bags are removed. When the grafts have made start see that they are not smothered out by black walnut suckers, but break off any that are likely to do this and let the others go for the season. Don't work in a north wind.

GRAFTING WAX.

If you want to make your own, use one pound of beeswax, five pounds of resin and a half teacupful of raw linseed oil melted up together. A homemade glue pot will keep this warm for you while using it on the grafts.

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Horticultural Jottings

The recent inundation in Sutter county has been hard on the gophers. In one space of 10 feet by 30 fifty dead gophers were counted, left there by the floods.

The seasonal rainfall at Grass Valley is now over the average, which is 38 inches. Nearly one-half of the total amount fell during the month of February.

One ranch in Merced county, with an average of 20 ground squirrel holes to the acre, has been completely cleared of the rodents at a cost of 65 cents an acre, according to A. E. Gray, field assistant.

Work has been resumed on the State highway lateral between Nevada City and Downieville, also on the four miles of lateral between Comptonville and Indian Valley. Convict labor is employed.

Sutter county has started a vigorous drive to exterminate ground squirrels under the capable direction of Harry P. Stabler, County Horticultural Commissioner, in cooperation with the Farm Advisor.

Fig buyers are said to be already in the field in Yolo county, offering growers contracts for their crops at 12½ cents a pound. Last season many growers here sold their crops at 9 cents. No sales are yet reported.

The raisin crop of the current year is expected to reach a quarter of a million tons, according to an estimate made by the Associated Raisin Company. More than 175,000 tons of the estimated crop will be handled by the association.

Indications at present are that the shipping of Valencia oranges will be at least two weeks later than last season from the Porterville section. This will bring the opening of the season into early April. Packing of seedlings and Javas is at hand.

It is time to put out that bait for cutworms in the vineyard in the earlier sections. They get to work as soon as the buds burst. If only a small area is infested, a piece of baling rope or rag smeared with tree tanglefoot and tied around the vine does the trick.

A large area has been set to grapes in the Woodlake (Fresno county) section, which promises to equal the orange industry in area if planting continues for a year or two at this rate. The Red Emperor is the favorite grape being planted, as it does especially well here.

The New Zealand Fruit Grower says: "The control of insect pests by spraying and fumigation cost the growers of California £800,000 (about $4,000,000) during the past season." Three commonwealths in the Antipodes are adopting in major part the far-reaching benefit of California's horticultural and standardization laws.

There is a good outlook for the dried apricot this year, the "holdover" being negligible and the old channels of export trade being restored. The trees in the apricot producing sections are in exceptionally invigorated condition and blooming promises to be a little late in the hills. A few early blooms are already out.

At a meeting of the State Berry Growers' Associations held at the office of the State Commissioner of Horticulture in Sacramento recently the associations passed a resolution favoring the adoption of a loose pack and recommending the discontinuance of "facing," as the berries carry better and they reach the consumer at less expense.

LEGISLATIVE NOTES.

State Fair special appropriations were on Monday night recommended by the Senate Agricultural Committee to the Senate Finance Committee. They include a raise from $5,000 to $10,000 per annum for the collection of agricultural statistics, and Senator Rush's bill to appropriate as much as necessary of $10,160 to buy additional land for the State Fair grounds.

Protection of vineyards against phylloxera by regulating transportation of vines or parts of vines is proposed in Assembly bill No. 1009, introduced by Melvin Pettit of Fresno county. It does not apply to vines or roots intended for planting or propagation.

The Senate on Tuesday adopted Senator J. M. Inman's resolution petitioning Congress to place a 2-cent advalorem import duty on rice.

A proposed constitutional amendment, introduced by Assemblyman E. S. Hurley of Oakland, would give the Legislature power to establish water storage reservoirs and construct all works necessary to carry the water to outer edges of irrigation districts and to towns where there is no municipal water supply. It could also construct power plants and lines. Bonds would be issued and the State would charge enough for power and water to pay interest and sinking fund on the bonds.

Among the guests at a reception was a distinguished man of letters. He was grave and somewhat taciturn. One of the ladies present suggested to the hostess that he seemed to be out of place at such a party. "Yes," replied the hostess, with a bright smile, "you see, he can't talk anything but sense!"

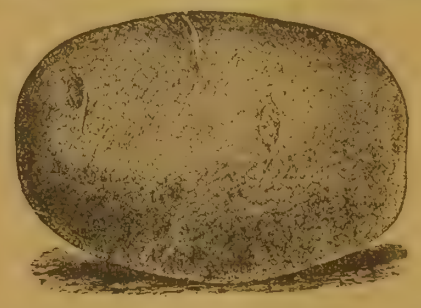
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Effects of Barley as a Cover-Crop

[Written for Pacific Rural Press by John J. Fox.]

How does barley as a cover-crop affect orchard trees? This is a matter we would all like to find out. The writer has used barley because on good ground it stools so well and makes such a large amount of matter to turn under at a small cost for seed. Always, however, with the proviso that it be turned under early and under no conditions be allowed to mature. Now comes a man who says it yellows his foliage (on prunes). Here is the story. He has used barley as a cover-crop for perhaps eight years. A German neighbor—John Heid—told him the first year that it would be injurious to his trees. Now John Heid is a first-rate farmer. We have known him for years. He is a very observant man, rather taciturn, but reliable in saying what he thinks. But the trees seemed generally to get away with the cover-crop if it was turned under early.

THE FIRST DEFINITE EVIDENCE.

In 1916 and 1917 the usual barley cover-crop was in (with a sprinkling of bur clover) and one acre was given a heavy application of dried blood. On this acre the barley was very heavy — nearly double the weight of some parts of the orchard —and here the trees were starved.

On this one acre the prunes were poorest and the trees made the least growth. The conclusion was immediately jumped at that the barley, growing so strong had robbed the trees of moisture, as the rest of the orchard, also in barley, came through all right. But was the drying out of these trees the sole cause of the yellowing or was there something else? We were at the Riverside Citrus Experimental Station in November and were told that barley had been tried as a cover-crop and a yellowing of the foliage was apparent afterwards, though we forgot to ask at what stage of maturity it was turned under. Unfortunately, Dr. Kelley who is conducting the experiments was absent the day we were there so we had nothing but the above bare fact to record.

EXPERIMENTS IN TULARE COUNTY.

We called on Mr. Logan, agriculturist for the Barrett Company, with regard to their cover-crop experiments on citrus. These experiments were carried out in four series of four rows each with check. Each row was 50 trees long and the experiments were carried out by undisturbed mulches carried in basins and irrigated in the basin. The first row was barley straw, the second barnyard manure, the third alfalfa, and the fourth bean straw. Each mulch was supplemented with varying amounts of commercial fertilizer high in nitrogen. Each succeeding four rows to the number of 16 carried mulches in the same order as those named, and they were applied in March. The investigator saw them again in June, July and August. Each row carrying the mulch of barley straw looked like a yellow tinged streak, though all had been irrigated in a similar manner. He told us that it was suggested that denitrification took place where barley straw was used.

We then wrote to H. C. Carr of Porterville, hearing that he had experimented with barley straw as a mulch. The following is his reply:

"I have never had any experience in the use of barley straw as a cover-crop or as a mulch on orange groves. I bought quite a lot of that straw one year ago and was advised against putting it on the grove, so abandoned the idea and put wheat straw on instead. I got very beneficial results from the wheat straw, in making the soil very friable with no detrimental results to the trees. The check plot I kept on this did not show as heavy a yield as where I put the straw."

We would like to have the results of other experiments with barley straw or a barley green cover-crop, both matured and unmatured. Also, the results the second year after application, as demonstrated in the vigor of the growth and the color of the foliage. The writer has used barley as a green cover-crop—always

Almond Trees { Nonpareil, Texas, Peerless, Drake Seedling
On Almond and Peach Root.
Peach Trees { Tuscan Cling, Muir, Lovell
Prune Trees { French, Imperial, Stuart
Pear Trees { Bartlett on Japan Root
Olive Trees { Mission, Manzanillo

These trees are budded from carefully selected bearing stock and are guaranteed true to name.

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RIPON, CALIFORNIA.

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Don't experiment with makeshift methods. Bolton Orchard Heaters are sure. They maintain the temperature, distribute the heat uniformly, and prevent frost damage.

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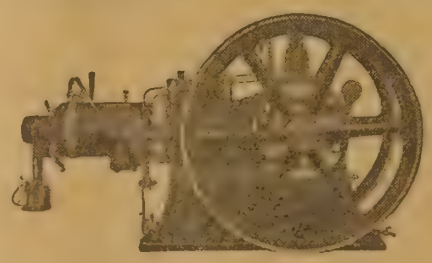
Tells you all about frost prevention. Filled with valuable information for the grower.

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When you have land to clear, trees to plant, subsoil to be broken or ditches to be blasted, tell your dealer to get for you one of the Giant Farm Powders—Eureka Stumping or Giant Stumping. Don't accept any ordinary dynamite, but insist on genuine Giant Powder, bearing the Giant trade mark on every box.

A postal will bring you our book, "Better Farming with Giant Farm Powders." Its 52 pages are full of short-cuts and labor-saving methods.

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Feed the Crops

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Without fertilizer, crops will decrease and deteriorate in quality.

With more fertilizer, crops will increase and improve in quality.

Bigger and better crops mean bigger profits to you.

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are scientifically manufactured to meet California soil conditions and crop necessities. They are made from animal products that contain the necessary elements to feed your crops.

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Western Meat Company

SAN FRANCISCO, CAL.

PURE ANIMAL MATTER AMMONIATES

GOLD BEAR FERTILIZERS

FOR CALIFORNIA SOILS

turning it under green and early, and has never noticed any ill effects excepting that in heavy land the furrow turns over rather soggy and does not break up so nice and crumbly as where a legume is planted with its myriad of tiny roots. This seems to be due to the fact that the big fat roots of barley are such surface feeders and do not disintegrate the soil as the legumes do. It is a mechanical effect. That the yellowing does take place in the orchard foliage where growth has been rank and allowed to mature, has been demonstrated to the writer's satisfaction, yet he would still like to be shown why, under proper conditions, it is not a useful crop to turn under green. Because it is one of the cheapest and surest green crops to obtain in an orchard next to rye, and will often give something to turn under where a depleted soil refuses to give more than a few inches of growth in legumes.

IT IS ACTUAL RESULTS THAT COUNT.

And results that have been demonstrated under the varying extremes of moisture and soil texture in our various orchard districts—from the white ash and sandy loams of the San Joaquin to the heavy clay loams of other sections. Here is where our deciduous fruit experiment stations will count. They will be carried out by and among men who are keen to learn and are willing to try. Negative people are hopeless—you can't inspire them with any activity. We all want to know of results that benefit our industries at large, and the Pacific Rural Press is at pains to discover any of these results and will follow them through.

We would like to hear more from growers of barley cover-crops, especially after the first spring growth.

STANDARDIZATION OF RAISINS.

The California Associated Raisin Co., Inc., is elaborating a system of standardization of raisins of all varieties that will be well received by the growers and of added value to the industry. The cured raisins are to be delivered at the packing house right from the vineyard, if convenient. A door test is given on grade quality and a receipt given to the grower at the scales. The grower will receive his values on quality, which will inspire every man to his best efforts to produce this. A staff of men will be kept, who will visit ranches and advise as to handling, curing, boxing and other affairs on which the grower may need help at any time, service covering the whole raisin-producing area—from El Cajon in San Diego county to Marysville in Sutter county in the north. The whole system will tend to build up the quality of our raisins and will save the growers expense on curing. When complete the association will be able to absolutely guarantee every pound package that goes into the market. Each package must please the housewife when she opens it up. What standardization is accomplishing and has accomplished in other fruit industries will be duplicated by the raisin growers. Thus the man who turns off the largest percentage of first quality fruit will be adequately recompensed for his efforts.

GRAPEVINES REPAY IRRIGATION

More vineyards would pay a handsome excess dividend if they had more careful pruning and attention, especially a little irrigation in summer months whenever the vines are dry and thirsty. A sample of this has been shown the past two years on a Fresno Muscat vineyard which yields bumper crops. One vine near the house received extra attention in pruning, tying, etc., and it was irrigated several times, while the vineyard proper was not. This vine netted about double the quantity, quality, and size produced by the average of all the rest.

F. W. Cook of Ceres believes in pruning his fig trees heavily about once in three years. Keeps his trees thinned out lower down and when he makes a cut gets two or more sprouts for fruit wood.

PRUNE TREES

FRENCH on Myro., 6 to 8, 4 to 6, and 3 to 4 ft
" on Peach, 6 to 8 and 4 to 6 ft.
" on Almond, 4 to 6 ft.
" on Apricot, 6 to 8 and 4 to 6 ft.
IMPERIAL on Myrobalan, 4 to 6 and 3 to 4 ft.
All budded and selected bearing trees.

CHERRY, leading Commercial sorts, all sizes.

EUROPEAN SYCAMORE (Platanus Orientalis) 8 to 10 and 6 to 8 ft.

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A FULL LINE

of all that is best in Fruit, Nut, and Ornamental Trees, Vines and Plants; and our prices are low. Write for our Price List; free.

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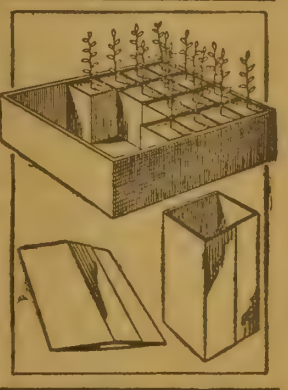
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that will keep squirrels, rabbits, and gophers from barking your trees and give perfect protection from the hot sun, sand storms, raking bark in cultivation, etc. We make a number of kinds of wraps, among these are the YUCCA, which has the fastening wire entirely around it. Tell us your pest and we will tell you what kind to use.

COLLAPSIBLE PLANTING POTS

These pots are bottomless. This allows you to plant pot and plant, never disturbing your plant nor stopping its growth in transplanting a single hour. For starting early vegetables, such as tomatoes, cabbage, egg plant, cauliflower, cucumbers, cantaloupes, and squash. Also for propagating rose cuttings, geraniums, eucalyptus, or olive cuttings. It is the most practical pot on the market today for propagating work. Write us for samples of either pots or protectors. Tell us which you are interested in.

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"It Starts 'Em Right"

"That's the secret of my success! And it's *blasting* the holes that does the trick."

"When I first started to use dynamite I found out that it was an *easier* way but in two years time I knew that it was a *better* way too. Those trees grew like weeds and were in blossom a full year ahead of time."

HERCULES DYNAMITE

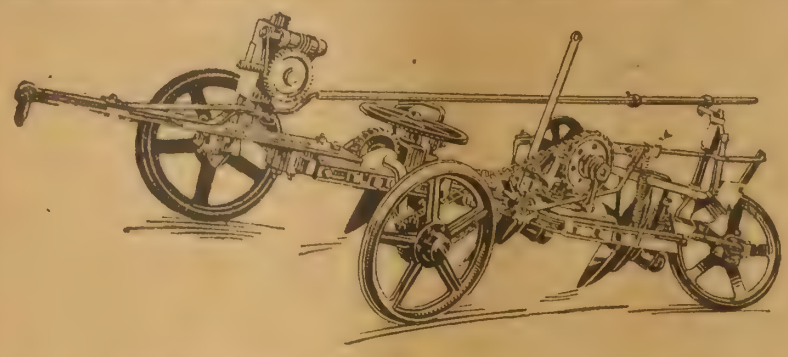
is a pretty good pal at planting time. It not only *digs* the holes but it loosens the soil all around them so that the roots of your young trees can take hold and *grow!*"

"There are a lot of other things that dynamite can help you do. It'll dig your post holes, cultivate your bearing orchards, clear your waste land and drain your wet land."

"Better send to the Hercules Powder Co. for a copy of their illustrated book "Progressive Cultivation." It'll tell you all about the uses of dynamite on the farm and in the orchard."

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Gentlemen: Please send me a copy of "Progressive Cultivation."
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In other plows, the lift mechanism is placed between the land wheel and the body of the plow, throwing the land wheel out at a considerable distance. The position of the lift in our plow enables us to set the land wheel in close, where it belongs, so that with a Knapp you can plow within eight inches of the trees, throwing the soil away from them. Put a Knapp behind your tractor and you'll avoid trouble. Built heavy—and sturdy—and strong—all the way through.

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There are more disappointments and partial failures caused by planting alfalfa unsuited to the soil and moisture conditions than from any other cause.

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Bomberger Seed Co.

(Desk A)

725 Tenth St., Modesto, Cal.

A West Side prune grower of San Jose was offered seven and a half cents base by an independent buyer for the coming season prune crop. Let's match pennies.

Resistance of Figs to Oak Fungus

[Written for Pacific Rural Press by E. R. Thurber, Vacaville.]

In connection with the outline of Professor Horne's discussion of fruit tree diseases from oak fungus in the Pacific Rural Press of December 21, I have had correpondence with Professor Horne and as he thinks my observations would be of general interest to fruit growers, I send them to you for publication.

SUCCESSIONS OF PEACH ROOTS FAIL.

There is on our ranch a fig orchard, planted in 1911 directly in the spot where trees were dying with oak fungus. The land where the fig orchard is was planted to vineyard about 1860 by my father. After a few years the vineyard was killed out. Then an apricot orchard on peach root was planted, about 1885, and this orchard remained sound until about the late 90s, when it began showing here and there a dead tree, and about this time it was removed and a peach orchard planted, which did well until about five years old and then began dying very rapidly until it was hopeless at 12 years of age. At that time I saw it was useless to plant with peach root and began to observe for resistant stock.

THE IMMUNITY OF FIGS.

On this ranch there is a Mission fig orchard, some of which was planted in 1860, and there never was a dead tree among them without a known cause. The condition of these fig trees was excellent and commercially it was getting better from year to year. My conclusion was that if these fig trees had lived so long and escaped the disease it would be a safe trial for me to plant figs again without much fear of the fungus destroying the orchard. So I planted in 1911 about two hundred Smyrna fig trees in the spot where old peach trees had perished with oak fungus and I have yet to see the least blemish on these fig trees resulting from oak fungus. Of course there is time enough for it to show, but still I am rather of the opinion they are resistant.

I have a small block of Mission figs 14 years old, and these were planted on old peach ground directly over where the old trees were removed, and I have as yet to see the first diseased tree. Of course the disease might have not been present in this block; however, only a few hundred feet away I could recognize the damage. This again looks quite favorable for figs being resistant.

EXPERIENCE WITH PEARS.

As to pears, I do not believe they are immune. I have found the disease present just at the crown of the tree; in fact, have scraped it out of the trees. There are two trees, quite old ones, on this ranch that have been infected for at least five years and still they live. These trees are not very good producers and should be removed from the orchard. Most all pears are resistant and to some extent I think an adult tree is more so than a young tree. The past winter I lost about 10 trees six years old, planted on old peach ground, and to my eye it seemed to be from oak fungus. It was the same a year ago. I have great hopes that some of the new pear stocks may prove immune. Our black walnuts have always been healthy.

It seems to me the only way to combat the disease is through resistant stocks; and the sooner the farmers find out what is resistant the greater saving there will be.

THE STRAIGHT-SIDED BERRY BASKET.

The straight-sided berry basket with raised bottom allows for the under package to be rounded up and prevents mashing of fruit. There is a big saving in the field in handling the fruit—putting baskets in the crate, as well as saving of 7 cents a crate manufacturers' price against the use of a double-decked crate. The California Berry Growers can be congratulated that they have fallen in line with the Eastern style of packing berries. You cannot get uniformity of size in anything but a straight-sided container.

A good many loganberries are being planted at Sebastopol this year. The local supply was inadequate and they are now buying all there are to be had in Oregon. Every plant that can be procured is being planted. The outlook for berries and for marketing them in this section is distinctly encouraging.

NOTHING NEW.

Camouflage beyond all doubt
Is an ancient stunt,
We have heard for years about
Putting up a front.

Here's the Tax You'll Have to Pay

The great income tax drive is now on. The War Revenue bill provides that $1,000 of a single man's income is exempt from taxation and $2,000 of the income of a married man. On the first $4,000 of the taxable income of any individual the tax is 6 per cent, and 12 per cent on all taxable incomes above that amount. The surtax begins at 1 per cent of the net income in excess of $5,000 and not in excess of $6,000 and runs up to 65 per cent where the net income is in excess of $1,000,000. The table below shows the total amount of tax which individuals of various incomes must pay, the amount that each will have left and the percentage thereof, after they have paid their taxes:

Amount of income	Normal tax—Rate p. c.	Amount	Amount subject to surtax	Surtax: Zone rate—Per cent	Surtax: Zone tax	Surtax: Total surtax	Surtax: Total income tax	Income left to taxpayer: Amount	Income left to taxpayer: Per cent
$3,000	6	$60	.....	..	.....	.....	$60	$2,940	98.00
4,000	6	120	.....	..	.....	.....	120	3,880	97.00
5,000	6	180	.....	..	.....	.....	180	4,820	96.4
6,000	6	240	$1,000	1	$10	$10	250	5,750	95.8
8,000	12	480	3,000	2	40	50	530	7,470	93.87
10,000	12	720	5,000	3	60	110	830	9,170	91.7
12,000	12	960	7,000	4	80	190	1,150	10,850	90.41
14,000	12	1,200	9,000	5	100	290	1,490	12,510	89.35
16,000	12	1,440	11,000	6	120	420	1,860	14,140	88.37
18,000	12	1,680	13,000	7	140	550	2,230	15,770	87.66
20,000	12	1,920	15,000	8	160	710	2,630	17,370	86.85
22,000	12	2,160	17,000	9	180	800	2,960	19,040	86.51
24,000	12	2,400	19,000	10	200	1,090	3,490	20,510	85.45
26,000	12	2,640	21,000	11	220	1,310	3,950	22,050	84.80
28,000	12	2,880	23,000	12	240	1,550	4,430	23,570	84.17
30,000	12	3,120	25,000	13	260	1,810	4,930	25,070	83.56
36,000	12	3,840	31,000	16	320	2,710	6,550	29,450	81.80
40,000	12	4,320	35,000	18	360	3,410	7,730	32,270	80.87
50,000	12	5,520	45,000	23	460	5,510	11,030	38,970	77.94
60,000	12	6,720	55,000	28	560	8,110	14,830	45,170	75.28
70,000	12	7,920	65,000	33	660	11,210	19,130	50,870	72.67
80,000	12	9,120	75,000	38	760	14,810	28,930	56,070	70.08
90,000	12	10,320	85,000	43	860	18,910	29,230	60,770	67.52
100,000	12	11,520	95,000	48	960	23,510	35,030	64,970	64.97
150,000	12	17,520	145,000	52	26,000	49,510	67,030	82,970	55.31
200,000	12	23,520	195,000	56	28,000	77,510	101,030	98,970	49.48
300,000	12	35,520	295,000	60	60,000	137,510	178,030	126,970	42.32
500,000	12	59,520	495,000	63	126,000	263,510	323,030	176,970	35.39
1,000,000	12	119,520	995,000	64	1,320,000	583,510	703,030	296,970	29.69

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More than 700 California Farmers Bought Avery Tractors last year.

Have you investigated the Avery? You owe it to yourself to do so at once—to learn how much work you could do with an Avery—to find out how much less an Avery costs to buy—how much less it costs for upkeep.

Write and let us give you the names of satisfied Avery owners and first hand information on how to raise bigger crops with less help.

Everybody is invited to attend the Avery Service School—it's free. It will be held as follows:

Chico, March 24th and 25th
Sacramento, March 27th, 28th and 29th
Stockton, March 31st and April 1st
San Jose, April 3d
Salinas, April 5th
Fresno, April 7th and 8th
Los Angeles, April 10th, 11th and 12th



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Here and There in the Fruit Business

[Written for Pacific Rural Press.]

Proposed Merced Irrigation District.

The Merced Irrigation District, to embrace the area now served by the Crocker-Huffman Land and Water Company, had more than enough names to their petition to call an election, but they are now readjusting boundaries. When this is finished, signatories will have to be canvassed again—i. e., after the new boundaries have been established. A good deal of alkali land, high land and low land has been excised. There seems to be some opposition to the proposed district, particularly on the part of large owners and people who own their own pumping plants who cannot benefit by the new district. Many districts which failed in the early '90s, when the constitutionality of the Wright Act was questioned, are cited against it, though Stanislaus county seems to have developed well since she organized.

A Rapidly Growing Section.

Eleven hundred acres were planted to Thompson Seedless grapes in February, 1916, by the American Seedless Raisin Co. This vineyard, which is four and a half miles west of Livingston, Merced county, will have a nice crop this year and will come into full bearing next year. The company has spent more than half a million dollars in improvements since converting the former grain land into a vast vineyard. It is intended to build a raisin packing plant, either in Livingston or at the vineyard. The Yamato Colony, the Crowell-Minturn vineyards, Arkelian Bros.' vineyard and a dozen subdivisions about Livingston now represent highly improved areas where a few years ago raw, unbroken land or else only dry grain land obtained.

Mission Olives Vary.

A survey of a number of the Mission olive orchards by men of the United States Department of Agriculture has confirmed the view that the Mission olive is, in reality, a group and not a single variety. In this group there are several distinct varieties, with characteristic foliage, differences in shape of fruit and time of ripening. In many orchards three or four distinct varieties of the Mission were found. Therefore, bud selection is a most important item of the nurseryman's work in order to insure a uniform product of the best quality. The modern nurseryman is very much alive to this bud selection in all fruits. The life of his business depends on its observance.

Ladybug Harvest Now On.

The annual harvest of ladybugs by the million is now going on in the hills of Placer county. E. J. Brannigan of the State insectory is up at Towle gathering them in by the bushel from the old stumps and other places where they congregate in the ravines and gulches about the North Fork of the American river. They are placed in boxes, packed out and then shipped by rail to Sacramento, whence they are shipped to various localities to feed on aphis. The Imperial Valley gets large quantities to protect the melon crop. A supply of our ladybugs is to be shipped to France to fight the mealybug, which has been damaging what the Hun left of the fruit trees.

Care of Grape Cuttings.

Grape cuttings are best kept in sand which is only barely moist. More cuttings are spoiled by excess of moisture than from drying out. They should be kept in a cool place, protected from the weather. Eph. Light of Calistoga keeps his cuttings corded in lug boxes without any sand at all. A board is placed over the tops of the boxes to keep out the soil and then they are buried in the ground in a dry place with a foot or more of earth over them. We saw grafting done (after the frost three years ago) by the Light boys from May 14 to July 27 with practically 100 per cent stand.

Butte County Buoyant.

"We have just finished a very satisfactory year in harvesting," L. W. Pray reports from Oroville. "Not a full crop, but we got it all. Pruning is about all finished. I was very much interested in the article on pruning in the Pacific Rural Press. I like your journal very much—read everything in it. The outlook for a bumper crop of both olives and oranges was never better. We got a fine rain in the early fall, which allowed the trees to enter the winter in strong physical condition—something they have not had the pleasure of doing for three years past."

Large Plantings in Merced County.

A large acreage of Thompson Seedless, Malaga and Emperor (table) grapes have been set out this winter around Turlock and Livingston, according to J. F. Grass, Merced County Farm Advisor. Peaches have been planted extensively in the Atwater and Tuttle sections—chiefly Muirs, Albertas and Lovells—and figs in the Merced and Tuttle districts, Calimyrna, Black Mission and White Adriatic, in the order named. The Farm Bureau has carried out many field demonstrations this winter in pruning bearing trees—peaches, almonds, olives and grapes.

Strawberry Cannery at Gilroy.

A Chicago firm is reported to have signed up most of the Japanese berry growers in the vicinity of Gilroy, San Juan and Betable to deliver to them at least 33 per cent of their crop for canning. The same concern operated last year at San Juan. L. M. Pine, the State representative, said that his firm would need the services of about 200 men, women and girls in handling the fruit.

Free Employment Office.

The Farm Advisors of the State are running free employment offices at their headquarters throughout the State. It is hoped that this plan will put our returning soldiers who are land workers in quick communication with farmers and others desiring help.

Bully for Them.

In all live country districts the supervisors who have dirt roads to care for are keeping the scraper and road drags going after every rain as soon as they are dry enough. If they keep it up till the rains are over, some of our mountain roads should be in splendid shape this year.

Spray Your Pears Now

Now is the time to spray your pears for thrips, greedy, pernicious, and oyster shell scale, blister mite, psylla, red spider, rust, and first scab spray. Probably some men will have started by the time this appears. This spray can be continued until the cluster bud opens up and the knobs show. After the first blooms appear it were better to cut down the mixture to 1-15. If thrips show up badly, Black Leaf 40°, one pint to the tank (200 gallons), can be used, or if thrips alone are to be fought, 10 gallons of distillate emulsion to the tank can be used with the pint of Black Leaf 40°. The lime sulphur and Black Leaf 40° is also a good remedy against aphis.

Spray Peaches, Apricots and Plums

Just as the buds swell, with Lime Sulphur solution 1-10. This will prevent curled leaf, help shot hole fungus and brown rot, kills twig borer, and is second spray for peach blight. It also gets San Jose scale now. By the time this appears the early sections must be at it and the later sections getting ready. If the plums are too far out in leaf now—use Bordeaux 5-5-50.

Dont Wait For Your Trees to Bloom

—or you may not have a crop this year

Thrips are treacherous; they come without notice, bury their eggs in the swelling buds and die. But don't be fooled. Don't wait until the eggs hatch and the larvae are feeding on the hearts of the buds before you

Use Miscible Oil No. 2

FOR THRIPS

You won't get much warning; so keep these materials on hand and kill the eggs before they hatch.

Miscible Oil No. 2 is a highly penetrating oil that goes into the bud and kills the egg. It is made from selected oils under the supervision of our laboratory and field men. It has been thoroughly tested and gives right results.

Our entomologist, Paul R. Jones, is a specialist on dealing with thrips. Don't hesitate to write him for help in fighting this and other pests. His expert services are at your disposal—free!

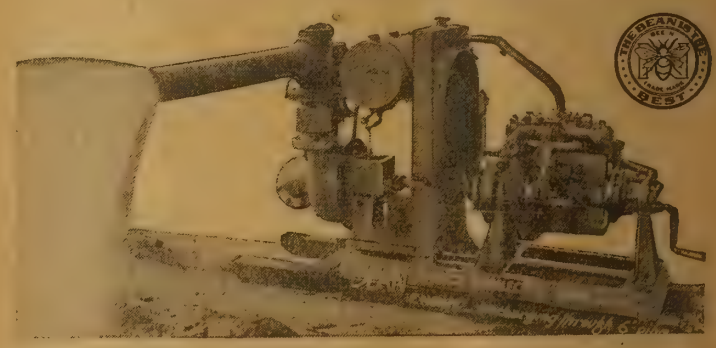
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Direct Connected to Engine



A New Standard in Pump Values

It's BEAN QUALITY through and through. If you need a portable pumping plant or a stationary unit that will deliver your water supply at a small cost—and keep on delivering it efficiently and economically, investigate this pump. We manufacture and sell

Horizontal and Vertical Centrifugal Pumps
Deep-Well Turbines, Direct Connected Outfits
(both engine and motor driven)

Tell us your pumping requirements and let our pump specialists advise you. Fill out the following. There is no obligation.

1. I want to pump.....gals. per minute.
2. Suction lift?.....ft.
3. Discharge lift?.....ft.
4. Source of water supply.....

Name .....

Address .....

BEAN SPRAY PUMP CO.
SAN JOSE, CALIF.

Cull Prunes Should Make Pork

[Written for Pacific Rural Press by Fred K. Smyth, Napa.]

FOR over twenty-five years the problem of disposing of our cull prunes has troubled the grower. Today we are no nearer its solution than at the beginning. We have, however, proved that all our efforts to force our cull prunes upon the consumer have been worse than a failure. All sizes smaller than eighties are culls—all pit and skin—and, except for feeding to hogs, who eat the pits, of little food value. If these culls were crushed and pressed into cakes, they would find a ready market for that purpose, at about the price of corn. Fed to fatteners, one ration in four, they would produce better results than an entire corn ration.

For years we have furnished the dishonest dealer with material for degrading our sixties, seventies and eighties, injuring their sale. These sizes, if honestly delivered to the consumer, would be our best sellers. What has the grower gained by dumping these culls on the Eastern market? Compare the average price of corn for the past twenty years with the average price obtained for these culls and you will find it to be less than a cent a pound. Has the grower gained even that?

The packer, in spite of his compelling the Eastern jobber to take a percentage of culls in every carload of the larger sizes, always found a lot of these culls still on his hands. Every spring he would come into our orchards with this wail: "Hundreds of carloads of prunes are still unsold on this Coast; hundreds more in New York. We will have to give a cent less basic price on this account." Allowing a discount of 70 per cent of this statement to be a lie, we know that 28 of the remaining 30 per cent must be these miserable culls. Any prune orchard which cannot average nine tons of prunes larger than nineties to one ton of smaller sizes ought to be put to some other use or have a change of management. Can we afford to lose a cent a pound on our nine tons to gain a cent on our one ton?

"Make jam of your culls!" is now the cry. Has any responsible jam-maker offered to pay more for them than they are worth for hog feed? Even if he should, would we dare to accept the offer without efficient guarantees that they would not be used for prunes and turned over to speculators for manipulating the market with? Which would be the worse competition to our other sizes—jam or pork?

In five years jams will be a glut on the market, pork will sell as high as it does today. For twenty years the prune growers have been turning out larger and better cured prunes and the packers have been improving the character of their pack; but both have steadily ignored the first principle of standardization—"pitch out the culls!"

THE ORIGINAL CONCORD WALNUT.

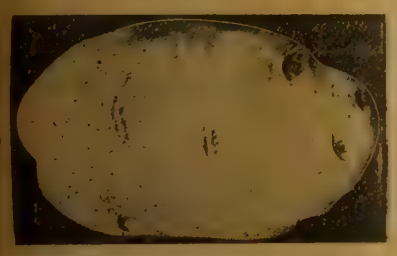
To the Editor: In the Pacific Rural Press of February 22, under "Nursery Notes," I notice a report made by Leonard Coates and I wish to correct the statement he makes in which he says he named and introduced the Concord walnut. The original Concord walnut tree is growing on my ranch in Ygnacio Valley, Contra Costa county. It was discovered, named and introduced by myself.—George M. Westcott, Concord.

With the agitation for better roads producing results, increased improvement is looked for in many a mountain section suited to fruit growing. Transportation difficulties have been holding them back till now.

Ask the Man Who Has Used It

Whether or not he has made good crops with Nitrate. Why speculate with Non-Nitrated forms of Nitrogen when, by using Nitrate you can insure crops against adverse conditions? With the rational use of Acid Phosphate, always recommended by us, there will be no interference with normal soil conditions, either in one year or in one hundred.

W. LAMBERT MYERS
Chilean Nitrate Committee
P. O Box 248 Berkeley, Cal.



When you plant seeds, whether it be a small garden or a large acreage, you want

GOOD SEEDS—FRESH AND TRUE TO NAME.

We carry the best obtainable, from reliable growers of years experience. Fancy Seed Potatoes and all varieties of FIELD and GARDEN seeds.

Write for Catalog.

KNOX SEED CO.
Central California Headquarters for Reliable Seeds,
223-225 E. Weber Ave., Stockton, Calif.

BITTER ALMOND SEED

FOR SALE

California Almond Growers Exchange
No. 311 California St.,
SAN FRANCISCO, CAL.

MOCOCO

SUPERPHOSPHATE

is a wonderful fertilizer for ALFALFA

Excellent, also, for Fruit Trees, Vines, etc. For sale by

The Mountain Copper Co., Ltd.
332 Pine St., San Francisco

TOP DRESSING TALKS No. 6



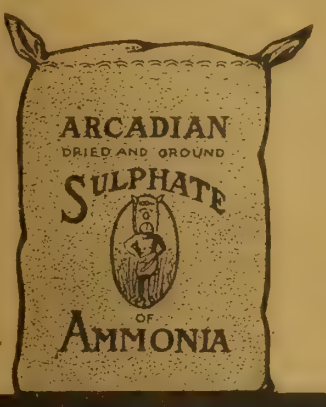
What amount of ARCADIAN Sulphate of Ammonia should you apply? That is very largely determined by conditions of soil, crop and climate. Generally speaking, 100 to 200 pounds per acre will prove profitable on field, truck and orchard crops. For well grown citrus trees as much as 600 pounds per acre may be used with profit, providing the phosphoric acid and potash content are sufficient.

The best advice is to try a moderate application first, watch your results carefully and be guided by them. In this way you will learn whether your maximum profit is at 100, 200 or 300 pounds per acre, or even more.

Don't forget that good farming requires an occasional application of lime.

Arcadian Sulphate of Ammonia

ARCADIAN Sulphate of Ammonia is the well-known standard article that has done you good service in your mixed fertilizers for years past. Especially kiln-dried and ground to make it fine and dry. Ammonia 25¼%. Made in U. S. A.



For sale by Hawaiian Fertilizer Co., Ltd., San Francisco; Pacific Bone Coal & Fertilizing Co., San Francisco and Los Angeles; Pacific Guano & Fertilizer Co., San Francisco and Los Angeles; Agricultural Chemical Works, Los Angeles; Western Meat Co., San Francisco.

For information as to application, write

The Barrett Company
AGRICULTURAL DEPARTMENT
510 First National Bank Building
Berkeley, Cal.

ATTENTION, TREE PLANTERS

We have only a few trees left—the best of our stock—and as we are anxious to close them out as soon as possible we are making special prices on the following varieties:

Beurre Anjou on French and Jap Root;
Comice and Winter Nelis on French;
Bartlett on French and Jap, 3 to 4 ft.;
Almonds, all varieties, on almond root;
Royal and Moorpark Apricot on Myron Root;
French Prune on Peach;
Cherries on Mazzard.

WRITE FOR SPECIAL PRICE LIST

UNITED FRUIT CO. - - NEWCASTLE

Giant Winter Rhubarb

Now Best Time to Plant

Should return from $1,000 to $1,500 per acre first year. If interested in Rhubarb or Berries, write for special prices. J. B. WAGNER, Rhubarb and Berry Specialist, Pasadena, California.

TREES

PEACH APRICOT ALMOND
PLUM PRUNE PEAR
APPLE CHERRY OLIVE
FIG ORANGE Lemon, Etc

More Than a Million High Class Fruit Trees per Year to California Planters

KIRKMAN NURSERIES

Established 1888
Incorporated - $100,000

Fresno, California

Agricultural Notes

Watsonville is in growing repute as a lettuce-producing section.

An effort is being made to have the former two-cent tariff replaced on imported foreign rice.

A beet grower on the silty free loam of the Delta near Stockton averaged 12 tons of sugar beets per acre for three years in succession.

Four hundred tons of alfalfa meal are being shipped to New Orleans and the East from Yolo county. The meal has a great advantage over hay in freight rates.

Many farmers in the Livingston district who last year grew beans will this season try sugar beets. The new $10 a ton price is thought to offer a good margin of profit.

James H. Jones, a grain broker and miller of Chico, has purchased 2900 acres of the Stanford ranch at Vina. Two thousand acres of the big ranch is to be planted to alfalfa.

Demand for alfalfa seed in Tulare already indicates that over 1000 acres have been newly planted in that vicinity. Surely the dairy industry looks bright in Tulare county.

A bill has been introduced into the Legislature by Senator B. F. Rush asking the State to appropriate $2000 for payment of premiums at the Napa county fair the past two years.

Ten thousand sacks of Early Prolific rice have been sold to the Southern Rice Growers' Association by Ernest Eibel, a grower of Glenn county. The price was 5 cents a pound.

The Railroad Administration has placed an embargo on shipments of bulk domestic grain to New York harbor points. Exemptions may be made by the Freight Traffic Committee.

There has been recently a large increase in the acreage devoted to spinach in the territory tributary to San Francisco. Orchardists have found it a profitable crop for interplanting.

Joe Coconauer of Merced has already sold $10,000 worth of "shook" to growers of truck and early tomatoes, etc. Growers are busy getting their land into shape and the spring tooth is busy on alfalfa.

The barley stand in eastern Merced county is reported to be looking fine. With timely showers from this on, a heavy harvest is predicted Over three-fourths of last season's crop of barley has been shipped out.

Cotton growers of Porterville district (Tulare county) have arranged to unite with Fresno growers in securing seed for the spring planting orders for the whole to be placed through the Fresno County Farm Bureau.

Poterville planters will plant Egyptian long-staple cotton. Contracts have already been placed for a carload of Pima strain seed, which is to be ginned out under expert direction. Several hundred acres will probably be planted in this section.

Large quantities of cantaloupe seed from the Rocky Ford section of Colorado are going into Turlock. They come by express in 75-pound sacks and are valued at $1.50 per pound. We are getting ready for another big season.

Placer county orchardists have complained to the State Railroad Commission that the P. G. & E. has made no provision for irrigating the increased orchard acreage planted since 1915, when the commission ordered similar provision for orchards planted in seasons just previous to that time.

Potato growers of the San Joaquin delta had a delegation in Sacramento on Thursday to meet with other potato growers of the State at the State Horticultural Commissioner's office. They met to protest against the threatened action of Oregon, Washington and Montana in quarantining California potatoes for fear of tuber moth.

The bean growers of San Fernando Valley united last week to pool their interests in marketing. This valley is said to grow 30,000 acres. At present the four bean warehouses there are filled with beans of last year's crop. There are over 100,000 sacks of Henderson bush beans alone soon to be advertised as the "San Fernando baby lima."

The cantaloupe industry has reached a point in the Turlock section where it ranks with the other leading crops of that community. There are thousands of acres planted to cantaloupes there every year, and growers have claimed that they have netted over $600 an acre from this product. Small acreages instead of large are being encouraged. The time there to plant is about the 10th of March.

Export of beans is now freely allowed and foreign governments are abandoning official buying, permitting trade to seek ordinary channels, according to G. A. Turner, president of the California Bean Growers' Association, who wires the above from New York, with the approval of the Food Administration Grain Corporation. The message says further: "Grain Corporation is considering the possibility of making direct purchase under some equitable system of allotment to different localities. This possibility depends on requirements abroad."

HE HAD THE HOOVER IDEA.

"Tommy," said the fond mother, "isn't it rather an extravagance to eat both butter and jam on your bread at the same time?"

"No, ma'am, it's economy," the boy answered. "The same piece of bread does for both."

UTILITY, SOCIAL, AND VOCATIONLESS DOGS.

[Written for the Livestockmen by W. Mayo Newhall.]

"Long experience has demonstrated the serious loss to sheep, poultry, calves, and pigs, besides the annoyance to horses and grown cattle by dogs in this State," writes W. Mayo Newhall to Senator Benj. F. Rush regarding his dog licensing bill, on which a public hearing will be held at the Capitol on the evening of March 10.

"There is no question but that horses, cattle, calves, sheep, and poultry are to be considered before dogs; and if anything has to give way for the survival of the best, dogs should be the first to go.

"It is well known that on the smaller farms in the Middle Western and Eastern States farmers have had to stop keeping flocks of sheep owing to the damages done by dogs.

"Our own experience is that depredations by dogs are such that they are of more damage than coyotes or any other flesh-eating animals.

"Personally I divide dogs into three classes: Utility dogs, vocationless dogs, and social dogs. The vocationless dogs have but little right to live on earth.

"We are perfectly willing to pay a tax upon any dogs of usefulness in herding cattle or sheep, and I see no reason why people having hunting dogs or pet dogs or ornamental dogs should not be equally willing to pay a tax. If dogs belonging to the utility or social classes are not worth paying a tax upon, it is certainly a commentary on their value and usefulness. I see no reason why dogs should not pay a tax as imposed upon other forms of personal property."

Now, you sheepmen and cattlemen of Solano county and elsewhere, come up to the Capitol in force next Monday night and support Senator Rush in the fight he is making for you. The Humane Society of Los Angeles is abusing the Senator in a way which the Humane Society of Sacramento thinks is inhumane beyond what the Senator proposes to do to the dogs. It certainly doesn't reduce the high cost of living to let worthless curs destroy livestock.


Junior MH—capacity 600 to 900 lbs. meal per hour —6 to 8 h. p. engine.

Smalley Recutter Mills Low Feed Costs




Meal Recutting Attachment


Grip Hook Feed Table

Write for Amazing New Smalley Book FREE!

Don't throw away a *thing* that can be *turned into FEED.* Save it ALL! Save that valuable *roughage* that has hitherto *gone to waste.* Make it into fine, wholesome, appetizing MEAL! Done quickest, cheapest, with the famous Smalley *Recutter*—this great book now sent you *free* PROVES IT!

Smalley Recutter Mill Reduces all roughage to fine meal at lowest cost. Has maximum *capacity.* Requires minimum *power.* Grip-Hook Feed Table saves labor and hire. Enables you to feed your cattle, hogs, sheep, cheaper than ever. Manufactures meal *without grinding,* from corn stalks, alfalfa, clover, pea vines, with grain or separately. 1,000-lb. cows will eat from 23 to 28 lbs. corn stalk meal daily—and thrive on it! Handles corn, shucks and all—makes good balanced ration—cuts feed costs down to limit.

Capacity ranges from 800 to 2,000 lbs. *per hour.* Recutter is *detachable.* Makes your grip-hook Smalley available for *silo filling.* Big success! Feed shortage overcome on leading dairy farms *everywhere!* High hay costs ignored! All because of this great machine which allows *roughage* feeding with *silage* and *ends WASTE!* Produce *more* milk at *less cost!* With a Smalley Recutter Mill! Sample of meal FREE with *catalog.* Write quick to



PACIFIC IMPLEMENT CO., San Francisco, Calif.

MANURE

Sheep and cattle manure mixed, from stock fed on alfalfa, cottonseed and oil cake meals, makes big crops.

$3.50 Per Ton

In carload lots, f. o. b. San Francisco.

Immediate shipment.

J. P. HOLLAND

540 BRANNAN ST., SAN FRANCISCO

Federal Farm Loans

Long Term *Low Rate*

All loans made on an amortization plan whereby the borrower repays the principal gradually with each interest payment.

Over three thousand satisfied borrowers in this district. It will pay you to investigate.

For information apply to the nearest **National Farm Loan Association** or write direct to

Federal Land Bank of Berkeley

Berkeley, Cal.

THE BEST RUBBER BELT EVER MADE

TEST SPECIAL

Special booklet mailed free upon application, describing construction of Test Special Belt. Sample also sent. Tell us your belt troubles.

NEW YORK BELTING & PACKING CO.,
519 Mission Street, San Francisco.

CALIVADA

Sheep Manure Steer

From highest nitrogenous feed.

Decomposed and concentrated by age in their own liquids, containing the highest percentages of Nitrogen, Phosphoric Acid, Soluble Potash, and readily available Humus.

Shipped commercially dry. Cars average 22 to 24 tons. Saves four-fifths labor in application. Thousands of tons now being shipped to citrus and deciduous growers in California.

Write for samples, prices and particulars today to insure prompt deliveries

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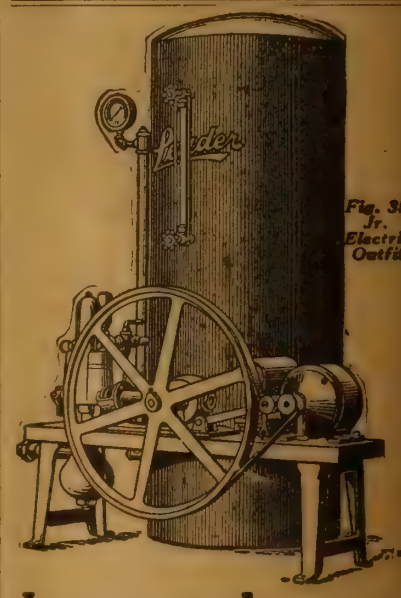


Fig. 35 Jr. Electric Outfit

It pumps and carries all the water

No more drudgery work on the farm for the men folks or the women folks. Every farm home can now be citified with a



Leader Home Water System

50,000 already in use. No hired hand can work as cheap. Be a happy Leader farm owner.

For Sale by

Pacific Pump & Supply Co.
Pump Engines, Windmills, Etc.
853 Folsom St., San Francisco.



Co-operation

NO one system of handling grain, or handling anything else, can be successfully carried out, no matter how advantageous it proves to be, unless there is a hearty co-operation among all concerned.

This co-operation starts at the source of supply and extends through every handling until the product is put in shape for the consumer.

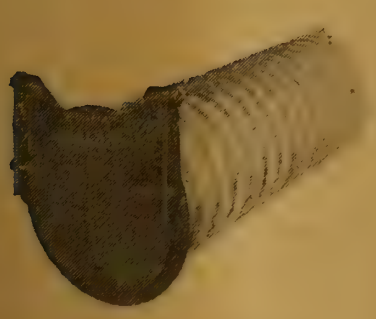
Handling grain in bulk has been found practical, advantageous, profitable. The Government Grain Experts advocate it in California; the University Investigators believe in it because facts have proved it to be a big saving over sack handling; railroads are ready for it; every mill in California is equipped to handle grain in bulk, for they appreciate its profit and know the farmer will quickly see it, too, and change from his former costly method of using jute sacks.

Two things are necessary before the grain grower can give his willing co-operation in bulk handling. First, a storage bin on his own farm. The Calco Grain Bin meets that need. Second, a co-operatively operated, centrally located grain station at a railroad siding. The Calco Grain Loading Station meets that need.

Know as much about the Calco Grain Bin as your neighbor. Write for our free booklet. It tells about saving on handling grain.

Let us send you blue prints and estimated costs on a Calco Loading Station in your community—write for them today.

Other Calco Products



CALCO AUTOMATIC DRAINAGE GATE

Model 100

A SENSITIVE, reliable, water-tight, Cast-Iron Drainage Gate, automatically operated. it will drain and convert your flooded land into fertile fields. Diameters from 8 to 84 inches. Write for price lists.

All gates are supplied in connection with rust-resisting Armco Iron pipe in any length required. Replace the old, leaky structure which constantly causes you trouble and money.



CALCO SLIDE HEADGATE

Model 101

A WATER-TIGHT Cast-Iron Gate for reservoir or levee work. For use under heads of water up to 20 feet. Diameters from 8 to 72 inches—gate frame any height desired. Write for details and price list.



ARMCO IRON FLUME

Lennon Type

GET away from the old, expensive, leaky wooden flume. Armco Iron Flume is a water-tight, semi-circular, galvanized metal flume for conveying water—durable because made from rust-resisting Armco Iron. Simple to erect without skilled labor; greatest carrying capacity account of its perfectly smooth interior. Write for our flume catalog.

California Corrugated Culvert Company

LOS ANGELES
417 Leroy Street

BERKELEY
406 Parker Street

AMERICAN ARMCO IRON

CALCO GRAIN BINS

Field and Garden Suggestions

[Written for Pacific Rural Press.]

Farm Tenancy Not Alarming.

In the thirty years from 1880 to 1910 the number of farms in the United States increased from 4,009,000 to 6,362,000. The number of those owned by the operators increased 34.3 per cent and the number of those operated by tenants increased 129.9 per cent, as figured out by the U. S. Secretary of Agriculture. But in 1910 five-eighths of all the farms and 68 per cent of all the acreage in farm land were operated by owners. By census statistics 76 per cent of farmers under 25 years of age are tenants. The percentage falls with age of the operators so that among those over 55 years old only 20 per cent are tenants. With less of free land, more beginners in farming have to become tenants at first and work their way from tenancy to ownership. The Secretary recommends more attention to terms of leases to provide equitable sharing of income and more interest of the tenant in maintenance of fertility.

Early Potatoes in Delta.

Considerably increased acreage of early potatoes are being planted this season in the Delta islands of San Joaquin county, total acreage being estimated at nearly 2000 by R. M. Dixon of Stockton. F. H. Rindge alone has bought 7000 bags for about 900 acres on his own ranch. Early potatoes here include Early Rose and Peerless, but are mostly American Wonders. They are planted in February and early March and are dug more or less green 110 to 120 days after planting. This gets them out of any serious danger from rhizoctonia. For seed potatoes they are planted around Sacramento about June and are dug in November or December. Some of these on sale in February were plump and crisp, though they had simply been stored in a barn. These American Wonders seem immune against "leaking." Many which had been forked in digging dried the wounds without rotting.

Average Retail Seed Prices.

Average retail prices of field vegetable seeds of standard varieties, as shown by catalogs of a large number of representative seedsmen, have been compiled and printed in the U. S. Department of Agriculture Seed Reporter for three years. We give some of the comparisons:

Kind	1919	1918	1917
Beets (garden)	$ 1.75	$2.34	$1.32
Beets (mangels)	1.18	1.32	0.57
Cabbage	11.12	5.05	2.98
Carrots	1.70	2.23	1.4
Celery	2.89	2.84	2.(
Lettuce	1.49	1.41	1.3.
Muskmelon	1.36	1.30	1.0.
Watermelon	1.15	0.97	0.79
Onion	6.82	5.16	3.50
Spinach	1.23	2.12	0.86
Tomatoes	4.02	4.11	2.97

It will be noted that beet, carrot, onion, and spinach seed are notably lower than prices quoted last year, while cabbage has gone skylarking.

About 24,000 Acres Delta Potatoes.

Potato planting in the Delta islands is estimated by several well-posted men as likely to be about the same as last year, between 24,000 and 25,000 acres. While potatoes have not moved particularly well, growers are not so much discouraged as other reports have indicated. Liberty Island would have been put into potatoes had it not been flooded, but chances are that the water will not be off in time for this crop, which should be planted in May or June. If so, beans will be planted.

Rail Fences vs. Snow Slides.

Common old-fashioned rail fences are the only kind that M. B. Brown of Tuolumne county has found would resist the snow slides on a certain section of his mountain range. Several other kinds were wiped out each year, but the rail fence put up on this section several years ago is still there. It is explained that by the time snow gets deep enough to slide the weight of it on the fence holds the fence down and prevents the slide until it melts off. The fence sometimes moves a few feet, but that is no difficulty.

Europe Wants Fruit.

Europe is hungry for fruit, either dried, canned or fresh, and there is a shouting demand for prunes and apricots, according to several reports that have come by mail. Dried fruits were especially conspicuous by their scarcity at Christmas time in the British markets. Wait till we show them what can be done with evaporated loganberries, etc., for winter use.

California Raisin Day.

The eleventh annual celebration of California Raisin Day will be held in the city of Fresno on April 30 under the direction of the California Raisin Day Festival Association. This embraces in its membership all the civic organizations in the raisin district. It is intended to make this pageant one of the biggest things staged in the interior valley.

Kills 'Em in Their Dens.

A new exterminator cartridge is now on the market which can be used to kill coyotes, badgers, wild cats and other burrowing animals right in their dens. The cartridge is a cylinder one inch in diameter and eight inches long, which in burning creates a powerful gas (principally sulphuretted hydrogen), which is fatal to animal life.

Imperial County Land Rentals.

High rentals are reported from northern Imperial county. One alfalfa ranch of 320 acres was recently leased for $25 per acre. Vegetable land has rented higher than that. Considerable alfalfa has been leased to cattle and sheepmen at $18 to $22.50 per acre. This is about double the rentals of two or three years ago.

J. I. CASE PLOWS

IN J. I. Case Tractor Plows the "drag" of furrow bottom and land slide pressure has been eliminated. All the weight of the frame is carried on J. I. Case dust-proof, easy-lubricating, long-distance wheels.

That's why this Tractor plow "rides" like a wheeled vehicle instead of dragging like a stone boat. That's also why more acres per day and deeper plowing are possible—and extreme fuel economy is attained.

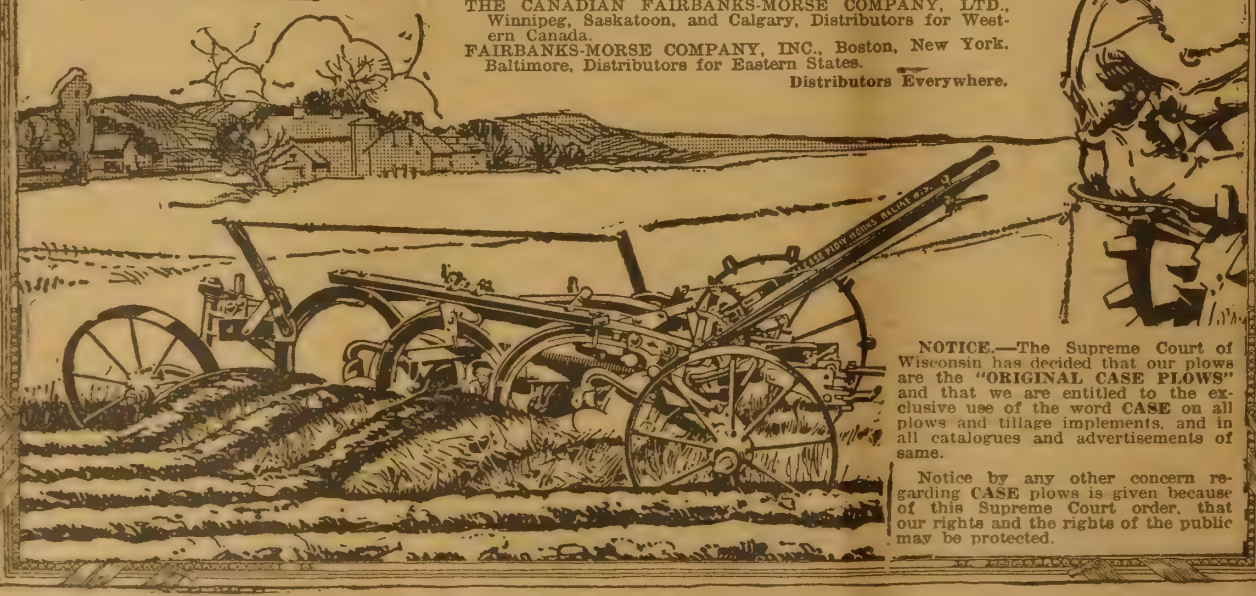
In addition, the J. I. Case Tractor plow is easily handled from the seat of the tractor; has a simple, sturdy power lift; and enters and leaves the ground instantly, points first, like a walking plow. Thus less labor is required and a more uniform quality of work is done. The Tractor is made a more profitable investment.

See your J. I. Case dealer today. He is a dealer who will justify your faith as well as ours.

J. I. CASE
Horse Drawn Plows
Sulky, Gang, Walker models. World's lightest draft. Flexible beam and "floating" bottom insure uniform penetration and prevent snares from breaking. Strong, dependable, convenient.
See your J. I. Case dealer or write us.

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594 W. SIXTH STREET RACINE, WISCONSIN
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Minneapolis, Minn. — Bloomington, Ill.
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Cedar Rapids, Ia. — Indianapolis, Ind.
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St. Louis, Mo. — San Antonio, Texas.
Oklahoma City, Okla. — Des Moines, Ia.
Denver, Colo. — Little Rock, Ark.
DOUGLAS BOSWELL, Sacramento, California, Distributor for California, Oregon, Washington, and Northern Idaho.
THE CANADIAN FAIRBANKS-MORSE COMPANY, LTD., Winnipeg, Saskatoon, and Calgary, Distributors for Western Canada.
FAIRBANKS-MORSE COMPANY, INC., Boston, New York, Baltimore, Distributors for Eastern States.
Distributors Everywhere.

Reg. U. S. Pat. Off.



NOTICE.—The Supreme Court of Wisconsin has decided that our plows are the "ORIGINAL CASE PLOWS" and that we are entitled to the exclusive use of the word CASE on all plows and tillage implements, and in all catalogues and advertisements of same.

Notice by any other concern regarding CASE plows is given because of this Supreme Court order, that our rights and the rights of the public may be protected.

In California, Washington, Oregon and Northern Idaho, J. I. Case Power Farming Implements and Tillage Tools are distributed and sold by

DOUGLAS BOSWELL

1227-29-31 Seventh St.
Sacramento, Cal.

416-17 Investment Bldg.
Los Angeles, Cal.

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BARGAINS STANDARD MAKES

These tires are all new, fresh goods and NOT retreaded or so-called rebuilt tires.

Goods Shipped C. O. D., Express or Parcel Post.
Money Refunded on Goods Returned to Us Intact Within Ten Days.

	Plain Tread Guaranteed	First Non-Skid Guaranteed	Tubes Guaranteed Gray
28x3	....	$11.40	$2.35
30x3	$9.85	11.90	2.35
30x3½	12.60	13.95	2.85
32x3½	13.90	16.40	3.00
31x4	18.25	21.40	3.65
32x4	18.55	21.85	3.75
33x4	19.35	22.80	3.85
34x4	19.80	23.30	3.95
34x4½	26.20	29.90	4.80
35x4½	27.00	31.20	4.95
36x4½	27.50	31.70	5.10
35x5	29.90	35.60	6.00
37x5	32.25	37.70	6.20

All other sizes in stock. Write for them or call and see them.

SPECIAL

NON-SKID SECONDS

30x3½ Clincher $11.75
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STANISLAUS FARMERS' UNION DOES THINGS.

[Written for Pacific Rural Press by Mrs. C. E. Whitmore.]

The Stanislaus County Farmers' Union held an all-day session last Saturday, with a good attendance and lively discussions. There are plenty of good business men in the agricultural game here. "What the Legislature is doing to farmers" was given much attention and many measures discussed. A resolution was adopted requesting Senator L. L. Dennett to do all in his power to defeat Assembly Bill No. 14, which is dangerous to the dairy interests of the State. Dairying is the principle means of livelihood in Stanislaus county and with the last year crop of beans and barley unsold in the warehouses and increased taxation, the farmers are not living on "flowery beds of ease."

Resolutions were passed asking Senator Dennett and Assemblywoman Broughton to guard farmers and irrigation interests in all ways possible, especially the defeat of Senate Bill No. 34, in regard to fences, is asked for. Senate Bill No. 319, for the establishment of an experiment station for deciduous fruits and nuts was approved. Assembly Bill No. 186, graduated surtax on unimproved arable land, was also approved.

The action of the National Board of Farm Organizations relative to their efforts to have data which has been gathered by the Department of Agriculture in regard to cost of crop production made public was unqualifiedly endorsed, and such publicity was urged at an early date.

State President J. J. Hardie urged all members and other farmers to pay special attention to cost production of crops and livestock and to be able to present their data for use at any time.

To digress somewhat, the writer of this article raised a "war hog" during 1918 and kept an accurate account of cost of production of the same. The result was interesting, but not conducive to contentment, as the net loss totaled $23.15.

The County Farmers' Union also forwarded night letters to Senators Hiram W. Johnson and J. D. Phelan asking for a revision of the tariff for the protection of farmers in California.

B. A. Taylor, a live wire in co-operative work here, was elected county president of the Union and Mrs. J. W. Benoit secretary.

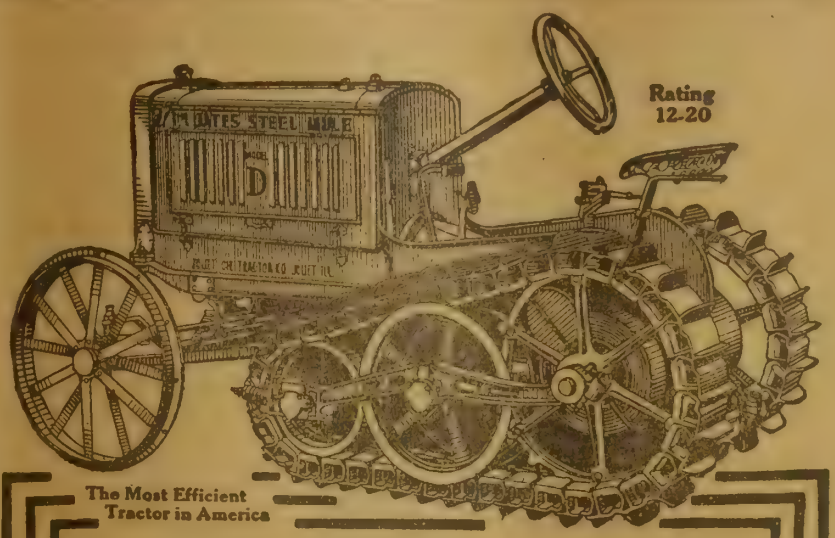
A protest was also voted against the abolishment of the State Market Director and actual farmers are asked to be named on all commissions and work relative to agriculture.

RICE STRAW TO FIGHT FROST.

To the Editor: I am sending you a clipping which tells how an Ohio grower saved his late potatoes by burning straw. It seems the suggestion might be useful in some sections of California, especially in our locality, where thousands of tons of rice straw are burned every year to get rid of it.—A. B. Farrar, Butte City.

[Certainly it can be done where such material is near by, though of course it is better to use oil burners than to haul straw very far. The account Mr. Farrar sends says that the Ohio potatoes were maturing in good shape, when, on the night of September 21, the temperature dropped below the freezing point. Preparations had been made for such an emergency. Baled straw had been placed in readiness and at 10:30 that night the fires were started. It was found that a heavy smoke could be made by using wet straw after the flame had been applied. Fires were kept burning in 102 places, and it is estimated that 10 tons of straw were used. The entire field was kept covered with smoke, and after the sun had been up a few hours the following day it was plain that the potatoes had been saved.]

Farmers in the Oakdale district contemplate branching out in sweet potato culture, as the soil seems to be peculiarly adapted to the growth of this tuber.



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Smut-Controlling Solution Experiments

[Written for Pacific Rural Press by Norman F. D'Evelyn.]

According to the returns from the questionnaire sent by the Sperry Flour Company to some 1500 wheat growers scattered throughout California, 76 per cent of them dipped their wheat for the control of smut, either with bluestone or formaldehyde. The big bulk of grain growers, therefore, will be interested in the following report of some experiments just completed by the company on the effect on germination of this smut-controlling solution. Reading this article may help to convert some of the remaining 24 per cent who use no treatment whatever—a large part of them, no doubt, as a result of disastrous experiences through improper handling—to resort to dipping without appreciably affecting the germination of their wheat.

Few grain growers probably have been brought to realize that the weather has a very direct bearing on the effect of smut-preventing solutions on the germination of wheat. Close observation and long experience in wheat growing had led the company's grain men to build up a theory that the germination of wheat which is to be planted in cold land or in cold weather was partly destroyed or seriously retarded by dipping.

TO DIP OR NOT TO DIP.

To prove or disprove this theory, George R. McLeod, head of the company's agricultural department, determined to conduct a series of experiments and the result has been a convincing proving out of the soundness of the theory. Lest any farmer make an erroneous assumption of the attitude of the company toward the much-mooted question, to dip or not to dip, in announcing the findings of the experiments the Sperry people hasten to emphasize the fact that they have been and remain unqualifiedly advocates of treating seed wheat to control smut. Their own direct experience on the Sperry experimental farms has shown clearly that under favorable climatic conditions careful dipping does not at all interfere with germination. The practical lesson of the experiments is that after the cold weather has once set in it is essential that the strength of the bluestone or formaldehyde solutions be reduced. Logically, the parallel is inevitable that the cold weather will lessen the vitality of growth of the smut as well as of the wheat, and that under such conditions the solution which weakens germination will also tend to weaken and destroy the smut. In short, a weaker solution will accomplish its purpose in cold weather and the farmer will reduce his risk of disastrously affecting germination of the wheat. Mr. McLeod's plan is to reduce gradually the strength of the dipping solution as the weather grows colder and to exercise increasingly extreme care that the wheat be not allowed to remain in the solution beyond the time specified in the formulæ. Use the watch, is his admonition.

EXPERIMENTS CAREFULLY PLANNED.

In planning the experiments every effort was made to approach as closely as possible actual field conditions. Some cold, unfertilized, heavy adobe soil was secured and the experimental boxes were set in a shaded spot so that the conditions might be under rather than over the average with respect to favorableness. Miniature burlap sacks were made and dipped in solutions prepared in the laboratory according to the recognized formulæ. For the bluestone-lime solution the University of California's formula was followed. The wheat was dipped for three or four minutes in a solution made by dissolving bluestone in water in the ratio of 1 pound to 4 gallons, following which the drained sacks were dipped for three minutes in air-slaked lime in the proportion of 1 pound to 8 gallons of water. For the formaldehyde the standard 40 per cent strength was used in the proportion of 1 pint to 45 gallons of water, the wheat being immersed in the solution for from eight to ten minutes.

These tests were begun early in February, after the long-sustained cold spell. The day after dipping, the wheat from the little sacks, treated by the two different methods, together with untreated wheat of the same varieties, was planted after a uniform number of kernels had been carefully counted out.

All the plots were left undisturbed for five days, at the end of which time one set was unearthed and the condition of the kernels carefully observed and tabulated. Every second day thereafter the kernels from another set of plots were similarly unearthed and the results recorded. The following table shows precisely the percentage of germination for each type of wheat, handled in the three distinct ways, in the ground for the length of time indicated:

EFFECT OF DIPPING ON GERMINATION OF WHEAT.

Soil—Heavy adobe, unfertilized, shaded.

Bluestone—University of California's formula.

Formaldehyde—One pint of 40 per cent solution to 45 gallons of water.

Dipped February 5, 1919, planted February 6, 1919.

Plots unearthed at two-day intervals as follows, beginning February 11:

PERCENTAGE OF GERMINATION.

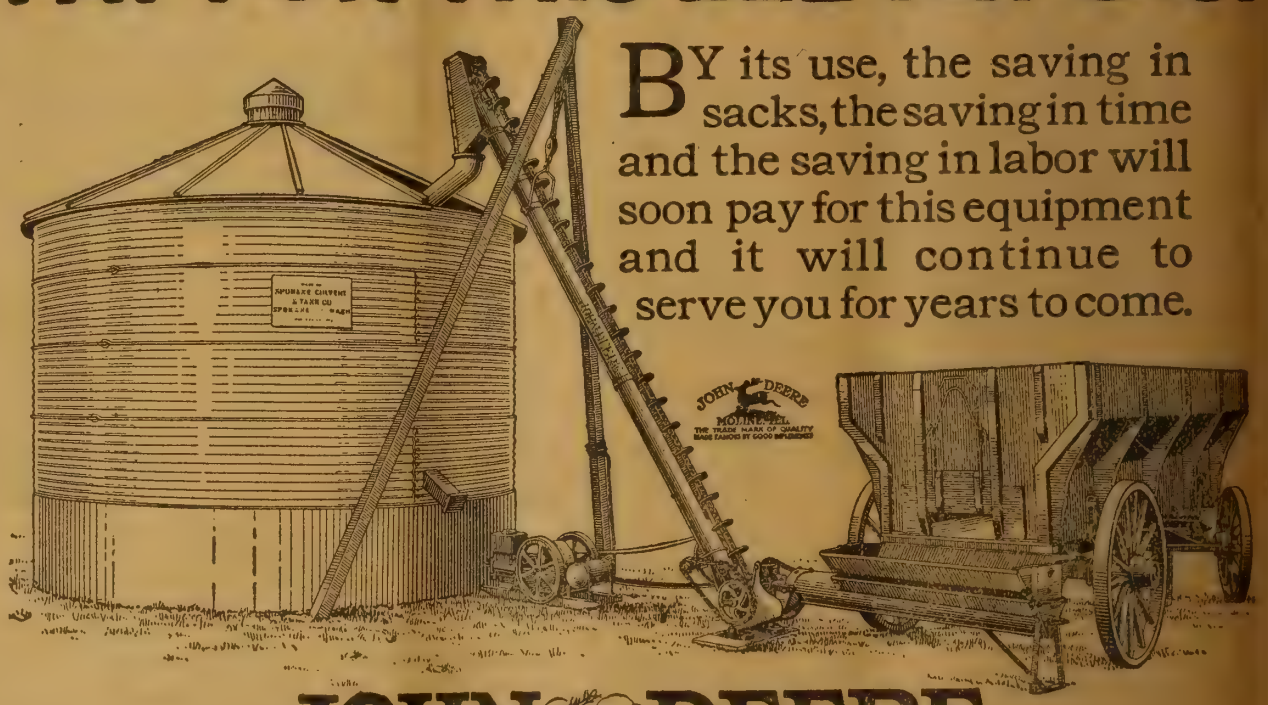
	Not treated.	Bluestone-Lime.	Formaldehyde.
Australia, 5 days:			
Strong	98	2	72
Weak	8	26	12
Not visible	0	72	16
Early Baart, 7 days:			
Strong	74	38	80
Weak	10	22	7
Not visible	16	40	13
Club, 9 days:			
Strong	92.5	4.7	83
Weak	5	60	13
Not visible	2.5	35.3	4
Bunyip, 11 days:			
Strong	96	6	55
Weak	4	50	24
Not visible	0	44	21
Sonora, 12 days:			
Strong	65	8	57
Weak	25	74	40
Not visible	10	18	3
Average for the 5:			
Strong	85	12	69
Weak	9	46	19
Not visible	6	42	12

DISASTROUS EFFECTS OF COLD WATER.

Fearful that any grain grower should, by any chance, become prejudiced against dipping wheat as a result of the statistics gathered from this series of experiments, the agricultural department of the big milling company includes in its report some testimony to show that, properly handled, smut control treatment has no appreciable effect on germination. For instance, on Sperry experimental farm No. 1, about 15 miles east of Stockton, seeding was begun in the latter part of October at the rate of 74 pounds to the acre, after the wheat had been dipped in a formaldehyde solution. The seed was planted at the depth of about 2 inches. The weather was warm and the moisture within three inches of the surface. The day after seeding was finished about an inch of warm rain fell, soaking through the dry, top layers of soil. As a result the stand indicated practically 100 per cent germination and was fully as thick as had often been secured by planting 100 pounds of wheat to the acre. The following week, after the weather had grown somewhat colder, wheat treated with formaldehyde and sowed about 30 pounds heavier to the acre than the first planting did not germinate as quickly or as strongly as the small field adjoining planted at the same time with untreated wheat.

Seed for another small field planted a little later on in extremely cold weather was dipped in a solution of nearly half the strength called for, 1 pound of bluestone to 8 gallons of water, and although put in at the

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It serves you when marketing your grain, as well as when harvesting it—elevates from the wagon into tanks, granaries or cars—elevates from tanks or storage bins into wagons. Operated by either engine or horses, its purchase ordinarily does not result in extra expense for power. A team of horses or a 2½ H.P. engine or larger will operate it.

The hopper, of big capacity, can be folded up out of the way when the load is driven up. Lower the hopper and the elevator is ready for duty. Backing the wagon is unnecessary. Hopper is provided with an adjustable feed by which the volume of grain being elevated is accurately controlled—you can quickly adapt the elevator to the power you apply.

Built of steel almost entirely, it will not warp or decay. The elevator proper is made of 3/16 in. steel well-casing, 6½ in. in diameter. It will never wear out. Round steel flights run smoothly inside of casing. The heavy elevating chain is fastened to center of flight. Grain cannot get under chain or into sprockets—no grinding, cracking or spilling of grain.

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rate of 100 pounds to the acre only about 10 per cent of the wheat germinated. Frosty weather continued after planting. Thirty days later, after it became evident that the wheat was not coming up, this ground was reseeded with untreated wheat and in spite of the fact that the weather was still frosty nearly a 100 per cent stand resulted.

Another point that should be stressed, in the opinion of those who held the experiments, was that harrowing should not be begun in extremely cold weather until the sun had had an opportunity to thaw out somewhat the surface of the ground.

BELIEVES IN COVERING PEANUTS.

To the Editor: C. S. of Atwater may be interested in my experience with peanuts in the interior valleys of California. I have grown them for many years for family use and never failed to get a crop but once and that was when I took the advice of the press and left them uncovered. I cover three times in a season and only get a few "pops" in the last layer, and four-kernel nuts are common—with a yield of one to three gallons per vine. When left to itself the spike, being tender on the tip, is very apt to scald or harden on contact with the hot soil in the middle of the day (except in moist, cool locations, which are not ideal for peanuts) and be barren. A flower springs from a fruit and fructifies it, then one or more spikes strike downward from the joint to a depth of several inches where the tip enlarges after the manner of all tubers to form the nut. I cover when a majority of the blooms of each series is withering. If C. S. had not fertilized he would have had no "pops"; evidently his soil either lacked plant food or water.

You ask how the first peanut became a peanut uncovered? If the genesis of the "goober" paralleled that of the American potato it is more than likely the "dusky aborigines" got more pops than C. S., and were satisfied to take what the gods and a beneficent climate gave them. And neither threw additional dirt on their "goobers" or "taters"—leaving their development to later and more strenuous generations.

If you can give me any logical reason why the crop is injured by covering any more than are potatoes, I will be pleased to hear it as I'm from Missouri.—Frank Owen, Suisun.

[The solitude in which you dwell as an advocate of covering the blossoms is notable. All commercial growers abandoned the practice long ago, and investigators have shown by comparative results that it is not desirable. Commercial growers insist upon mellow soil for peanuts. They keep it mellow on top and let the peanut do the rest. By covering with loose soil you may have helped to keep the moisture up and helped the plant in that way, but not in the way you imagine. As for the analogy between potatoes and peanuts, there is none, for the potato is a tuber and the peanut is a seed-pod.—Editor.]

GRIN AND BEAR IT YET AWHILE.

It is reported that Mayor W. A. Vandegrift of Pomona has declared that smudging to protect citrus crops from frost has become a public nuisance. He is further reported to have prepared a tentative ordinance against smudging within the city limits of his town. If passed, it was estimated that at least half a million heaters in Pomona Valley will not be ignited—or one-half of the citrus acreage! "The growers must find some other system of heating, in my opinion," the Mayor is reported to have said. It certainly is a trying problem. But it reminds one of the young bride who was a good sailor and took an ocean trip with her husband. He suffered from seasickness. After each paroxysm she solicitously inquired, "Are you ill again, dear?" till finally he replied, "Good gracious, Maria, do you suppose I'm doing this for fun!"

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Of course, Mohawks would give good mileage without this extra ply if they were always used on smooth roads and pavements.

But the Mohawk Company believes that Mohawk users cannot always pick and choose their roads. They have to go where they want to, when they want to.

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We use a generous quantity of these materials. *Mohawk Tires actually weigh more than other tires because there is more good rubber in them.* For example, the Mohawk Cord Tire weighs 8 to 10 pounds more than most other cord tires on the market.

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The All-American Canal Assures Perpetual Sufficiency of Water for 900,000 Acres in Imperial Valley. This Area Nearly Equals That of All Projects in United States Reclamation Service.

[Written for Pacific Rural Press by R. E. Hodges.]

Every drop of water available for the irrigation of 515,000 acres in Imperial county must pass for a long distance through Mexico. For the privilege of running this water from the Colorado river to the point where it flows northward over the California line into the Imperial county basin a treaty was made with Mexico by which a maximum of 50 per cent of all the water flowing through the canal was reserved for lands below the line at a price which has proved to be about half of the cost of delivering it, 50 cents per acre-foot. This water is used almost wholly by American farmers who have taken up the land because it was cheap, and who agreed to pay about $2.50 per bale for all of the cotton they hauled across the line to the only market that is available for it. Those Americans were not a little uneasy during the Mexican disturbances, but fortunately the State of Lower California had a Governor whose strong hand protected this chief source of his revenue. Governor Cantu, however, thought he saw a chance to increase his income, so he raised the export duty to about $15 a bale. He has suffered a softening of resolution since then.

ALL-AMERICAN CANAL.

But the war-and-bandit menace, coupled with the export duty on cotton and a 20 per cent tax on all water sold to Mexican lands, with the potential shutting off of all irrigation water from Imperial Valley, have begotten a desire in the water users of that empire to have an "all-American canal." About a year ago the project was definitely broached and the United States Secretary of the Interior agreed with officials of the Imperial Irrigation District to stand one-third of the expense of a preliminary survey to show the possibilities and the probable cost. The survey was made and the engineers reported on December 12 that the project is feasible for the irrigation of 900,000 acres, including mesas and other land outside the present Imperial Irrigation District at a cost on the present prices of labor and materials of $26,732,602, including $1,900,000 to be paid to the Government for the privilege of diverting the water from the Laguna dam a few miles above Yuma. The interest on this sum at 5 per cent would amount to $1.50 per acre per year. A 1 per cent sinking fund would add 30 cents per acre per year. The canal will absolutely remove the Mexican menace to Imperial county irrigation, will simplify several minor matters, will enable the District to sell its water at its own price, and will furnish a means of sluicing out the silt near the intake of the canal. This silt now keeps a fleet of dredge boats and 200 men almost constantly busy around the present heading and other dredge boats always working on the canals. It would almost eliminate the silt which constantly fills the laterals and complicates irrigation practices. It will eliminate the necessity of building a temporary diversion weir at a cost of $150,000 a year plus the cost of tearing it out each spring before floods come. This weir is required in order to prevent a drouth in Imperial Valley six months more or less each year. But it endangers the country on the other side, which is subject to overflow, and the Yumaites have obtained an injunction to prevent their building the weir again. Thus it was that Imperial Valley people had to do something or vacate the valley.

Their officials agreed with Secretary of the Interior Lane and the Yuma people to undertake construction of the all-American canal, the contract finally being signed by Secretary Lane on October 23, 1918. The contract, of course, to be binding, had to be ratified by the people of the District and this was done by a vote of nearly three to one on January 21, 1919. It provides that the Imperial District may take three-fourths of the water from above Laguna dam and they must begin construction of a suitable canal within two years from date. The plans include construction of a canal to carry 9000 second-feet of water and the building of power plants utilizing about 8500 water horsepower for the generation of electricity. Some folks have hoped to sell the canal in Mexico, but while it was built entirely by Americans, and has put the District under several million dollars' indebtedness to maintain it, they will probably have to give it over to the lands south of the line.

The great ditch is to be financed by bond issues, but it is hoped that Congress will give some aid. At any rate, an assured supply of practically siltless water and the electric power to be generated are well worth the $30 to $35 per acre that they will cost. And more than this, it is likely to remove the perpetual danger that the river might break out in flood time in a worse way than it did ten or fifteen years ago when it cost $2,000,000 to save the valley from complete inundation. Being in bona fide partnership with the Government, there is every reason to hope that storage reservoirs will be built in the headwaters of the Colorado river to remove the flood menace and to increase the flow in times of scarcity. The wonderful development of Imperial Valey under the Mexican handicap of irrigation and with only two or three inches of rain per year, bids fair to be far surpassed in the grand era just begun.

STATE 1918 COTTON PRODUCTION

All the cotton grown in the Imperial Valley is now reported as California cotton. The production of the State in 1918 is estimated at 100,000 bales, compared to 69,900 bales last year. The average yield per acre was but slightly better than in 1917, the increased production being largely due to increased acreage. This year's production will include about 3300 bales of the long-staple or Egyptian cotton, of which some 400 or 500 bales were grown in the San Joaquin Valley. In the Sacramento Valley short-staple was tried out, with a probable production of 500 bales. The Palo Verde Valley, Riverside county, will have the best average yield, producing about 10,000 bales on 13,000 acres. The total value to the grower will approximate $15,000,000 for lint and $3,000,000 for seed.

New Highway Bond Issue Up March 13

Concrete highways on all the main roads of the State are possible if enough interest is shown at a statewide meeting of all folks interested, to be held March 13, at 7:30 p. m., in the Assembly Chamber at Sacramento. The meeting is called by the Highways Committees of the Legislature. Chairmen of these committees are Senator M. B. Johnson of San Mateo county and Assemblyman W. J. Martin of Monterey county. Letters should be addressed to these men at the Capitol, Sacramento, by interested persons who cannot attend the meeting. To finance these proposed paved highways, a bond issue is suggested for amounts ranging from $25,000,000 to $40,000,000. The Legislature will take action according to the best expression of sentiments they can get. Such action will be in the form of a resolution submitting the question of a bond issue to the people for a vote of yes or no, without change in the details, which may be pretty well fixed by this meeting.

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(Trade Mark registered in U. S. A. and all principal foreign countries)

4-PULL TRACTOR



Patented and other patents applied for in all principal countries in the world.

KROYER WIZARD

It is a Track-Shun Make-Good-Tractor

A COMPLETE LINE

To be built in sizes

6-10 12-20 20-35 30-50 45-75

THE KROYER WIZARD 4-PULL TRACTOR is built low yet has spacious clearance under the body, between its wheels. It is short in over-all length, powerful in performance, and develops unusual high efficiency in draw-bar pull. It is equipped throughout with ball and roller bearings.

With our experimental **Wizard 4-Pull Tractor,** we have plowed and cultivated the loosest blow-sand land and immediately after plowing same, have gone over it again, pulling a full load without slipping the wheels or having the Tractor bury itself. Work of such nature that would in a short time wear out tracks or moving parts on other tractors, has no effect on the **Wizard,** all its working parts being enclosed in oil-tight housings.

It will work and get traction after rains, snow or irrigating, as soon as horses could be successfully used on the same land. It will operate on peat land and in many sections where soil, difficult to work, is now lying virgin for want of a practical means by which to till it.

The much desired feature of short turning has been mastered in the Kroyer **Wizard** by a device unique in its construction. This is one of its patented features, causing it to turn itself around in a pivotal manner, when so desired, without making any backward or forward movement (as when a man turns himself on his heel) and this can be done in either direction.

It is quick and very flexible in action and operated with ease, making the handling of the **Wizard 4-Pull,** light work. The weight is distributed equally on all four wheels when pulling a load, and it does not pack the soil.

Mr. Kroyer, being a pioneer tractor builder, knows, however, that no new principle embodied in a tractor, makes, in itself, a perfect machine. Experience must be built into it throughout, from the point where it touches the ground, to the top of its hood. In other words, a master mind in tractor construction must be the foundation for producing a tractor that is actually successful. This ability Mr. Kroyer possesses, being a practical man and having designed, built and marketed seven different models of Tractors since 1903. As early as 1904 he built in his second model (size 8-16) an enclosed dust-proof machine, and into his fifth model (size 15-30) built in 1913, he used the live rear axle principle in an all enclosed dust-proof tractor. Over 3000 of Mr. Kroyer's Tractors are in use on the Pacific Coast and in other countries, and they are regarded as the most durable tractors in the field.

The **Wizard 4-Pull** will be a "quality" machine and built to give at least ten years' service when used with reasonable judgment. It will be distributed and sold conscientiously. Orders are held for 1200 of the 12-20 **Wizards** for California, with strong demand for the other sizes, and deliveries are expected to begin this Fall.

The **Wizard 4-Pull Tractors** will be manufactured by the Kroyer Manufacturing Co., a $5,000,000.00 corporation, with its plant located at Stockton, California, an additional eastern factory being also contemplated.

STOCKTON, CALIFORNIA

Proposed Legislation of Interest to Farmers

Will Delay Bills Asking Money.

People interested in bills calling for appropriations will have a week or two after this note is published to work for the bills. All of them will be held up in the Finance or Ways and Means committees until there is good ground for knowing about the total that will be recommended by all the other committees. Then the appropriations seeming most urgent will be recommended to the Legislature up to the limit of cash available, as indicated in another paragraph.

Support for Feed Control Bill.

Be it resolved, that we heartily commend Senator E. S. Rigdon for his efforts in providing dairymen the protection they should have against fraud in the manufacture and sale of commercial feeding stuffs and we endorse Senate bill 93 and its companion, Assembly bill 480—resolution unanimously passed by the directors of the San Francisco Wholesale Dairy Produce Exchange.

Seed Potato Law Proposed.

Ere this appears in print, the meeting of potato growers will have been held in the office of the State Horticultural Commissioner and the new seed potato certification bill will have been introduced, probably by Senator Herbert W. Slater of Santa Rosa. The bill will repeal the present seed potato certification law, which is like a good engine with no gas. It will, if passed, put the gas to the engine, but gas is hard to get (in this sense) from the State Government. You have plenty of time yet to send in petitions in favor of the bill, for it cannot come out for final passage within two weeks.

State Efficiency and Economy.

The central Committee on Efficiency and Economy in State Government is holding a meeting on the day this reaches our subscribers. The final recommendations are to take form at this and perhaps subsequent meetings. Our readers may see something of interest in the Sunday or Monday papers. As a general line on their policy, one of them, Marshall De Motte of the State Board of Control, has said that they are for efficiency spelled with capital letters.

Less Arsenic in Sulphured Fruit.

It is a lamentable fact that much of the sulphur used in sulphuring fruits for drying contains enough arsenic to be a real menace to health of those who eat the fruit. It depends on whether arsenic is in the crude sulphur as it comes from the ground. Not all of it can be taken out by any commercial method of refining. Senator J. J. Crowley of San Francisco has introduced a bill to prevent use of such sulphur in drying fruit and to provide standards for sulphur that is used. By its terms no person shall sell sulphur for fruit or other food drying if it contains over ten parts per million of arsenic oxide. Sulphur for this purpose will have to be prominently so labeled. Violators may be fined up to $500 or imprisoned or both.

To Investigate Milk Prices.

If the Assembly agrees with the Senate amendment to Assemblyman N. J. Prendergast's resolution, No. 10, the high prices of bread and milk and eggs are to be promptly investigated by a committee composed of three from each House, who will report to the Legislature within 25 days after adoption. Several legislators think that prices should come down and they want to find out by whom the public is being gouged. Senator W. E. Brown of Los Angeles blamed the factors who are organizing producers, pointing particularly to the poultry, bee, and milk associations, and promised some startling revelations later. Senator L. L. Dennett of Modesto stated that thousands of cows have been sold to butchers in his county during a period not long passed, because dairymen were receiving less than their costs of production. The producers until recently were not receiving living profits. The investigation of dairymen was not opposed by Senator Dennett, but he desired also an investigation of the distributors of foodstuffs and believed that the excessive consumer costs would be found there. Senator Brown told of a friend of his who disguised himself as a poultryman and visited the milk distributors of one of the bay cities. He found he could buy milk at 5 cents a gallon. Asking what was done with the milk if it was not sold at that price, he was told that it was dumped into the sewers.

Fruit Standardization.

Facing packages of dried fruit or vegetables with better stock than is used inside is pronounced a misdemeanor in the new fruit and vegetable standardization bill introduced by Senator J. M. Inman of Sacramento. The bill also specifies dimensions of containers in which berries, fresh fruits, and cantaloupes shall be shipped after July 1, 1920, with the alternative of using other sized containers if they are marked "irregular container." Oranges are to be considered mature if substantially colored on the tree or if they have 40 per cent of color and test as much as 8 to 1 sugar to acid. Standards of uniformity, maturity, cleanliness from defects, etc., are carefully defined. Other grades and grading rules may be put into effect by the State Horticultural Commissioner after approval in meetings representing at least 50 per cent of the growers.

Wants U. S. to Buy Beans.

Whereas, warehouses are now crowded with beans and are not capable of holding all the beans produced, and because the Government, in urging the planting of foodstuffs, implied an understanding that markets would be provided, the State Senate on February 28 passed a resolution introduced by Senator W. S. Scott calling on the U. S. Grain Corporation to buy beans on the Pacific Coast until the supply is exhausted and before it buys beans from the Orient either for the United States or Europe.

The Most Damnable Conspiracy.

What is declared by Senator W. E. Brown of Los Angeles to be the most damnable conspiracy against producers and consumers of California is the effort of State Market Director Weinstock and others to organize the dairymen of the State. The conspiracy develops. The association is taxing each cow $5. Thus the 500,000 cows would yield $2,500,000 to the association. This amount is to be added to the price of milk, of course, and used for construction of butter, cheese, condensed milk, and other factories all over the State. They will then fail and Armour, one of whose men is said to be a chief factor in the organization, will buy them out at about 25 cents on the dollar. He will then own and control the whole dairy industry of the State. Interesting, isn't it!

A Mathematical Problem.

Bills have been introduced into the Legislature to appropriate amounts of money exceeding the total estimated revenue and the total surplus in the treasury by $15,705,519.38, according to Assemblyman T. M. Wright, chairman of the Committee on Ways and Means. Budget Board recommendations totaled $47,580,153.66 and their estimates of revenue for the coming two years total $47,969,490. The surplus in treasury amounts to $5,219,174, giving a total leeway of $5,908,510.34, including $300,000 allowed as a leeway in the Budget Board recommendations. Bills introduced previous to February 28 proposed appropriations not recommended by the Budget Board totaling $21,314,029.72, to pay which there is a total of $5,908,510.34. The duty of the Finance Committee of the Senate and the Ways and Means Committee of the Assembly is to make the $21,314,029.72 equal $5,908,510.34. All bills appropriating money go to these committees before they can be finally passed, so friends of such bills may calculate the chance of their getting through.

Poisoned grain intended for ground squirrels killed four $3,000 mules in Tulare county recently. Well, the squirrels did a lot more damage than that in one township last year where the squirrels are lonesome this year.

They Fit All Tractors

Clark "CUTAWAY" DISK HARROWS

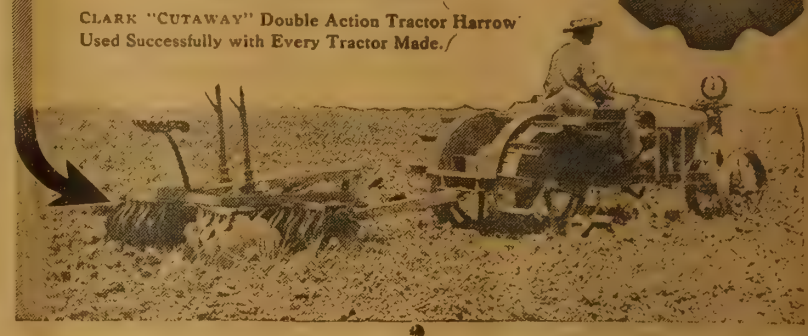
THIS Double Action Light Tractor Harrow is designed for use with all light tractors. It embraces every important feature of our heavy engine type. Once over thoroughly pulverizes every inch of soil — rear disks splitting furrow turned by front disks.

All CLARK "CUTAWAY" Disks, both cutout and solid style, are made of high grade cutlery steel, *forged* sharp. They dig deeper and pull easier, and without breaking, bending and cracking like ordinary disks.

Write now for interesting free book "The Soil and Its Tillage". Information that you will surely profit by. Ask your dealer about the genuine CLARK "CUTAWAY" tillage tools for tractors and horses.

The Cutaway Harrow Co.
619 Main Street Higganum, Connecticut
Maker of the original CLARK Disk Harrows and Plows

CLARK "CUTAWAY" Double Action Tractor Harrow Used Successfully with Every Tractor Made.



E. P. BOSBYSHELL CO.
Dealer in Farm Implements, Vehicles and Road Grading Machinery
125-127 N. Los Angeles Street
General Agents Clark's Harrows Los Angeles, Cal.

Learn the facts about America's greatest farming opportunity



Our big, free, fully illustrated booklet tells all about this wonderfully fertile valley near Tucson, Arizona, where farmers ARE BECOMING RICH. It contains signed statements by the actual settlers. You can write and verify everything they have said. Only 20% of the foodstuffs consumed in Tucson and adjoining mining districts is produced in the valley—the other 80% is shipped in from California and other outside points. Local farmers command fancy prices for everything they can raise. Soil is deep, rich, silty loam; water supply abundant; climate ideal; no drawbacks, nothing but advantages. Land with water, $150 an acre; attractive terms. Farmers, investigate!

Edwin R. Post Company

Write today for this Free Booklet —

A SURVEY OF CALIFORNIA'S 1919 WHEAT CROP.

[Written for Pacific Rural Press.]

Using the returns from wheat growers who have planted an aggregate of 225,490 acres as a basis it may be announced authoritatively that the prospect of the wheat crop of California is entirely satisfactory. As the data came in from the Sacramento and San Joaquin valleys, the coast regions and from south of the Tehachapi, it thoroughly represents the situation in all the wheat growing districts of the State.

To secure first hand authoritative information, the Agricultural Department of the Sperry Flour Company issued a questionnaire to the wheat growers on its mailing list, and from the returns it has compiled some figures that will be of interest to all the grain men of the State.

A GRATIFYING FORECAST.

Forty-three per cent of the growers reported their crops to be normal, while 30 per cent of them indicated that the condition of the crop was advanced. In other words, projecting the figures as typical of the entire acreage sowed in the State, practically three-fourths of the wheat crop is fully up to the mark it should have attained at this stage of the growing period. Of the 27 per cent reporting their crop as backward, it is significant to note that a big bulk of these growers specifically indicated on their report cards that they planted their wheat in January after the extreme cold weather set in.

Outside of the unusually long sustained cold spell, the greatest determining factor in certain districts has been the lack of a normal rainfall. In reviewing the returns it develops that while in the Sacramento Valley 82 per cent of the crops were reported as normal or advanced, the corresponding figures for the southern end of the San Joaquin Valley is 60 per cent. In the territory centering around Stockton 67 per cent of the crops were reported to be in a condition described as either normal or advanced, and south of the Tehachapi only 16 per cent of the growers indicated that their crops were not up to normal. The extremely light rainfall in that section is offset by the fact that most of the wheat is grown on irrigated land. In the coast region around San Luis Obispo the condition of the crops strikes an average between the best and the least advanced sections of the San Joaquin Valley. Of the acreage represented in the returns 149,323 acres were winter-sown and 76,176 acres were summer-fallowed.

The farmers were asked to state how the wheat was sowed. Fully 70 per cent of them used the drill, and the balance, with the exception of 4 per cent who sowed the wheat from the plow, used a broadcaster.

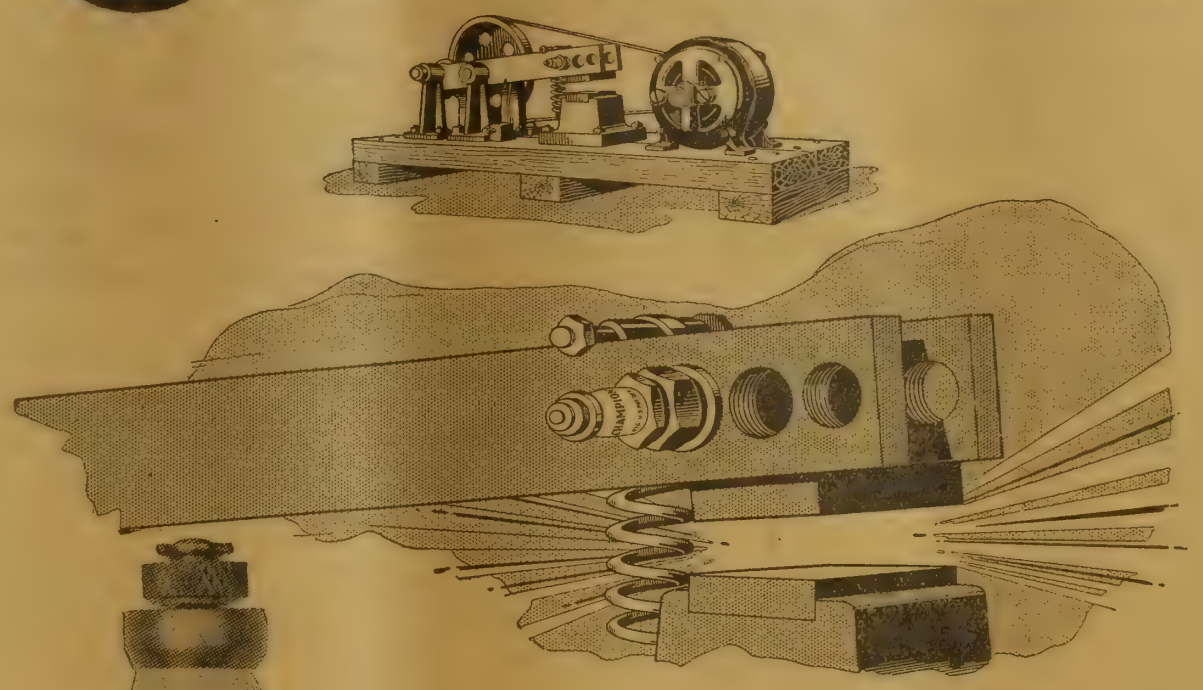
BIG INCREASE IN CALIFORNIA'S WHEAT ACREAGE.

As stated above, the reports cover an acreage of more than 225,000. In the five or six years prior to 1918 California's wheat acreage averaged less than 400,000. This year there are probably considerably over 750,000 acres. There is no way to arrive at what the aggregate acreage would have checked up had all the returns come in. The volume of absentee reports from farmers who dealt through this one source of speed supply is some indication of the tremendous increase in California's wheat acreage.

ONIONS SLOW AT $1.75 TO $2.00.

Sluggish onion markets continue throughout the country, as reported by S. H. Boddinghouse of the U. S. Bureau of Markets. Australian Browns out of storage in California demand $1.75 to $2.00 sacked per hundred pounds. Oregon crop movement is light, with onions going at about $1.75 to the growers. California had on February 3 shipped 3736 carloads since the season started last May. This is about 60 per cent more than the shipments from growing points in the next highest state, Massachusetts.

Champion Dependable Spark Plugs



Champion Regular 7/8-18
Price $1.00

Withstand Shocks of 300 Sledge Hammer Blows Per Minute

The results of various exhaustive factory tests imposed upon Champion Spark Plugs completely demonstrate their ability to endure every punishment your car's engine can impose.

The test illustrated here is known as the "shock test." The shock, which the Champion Spark Plug must survive without injury, is the equivalent to a weight of 3½ pounds, dropping with the rapidity of 300 times per minute.

The qualities that enable Champion Spark Plugs to successfully withstand such severe trials are largely a result of ten years' study and experimenting that developed our patented gasket construction and our Number 3450 insulator.

This superior Insulator offers 2½ times the resistance to shock and vibration compared with the best previous insulator. That is one of the several reasons why Champion Spark Plugs are more durable and dependable than ordinary spark plugs.

There is a Champion Spark Plug for *every* type of motor car, motor truck, tractor, motorcycle and stationary engine.

Champion Spark Plug Company, Toledo, Ohio
Champion Spark Plug Co., of Canada, Limited, Windsor, Ontario



10,000 Miles Guaranteed and No Punctures

After ten years test by thousands of car users, Brictson Pneumatic Tires have solved pneumatic tire problem—easy riding, absolutely proof against punctures, blow outs, ruts, rim cut, skidding, oil, gasoline. In short trouble proof. Written 10,000 mile guarantee. Some go 15 to 20,000.

TRY 'EM AT OUR EXPENSE

Make us prove it. Don't pay if not satisfied. Write today for details of most liberal, convincing Free Trial plan ever offered. Sent with illustrated, descriptive booklet.

The Brictson Mfg. Co. Dept. 170-W
1016 W. O. W. Bldg., Omaha, Nebr

SCHOENER'S HANDY GARDEN TOOLS

4 Tools That Fit on 1 Handle. Can be set at any angle. Spins ... Hoeing and Weeding.

Sold by Most Dealers

4 Schoener yet practicable garden tools are sold by most dealers. If your dealer cannot supply you, let us know, and we'll tell you where to get them. Illustrated Folder on Request.

SCHOENER MFG. CO.,
412 Schoener Bldg., St. Cloud, Minn.

Dealers in PAPER

BLAKE, MOFFITT & TOWNE
37-45 First St., San Francisco
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Blake, McFall Co., Portland, Ore.



Stock Raising in Western Canada
is as profitable as Grain Growing

In Western Canada Grain Growing is a profit maker. Raising Cattle, Sheep and Hogs brings certain success. It's easy to prosper where you can raise 20 to 45 bu. of wheat to the acre and buy on easy terms.

Land at $15 to $30 Per Acre
—Good Grazing Land at Much Less.

Railway and Land Co's are offering unusual inducements to homeseekers to settle in Western Canada and enjoy her prosperity. Loans made for the purchase of stock or other farming requirements can be had at low interest.

The Governments of the Dominion and Provinces of Manitoba, Saskatchewan and Alberta extend every encouragement to the farmer and ranchman.

You can obtain excellent land at low prices on easy terms, and get high prices for your grain, cattle, sheep and hogs. Low taxes (none on improvements), good markets and shipping facilities, free schools, churches, splendid climate and sure crops.

For illustrated literature, maps, description of lands for sale in Manitoba, Saskatchewan and Alberta, reduced railroad rates, etc., apply to Superintendent of Immigration, Ottawa, Canada, or

GILBERT ROACHE, 3-5 First St., Sheldon Block, San Francisco
Canadian Government Agent

WESTERN CANADA

The Patte



The LAUSON is known as the Pattern Tractor. This is not a title which we, the manufacturers, have taken ourselves. But, like all titles worth while, it is a title that has been given us by the people who know Lauson worth and Lauson sterling quality—in other words by Lauson users and tractor experts. The reason for the term "Pattern Tractor" is that the Lauson has won the position where it is regarded as a pattern for the tractor industry, the machine which serves as a standard and model for other manufacturers to build to. The prominent position of the Lauson in the tractor field was not gained ve night, but came as the result of thorough understanding of tractor requirements, strict adherence to high standar

Dust Proof

The Lauson is "Full Jewel" like a full jewel watch, having 24 Hyatt and Timken roller and ball bearings. They insure easy running and the delivery of maximum engine power at the drawbar or belt pulley.

The dust, dirt and grit which play havoc with the average tractor have no effect on the Lauson. It is absolutely dust proof, all the gears, including the final drive, are enclosed in a dust-proof housing and run in a bath of oil. The engine and all the working parts, where necessary, are also protected against dust and dirt. This eliminates the friction and wear which wastes power and saves expensive replacement of gears.

Lauson-Beaver Engine

Surplus Power is a distinctive feature of the Lauson. This reserve power is supplied by the heavy duty Lauson-Beaver valve-in-head engine, capable of delivering a surplus of 30% over the actual rating of the tractor. It is fittingly called *"A Brute of an Engine."*

The very best insurance that the Lauson-Beaver will require little attention from the operator lies in its great mechanical strength—its huge crankshaft, thick-as-your-wrist; its powerfully built rods, wrist-pins, pistons, valves, bearings, and all other working parts. Every moving part is gotten at without difficulty. Two valve covers can be removed. The entire head, valves, and all is easily detached. Extra large hand-holes on both sides of the crankcase are uncovered in two minutes. The whole crankcase bottom is removable in a jiffy. Connecting rods, with the pistons, come out with no trouble at all.

Owing to the correct carburetion principle and sensitive throttling governor, the Lauson-Beaver engine burns kerosene without waste. In the tractor you buy, see that it burns kerosene without smoking. There is no smoke with the Lauson-Beaver on kerosene low priced fuel.

Manufactured by
BEAVER MANUFACTURING CO.
Milwaukee, Wisconsin

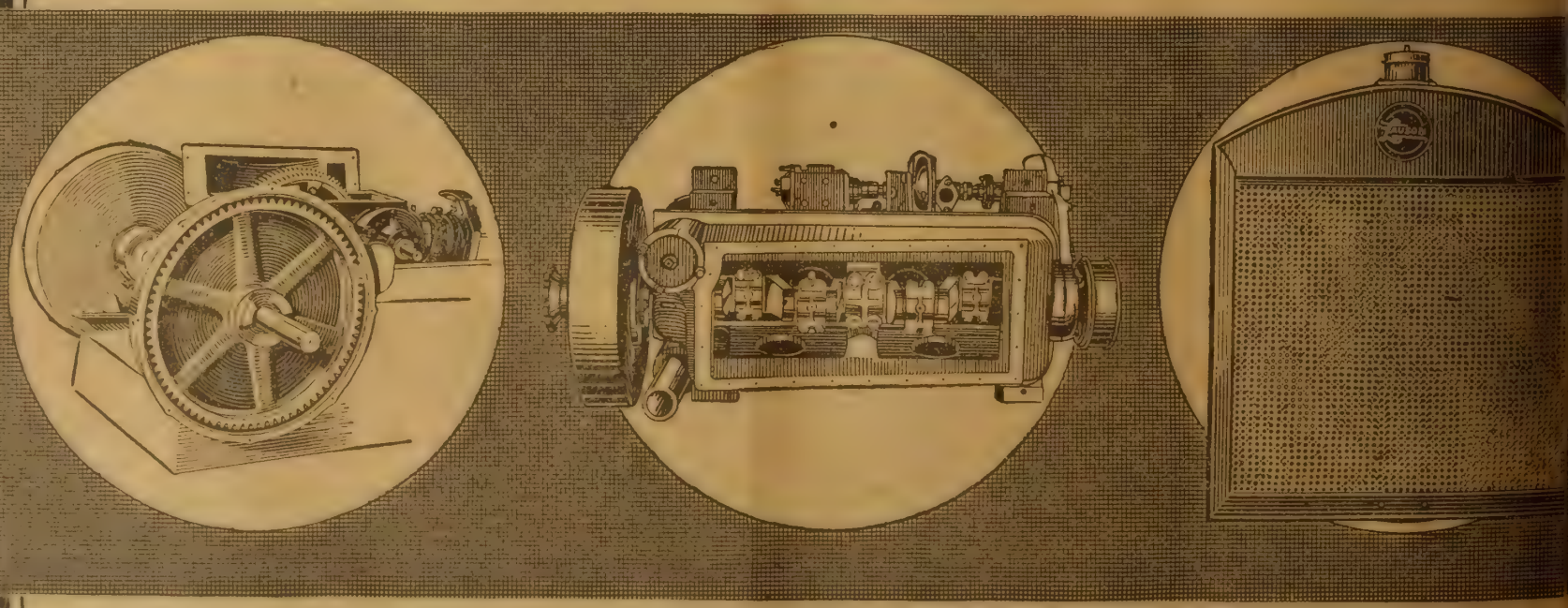
Perfex Radiato

The Lauson is "Perfex" equippe be cause the Perfex is conceded to b perfect radiator which yearly s thousands of dollars for farmers.

This radiator sets a new standa in cooling efficiency and entirely elimi te delays in the field due to overh engines.

In the distinctive PERFEX Core inch of surface cools. The waterway ar generously large—free from fins, co or other obstructions. Under he loads or in hottest weather Perfex tected tractors are absolutely safegua against overheating. In winter th clusive "expansion slit" makes conti freezing practically harmless. A t is no better than its cooling system fex offers Lauson owners *real* insur under extreme working conditions

Manufactured by
PERFEX RADIATOR COMPA
Racine, Wisconsin



THE JOHN LAUSON MANUFACTURING CO

DISTRIBUTORS FOR CALIFORNIA, OREGON, ARIZONA AND NEVAD

'n Tractor



ON 15-25

F-ALL GEARS ENCLOSED

construction, and more than 23 years' farm engine manufacturing experience. Into the Lauson Tractor have been incorporated all those features which actual experience and engineering ability have demonstrated as necessary to render the maximum of service under the most exacting conditions. In actual service on farms in every part of the country—from the wheat fields of Northern Canada to the Everglades of Florida, in the rough foot hills of the Alleghanies and the "adobe" of California—the Lauson proven equal to every task upon which a tractor can be called to perform. It gives the farmer a farm power unit h does all his power work, either in the field or at the belt—and does it efficiently, reliably and economically.

ristensen Starter

son now has Christensen Starter—not an elec- other mechanical cranker—operates by car- n principle, producing starting impulse within inders themselves.

ther big feature of the Lauson 1919 Tractor creases the tractor's efficiency by making easy under every kind of weather condition. re its adoption for 1919 Lauson Tractors the nsen Starter was required to pass eleven ade in the presence of John Lauson, Henry and H. N. Edens, our Chief Engineer.

Christensen has no electric wires or batteries a solid, subtantial starter that stands the jolts of rough farm work and is everlastingly "on

Christensen is a "carburetion principle" —a new and successful principle in starter ction. Instead of cranking by electricity or ssed air, it joins air and fuel in an explosive which it supplies to the cylinders in their firing order, under compression sufficient to e engine turning. The ignition system of the Tractor then fires the mixture, giving you a en from a stone cold engine—with any grade —in one to four seconds.

Manufactured by
ISTENSEN ENGINEERING CO.
Milwaukee, Wisconsin

Dixie Magneto

It is generally conceded that the standard ignition equipment for the high grade tractor is the Dixie Magneto.

This "Great American Magneto" has won first place because of its greater accessibility, better protection against oil, dirt and water, and its ability to produce a uniform spark of full strength at all engine speeds.

Sumter Starter Coupling makes starting of even the largest and heaviest engines directly from the Magneto safe, sure and easy. It is as widely known and used as famous Dixie All-American Magneto.

Sumter High Tension Cable—highest grade rubber covered cable, with terminals securely soldered, is used. Every set is made to fit the engine on which it is used. It conducts the intense Dixie Spark safely and without waste.

Splitdorf Green Jacket Spark Plugs known and used the world over. Unequalled for Tractor service because there is no porcelain to chip or crack. The rolled mica insulation can never short circuit internally. It is easily taken apart for cleaning.

It's natural to expect the Lauson to get its "start" from the Dixie Magneto.

Manufactured by
SUMTER DIVISION SPLITDORF
ELECTRICAL COMPANY
1466 Michigan Avenue, Chicago, Ill.

Nuttall Gears

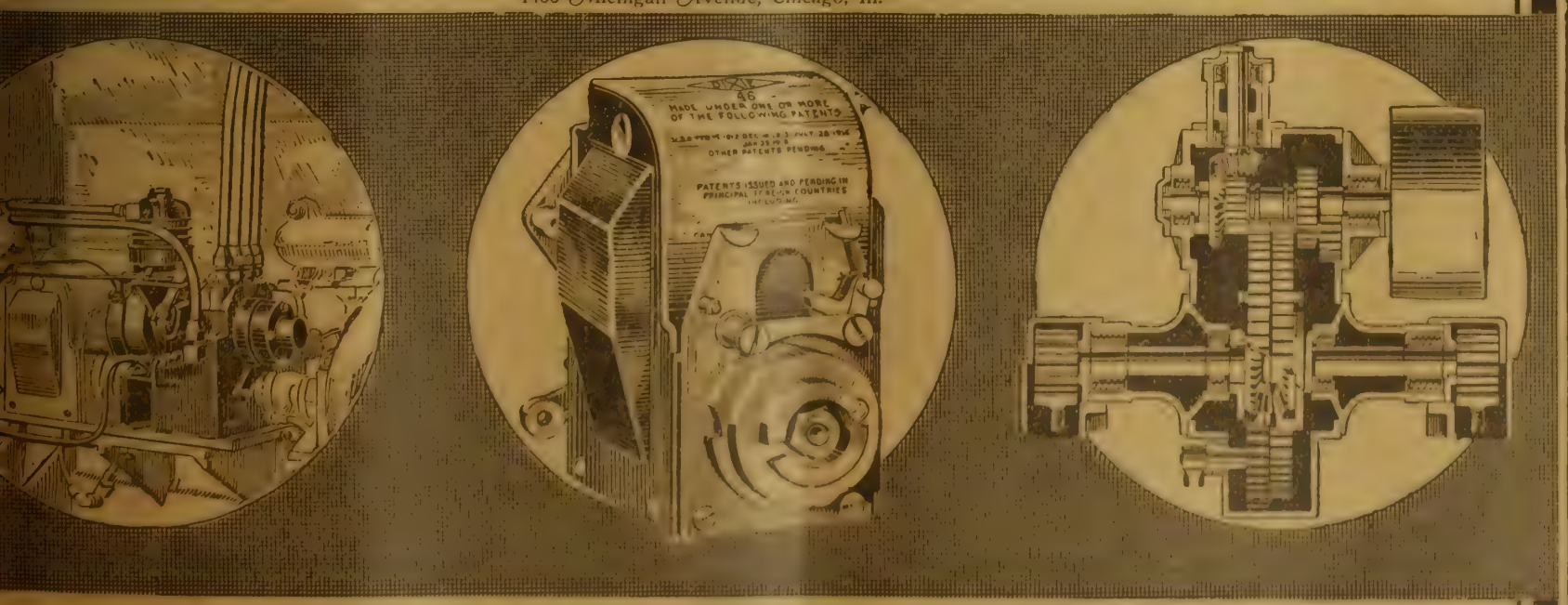
The Lauson Transmission is notable for its small number of gears and its light weight combined with unusual strength. And the strength of the transmission is due to the Nuttall BP Forged Steel Gears. The use of these forged cut and heat-treated gears enables the transmission to be made smaller, lighter and at the same time stronger. This means not only cutting down the weight but saving power and fuel and lengthening gear life.

Nuttall Gears are the result of 30 years' engineering and manufacturing experience. For years, Nuttall has maintained the system of registering each gear so that every Nuttall BP Gear is a *gear with a pedigree.*

Nuttall Tractor Gears are made to stand the tremendous strains and shocks of tractor service. Heat-treatment by the special Nuttall BP process makes them so superior to ordinary untreated cast-steel gears that in other fields of use, where direct comparison can be made, *they are guaranteed to last four times as long.*

Just as registered stock insures more beef on the hoof, more milk in the pail, so do Nuttall Pedigreed Gears insure longer gear life and greater efficiency.

Manufactured by
R. D. NUTTALL COMPANY
111 W. Washington St., Chicago, Ill.



Y, 1039 Monroe Street, New Holstein, Wisconsin

L DAIRY SUPPLY CO., 61 BEALE STREET, SAN FRANCISCO, CAL.

Mechanical Power on the Farm

Users of tractors, engines, pumping plants, motor trucks, automobiles, electric motors, and other mechanical farm power are invited to make this department an exchange of their experiences and troubles.

FINE SEEDBEDS MAKE BIG CROPS.

What finer seedbed could be worked up than the one shown in the accompanying picture! It is doubtful if anyone with less careful preparation will get so good a stand of grain, beans, or other crops, other things being equal. Many a rancher never got his soil into such fine tilth until he got a tractor which could go over it several times if necessary in the short time before clods turned by the plow were dried too hard to pulverize. Disking with horses is heart-breaking work at best; and there must be many stops, for walking alone on



the soft or rough fields is hard work for the animals. With the tractor, enough power can be obtained to pull the disk at its full angle, and loaded if necessary. And in the tractor there is no heart to break by the steady grind with no stops, if proper attention is given at grooming time.

FREE TRACTOR TRAINING COURSE AT CONCORD.

A free tractor training course will be given under the auspices of the State Board of Education at the Mt. Diablo Union High School, Concord, Cal., March 10-29. The first part of the work will deal with the study of the gas engine, with practical work in repairing and assembling engines of the tractor type. The remainder of the course will be devoted to instruction and practice in the handling of tractors, and to actual practice in driving tractors in the field. At least six types of tractors will be used for demonstration. G. A. Chlsson will be the instructor in gas engines, and E. E. La Barr, instructor in use of tractors.

A $2 registration fee is required. Men who desire to take this course should send their names and addresses, and the $2 fee to Bertha Romaine, principal, Mt. Diablo High School.

PAYING FOR GASOLINE — GETTING DISTILLATE.

Do you get it? Do you like it? What's the matter with your engine? Many motorists have been resting in the security of statements made by gasoline dealers that the latter were subject to unheralded inspection and they didn't dare mix distillate with their gasoline. Listen to Charles G. Johnson, State Superintendent of Weights and Measures, in his biennial report, just printed: "Since the inception of this department, there have been constant complaints over the substitution of distillate for gasoline. During the last three months these complaints have been much more numerous, and investigations established the fact that substitution is becoming very common. It appears that the most practical manner of preventing adulteration of gasoline with distillate is to 'color the distillate.' State Chemist E. D. Griffith has developed a color that will remain indefinitely and will show up distinctly in gasoline adulterated with one-eighth of its volume of distillate. The cost of the coloring is one cent per ten gallons."

Straight gasoline sells at 21 cents per gallon, while distillate sells at 12 cents. Says Mr. Johnson further:

"From the complaints I believe the public is being swindled out of hundreds of thousands of dollars annually by this deception. Honest, legitimate dealers are being driven out of business and standards maintained by reputable refiners are being abused. Owners and operators of automobiles are undoubtedly the largest consumers of gasoline. They can least protect themselves against adulteration and are only conscious of the deception after damage has been done to their automobiles" and after they have paid 21 cents per gallon for distillate.

Mr. Johnson intends at this writing to ask for the introduction of a bill in the Legislature that will require the coloring of all distillate so it cannot be sold as gasoline. Other protective features will be included. May it soon become law, for the Weights and Measures Department will enforce it.

BOSCH MAGNETOS 100 PER CENT AMERICAN.

The American Bosch Magneto Corporation has recently succeeded the old Bosch Magneto Co., due to the auction, December 7, 1918, of stock formerly owned by enemy aliens to Americans, so it is now an all-American concern. It has taken over all of the holdings of the old company, including the works at Springfield, Mass., which comprise 250,000 square feet in buildings and employ 1500 operatives. Ever since the alien property custodian seized the property in May, 1918, it had been operated up to capacity for war needs of the Government. The entire output is now to be sold for commercial uses. More than a quarter of a million magnetos were turned out in 1914. Since then 60,000 square feet have been added to the Springfield works, and the Rushmore Dynamo Works have been purchased to increase the production of starting and lighting apparatus. The American Bosch Magneto Corporation owns all the patents and trademarks of the old company, including 150 U. S. patents, numerous U. S. patent applications, and foreign patents. They will probably add new ignition apparatus to their sales stocks. The San Francisco office, in charge of P. Furrer, is soon to move into their new building on Van Ness avenue.



Harvest and Thresh at One Operation

MANY Western farmers are now using **Deering** or **McCormick Harvester-Threshers,** and many more will buy these machines for the coming grain crop.

Modern grain handling means harvesting and threshing in one operation wherever weather conditions permit, turning the threshing expense into clear profit, doing away with the big threshing bill and burden, saving time and long-drawn-out labor.

Deering and **McCormick Harvester-Threshers** are Western necessities. They cut a 9-foot swath, harvest 15 to 18 acres per day, and thresh as clean as any thresher. Require 8, 10, or 12 horses, and one or two men, depending on attachment used. In most cases, an International kerosene tractor can be used to best advantage.

The harvester-thresher has proved that it is designed and built right in every particular—strong and lasting, simple, of light draft. It can be used as a stationary thresher, too, by adding cylinder and beater pulleys, which are supplied at extra cost. A 10-h. p. engine does the work. Capacity 30 to 50 bushels of wheat per hour. Write us for interesting folders on **Deering** or **McCormick Harvester-Threshers** and on any other machines in the list below.

The Full Line of International Harvester Quality Machines

Grain Harvesting Machines
Binders Push Binders
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Threshers

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Disk Harrows
Tractor Harrows
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Orchard Harrows
Soil Pulverizers
Cultivators

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Kerosene Tractors
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Motor Cultivators

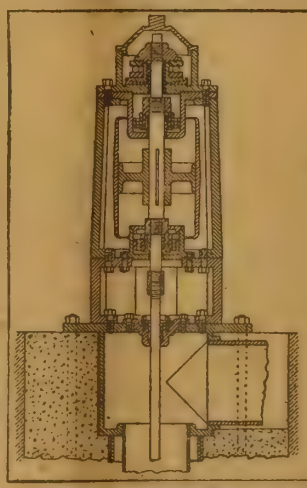
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SAVE AGENTS' PROFITS

When goods are sold through agents or middlemen you can rest assured that the agents' commission and dealer's profit are added to the price received by the manufacturer, and as "the consumer foots the bills," he pays all these profits and commissions.

After twenty-one years experience with agents we have decided that in the future we will sell direct to the consumer at wholesale prices giving the buyer all these profits and commissions.

Therefore, if you want to save money, BUY AT WHOLESALE and at the same time get the

Best Pump On Earth

Write for catalog and price list of the
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FOR IRRIGATION

Prepare for the dry season. Select a Layne & Bowler Pump—used by over 6000 successful ranchers. Pumps of any capacity—180 to 4500 gallons per minute.

Ask for Folder No. 25.

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POWER NOTES.

Fresno tractor and implement dealers plan to hold a demonstration in the three or four days ending on Raisin Day, April 30.

Seven or eight Bates Steel Mule track type machines have recently been sold by the H. V. Carter Co. of San Francisco in their local territory.

F. H. Stow of Berkeley, formerly State distributor for Cleveland tractors, expects to have one of another make in time for the California Tractor and Implement Association demonstration at Sacramento, May 6 to 11.

The Northwestern Tractor and Implement Demonstration is to be held about the first of May in Walla Walla, Wash. G. A. Hildebrand, who has managed several of the big Eastern demonstrations, will be the manager at this one.

An elaboration of the Louden manure carriers, handled by the California Hydraulic Co. of San Francisco, is the overhead carrying equipment for which they are now receiving quite a demand from canneries, abattoirs, packing plants, foundries, etc.

The Willys-Overland automobile people are just returning to a peace basis after having spent the war time making war materials. The production is not very heavy now, though the January and February demand has been strong, according to B. Neustadt of the San Francisco branch. City business has picked up most promptly. Most of the country sales have been for the model 90 at $985 f. o. b. Toledo, Ohio.

DUAL TRUCK-TIRES DISAPPEARING.

Dual tires, solid or pneumatic, are becoming relics so far as motor trucks are concerned. Tests have been made with a dual tire on one rear wheel and a single one on the other. The single tires outwore the others. Dual pneumatic tires are seldom equally inflated, thus putting most of the weight on one anyway. But the serious objection to either these or solid tires is that on crowned roads the load is unequally borne and the tires break down sooner than if a single larger size were used.

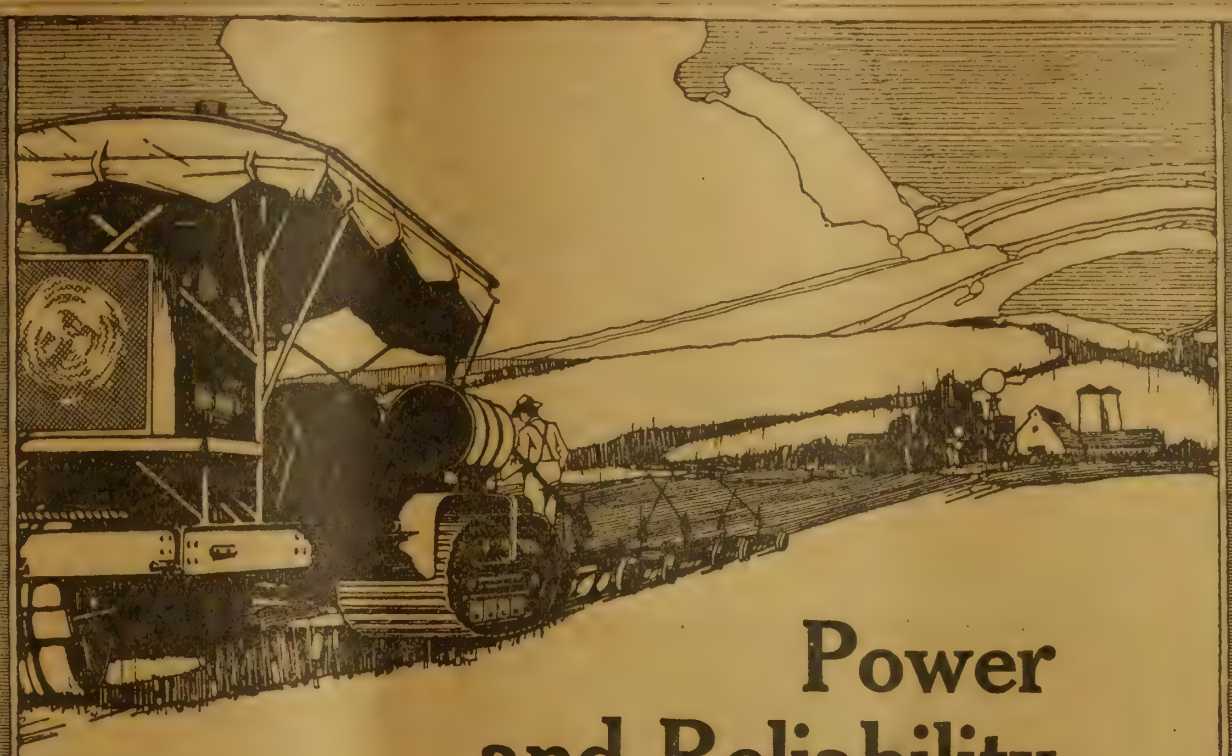
EXPENSIVE LACK OF GREASE.

The owner of a small track type tractor neglected to grease the truck wheel bearing until it had worn entirely through the heavy main casting, and it cost him $70, according to N. C. Jessee of Butte county, who took it apart and replaced the worn parts. It was also found that he had not greased the bull wheel internal gears and they were worn to an edge. That man never paid $2 for repairs except what were his own fault.

OLD STAVE SILO

What is probably one of the oldest silos in the Sacramento Valley is the one made of spruce staves put up by J. H. Guill of Butte county in 1898. This appeared to be very wobbly and distorted four years ago, so it was pulled down and rebuilt. Though it was out of shape and seemed ready to fall, all the bands had to be taken off and a team of mules hitched to pull it over. It was rotted a little at the bottom and a few staves broke in falling. The same staves were used to rebuild the silo, so it seemed desirable to line it with circular and vertical layers of resaw to cover what cracks were found.

A circuit court judge of Pennsylvania was systematically affronted by a lawyer, a political opponent. A friend asked him: "Why don't you squelch the fellow? He needs it." "Well," said the judge, musingly, "up in my home town there's an ugly yaller dog that, whenever there is moonlight, sits on the stoop and howls until the town can't sleep, and generally keeps it up till daylight." He then resumed his dinner. The friend in amazement inquired, "Well, what of it?" "Well," said the judge, slowly, "the moon keeps right on."



Power and Reliability

Power and reliability, coupled with right design, are essential requirements of the successful tractor.

Power sufficient for the heaviest work—the "peak loads" of farming, freighting or road work. Reliability that insures the work being done on time, whenever and wherever the demand comes, and regardless of the conditions. These features the "Caterpillar" Tractor has been showing for many years—providing ample, economical power and giving consistent, reliable service in every kind and condition of work. But most important to consider is the design of the tractor in which these qualities are contained. Holt design—imitated but unequaled—makes the "Caterpillar" Tractor easily the foremost tractor of the world today.

"Caterpillar" Tractor superiority is an established fact—established by the service this tractor has given its thousands of owners—established by the rigid Government tests resulting in extensive purchases of "Caterpillar" Tractors for war service—established by the performance of those tractors in the Great War.

Let us tell you more about the "Caterpillar" Tractor—how it can be put to profitable use for you—how its record in peace and war makes it your logical choice. Send for catalog No. 394.

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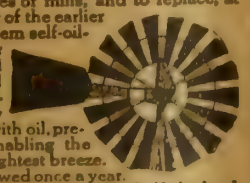
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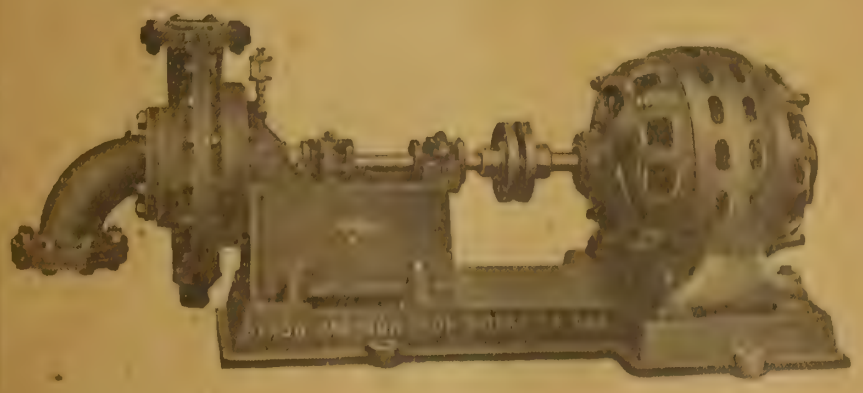


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BYRON JACKSON IRON WORKS, Inc.

LOS ANGELES — SAN FRANCISCO — VISALIA

LIGHTHOUSES THAT GUIDE TO BETTER FARMING.

(Continued from first page)

However, Professors Woll and Castle, of the University Farm, state that Indian corn seems to be the best silage crop to plant on irrigated lands under ordinary conditions, with sweet sorghum a close second; but for dry farming, or where the water supply is limited, the grain sorghums, milo, feterita or sudan grass may be placed first.

But these are not all of the crops that can be used for silage. Cow peas, soy beans, cereal grains, vetch, beet tops, clover, thistles, sunflowers, foxtail and practically all forage crops are used.

A BOON FOR ALFALFA GROWERS.

Alfalfa was not included in the list because it requires special consideration. Ordinarily there is no difficulty in making alfalfa into good hay here in California, where we do not have summer rains, but often the first crop is caught—sometimes the last—and haymaking is impracticable. Furthermore, the first cutting is often so foul with weeds, especially foxtail, that it is out of the question to make hay of it, and even when it is not spoiled by rain, vast areas are burned every spring to get rid of it.

When such a crop is cut before the foxtail beards are stiff, and is promptly siloed, a fair quality of silage is secured that is readily eaten by stock after they become accustomed to it. This weedy alfalfa will not make as good silage as will corn or sorghum, but it is better than that made from alfalfa alone, and when made right it does not have the objectionable flavor of many leguminous silages. It can be improved by the addition of one part black strap molasses to 20 parts alfalfa.

SAVE THE FIRST CUTTING.

Silo-filling time in California is generally thought of as including the months of August, September and October, for it is at this season that the common silage crops ripen. But we are coming out with a silo article early this year because we believe that practically every farmer who has enough stock to consume at least 50 tons of silage during the season will find it profitable to use a silo for his first cutting of alfalfa, and thus convert the almost worthless weed-infected hay into first-class feed.

One dairyman who has used two silos for several years raises nothing but alfalfa, and he says that it pays him to have the silos just for his first cutting of alfalfa. But there is no reason why a silo cannot be made to do double duty and be filled twice a year; in the spring with the first cutting of alfalfa, and in the fall with corn, sorghum or a similar crop, or with the last cutting of alfalfa if it is caught by the rains. In some localities it is possible to harvest a crop of barley and plant a silage crop on the same land in time to have it mature before frost comes. In this way the land, as well as the silo, can be made to do double duty.

USING FOR BEST RESULTS.

Silage makes an excellent feed for dairy cows, beef cattle and sheep, and is also fed to advantage in small quantities to other farm animals. With horses it is necessary to see that the silage is not moldy or decayed, as fatal results may follow the feeding of such silage. Other stock seem less sensitive to moldy feed, but it is better to throw such silage away. Silage is not especially adapted for feeding hogs, but a couple of pounds per head daily of alfalfa silage has been found to make a good feed for sows.

Silage should never be fed as the sole roughage to any class of farm animals, but always with dry roughage, such as alfalfa or grain hay. When fed with alfalfa hay it forms a very well balanced ration, and not only gives much better results than when alfalfa is fed alone, but saves the cost of much high priced grain.

At the University Farm, cows that had been fed on alfalfa alone responded in a striking manner to the addition of silage to the ration, the production of milk being increased from 14.1 pounds to 17.7 pounds per head daily and butterfat from 0.63 to 0.80 pounds daily. In Ohio 17 per cent more milk and 28 per cent more butterfat were obtained from cows fed largely on silage as compared with others fed heavily on grain. Silage produced butterfat at a cost of 13 cents per pound, and the grain ration at 22 cents—this before the present era of high prices. Eight years' feeding tests in Indiana show a profit of $15.24 a head for steers fed on silage as compared with $8.85 for those not fed silage—a difference of $6.39 in favor of silage.

The consensus of opinion of experts on the economy of the silo is that it will increase the producing capacity of a farm from 10 to 25 per cent, and its stock carrying capacity fully 25 per cent. It will save 10 cents on the production of a pound of butter, 40 cents on 100 pounds of milk, and from $1.50 to $2.50 on a hundred pounds of beef.

WHAT SIZE AND MATERIAL?

The height of a silo should be decided by the length of the feeding period, and the diameter by the amount of stock to be fed. Practically all silo catalogs have carefully worked out tables showing the proper sizes for different feeding conditions. They also tell of the merits of the materials used in the construction of their silos. Different kinds used in California are the wooden stave, re-saw, concrete, concrete stave, brick and hollow tile. Different kinds of lumber are used in the various makes of stave silos, and it is a good plan to get the catalogs of different manufacturers and consider the merits of each carefully. You may want to construct your own silo instead of buying one, but whether you buy or build, remember that makeshift buildings do not satisfy or prove profitable in the long run. Provide for permanency, and no matter how much the silo costs you it will prove the cheapest in the end.

But there is one kind of a silo that is no earthly good, and that is the one you dream about. It will never increase the production or the carrying capacity of your farm. It will never add to your profits. It's all right to build air castles, but build the right kind. Make them of substantial materials and put foundations under them. Then they will prove monuments that will pay big dividends. They will pay for themselves in three years—often in two or in one.

Next to a good wife, a silo is the farmer's best asset. It will prove the balance wheel to a sound scheme of farming.

Jersey cows are going strong on test, and the making of records of 700 pounds of fat in a year seems to have become a common custom. Within the past few days seven Jerseys completed their yearly tests with records ranging from 737 to 762 pounds of butterfat, and the frequency of these 700-pound records threatens to cause a change in the gold medal rules of the association to make the 800-pound mark the special aim of breeders and dairymen.

THAT ESTRAY ACT.

To the Editor: I was pleased to read your comments on Senate bill No. 34 and Assembly bill No. 22 and I earnestly hope that the orchardists, truck and grain growers of our State will wake up to defend their endangered rights.

The present estray law is bad enough in that it gives very little protection to orchards against stray animals, but Senate bill No. 34 is a winner when it comes to brazen disregard for justice and fair play.

It is rather strange that our strong organizations of fruit growers do not make any move to protect the interests of their members in the Legislature.

Any fair-minded person must concede that, in return for the taxes which the fruit grower pays, the State laws ought to protect his unfenced orchard against the depredations of stray animals.

Senate bill No. 34 is about as unreasonable as if somebody tried to pass a law which would require sheepmen to build dog-proof fences in order to claim damages done by stray dogs.—John Silbersack, Hamilton City.

The first carload of broom corn was shipped from Holtville to Los Angeles last week. It was of fine quality and is a forerunner creasing future shipments. interest is being taken by th ers in that vicinity in the dustry.



"My Cyclone Silo has stood like a rock"!



The Cyclone Silo is built to withstand all kinds of climatic conditions—wet or dry—hot or cold—it cannot twist or get out of shape. Hundreds of them are standing straight and round after years of service. Cyclone patented hoops are flat and specially notched on each edge so that the heavy staples go over the hoops into the wood, fitting into these notches and holding each stave in place regardless of shrinkage or expansion. **Hoops need no tightening.**

Cyclone Silo has **trussed steel bracing** which makes it the strongest silo made. These steel brace rods are fastened to the top of the silo and imbedded in the concrete foundation. They are also securely fastened to the staves in the same manner as the hoops, thus it cannot lean or twist.

"CYCLONE" Will Last a Lifetime

Whether you are a dairyman or feeder, it will pay you to put up the most permanent silo. It will increase your profits immediately and double yor profits evenually.

SILO FEED BOOK—FREE

Henry North's Silo Feed Book contains 50 pages of the latest and most scientific information on silos and feeding. Free while they last. Also send for early buyers' discount.

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Am interested in a ..... ton silo which will be strong and permanent. Please send me, without obligation, Henry North's Silo Feed Book; also early buyer's discount.

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RANGE PROJECT FOR DAIRY STOCK.

The farm bureau of Shasta county is considering a project, started by a number of dairymen, to rent between 30,000 and 60,000 acres of mountain range on which to keep young heifers up to the time they first come fresh. If suitable ranges can be found it is believed that from 5000 to 6000 head can be signed up on the west side of the county, and a similar number on the east side. Each man would share the expense of renting the range, hiring necessary help and other items, in proportion to the number of head signed up.

The results which could be accomplished by such a plan are numerous, chief among them being:

1. The placing of young stock on the range would permit the carrying of more milk stock on the farms.

2. By joining together and renting a large range the dairymen would obtain a cheaper rate than if each acted independently.

3. It would permit the bringing up of young stock on the mixed grasses of the range, which is considered more desirable for growing stock than the exclusive alfalfa ration received on the average farm.

4. It would tend to make the dairymen leave their stock on the range until they were 20 months or more old, instead of breeding them at an earlier age, as is too often the case when they are kept on the farm.

5. Being organized, it would be possible for this group of dairymen, or a part of the group, to buy cooperatively better bulls than they would be able to buy individually.

Seems like a dandy plan. We shall be anxious to know how it works out.

NATIONAL MILK AND DAIRY FARM EXPOSITION.

Nearly $100,000 is being put into the National Milk and Dairy Farm Exposition to convince the public of the food value of milk; also that milk costs are reasonable, and that a big industry is involved.

The exposition, which will be held in New York during the week beginning April 21, will be a big "store window," in which all forms of milk foods, milk products, processes of milking, handling, machinery and equipment, and everything relating to the dairy farm and its allied interests will be exhibited.

The exposition will prove valuable to the farmer, as well as the layman, as the exhibitions will be largely educational and will aim to teach greater efficiency.

EVER MAKE JACK CHEESE?

The production of Jack cheese on farms is practicable because it requires a comparatively small investment for equipment. When properly made, it is a good substitute for imported grating cheese. A good grade of milk is necessary, but any dairyman taking proper precautions can insure a milk supply suitable for this purpose.

So much interest has been manifested in this variety of cheese, which is distinctively a California product, that the College of Agriculture has issued a circular giving in detail the processes of making it. Anyone interested can secure a copy by writing to the College of Agriculture, University of California, Berkeley, asking for Circular Number 206.

NO IMITATION MILK FOR US.

The present dairy laws were framed when substitutions were unthought of, and it is the opinion of the State Dairy Bureau, health officials, dairymen's associations, creamery officials and all handlers of milk products, that the laws must be amended to control imitation milks and protect California's dairy industry, according to A. R. Bates, chairman of the State Dairy Bureau.

Young children are fed large quantities of milk, and the existence of a filled milk would prove a menace to their life and growth, as milk fat is absolutely necessary for their proper development. It would be a national calamity if imitation cocoanut or other vegetable oil milks, containing no milk fats, were unregulated, and Senate bill 204 and its companion, Assembly bill 534, introduced in the present session of our State Legislature, will regulate and restrict imitations of milk and properly protect the public from the menace which the elimination of milk fat from the diet would prove.

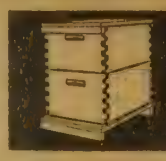
These bills should have the support of everyone who believes in pure food, and in selling products for exactly what they are. Get after your senator and assemblyman and see that they support them.



KIMBLE RAMBOUILLETS

These sheep are purebred, large and smooth, with heavy fleece of fine, long, staple, white wool. Yearling rams and ewes. Individuals or carload lots.
Prices reasonable. Correspondence solicited.

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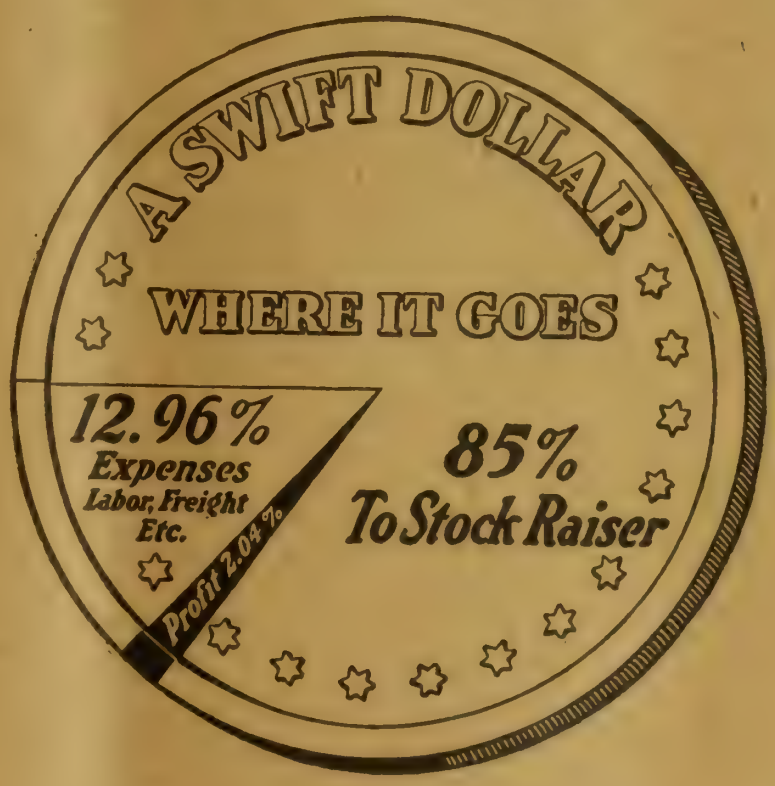
Bee-keepers can obtain from the Apiary Department of the Diamond Match Co. the finest quality of Bee-Keepers' Supplies at fair prices.

The Apiary Department, which is in charge of experienced Bee-Keepers, is one of the largest of its kind in the United States and maintains a constant excellence of product and unsurpassed service.

Write for catalogue and if a beginner for Cottage Bee-Keeping, which will be promptly mailed free.

THE DIAMOND MATCH CO.
APIARY DEPARTMENT
CHICO, CALIFORNIA, U. S. A.

The Swift Dollar for 1918



The above diagram shows the distribution of the average Swift dollar received from sales of beef, pork and mutton, and their by-products, during 1918.

1919 Year Book of interesting and instructive facts sent on request.
Address Swift & Company
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FINEST HERD OF
AT PUBLI

Taking Breeding, Records, Individuality and Size o

LODGE VON HEIM HE

St. Patrick's Day, Monday

SIXTY-FIVE HEAD O

The Entire Herd All Must Go

Mr. Von Herberg has spared neither time or expense in making his selections, and the most prominent families of the breed are very pronounced throughout all of the pedigrees. These animals are backed by many of the finest records ever made and have proven their ability to make as good, or even better records than their dams.

These records have mostly been made at Lodge Von Heim. Out of a milking herd of only 30 cows (and over half of these but two and three-year-olds), eight 30-lb. records have been made. How many herds in the world have equaled this?

How many herds in the world of like size hold three world's records?

How many herds in the world of like size have a 3-year-old with nearly 35 lbs. in 7 days and nearly 140 lbs in 30 days?

How many herds in the world of like size have two 3-year-olds with records above 33 lbs. each?

Howmany herds in the world of like size have a 2-year-old with a record of nearly 33 lbs.?

How many herds in the world of like size have two 2-year-olds each having a record above 31 lbs.?

How many herds in the world of like size have a 2-year-old with a record of 26 lbs. of butter in 7 days, and nearly 900 lbs. butter in 365 days, made from 22,000 lbs. of milk, and then as a junior 3-year-old came back and made over 32 lbs. of butter in 7 days?

How many herds in the world of like size have a range of records all as junior 2-year-olds from 18 lbs. as the lowest to 32 lbs. as the highest?

This high quality herd at Lodge Von Heim has accomplished all of this. Only the highest records have been mentioned. ALL of the other records are high—26 and 27-lb. 3-year-olds, 18 and 20-lb. 2-year-olds. Let us not forget the WORLD'S RECORD daughter of the Sr. Herd Sire. As a junior 2-year-old she made over 29 lbs. of butter in 7 days; over 117 lbs. in 30 days.

WRITE FO

GEO. A. GUE, Auctioneer and Sales Manager, Yakima, Wash.

S. T. WOOD, Master of Pedigrees

'ATTLE IN WORLD AUCTION

'd Into Consideration, I Make the Above Assertion

AT KENT, WASHINGTON

arch 17, St. Patrick's Day

EGISTERED HOLSTEINS

Breeding, Records, Individuality

DO YOU WANT A YOUNG HERD SIRE that is out of some of these splendid record cows and sired by the Junior Herd Sire, Finderne Mutual Fayne Valdessa? Or perhaps you may be interested in this bull himself? He is a wonderful animal, a splendid individual, nicely marked, with breeding that will rank among the World's Greatest and backed up ALL AROUND by wonderful records. His sire is the famous King Valdessa, who is a son of the first 40-lb. cow, sired by a son of the first 44-lb. cow, and she a daughter of the King of The Pontiacs. The dam of Finderne Mutual Fayne Valdessa is a world record 2-year-old, standing in a class all by herself, unapproached by any other cow of like age. As a junior 2-year-old she gave over 1200 lbs. butter in 365 days, showing an average per cent of 4.32 fat. She carried a calf a large part of her lactation period, and freshened again as a 3-year-old, and made 37 lbs. of butter in 7 days. This bull is only 2 years of age; he has a large number of sons and daughters to his credit, and over 50 head of females in calf to him. Among these are some of the highest record cows of Washington and Canada. His future is assured. He is bound to become a great sire.

THE SENIOR HERD SIRE, COLANTHA SIR HARTOG, sired by Aaggie Cornucopia Johanna Lad, Jr., his dam one of the best daughters of Colantha Johanna Lad; surely it is not necessary for me to say more, only this: Like his sire, he is a wonderful show animal. Like the great records that are also back of him, he in turn is transmitting to his daughters the same wonderful ability to produce. One daughter as a junior 2-year-old, has made over 29 lbs. of butter in 7 days, over 117 lbs. in 30 days, and a World's Record when made. His daughters are the finest lot of heifers ever seen in any herd, many of them out of 30-lb. cows and all out of high record cows. The yearlings and 2-year-olds are in calf to Finderne Mutual Fayne Valdessa.

WHY GO EAST TO BUY DAUGHTERS OF 30-LB. COWS, WHEN YOU CAN BUY THE 30-LB. COWS THEMSELVES IN THE WEST? Also SONS AND DAUGHTERS of these high record animals that are crossed and double crossed by the WORLD'S GREATEST breeding.

REMEMBER LODGE VON HEIM ON ST. PATRICK'S DAY. This herd is clean from all disease and a 60-day retest privilege will be given.

KENT, WASHINGTON, is located midway between Seattle and Tacoma.

TALOGUE

VON HERBERG, Owner, Kent, Wash.

Scours the Bane of Calf Raising

[Written for Pacific Rural Press.]

The most common ailment of calves is scours, and as a calf will seldom develop into a good mature animal after being thus handicapped, every precaution should be taken to prevent calves from having scours.

There are two forms of this disease: one infectious, being known as white scours or calf cholera; the other not infectious, but due to digestive disturbances brought on by improper feeding or care. It is known as common scours or indigestion.

WHITE SCOURS.

If a calf begins to scour in a very few days after birth and the discharge is a foul, whitish matter, you probably have a case of white scours on your hands, and it will require prompt action and thorough sanitation to save the calf. In most cases the calf becomes very weak, wants to sleep most of the time, and cannot be induced to suck or drink. Generally death occurs within three or four days.

Infection of calves usually occurs soon after birth, and the germs gain entrance to the body through the naval cord, or the wilk, or by contact with calves already sick.

Until recently there has been no specific method of curing the disease, but manufacturers of biological products are now selling a potent serum which they claim will effectually prevent it, and will act as a cure in about 90 per cent of all outbreaks.



This is the age at which the germs of scours are most likely to get in their deadly work.

Preventative measures, other than the serum treatment, consist in the use of sanitary precautions. Clean, dry, disinfected, individual pens should be used for calving. Each calf should be kept by itself for ten days, and should receive milk from only one cow, known to be healthy. The navel should be carefully disinfected at birth, either by painting it with iodine, or immersing it in a 1-1000 solution of bichloride of mercury for ten minutes and then drying it by dusting it with healing powder. All of the sanitary precautions and methods of feeding and treating which will be suggested for common scours should be carried out.

COMMON SCOURS.

The other form of scours can generally be traced to faulty methods in feeding the young calf, chief among them being: overfeeding, irregular feeding, sudden changes in feeding, cold milk, sour milk, alfalfa or other highly nitrogenous hay, dirty milk, dirty pails, fermented grain. Also, sudden changes in temperature, exposure to rain, or wet, filthy stalls may bring it on.

The first sign of scours is usually the characteristic foul-smelling discharge. At once the milk should be reduced one-half or more, and very gradually increased again as the calf improves.

As a remedy it will be hard to find anything that will equal blood meal—sometimes called blood flour, or dried blood. This can be procured from feed dealers or from any of the packing houses. Use from a heaping teaspoonful to a tablespoonful three times a day in the milk, and stir well. Blood meal not only acts as a tonic and corrective, but is highly nourishing, and is constantly used for calves by many dairymen on account of its feeding value as well as being a preventative for scours.

Another remedy which has been used with success is formalin. Add fifteen ounces of distilled water to one-half ounce of formalin, and add one teaspoonful of this mixture to each pound or pint of milk fed. Treatment should be begun at the time the feed is reduced, and continued at each feed until the calf improves. It should be added to the skim-milk immediately after separation, and the milk should be fed as near body temperature as possible.

Burned flour, fed in the same proportion as blood meal; two raw eggs, black coffee, and a spoonful of a mixture of one ounce bicarbonate of soda, one-half ounce salol, and one-half ounce subnitrate of bismuth have been used with good results. If a painful, watery diarrhoea has developed, it may be well to give one teaspoonful of laudanum two or three times a day.

Some authorities recommend that a laxative of one to two ounces of castor oil be given in a small amount of warm milk before any of these remedies are used, in order to clean the bowels of all irritating substances.

THE OLD "OUNCE OF PREVENTION."

These simple remedies will usually cure cases of common scours, but naturally the digestive system of a young calf is weak and easily upset, and the safest policy is prevention by careful attention.

The following precautions will tend to prevent scours: Feed regularly; keep the quantity uniform; always have the milk sweet, clean and at the same temperature; use only clean pails; don't make sudden changes in feeding; feed the calf a little less than it wants; keep it in a clean, dry, protected stall.

Livestock in California

The Bureau of Crop Estimates has just issued a report showing the livestock on farms, January 1, 1919, as compared with other years. We give below the comparisons with 1916. They include stock of all ages.

	Number		Total Value		Value Per Head	
	1919	1916	1919	1916	1919	1916
Horses	435,000	493,000	$39,585,000	$47,328,000	$ 91.00	$ 96.00
Mules	63,000	70,000	7,875,000	7,700,000	125.00	110.00
Dairy Cattle	561,000	568,000	44,319,000	39,192,000	79.00	69.00
Other Cattle	1,650,000	1,558,000	79,530,000	56,555,000	48.20	36.30
Sheep	2,943,000	2,450,000	35,316,000	12,250,000	12.00	5.10
Hogs	1,003,000	947,000	18,054,000	7,955,000	18.00	8.40

ESTIMATED FARM VALUES, JANUARY 15, 1919.

Hogs, per cwt.	$15.40	Sheep, per cwt.	$10.90
Beef Cattle, cwt.	10.00	Lambs, per cwt.	12.50
Veal Calves, cwt.	10.50	Wool, unwashed, lb.	.44
Milk Cows, each	$ 86.00		
Horses, each	113.00		



A Little Thing to Buy; a Big Thing to Have in the Cow Barn.

No dairy is complete without being insured against diseases of the udder and teats—the producing end of the business.

Bag Balm, the great healing ointment, is constantly finding its way into the best-regulated dairies because it is so simple to use and so promptly effective in treating all external hurts, sore teats, bunches, chaps, cuts and any disease of the udder.

Its great penetrating qualities make the treatment of Caked Bag simple. The diseased tissues are quickly restored to a normal, healthy condition. Bag Balm is a great all-round first aid in keeping udder and teats in perfect condition.

Sold by druggists and feed dealers in liberal 60c packages.

Dairy Association Co., Lyndonville, Vt.

MANUFACTURERS OF KOW-KURE AND

BAG BALM

MADE BY THE KOW-KURE PEOPLE

Breeding Will Tell

KING KORNDYKE PONTIAC 20TH as a calf looked like the real bull to head our herd, adding to his great individuality the backing of a pedigree with an unbroken line of great producing dams and type of the highest character. The price of $6,500 which we paid for him was really a minor consideration. Now that his calves are coming on we know that we made a fortunate choice, for they are certainly beauties. His oldest son in our herd was sold at 40 days of age to become the future head of a newly established Stanislaus county herd.



And the last six calves by King have all been heifers, mostly white in color, beautiful individuals, and every one of them has large, well-placed teats, just what we expect from the great uddered cows in his ancestry.

Better get in touch with us for one of his young sons for YOUR herd. We already have requests for reservations of unborn calves if they are bulls.

Satisfaction of the buyer is our first consideratio[n] and our prices are reas[onable].

Our Entire Herd is Tub[erculin] Tested

Tulare Holstein Farm

W. J. Higdon, Owner, TULARE, CAL. H. L. Redd, Herdsman

Dispersal Dairy Auction Sale

on the old Steve Vivian ranch, 5½ miles south of Modesto on the Crows Landing road, on

Tuesday, March 18, 1919, at 10 A. M. Sharp

Having sold my ranch we will on the above date sell our entire dairy, as follows:

120---HEAD OF CATTLE---120

Consisting of 64 Holstein cows, 8 Durham cows, 32 bred heifers, some springing, all Holsteins; 14 small heifers and Holstein calves; 2 Holstein bulls, one 3 years old and the other 18 months old.

These cows are one of the best producing herds in the Turlock irrigation district. Sutter & Schelbert are practical dairymen and have culled out all cows but the ones that pay. The cows are young.

Be on time, as the sale will start promptly at 10 o'clock. Terms of sale, cash. Free lunch. Bring your own tin cups.

SUTTER & SCHELBERT, Owners

COL. CY N. C[L]ARK, Auctioneer C. N. CLARK, Jr., Clerk

Office Home Realty Co., 915 I St., Modesto.

LATEST ITEMS ON GUARANTY SALE.

The auctioneers for the Holstein Breeders' Guaranty Sale, to be held at the State Fair grounds, Sacramento, on Thursday, March 27, will be Col. Ben A. Rhoades, Los Angeles, and Col. Harry C. Cranke, Nezperce, Idaho.

Several choice females in the sale are bred to Matador Segis Walker, senior herd sire at Carnation Stock Farms, Seattle. A senior three-year-old daughter of this great sire recently made over 40 pounds butter in 7 days and another three-year-old now on test has 29.60 pounds in 7 days to her credit.

An addition to the list of 30-pound cows was made at Rosamaines Rancho, A. J. Stalder, Riverside. She is by a grandson of King Segis, only five years old, and a splendid individual.

The latest 30-pound cow is a beautiful daughter of King Hengerveld. She is now on test in the A. W. Morris & Sons herd at Woodland and has over 30 pounds butter in 7 days from close to 600 pounds milk as a senior four-year-old.

Adirondac Wietske Dairy Maid, who made 41.01 pounds butter from 831.7 pounds milk in 7 days, now has to her credit over 158 pounds butter from over 3500 pounds milk in 30 days, the greatest combined milk and butter record ever made in 30 days by a cow in the United States. Her son is in the sale.

Some very choice heifers are out of daughters of Sir Skylark Ormsby Hengerveld, who now has five daughters from 30 to 34 pounds butter in 7 days. His fifth daughter to go above 30 pounds is Verona Hengerveld of Glen Eva, who made 32.64 pounds butter in 7 days in the herd of E. E. Freeman, Modesto. This cow also has above 130 pounds butter in 30 days at the present time.

Several of the good ones, including a 30-pound cow, are bred to King Pontiac Netherland Segis 3d, herd sire at Rosamaines Rancho, owned by A. J. Stalder, Riverside. The first three daughters of this bull recently freshened and have made official records. A senior yearling made 17.07 pounds butter from 335 pounds milk in 7 days, and two junior two-year-olds have made 20.41 pounds butter from 404 pounds milk and 20.52 pounds butter from 425 pounds milk in 7 days respectively. A sister to this bull, by the same sire, recently made over 30 pounds butter in 7 days.

DOG LICENSE BILL NEEDS HELP.

[By Our Special Sacramento Correspondent.]

Cattlemen as well as sheepmen ought to get behind the dog license bill, according to Senator B. F. Rush, who introduced it. Every cattleman or dairyman has seen instances among his own cattle where cows have left their calves to chase dogs. In several such instances in Senator Rush's own herds, the calves have meanwhile fallen into ditches and become so covered with mud that their cows would not own them.

Senator Rush is receiving some of the most vilifying letters from owners of dogs who place the value of their pets' liberty above the value of other people's livestock. People of the cities are going to put up a bitter fight for the liberty of their dogs. Similar bills have been killed in other sessions as mercilessly as dogs kill sheep, and the present bill will go the same way unless farmers and stockmen support it more vigorously than heretofore. Give Senator Rush your support in the fight that is before him. You will have to write at once or you may be too late. Letters cost less than dogs.

Ireland Ranch, Owensmouth, has just received a consignment of Durocs purchased in the sales ring of Ohio. It includes a spring boar, tracing back to Joe Orion 2nd, and Orion Cherry King on his dam's side. They plan to breed this boar to their gilts sired by Cherry Volunteer 2nd, grand champion at Riverside, 1918. In the shipment also were two daughters of Pal's Perfection, bred to Joe Orion Cherry King 4th for March litters. From these litters Ireland Ranch expects to select its futurity herds for the shows next fall.

"Would you step on a cockroach—or would you refrain from staining the floor?"—*Roosevelt*

THE "ethics" of business call for courtesy between competitors—and the "ethics" of advertising also demand "truth in advertising." After observing the former, we find it absolutely necessary to "step on" some of the false claims and untrue propaganda of several separator manufacturers in an attempt to preserve a semblance of "truth" in their advertising.

We owe it to the dairy people of this country to present the real facts regarding cream separators. Propaganda based on the falsest of claims has been spread in an attempt to mislead American farmers. In presenting these facts, we stand ready to prove every assertion; they are based on actual records of dairy history.

Official records show that the first cream separator was invented by the French, and that patent No. 105,716 was granted to the company of Fives-Lille, of France, November 19, 1874, for a "system of continuous centrifugal separation." A little later the Danes developed the cream separator and were the first to introduce cream separators into America. Four years later, in 1878, a Swedish concern took advantage of the French invention and built a cream separator.

Looking for American business, this concern contracted with Mr. P. M. Sharples, an inventive genius of West Chester, Pa., to manufacture, install, and repair their machines in America. The first machines were decidedly impractical and unfitted for efficient use in American dairies and creameries.

Mr. Sharples attempted for a few years to make of this foreign machine a satisfactory separator, and during this time invented all the great improvements that have since been used by this type of machine. Among his invented improvements were the discs in the bowl, the splash oiling system, the detached spindle, the lowering of the supply can, and the concave bottom bowl, which permitted a *part* of the weight of the bowl to be suspended below the bearing. The complication of the machine, however, soon caused him to give up this manufacturing contract entirely, and, with true American ingenuity, he built a real American separator, adapted to American dairy needs and entirely different in that it was a most simple and efficient machine.

The Sharples factories are the oldest and largest separator factories in America. They have always been entirely American-owned. During the thirty-eight years of its existence, The Sharples Separator Company has manufactured more separators than any other factory in America, and the output of the Sharples factory today exceeds that of any other separator factory in the world. More Sharples machines are being sold than any other, and a much larger percentage of those sold are today in actual use.

Every American dairyman should know these facts, and has the right to, and should, on buying a machine, ask the following questions of any separator manufacturer:

"*Will your separator skim clean and deliver a cream of even density at any speed at which it may be turned? Is the bowl free from troublesome discs or blades? Has the separator an entirely automatic oiling system and do you guarantee your separator for durability to the extent that you guarantee a repair expense not to exceed $2.00 per year?*

"*Is your separator built in American factories, by American manufacturers, by American labor, of American material, and entirely owned by Americans? Is it truly an American separator, encumbered by no suspicion of taint of Hun propaganda?*

It is due to Mr. Sharples' untiring efforts during the thirty-eight years of his separator manufacturing experience—not to any foreign makers or inventors—that the American farmer owes the modern efficient cream separator. The Sharples Suction-feed Separator is the perfected machine; all other separators are today where Sharples left off years ago—old style, bucket bowl, fixed feed machines.

We say, without fear of contradiction, that the modern Sharples Suction-feed Separator

—is the *only* separator in the world that skims clean and delivers a cream of even density at widely varying speeds;

—is the *only* separator in the world with a controlled varying capacity;

—is the *only* separator in the world with a knee-low supply can, easy to fill;

—is the *only* separator in the world with a perfect automatic splash oiling system, not a single oil cup;

—is the *only* separator in the world with a hollow tubular bowl—no discs to wash.

Write today for the complete Sharples catalog on cream separators. Address Dept. 31.

The Sharples Separator Co., West Chester, Pa.

BRANCHES: CHICAGO SAN FRANCISCO TORONTO

"Over 2,425,000 Sharples Separators in daily use."

TC-3

STOP LOSING CALVES

You can **Stamp Abortion Out** OF YOUR HERD and **Keep It Out**

By the use of DR. DAVID ROBERTS' **"ANTI-ABORTION"**



Small Expense. Easily Applied. Sure Results. Used successfully for 30 years. Consult Dr. David Roberts about all animal ailments. Information free. Send for FREE copy of "The Cattle Specialist" with full information on Abortion in Cows.

DR. DAVID ROBERTS VETERINARY CO.
642 Grand Ave., Waukesha, Wis.

FARM EQUIPMENT.

Every up-to-date farm has its clipping machine for horses and dairy cows. Horses work better when relieved of winter coats—cows give cleaner milk when flanks and udders are clipped. Agricultural schools and Government farms are using clipping machines. You should should have one. Get a Stewart Ball Bearing Clipping Machine No. 1, $9.75. Send $3.00—pay balance on arrival. Or write for 1919 catalog.

CHICAGO FLEXIBLE SHAFT COMPANY,
Dept. A 103, 12th St. & Central Ave., Chicago, Ill.

We have issued a convenient little book for the keeping of breeding dates of cattle, hoping to aid the breeder and cattle owner in maintaining accurate records. We will gladly mail you a copy free if you request it

BREEDING DATE BOOK — HERE —

California Breeders Sales & Pedigree Co.,
C. L. Hughes, Sales Manager,
SACRAMENTO, CAL.



Calf Profits

Are you getting them? Calf profits mean more to you now than ever before.

Blatchford's Calf Meal

Write for New Data See actual figures showing you how to increase your calf profits

COULSON CO. - - - Petaluma, Cal.

REGISTERED HOLSTEINS

Creamerup Herd offers service bulls and bull calves of 34 lb. breeding. Females offered for foundation stock. Tuberculin tested.

M. M. Holdridge, San Jose, Cal.
R. D. "A," Box 437.
Two miles out North First Street.

GREAT HOLSTEIN SALE



ADIRONDAC WIETSKE DAIRY MAID; WEIGHT 1900 LBS.
Dam of King Abbekerk Johanna Segis.
Her record: Butter, 7 days, 41.01 lbs.
Milk, 7 days, 831. lbs.
Butter, 30 days, 158.3 lbs.
Milk, 30 days, 3584. lbs.

Her 7-day record is a Pacific Coast Record, and third highest in the world for combined milk and butter.

Her 30-day record is a Pacific Coast record for butter and a United States record for combined milk and butter.

Our consignment to Guaranty Sale, Sacramento, March 27, 1919, consists of

THE HIGHEST RECORD BULL EVER SOLD ON THE PACIFIC COAST

THE HIGHEST RECORD COW EVER SOLD IN PUBLIC SALE ON PACIFIC COAST

No. 1. **BOWEDA.** Butter, 7 days, 37.61 lbs. from 538.2 lbs. milk. Due to freshen April 13, 1919; to service of King Segis Alcartra Prilly, a candidate for a 40-lb. record. In great shape to put on test.

No. 2. **KING ABBEKERK JOHANNA SEGIS:** Bull, born January 11, 1918; dam, Adirondac Wietske Dairy Maid. Sire, King Segis Alcartra Abbekerk, a 30-lb. son of King Segis Pontiac Alcartra, the $50,000.00 bull.

No. 3. **SARAH TOPSY DE KOL, No. 215769:** Record, 32.4 lbs. butter from 701.1 lbs. milk in 7 days.

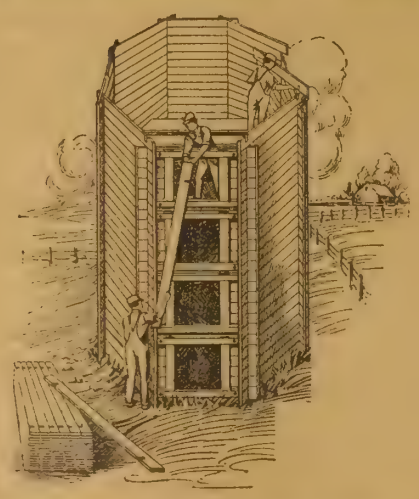
No. 4. **JESSE FOBES BURKE, No. 167097.** Record, 31.66 lbs. butter from 615.6 lbs. milk, 7 days. Due to freshen June 22d; to service of King Segis Alcartra Prilly

No. 5. **BELLE FASKIE HENGERVELD DE KOL 2d, No. 231930:** Record, 23.81 lbs. butter in 7 days from 623.4 lbs. milk; capable of much better record; Grand Champion California State Fair 1918; dam of 24.86-lb. junior two-year-old now on test.

BRIDGFORD COMPANY

KNIGHTSEN - - CALIFORNIA

STOCKMEN! ATTENTION!



HERE'S SILO SATISFACTION!

Here's just the silo you've been watching for—one that meets every requirement of a good silo; lasts for years when erected; and costs less than any other good silo on the market. It's the **MONRO PERFECT SILO.**

Ends all your silo troubles.
Stays round.
Stays absolutely tight—wet or dry—without watching or care.
Easier to build than any other
Absolutely smooth inside.
No hoops or bolts to need adjusting or to rust away.
No upkeep cost.
Easily taken apart and removed.
Quickly and cheaply enlarged or reduced.

THE LEWIS COMPANY

Department "C"

FIRST NATIONAL BANK, SAN JOSE, CALIF.

Live dealers wanted in open territory.

Wool Profits

Don't lose part of your wool money by shearing the old fashioned way. Shear with a machine. The extra wool secured from your sheep soon pays the cost of one. You secure better wool more easily and quickly and benefit your flock. Get a Stewart No. 9 Ball Bearing Shearing Machine. Price $14. Send us $2—balance on arrival. Write for catalog.

CHICAGO FLEXIBLE SHAFT COMPANY,
Dept. B 103, 12th St. & Central Ave., Chicago, Ill.



AUCTIONS

Sell your stock or implements at public auction. I can get big prices for you. Have cried successful sales in all parts of the State. Customers always satisfied. Write for terms and dates.

ORD L. LEACHMAN,
1004 Fifth St., Sacramento

Cantaloupe land in the Turlock district is reported to be renting at $50 per acre. Growers anticipate a season of good sales.

Co-operation or Domination for Dairymen

[Written for Pacific Rural Press by R. H. Whitten.]

A sensational charge was flung into the State Senate recently by Senator William E. Brown, who charged that J. M. Henderson, banker of Sacramento and associated with the J. Ogden Armour interests in the land developments of Sutter county, is collecting $5 a cow from 500,000 cows owned by members of the Milk Producers' Association, and plans to build up a monopoly with the $2,500,000 thus available, to control milk products in conjunction with the Chicago meat magnate. Brown's charges are backed by A. R. Bates, chairman of the State Dairy Bureau, who has fired a number of questions at Henderson as to who is to benefit from the so-called "Producers' Association"—the dairymen or the banks.

"We are faced with one of the most damnable conspiracies ever attempted in America," says Brown in the San Francisco Bulletin. "What do they intend to do with this money? They will build plants for cheese making, creameries and other factories; then the thing will fail and a partner of J. Ogden Armour will buy it up at 25 cents on the dollar. The State will be strewn with a bunch of commercial wrecks and the consumer will be faced by the same sort of combine as the meat trust."

Sounds bad. We hope it is not true. When the movement was launched we looked upon it with favor, because we believed in co-operation and it was represented to us that the association would operate strictly along co-operative lines. We were told that in establishing plants an endeavor would be made to buy those already in operation, and at most liberal prices. And it was explained that by reducing the cost of operating the plants and making other savings, the dairymen would get higher prices for their milk and butterfat.

But how has the plan worked out? We have heard with deep regret of professional organizers and solicitors who have gone into new fields and have endeavored to secure members by any hook or crook. It is said that they made many misrepresentations and used underhanded means to secure signatures.

We have heard of cases where high-class modern plants were offered to the association at cost, but the offers were ignored. It is said that plants which were offered at a sacrifice were purchased, and an effort was then made to take all of the business away from the first mentioned plants.

We have heard of a few cases where the price announced as paid for butterfat was very satisfactory, but "operating expenses" brought it down below that paid by independent creameries. We believe that so far the only dairymen who have been financially benefited are the ones who sell whole milk in the cities, and that those selling butterfat to the association's creameries have not received as much as dairymen selling to independent concerns.

What then has really been accomplished that is of benefit to the members? Haven't the older association plants been in operation long enough to increase the dairymen's profits if they are ever going to do it? What does the future have in store for those who have planked down $5 per cow to pay for the privilege of joining the association?

Frankly, our faith in co-operation remains unshaken, but our confidence in the success of the movement begins to wobble. That is, while the present methods are employed. They seem to us more along the lines of coercion, domination and absorption than of true co-operation, and we believe that some radical changes must be made before success will crown the venture.

As one authority writes us: "Co-operation germinates and grows from necessity, beginning at the bottom and growing upward in a degree depending upon the management. Competent management brings successful results; this inspires confidence; this in turn stimulates growth. The association apparently began at the top and came down upon the dairymen with questionable methods, followed by bad management through lack of experience. What will become of the association when the present contracts with the dairymen expire in a year or two is a matter too full of doubt for expression, unless radical changes are quickly made."

Perhaps changes in policy and methods will make the association a power for good. We hope so. We wrote to several of the managers of independent co-operative and privately owned creameries and were surprised to find that not one wished to see the association put out of business. "Now that we have the association, I believe some real good might come from it if good men with practical experience were put in the lead," writes one. "I do not think the plan impossible," writes another, "and I believe it would be a good thing to have the dairy interests organized in one large co-operative association. If the president associates the right men with him, he may be successful. I consider this very important, as there are always persons trying to get in who have mercenary motives and they do more harm than good."

A third writes: "I had hoped from the start that the movement would work out successfully, as I believe in co-operation and recognize that the drift is all toward the idea of producers controlling their product. But I have come to believe that the men who are behind this scheme have managed the promotion in a way that makes success impossible. Under different management, working along the lines of using present facilities instead of duplicating present plants and scrapping thousands of dollars' worth of machinery, it might succeed."

It is not too late to make the changes which will put the association on the right track. We shall not attempt to cover the matter fully this time; neither do we care to say anything at present about the alleged Armour-Henderson conspiracy. We don't believe that dairymen need to lose any sleep fearing that Armour will sometime control the situation here; neither do we believe that the association will fail and that those in it will lose what they have invested. Wrong starts have often been the preludes to remarkable successes, and in spite of everything that has been said and done we see the possibility of a successful future for the association—perhaps in different hands; certainly under different methods.

The attitude toward existing creameries must be changed. Many of them are conducted along co-operative lines and are doing good work. They must not be destroyed. The association should either buy them out at a fair price or work in harmony with them.

The marketing policy must be changed. In the words of one of our leading authorities, "An organization which depends for its success on its ability to corner the market cannot expect a very large measure of success. Granted that the organization is well managed and directs its energies to things that are susceptible to correction and improvement, there seems to be a legitimate place for it." Let us hope that it will now find its legitimate place.

The Farm Loan System has made good. Every bank in the system showed a profit last month and the business is growing and expanding in a most satisfactory manner, with its resultant benefit and distinct saving to the American farmer.

SANTA FE LUMBER CO

16 CALIFORNIA ST.
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March 8, 1919.

Messrs. Intelligent Farmer, Wife & Company,
In the forward-looking
State of California.

Friends:—

Dairying is the second largest farming industry. From it comes foods for all the people, all the time. There's a great demand for dairy supplies. But dairying is like any other business, it must be conducted efficiently to make it pay. Feeding must be done wisely and continuously.

The silo offers solution of the green feed question. The Simplex Silo is scientifically constructed; storm proof, wind proof. The interlocking anchor system cannot fail. It eliminates all possibility of vibrating, twisting or collapsing. The Simplex Silo insures your ensilage to the last ounce.

The Simplex Silo is the result of many years of experience and looking into the needs of Pacific Coast ranchers. Dry weather, nor an empty silo, does not affect the Simplex. Each stave is stapled securely to the top, center and lower hoop.

Simplex Silos are constructed of Oregon Pine (Douglas Fir). The hoops are of New Steel. Castings, cable braces, door hinges and hoops are heavy, thus insuring strength and durability.

Efficiency in feeding silage necessitates your own cutter. The forage should be put away at just the right time. With your own outfit the saving is sure and certain.

The Papec Pneumatic Ensilage Cutter is the standard all over America. Its record for fewer break-downs is its best claim to your attention. It is easy to save ten dollars an hour with a Papec. Reliability and the silo filled when you want it, make Papec customers.

The Papec is the easiest cutter to set up and take down, only the pipe has to be erected and removed. There are no bolts or rivets in the frame to get loose and allow the cutting wheel to get out of line.

The Papec has the greatest capacity, the lowest speed, the smallest power consumption and the lowest cost of upkeep of any ensilage cutter manufactured.

A complete stock of Papec Pneumatic Ensilage Cutters and Simplex Silos is carried in stock here ready for immediate shipment.

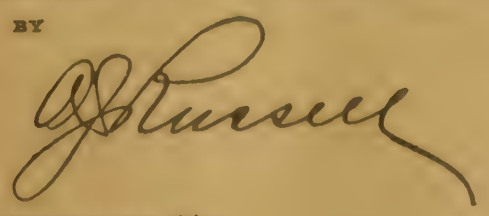
You are invited to telephone, telegraph, write, or, best of all, call to see us. Let us prove to your satisfaction that you need a Silo, and that the Simplex and the Papec are the outfit best suited to your requirements.

If there are two words which describe them for you, they are: permanent and profit.

Respectfully,

Santa Fe Lumber Co.

BY





Please say you saw this advertisement in the Rural Press.

Livestock and Dairy Notes

Livestock breeders all over the State are invited to send on postal cards, notes regarding their sales, State and County Fair intentions, new stock, etc.

Livestock Sale Dates

March 12—Estate of Jas. W. McCord, Hanford. Horses and mules.

March 15 and 16—Reno Livestock Co., Reno, Nev. Herefords and Shorthorns.

March 17—Lodge von Heim herd, Kent, Wash. Holsteins.

March 18—Garden City Sanitarium, San Jose. Duroc-Jerseys.

March 18—Sutter & Schelbert, Modesto. Holsteins and Durhams.

March 27—Guaranty consignment sale, Sacramento. Holsteins.

April 2—E. R. Putz, Laton. Holsteins.

April 3—Walter F. Mitchell, Visalia. Holsteins.

April 8—California Shorthorn Breeders' Association, Davis. Shorthorns.

April 9—Pacific Coast Hereford Breeders' Association, Davis. Herefords.

The Dairy.

F. D. Ross, Hanford, has sold Holstein bulls to G. F. Fletcher, C. M. Blowers and Ray Hall.

The plant of the Borden Condensed Milk Company at Modesto is being enlarged at a cost of $20.000 to take care of the increased business.

E. W. Majors of Los Angeles, manager of the Adohr Stock Farm in the San Fernando Valley, is in the East to purchase from 150 to 200 head of Guernsey cows, which will be added to the Adohr herd.

The California Central Creameries has taken an option on a location at Los Banos, where a $150,000 plant will be built, to be used as a combined condensary, dried milk factory, cheese factory and creamery.

M. M. Holdridge of San Jose reports that it has been impossible to get supervisors for testing the Holsteins in the Creamcup herd and that several official records have been lost—a 34-pound record in particular.

Prizes totaling about $3,000 in value have been announced for the Sacramento Cow Testing Association competition which started at the beginning of the year and includes herds in Sacramento, San Joaquin, Solano and Yolo counties.

E. A. Stuart, head of the Carnation Milk Company, has been in California several days and has stated that his company will enter the milk condensing field in California and will establish several plants throughout the State.

King Hengerveld Henriette, a senior four-year-old, owned by A. W. Morris & Sons, Woodland, has completed a record of 30 pounds of butter in 7 days and is being continued on test in the hope that this record will be increased.

E. B. McFarland of San Mateo has recently sold to H. P. Faye nine Ayrshire heifers, an aged cow and a young bull, which will form the nucleus of an Ayrshire herd that Mr. Faye is establishing on his River Garden Farm near Knights Landing.

A. M. Bibens, Modesto, recently purchased in the East the young Holstein bull Ormsby Jane King 2nd, whose granddam, Ormsby Jane Segis Abbey, is the only cow with two records of over 44 pounds of butter in seven days. His two nearest dams averaged over 35 pounds.

The John Lynch Ranch, Petaluma, has recently made the following sales of Milking Shorthorns: Two heifer calves to E. J. Schellhous, Roseville; one bull calf to E. B. Root, Wasco; one yearling bull to Chas. B. Younger, Santa Cruz, and two yearling bulls to Crescent Mills.

A three-year-old daughter of Sir Veeman Hengerveld has just made a record of 35.16 pounds butter in 7 days. This heifer is a half-sister to Sir Veeman Korndyke Pontiac, the former herd sire of R. F. Guerin's Sunnyside herd, Visalia. This makes the twentieth 30-pound daughter for Sir Veeman Hengerveld, and at Sunnyside Ranch are 40 of his granddaughters which will be fresh in a year. They were bred to King Sadie Vale Idyl Segis, a son of the State record junior four-year-old, K. P. Idyl Segis. With this wonderful combination of blood lines Mr. Guerin expects great results.

A. W. Humphreys of Grapewild Farm, Escalon has purchased a new Guernsey herd sire from Fruit Brothers, Waukesha, Wis. He is sired by Rex of Riehneck and out of Laura's May of Maple Hill, with a record of 624 pounds of fat as a three-year-old. He has three full sisters with 700 to 800-pound fat records. He will be used in the Grapewild herd on the daughters of Bullion of Edgmoor.

Beef Cattle.

Pacheco Cattle Company, Hollister, recently sold 25 head of grade Shorthorn bulls to the Tejon Ranch, Kern county.

The Rowland Land and Cattle Co. of Los Angeles county has 140 head of Polled Durhams purchased from the Babcock Ranch in the Julian mountains.

Frank Brown, the veteran Shorthorn breeder of Carlton, Oregon, has been appointed field man for the American Shorthorn Breeders' Association, with Oregon, Wahsington, California and Idaho as his territory.

J. H. Cazier & Sons, Hereford breeders of Wells, Nev., have engaged Jack Kington, former herdsman at the University of Nevada, to take charge of their herd.

As a result of continued demand for vaccine for immunizing cattle against blackleg, the United States Bureau of Animal Industry is enlarging its facilities for making this preparation so as to meet all demands promptly. During the last

THE GUARANTY SALE



HOLLYWOOD LILITH PONTIAC

22.71-lb. 2-year-old daughter of a 32-lb. sire, out of a good record granddaughter of Pontiac Korndyke, and bred to Judge Segis. Consigned by Hollywood Farm.



JESSIE HENGERVELD JOHANNA

A great 27.70-lb. cow, now milking 95 lbs. on semi-official test. By a grandson of Hengerveld De Kol and bred to the $106,000 bull, Carnation King Sylvia. Consigned by Albert E. Smith.

65 OUTSTANDING HOLSTEINS 65

THURSDAY, MARCH 27, 1919

STATE FAIR GROUNDS, SACRAMENTO, CAL.

ALMOST 50% OF THE TOTAL NUMBER ARE OUT OF DAMS WITH OFFICIAL RECORDS FROM 30 TO 41 POUNDS BUTTER IN 7 DAYS.

MORE THAN 60% ARE BY SIRES WHOSE DAMS HAVE OFFICIAL RECORDS FROM 30 TO 40 POUNDS BUTTER IN 7 DAYS.

THE HIGHEST RECORD BULL EVER SOLD ON THE PACIFIC COAST IS IN THIS SALE. His dam has 41.01 lbs. butter from 831.7 lbs. milk in 7 days; 158.31 lbs. butter from 3584.2 lbs. milk in 30 days, the highest combined milk and butter record ever made in 39 days by a cow in the United States.

THE HIGHEST RECORD COW EVER SOLD IN A PACIFIC COAST SALE will be one of the stars. Boweda, 37.61 lbs. butter in 7 days, and she will calve soon to the twice grand champion bull, King Segis Alcartra Prilly.

SOME TOP COWS AND HEIFERS FROM CARNATION STOCK FARM bred to the $106,000.00 bull, Carnation King Sylvia, and to Matador Segis Walker, who now has a 40-lb. three-year-old daughter.

SOME OF THE BEST COWS AND HEIFERS FROM HOLLYWOOD FARM, bred to the great proven sire, Judge Segis, whose first daughter to be tested at mature age made over 37 lbs. butter in 7 days.

AN EXTRA HIGH CLASS CONTRIBUTION FROM ALBERT E. SMITH, including the most remarkable family group ever offered in a western sale, the key animal being a splendid 30-lb. granddaughter of Colantha Johanna Lad.

A SENSATIONAL OFFERING OF DAUGHTERS AND SONS OF "IT," by McAlister & Son. All but one of them out of dams with records frim 29 to 35 lbs. butter in 7 days, and averaging up to over 30 lbs. butter in 7 days for the seven nearest dams.

DAUGHTERS OF PRINCE GELSCHE WALKER, out of 31 and 32-lb. dams and bred to Sir Aaggie Mead De Kol, the great 34-pound bull whose seven nearest dams average 1093 lbs. butter in one year.

SPLENDID 30-POUND COWS, daughters of great sires and dams, bred to the best sires in service in the west, picked tops from 14 of the best western herds.

And every animal in this sale is positively guaranteed to be a breeder; tuberculin tested and guaranteed against tuberculosis for 60 days, subject to test by the buyer.

CONTRIBUTORS TO SALE:

CARNATION STOCK FARM, Seattle, Wash.
GOTSHALL & MAGRUDER, Ripon, Cal.
W. J. HIGDON, Tulare, Cal.
R. F. GUERIN, Visalia, Cal.
FRED W. KIESEL, Sacramento, Cal.
A. J. STALDER, Riverside, Cal.
BRIDGFORD COMPANY, Knightsen, Cal.
HOLLYWOOD FARM, Hollywood, Wash.
ALBERT E. SMITH, Sumas, Wash.
ALEX WHALEY, Tulare, Cal.
WALTER F. MITCHELL, Visalia, Cal.
TOYON FARM ASSOCIATION, Los Altos, Cal.
McALISTER & SON, Chino, Cal.
A. W. MORRIS & SONS, Woodland, Cal.

THE GUARANTY SALE

Catalog free on request to sale managers.

California Breeders Sales and Pedigree Co.

C. L. HUGHES, Sales Manager, Sacramento, Cal.

Auctioneers: Col. Ben A. Rhoades, Los Angeles; Col. H. C. Cranke, Nezperce, Idaho

year more than four million doses were distributed free to stock owners. The bureau is prepared to assist stockmen in preventing blackleg in their herds through vaccine for properly immunizing them.

Alex McDonald, the well-known herdsman of beef cattle at the University Farm, Davis, is in the East purchasing Aberdeen-Angus cattle for Hawaiian Island breeders. At the same time he will select a new Angus bull to place at the head of the University herd.

C. R. Thomas of Los Angeles, who had charge of the livestock department of the Liberty Fair, has just returned from the East with a carload of range bulls purchased for the Diamond Bar Ranch, Spadra. They were registered Herefords and were considered the best carload ever brought to California.

At the Hereford sale, to be held at the University Farm, Davis, April 9, the leading breeders of California and Nevada will have consignments. Among them are Charles Rule of Duncan Mills, Cazier & Sons of Wells (Nevada), William Bemmerly of Woodland, W. D. Duke of Likely, and the University Farm at Davis.

At the second annual Shorthorn Congress show and sale, held in Chicago, February 18-20, 254 head sold for an average of $785. Ninety-two bulls averaged $773; 162 females averaged $800. The top was the first prize yearling bull, Hercules Diamond, owned by Day & Rothrock, Sprague, Wash., which sold for $5,000.

M. H. Tichenor & Son have sold to G. W. Emmons, owner of the Emmons Transfer Company, San Francisco, the D. O. Lively herd of 47 Herefords. Mr. Emmons has a ranch at Danville. He has been carrying grade stock, but has decided to change to registered and purchased these animals as the foundation for a registered herd.

The Shorthorn sale to be held at the University Farm, Davis, April 3, promises to bring together some of the best stock ever offered at public sale. The leading herds have been drawn on and among those who will consign are T. S. Glide, Davis; Charles A. Trosi, Vinton; Jack London Ranch, Glen Ellen; Ormondale Ranch, Redwood City; Pacheco Cattle Company, Hollister; W. M. Carruthers, Live Oak; H. M. Elberg, Woodland; University Farm, Davis; T. T. Miller, Hollister; T. W. Dibblee, San Francisco; D. & H. J. Baughman, Oakdale; H. E. Murphy, Perkins.

Swine and Swinemen.

Castleview Ranch has recently sold a classy bred Berkshire gilt to Calloc Orchards, Sacramento.

Maplewoode Ranch, Calistoga, has sold to Anchorage Farm, Orland, Maplewoode Royal Prince 3rd, junior champion and first senior boar Berkshire pig at the 1918 State Fair.

Word has just been received by wire that at Springfield, Ohio, 54 Duroc-Jerseys brought $65,800, averaging $1,218 per head. The top boar, Jackson's Top King, brought $10,500.

Maplewoode Ranch, Calistoga, Homer Hewins, manager, has purchased a thousand dollar Epochal boar from the Gossard Breeding Estate, Indiana.

Prof. Gordon H. True of the University Farm has been commissioned to select 40 Berkshire boars and gilts for the University of Manila. He will assemble the shipment quite soon and will draw upon a large number of California herds.

The Food Administration at Washington has announced that the present minimum of $17.50 will be continued until announcement of a decision by President Wilson regarding existing embargoes on pork affecting neutral and other countries.

H. P. Slocum & Son, Duroc breeders of Willows, report the greatest demand ever known for their Uneeda Durocs. They have made a large number of sales to settlers on the project at Durham, where Durocs alone are being raised. O. R. Moll, one of the latest arrivals, secured a fine sow and Frank Tetreau of Red Bluff purchased a boar by High Orion.

At the recent Duroc sale of Ed M. Kern, Stanton, Neb., an average of $1,021 was made on 50 catalogued sows, with a top of $4,250. The latter was Long Gano, the world champion sow of 1918, and she was bred to Great Orion, champion boar of 1918.

F. M. Johnson, the Duroc breeder of Napa, has recently brought out from the East a sow sired by King Orion Cherry and out of an Orion Cherry King dam. She is a litter mate to a boar that sold for $1,000 as a pig, and is bred to the noted Eastern boar, Orion Cherry King Jr.

M. Bassett & Son, Hanford, recently received a beautiful big-type Poland-China gilt from Kansas. She was sired by Erhart & Son's Big Chief and is bred to Big Sensation.

(Concluded on following page)

Plan now to put on your dairy the best Silo money can buy

Good silos and good cows are doing more towards building up the dairy industry and placing it on a profitable, substantial basis than any other agencies.

THE DE LAVAL DAIRY SUPPLY CO. has advocated and preached the use of silos and the feeding of silage for the past 25 years. Our interests are identical with those of the dairy industry. That is why we have labored unceasingly to perfect a silo that will give maximum results in the production of the best quality silage for the greatest number of years with the least loss.

THE IDEAL GREEN FEED SILO

is the result of these years of experience. We are not interested in merely selling you a bill of lumber but want to equip you with a good, sound silo that will prove a profitable investment to you.



Our Silo Catalog describes and illustrates in detail how the Ideal Green Feed Silo is made. You should have it. Study carefully each feature and compare them with those of other silos offered you. You can easily see the difference and your own judgment will point out the superior features of design in the Ideal which are to be found in no other silo. They are features which have taken time to develop, have proven most practical and are now patent protected.

Superior Features

No other silo has doors like the Ideal. They are refrigerator type, leak-proof and won't stick. No hinges or metal contraptions to bind and render them impracticable. Our doors come flush with the inside walls of the silo—no chance for air pockets and spoiled silage.

Our method of interlocking the ends of the staves makes the joints absolutely leak-proof. It is illustrated in detail in the catalog. Leak-proof foundation joint, self-supporting roof, extra heavy hoops, straight-pull malleable lugs and painstaking workmanship render the Ideal Green Feed Silo a safe and sound silo investment—a silo that will return to you as good silage every pound of good feed you put into it and do it for years to come without rebuilding it every time you want to fill it.

Every Ideal Green Feed Silo is made to your order of No. 1 Selected Kiln Dried Tank Stock from Foundation to Roof.

These books, The De Laval Silo Catalog, The De Laval Dairy Hand Book, should be in the hands of every dairyman. Sent free upon request.

De Laval Dairy Supply Co.

61 BEALE STREET, SAN FRANCISCO

PUBLIC SALE
45 REGISTERED 45
HOLSTEINS

E. R. PUTZ

DISPERSAL SALE

WEDNESDAY, APRIL 2, 1919

LATON, CALIFORNIA

The registered herd of 45 head contains

24 Greatgranddaughters of Pontiac Korndyke.

3 Daughters of Arcady Pontiac Wayne Hengerveld.

3 Daughters of Prince Beauty Pietertje Segis.

A clean bunch of young, well bred cattle, that have been and are now regular profit makers in a working dairy.

45 High Grade Holstein Cows and Heifers,

all by registered bulls and mostly all bred to a grandson of Pontiac Korndyke. A choice lot of young dairy stock.

Every animal over six months, both purebreds and grades, tuberculin tested and sold subject to retest by the buyer.

Auctioneer, Col. Ben A. Rhoades, Los Angeles.

Catalog on request.

MANAGEMENT
CALIFORNIA BREEDERS SALES AND PEDIGREE COMPANY
C. L. HUGHES, SALES MANAGER
SACRAMENTO, CALIFORNIA



Flush Cows After Calving

Protect your herd against Contagious Abortion and Barrenness.

Barrenness or Sterility, like Abortion, Retention of After-birth and Premature Birth, is nearly always caused by infection of the reproductive organs by the germs of Contagious Abortion. Unless this infection is promptly overcome by the use of a powerful but safe antiseptic, it may permanently affect the reproductive organs so that the cow will continually fail to stick.

Every time a cow drops a calf—whether alive or dead—by premature birth or abortion, whether the after-birth is retained or not, her reproductive organs should be flushed out, because that is where the infection is developing.

B-K, the powerful non-poisonous antiseptic, is scientifically correct for this work. Used as a douche for the uterus, it quickly brings the after-birth, dissolves the slimy albuminous matter, kills the germs, stops discharges and controls the infection. B-K does not cause straining, but is soothing and heals the tissues.

Send for "evidence" and free Bulletin No. 52 "Contagious Abortion." If your dealer does not have B-K send us his name.

GENERAL LABORATORIES

3452 S. Dickinson St., Madison, Wis.

B-K B-K B-K B-K B-K B-K

60 REGISTERED 60
Holsteins
AT PUBLIC SALE

From the families, and some of them the very animals, that have made a successful, profitable herd.

This will be a sale of the entire milking herd of registered Holsteins owned by

WALTER F.
MITCHELL

VISALIA, CALIFORNIA

and will be held on his farm

THURSDAY, APRIL 3, 1919

A fine opportunity to buy foundation cattle of high merit.

30 COWS AND HEIFERS in the sale are bred to PRINCE HISKE WALKER, full brother to the 34-lb. junior 4-year-old, Lady Hiske Walker who will himself be sold.

11 COWS AND HEIFERS with official records up to over 31 lbs butter in 7 days.

10 GRANDDAUGHTERS of Segis Pontiac De Kol Burke, sire of two state record heifers for yearly butter production.

CHOICE YOUNG BULLS for the dairyman and breeder.

Every animal tuberculin tested and sold subject to retest.

Auctioneer, Col. Ben A. Rhoades, Los Angeles.

Catalog free on request.

MANAGEMENT
CALIFORNIA BREEDERS SALES AND PEDIGREE COMPANY
C. L. HUGHES, SALES MANAGER
SACRAMENTO, CALIFORNIA

California's Wool Growers' Problems

Fred A. Ellenwood of Red Bluff, president of the California Wool Growers' Association, says that the price for 1919 wool will depend largely upon the action taken by the Government in disposing of the great quantity it now owns. If it refuses to sell this wool without taking more than a 10 per cent loss, our prices for the coming clip should be fair, although not equal to those of last year. Much also depends upon what England does with the Australian clip of 1919, as all of it belongs to the English Government. If England does not permit much of this wool to enter the United States that will help materially.

The wool manufacturers are using every effort to have wool prices reduced before the spring clip comes upon the market, and S. W. McClure, secretary of the National Wool Growers' Association, is now in Washington trying to combat their influences.

Nothing but strong organization among sheepmen will save us from remaining at the mercy of the manufacturers. They are strong for the movement, "sheep on every farm," because an increased wool supply in this country means cheaper raw material for them. More small flocks would also mean more small flock masters, who would not be sufficiently interested in wool prices to help our woolgrowers' organization, and who would thus become the prey of the wool dealer. Most of the organization's work among woolgrowers is due to the larger flock masters.

The only suggestion Mr. Ellenwood has to offer concerning the wool market at present is for sheepmen not to contract their wool before it is sheared. If the market is not as we think it should be at that time, we can consign our wool and sell on the Boston market. We have had some experience the past year along that line and know we can do it if necessary. We should strive to have all the wool sold in this manner. Instead of wool dealers buying and speculating in wool, at our expense, they should simply be wool brokers, the same as livestock commissionmen are at the stockyards in Chicago, Omaha and other places. We have two such wool concerns now who handle wool on commission and who never buy or speculate in wool at any time, and they should be patronized. These are the National Warehouse & Storage Co., with headquarters in Chicago, and Salter & Brothers, Boston.

One other point we have gained for future reference by the Government handling the wool clip is the fact that the basic principle in determining the grease value is the shrinkage, and if the Government can determine this accurately enough to fix a grease market price, then it can surely estimate it closely enough to determine the amount of duty that should be paid by an importer on grease wool. Eight years ago when we were urging a scoured content wool tariff, importers and manufacturers argued that it would be absurd to expect the Government to determine the shrinkage for the purpose of collecting duties. Everyone knows it can be done by the Government now. Today we have no wool tariff, and prior to the present administration for a number of years, we had one framed by the manufacturers and importers and for their special benefit. No wool tariff has ever been fair to the woolgrowers. Let us spend the next two years talking for a scoured pound wool tariff, one that will be fair to both the producer and the consumer, as well as the manufacturer, but without putting a burden on the consumer for the special benefit of the manufacturer and importer. This can all be accomplished by assessing wool duties, whatever they may be, upon the scoured content.

THE LAMB MARKET.

Last fall the lamb market went to pieces and it has never fully recovered from the slump. The price of pelts has also helped to reduce the price of lambs the last few months. The one thing that will restore lamb and mutton on the market where it belongs, at the top of the meat list, is advertising. Let the consumer know that at present it is cheaper than either beef or pork. Advertise the good qualities of lamb and mutton, the same as other foodstuffs are advertised.

GOVERNMENT LANDS.

All Government land is fast coming under the control of someone. It is either owned by private individuals or handled through Government supervision. While this naturally makes stock raising more expensive, it is much more satisfactory. One acre owned or rented from the Government, and fenced, will be of more benefit to the stock industry than two acres that are open and free for everybody. The U. S. forest officials recognize this fact as well as private individuals, and are constructing more fences every year within the national forests. The policy of the forest service is to utilize and conserve at the same time, both in feed and timber. About the only feed now going to waste is that within our national parks. It is perhaps all right to set aside certain areas and preserve them in their natural state, for the tourists and comfort of city-worn people, but most of our parks are many times larger than they need to be. Thousands of acres should be withdrawn from the boundaries of our national parks and placed under the supervision of the forest service, thereby utilizing excellent feed now wasted, without interfering with the pleasure of our tourists.

I believe it is possible for us to reorganize our various woolgrowers' associations in California along lines similar to those adopted by the cattlemen. I do not think we can succeed as we should as an organization until we have enough members with sufficient funds to employ a competent man as secretary—one who is alive and on the job all the time.

All local woolgrowers' associations should be united as a part of the State association, which in turn becomes a part of the National Woolgrowers' Association. It is the national association that takes care of all big questions and every woolgrower should support it, not only through membership in our State organization, but also as an individual member of the national association.

LIVESTOCK AND DAIRY NOTES.

(Continued from preceding page)

This is the first sow that Mr. Bassett has imported from the East in ten years and he certainly has made a wise selection, as she shows great quality.

C. B. Cunningham, Mills, is delighted with the latest addition to his Billiken herd of Chester Whites. He commissioned Fred Moore of the Chester White Journal to buy him some bred sows and gilts at the different Middle West sales, and the last buy was Emily Wing 2nd, who was shown last year as a senior sow pig and was first and junior champion at Missouri and winner of the silver cup for the best gilt. She was second at Nebraska and seventh at the National in a class of 24. This gilt was sired by Joe Wing and she is bred to Model's Wonder, the $2,500 boar. Mr. Cunningham says that with the exception of one

A SALE OF GREAT HEREFORDS



From some of the best Pacific Coast herds. Profits in cattle raising depend now, more than ever before, upon the sort of cattle you have on your ranges and the men who are making the most money are those who consistently use pure-bred bulls in their herds.

SECOND PACIFIC COAST HEREFORD BREEDERS SALE

Wednesday, April 9, 1919

University Farm, Davis, Calif.

will make available to buyers the seed of some of the best Hereford families, the seed that will result in the harvest of greater profits.

80 Registered Hereford Cows, Heifers and Bulls

will be sold, and the splendid selection of animals will meet the requirements of buyers wanting high class breeding females, real herd heading bulls, or bulls of exceptional fitness for range work.

Catalog in preparation. A copy free on request.

Sale under auspices of

PACIFIC COAST HEREFORD CATTLE BREEDERS' ASSOCIATION

W. R. Madden, Secretary, Dixon, Cal. H. H. Gable, President, Esparto, Cal.

Auctioneers
Col. Fred Reppert, Decatur, Ind.
Col. Ben A. Rhoades, Los Angeles

Management
CALIFORNIA BREEDERS SALES & PEDIGREE CO.
C. L. Hughes, Sales Manager, Sacramento, Cal.

Second Spring Sale of Short-Horns

Under Auspices of California Short-Horn Breeders Association

At University Farm, Davis, Calif., on

TUESDAY, APRIL 8, 1919, at 1:30 P. M.

60 Head of Short-Horns, comprising 35 head Cows and Heifers, and 25 Bulls. An opportunity is afforded of securing foundation and breeding stock of exceptional quality. For catalogue apply to

CALIFORNIA SHORT-HORN BREEDERS' ASSOCIATION

320 SHARON BUILDING, SAN FRANCISCO, CALIF.

Auctioneer FRED REPPERT, of Decatur, Indiana

ow owned by the University Emily Ving is the best Chester White sow .e ever saw.

Sheep.

J. Bidegary, Fresno, is beginning b shear a band of 700 yearling Rambouillets, figuring that shearing ow will give them a better appearnce when sold a month later.

H. J. Lonenlyen, superintendent f the Whitney Estate in Placer ounty, says that sheep-killing dogs re responsible for 35 per cent of he loss sustained on their ranch. he estate pays the same bounty for og scalps as for coyotes. They have ist finished marking the 1919 crop f lambs, which consisted of 10,000 ead.

Livestock Miscellaneous.

In the sale to close the estate of ames W. McCord, Hanford, which ill be held at the ranch March 12, n opportunity will be given to purhase some good boned jacks or oundation Shire stock.

DISPERSAL OF WORLD RECORD HERD.

Nation-wide interest is being manested in the dispersal sale of the odge Von Heim herd of Holsteins, hich will be held at Kent, Wash., St. Patrick's day, Monday, March 7. This herd of 65 head is consided one of the finest in the world, nd has many cows with records over pounds—some of them only twoear-olds. The two famous herd ills will be offered, as well as some utstanding young bulls. The best the most profitable in the end, and this sale buyers will be given an pportunity to bid on the kind of ock that is considered beyond price nd is not offered for sale as long the herds are maintained.

LIVESTOCK DIRECTORY.

te in this directory 3c. per word each issue.

SWINE.

Berkshires.

ASTLEVIEW GIANT TYPE BERKSHIRES the thrifty, typey, quick-growing kind that make larger profits for you. Prizes and championship honors are awarded—by the latest judges in America—only to animals possessing the essential qualities for economic meat production, viz: heavy bone, good t, broad strong backs, large hams and easy ding qualities. Our grand champion herd udes Biverby Princess, grand champion of the world; Rockwood Lady 100th, 1917 nd champion of America; Mayfield Laurel h, 1917 grand champion of California. rd sows, bred gilts and fine weaned pigs for

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ONEY-MAKING BERKSHIRES—The pro-, easy-feeding kind that make the highest ed pork from the lowest priced feed. They increase your profits. Prices reasonable; tisfaction guaranteed. Write for free bookdescribing our worlds reserve champion. AR LEADER. We are now making a ial offering of bred sows and gilts.

Anchorage Farm, Orland, Cal.

$25.00—$35.00—$50.00
BARON DUKE 201ST
Omaha Grand National Champion
BOAR PIGS: 3, 5, and 6 months old, from pound prize-winning sows. We will sell hing that we wouldnt use ourselves.
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In charge of Natomas Land sales.

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ROLEY'S BALANCED HOG FEED—The atest feed to fatten hogs. Write Geo. H ley Co., Inc., Livestock Supplies, 8th and Townsend streets, San Francisco.

ERKSHIRES bred at Imperial Stock Farm the kind that satisfy. Write us or call be convinced. R. J. Merrill & Sons, Mor-Hill, Cal.

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ERKSHIRES—Sired by Star Leader, the 00 boar. Kounias Registered Stock Farm, lesto.

ERKSHIRES by Ringleader 20th, greatest of Grand Leader 2nd. Geo. M. York, lesto.

OR REAL GOOD BERKSHIRES write nk B. Anderson, D. 724W., Sacramento, Cal.

CARRUTHERS FARMS BERKSHIRES—Cholera immune. Live Oak, Cal.

REGISTERED BERKSHIRES—Write R. D. Hume, Dos Palos, Cal.

BERKSHIRES—Fair Oaks Ranch, Willits, California.

Poland-Chinas.

SOW BARGAINS—We are offering some exceptionally nice tried sows, bred and open gilts, at attractive prices. They are all sired by the undefeated and world's grand champion Superba and out of big type sows, which cost me $200 and over. Investigate before buying elsewhere. Rough's Greenfields, Arlington Station, Riverside, Cal.

ELDERSLY FARM—We are offering some excellent tops from our fall and spring pigs at attractive prices, sired by one of America's best-bred boars, Big Black Bone Wonder, with grand championship breeding on both sides. He is a real 1000-lb. boar. J. H. Ware, Live Oak, Cal.

NOW BOOKING ORDERS for spring pigs, either sex, from my prize-winning, large type Poland-China hogs. Also will book a few orders for bred gilts, February and March farrow, and a few good, serviceable, aged boars. Hale I. Marsh, Modesto, Cal.

THE BEST IN THE WEST — California Gerstdale and President's Equal are my herd sires. Fall and spring boars now ready to move—each one a corker. Dr. J. A. Crawshaw, Hanford, Cal.

HARTSOOK BIG TYPE POLANDS—A fine lot of young boars. Both bred and open gilts for sale. Toggenburg goats and Holstein bulls ready for service. Fred Hartsook, Lankershim, Cal.

BARGAINS IN POLAND-CHINA SOWS—All immune. Good mothers and prolific. Registered stock. Also boars. Write for details. N. C. Hansen, Coachella, Cal.

BOOKING ORDERS for spring pigs, sired by "Bob Big Boie" 281289, litter brother of the Junior Champion at Sacramento, 1918. P. E. Mitchell, Atwater, Cal.

WEANLING PIGS, both sexes, Gerstdale Jones and Caldwell's Big Bob blood lines. Booking orders for spring. Forest View Ranch, Paradise, Cal.

YOUNG POLAND-CHINA PIGS — Three months and up, $20 each, either sex; registered. Edward A. Hall, Route 1, Box 39, Watsonville, Cal.

OXBONE HERD offers March boars for sale from King's Big Bone Leader, grand champion at State Fair, 1918. Write F. E. Fay, Tipton, Cal.

FOR SALE—Four September boars by California Jumbo Buster, priced to move quick. A. Buckland & Son, Rt. E, Box 126, Fresno, Cal.

BEST POLAND-CHINA BLOOD from hog belt. Immuned September pigs. Line bred Big Bob March pigs. R. W. Jickling, Elmira.

WAUKEEN HERD POLAND-CHINAS—Big type herd boar, the $700 Grand Champion of California. Les McCracken, Prop., Ripon, Cal.

40 SOWS and daughters of Big Bone Bob and I B A Wonder sows for sale. Price right. N. K. Horan, Lockeford, Cal.

BIG TYPE POLAND-CHINAS—Stock from the best herds of the Middle West. N. Hauck, Alton, Humboldt county, Cal.

20 HEAD of Big Bone Bob, Grand Model and I B A Wonder Stock for sale. J. W. Wakefield, Acampo, Cal.

LAKE SIDE STOCK FARM—Large, smooth and big boned Poland-Chinas. Geo. V. Beckman & Sons, Lodi, Cal.

REGISTERED POLAND-CHINA SWINE—Prize winners. Finest stock in the State. M. Bassett, Hanford, Cal.

POLAND-CHINAS—Quality and bone our hobby. Fall boars for sale. H. D. McCune, Lemoore, Cal.

FOR SALE — POLAND-CHINAS—June gilts sired by A. Price. Write W. S. Adams, Gridley, Cal.

BIG-BONED POLAND-CHINAS—From Eastern prize-winners. D. H. Forney, Route G, Fresno.

POLAND-CHINA PIGS WITH RIBBONS—Prices right. Johnnie Glusing, Winton, Cal.

POLAND-CHINA PIGS — Bernstein, Trewhitt, and Ross blood. B. M. Hargis, Tulare.

POLAND-CHINAS—A few young service boars for sale. R. F. Guerin, Visalia, Cal.

READAKS RANCH herd of registered Poland-Chinas. W. J. Hanna, Gilroy.

BIG-BONED POLAND-CHINAS — Stock for sale. E. S. Myers, Riverdale, Cal.

POLAND-CHINAS—Young stock for sale. H. E. McMahan, Lemoore, Cal.

Chester Whites.

BILLIKEN CHESTER WHITES—One yearling boar for sale; everything else sold. Will book orders now for spring pigs. C. B. Cunningham, Mills, Cal.

PUREBRED CHESTER WHITES — August boars. Prices moderate. Cedarhurst Ranches, Route 2, Sacramento.

Duroc-Jerseys.

LIBERTY RANCH SERVICE BOAR—An outstanding youngster farrowed August 26, sired by Cherry Volunteer, second grand champion Riverside Fair; dam by Arion Cherry King 5th. Weighed 177 lbs. at 5½ months; 40 in. long, 28 in. high, 10 in. bone. Great stretch, strong back, good feet. To avoid inbreeding will sell right, or exchange for boar equally good. L. W. Serrell, Route 2, Box 32, Van Nuys.

DUROC-JERSEYS AT IRELAND—Home of Cherry Volunteer II., Grand Champion Boar at Riverside. Ireland's Orion Defender and Orion's King of Ireland are excellent sires in service. Booking orders for spring delivery. Ranch at Owensmouth. City office, 1219 Brockman Bldg., Los Angeles.

DUROCS — SPECIAL SPRING OFFER — March and April registered weanlings, both sexes, good blood lines. Twelve-fifty each; three for thirty-five dollars. Order early. D. & H. J. Boughman, Oakdale, Calif.

WE WON MORE MONEY on Durocs at the State Fair than any other exhibitor. Why not buy some of this winning stock? Jones Acres Stock Farm, Davis, Cal.

DUROC JERSEYS — Banker's Good Enuff, Golden Model, King's Colonel and Pathfinder blood. Derrybrook Farm, National Bank Building, Sacramento.

DUROC WEANLINGS for the farmer. Easy feeders. 200 lbs. at seven months. W. W. Everett, River Bend Farm, St. Helena, Cal.

OPEN GILTS, weanling pigs, either sex, at $20 each; out of mature sows. F. W. Gardner, Route 4, Box 735, Sacramento.

REGISTERED DUROCS—Stock for sale. W. J. Fulgham & Sons, Visalia, Cal.

A FEW CHOICE BRED GILTS, spring boars and gilts of the best blood lines. H. P. Slocum & Sons, Willows.

BOUDIER DUROCS all sold out, excepting some sow pigs weighing 100 lbs. apiece. H. E. Boudier, Napa.

HEAVY-BONED DUROCS — A few service boars for sale. Ormondale Co., Route 1, Redwood City, Cal.

DUROCS—Defender, Clinton B, and Golden Model strain; the big type. Allen Thompson, Tulare.

REGISTERED DUROCS — All from prize-winning stock. W. P. Harkey, Gridley, Cal.

DUROC-JERSEYS—October pigs, $15.00 to $25.00. Jack London Ranch, Glen Ellen.

YORKSHIRES.

LLOYTON HERD REGISTERED YORKSHIRES—Bred gilts and pigs from eight weeks up. Lloyd & Tointon, Llano Road, Santa Rosa, Cal.

Hampshires.

REGISTERED HAMPSHIRES—Fine quality. Two open gilts. Now booking orders for weanling pigs for April. Our 28-months-old herd boar being related to our young sows, will sacrifice at 15c. lb. Tom M. Bodger, Gardena, Cal.

MY HAMPSHIRES are money makers. Stock for sale. Buy now. L. A. Denker, Saurus, Cal.

HAMPSHIRE SWINE — Young stock for sale. Ira Hart, Dos Palos, Cal.

Miscellaneous.

O. I. C. BREEDERS' NOTICE—I will sell Ohio Boy, two-year-old imported boar; none better. Also boar pigs ready for spring breeding (sire Ohio Boy, dam Toddler's Beauty, imported). Write for full information. Jas. Little, Wasco, Cal.

LARGE YORKSHIRES—The ideal hog for the progressive farmer. Young stock for sale. A. L. Tubbs Co., Calistoga, Cal.

MULE-FOOT HOGS — Large type. H. T. Bailey, P. O. Box 37, Lodi, California. "The Blue Gums."

DAIRY CATTLE.

Holsteins.

A PRICE ON EVERY ANIMAL.
Herd free from tuberculosis. All sales subject to sixty days' retest. Sons of **Finderne Soldene Valdessa,** whose dam is not only a world record cow in seven-day division, but has two sisters holding world's records for yearly production.
Toyon Farms Association.
679 Mills Building. San Francisco.

HOLSTEIN HEIFERS—For sale, 20 high grade heifers, 1½ to 2 years old. Well marked, fine condition. Part of them bred to freshen this fall to Buttercup bull. C. L. Knestice, Rt. A, Box 236, Reedley, Cal.

HIGH-CLASS HOLSTEINS—I have for sale some sons of Sir Veeman Korndyke Pontiac from A. R. O. dams. Write for particulars or come see them. R. F. Guerin, Visalia, Cal.

SUNNYBROOK RANCH, WILLITS, CAL.—Young registered Holstein bulls. Also 12 head grade Holstein heifers and cows, nicely marked and well bred.

FANCY GRADE HOLSTEIN COWS and heifers from herd testing 100 per cent. Animals qualified for certified dairies. The Lewis Company, San Jose.

PALO ALTO STOCK FARM, Palo Alto, breeders of registered Holsteins. Heifers and service bulls. Reasonable prices.

CREAMCUP HERD — Registered Holsteins, Pontiac bull calves. M. Holdridge, Rt. A, Box 437, San Jose, Cal.

REGISTERED HOLSTEIN BULLS with world's record backing. Kounias' Registered Stock Farm, Modesto.

BREEDERS OF REGISTERED HOLSTEIN cattle and Berkshire pigs. Whittier State School, Whittier, Cal.

F. H. STENZEL, SAN LORENZO, CAL.—Breeder of Registered Holsteins. High test producers.

REGISTERED HOLSTEINS—A. W. Morris & Sons Corp., Importers and Breeders, Woodland, Cal.

REGISTERED HOLSTEINS — Best blood lines of the breed. R. L. Holmes, Modesto, Cal.

GOTSHALL & MAGRUDER — Breeders of registered Holstein Friesians. Ripon, Cal.

CHOICE HOLSTEIN bulls for sale. No females. Millbrae Dairy, Millbrae, Cal.

BREEDERS OF REGISTERED HOLSTEIN cattle. McAllister & Sons, China, Cal.

HOLSTEIN BULLS and bull calves from A. R. O. cows. C. A. Miller, Ripon.

REGISTERED HOLSTEIN CATTLE—E. E. Freeman, Route B, Modesto, Cal.

HENGERVELD DE KOL BLOOD. High producers. T. B. King, Visalia.

EL DORADO HERD OF HOLSTEINS — Alex Whaley, Tulare, Cal.

Jerseys.

SUNSHINE FARM JERSEYS — Tuberculin tested. Production counts. E. E. Greenough, Merced.

YOUNG BULLS from Register of Merit cows. W. G. Garnett, Orland, Cal.

Guernseys.

GRAPEWILD FARMS GUERNSEYS.
A 21 months old bull out of dam with record of 615 pounds in A. A. class, and a few young bulls up to 1 year of age.
A. B. Humphrey, Escalon, Cal.

HIDDEN VALLEY FARM offers for sale 2 young Guernsey bulls ready for service, out of high record advanced register dams. A. J. Wood, proprietor, Redwood City.

EDGEMOOR FARM GUERNSEYS — First in the show ring and in official records. Few animals of either sex for sale. Edgemoor, Santa Clara, Cal.

PALO ALTO STOCK FARM, Palo Alto — Breeders of registered Guernseys, both sexes, prices reasonable.

Ayrshires.

NORABEL FARM AYRSHIRES—Purebred young stock for sale at reasonable prices. Los Altos Dairy Company, Valley Ford, Cal.

ELKHORN FARM AYRSHIRES — Choice young bulls at reasonable prices. J. B. Meyer, 415 Montgomery St., San Francisco, Cal.

AYRSHIRES — Registered all ages. E. B. Steel, 402 and 412 Class Spreckles Building, San Francisco.

MILKING SHORTHORNS.

BREEDERS OF REGISTERED SHORTHORNS—Milk strain; choice young stock for sale. John Lynch Ranch, Box 321, Petaluma.

INNISFAIL DAIRY SHORTHORNS—Registered young bulls for sale. Alexander & Kellogg, Suisun, Cal.

BEEF CATTLE.

AM A SPECIALIST in registered beef cattle and familiar with the best herds in the country. If you need Shorthorns or Herefords, make use of my experience, save money and be satisfied. R. M. Dunlap, Hotel Land, Sacramento.

RANCHO SAN JULIAN SHORTHORNS—Purebred range bulls, unregistered, for sale. Estate Thos. B. Dibblee, Santa Barbara or Lompoc, Cal. John Troup, Supt.

ALAMO HERD REGISTERED HEREFORDS (founded by Governor Sparks). Herd and range bulls. Reasonable prices. W. D. Duke, Likely, Modoc county, Cal.

REGISTERED MILK AND BEEF SHORTHORNS, bulls and heifers for sale; catalogue free. Thomas Harrison, Santa Rosa Stock Farm, Santa Rosa, Cal.

REGISTERED YEARLING SHORTHORN BULLS — Heavy-boned, thick-meated, Scotch and Scotch-topped breeding. Ormondale Co., Route 1, Redwood City, Cal.

THE NEVADA HEREFORD RANCH, Jno. H. Cazier & Son Co., props., Wells, Nevada. Registered Hereford cattle. Breeding stock for sale.

REGISTERED SHORTHORNS—A few choice young bulls, grandsons of Fair Knight. Prices reasonable. Fair Oaks Ranch, Willits, Cal.

JACK LONDON RANCH—Breeders of prize-winning beef Shorthorns. Glenn Ellen, Cal. Eliza Shepard, Supt.

HOPLAND STOCK FARM—Registered Shorthorns. Prices on application. Hopland, Cal.

REGISTERED HEREFORDS—H. H. Gable, Diamond G Ranch, Esparto, Cal.

SIMON NEWMAN CO., breeders of Registered Herefords, Newman, Cal.

GEORGE CALLAHAN, Breeder of registered Herefords, Milton, Cal.

GEORGE WATTERSON—Breeder Registered Herefords, Bishop, Cal.

HEREFORDS—Mission Hereford Farm, Mission, San Jose, Cal.

SHORTHORNS — Carruthers Farms, Live Oak, Cal.

SHEEP AND GOATS.

F. A. MECHAM ESTATE, Petaluma, Cal.—Breeders and importers of Shropshire, Rambouillets and American Merinos, both sexes. Also Red Polled cattle. Take electric car at Petaluma or Santa Rosa for Live Oak Ranch.

WE HAVE FOR SALE 40 pure blood, two-year-old Shropshire rams. Prices reasonable. For particulars address: Parrott Ranch, P. O. Box 1039, Chico, Cal.

SHROPSHIRES FOR SALE—Ewe lambs and matured bucks from Iowa. Non-related. C. J. L. Stonebraker, Route A, Chico, Cal.

DORSETS AND ROMNEYS — Dorset ram lambs for sale. John E. Marble, South Pasadena, Cal.

BISHOP BROS., SAN RAMON, CAL. — Breeders and importers of Shropshires.

KAUPKE BROS., WOODLAND, CAL. — Breeders, importers of Hampshire sheep.

WANTED—100 to 200 feeder sheep or ewes. Perkins & Co., Perkins, Cal.

CHAS. KIMBLE—Breeder and importer of Rambouillets, Hanford, Cal.

CALLA GROVE FARM, MANTECA, CAL.—Breeders and importers of Hampshire sheep.

HORSES AND MULES.

FOR SALE—One of the very best draft stallions in California; cheap. Weight 2150 pounds; 8 years old; color brown. Correspond with W. N. Price, Route C, Box 93, San Jose, Cal.

FOR SALE — Two imported Percheron stallions. Reasonable prices. Mary A. Hunter, Bradley, Cal.

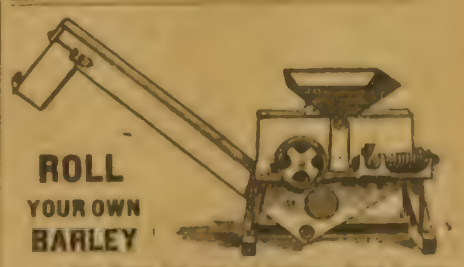
MISCELLANEOUS.

BUTTE CITY RANCH—Shorthorns, Shropshires, Berkshires and Shetland ponies. Write for prices and descriptions before buying. Butte City Ranch, Box P, Butte City, Glenn county, Cal. W. T. Dwyer and W. S. Gulford, owners.

CROLEY'S BALANCED DAIRY FEED—The cheap milk producer; and Croley's Calf Meal, the best California calf raiser. Geo. H. Croley Co., Inc., Eighth and Townsend streets, San Francisco, Cal.

FOR SALE—Eight yearling heifers, 20 two-year-old heifers, twelve cows, one bull—all good grade Holsteins. Rancho del Oso, 16 miles south of Pescadero, San Mateo county. Swanton, Cal.

FOR SALE—Three hundred and fifty head of coming two-year-old steers and heifers. White faces. John Sigler, Route B, Box 112, Hanford, Cal. Phone 19F4.



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Cut down the cost of feeding. Save 3 cents per pound and the hauling. Do the work at your leisure. The No. 22 rolls 10 to 15 sacks with 3 to 4 H. P. engine. Other sizes to meet your requirements. Write for circular.

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EXPERT LIVESTOCK AUCTIONEERS
Purebred Stock Sales a Specialty
Sales Conducted in All Parts of California.
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1501-3-5 So. Main St., Los Angeles, Cal.

Picked up Along the Livestock Trail

[Written for Pacific Rural Press by Thos. F. McConnell.]

FAT STEERS RIGHT OFF THE RANGE.

C. N. Hawkins of the Pacheco Cattle Company, whose ranch is located in the foothills nine miles northeast of Hollister, and near the noted Pacheco Pass, says that feed on the range was never so good at this time of the year. This is verified by the fact that 50 per cent of the steers are fit for the block now and the other 50 per cent are fast rounding into shape. While the writer was at the range a Los Angeles buyer called to select a carload of fat steers right off the range, and he begged for two carloads at the top market price.

Mr. Hawkins expects to have 50 Hereford calves from the senior herd sire Truedale. This five-year-old bull has proved a wonderful sire and transmits the true Shorthorn beef characteristics with certainty.

On the female side a noted individual is Pearl Thomas, a 14-year-old matron, from which they recently weaned the tenth calf, and she is to be rebred. They still have seven of her offspring on the place, one of which is a yearling bull. Six of her ten calves were heifers and they are considered above price. The wonderful cow was sired by Butterfly Abbotsburne, he by Young Abbotsburne, one of the noted sires in Shorthorn history.

The Pacheco Company will have five bulls in the coming Shorthorn sale at Davis. They are strong, vigorous individuals and every one bred in the purple, being sired by Truedale and some carrying the blood of Pearl Thomas. All are yearlings except one, which is a two-year-old.

HARDINESS IN HEREFORDS.

John S. Bryan of Hollister, an experienced cattleman, is a great believer in the Hereford as an ideal range animal, due to the hardiness, rustling and feeding qualities of this well known breed. Mr. Bryan claims that statistics and observation in Montana both prove that in the most severe winters where the range loss is as great as 90 per cent of all animals exposed, 80 per cent of all survivors are "whitefaces."

TOPPY STOCK AT TOYON FARMS.

Too much cannot be said in praise of the appearance of the Holsteins and their surroundings at Toyon Farms, Los Altos. The cows are kept in well lighted, well ventilated and scrupulously clean quarters and naturally show off well. But aside from this, the animals themselves are of such excellent quality that each cow seems to be an outstanding individual of the breed.

Weather conditions and the indisposition of the manager, Mr. McDonald, made our visit lacking in details, but we shall call again later and shall then have something interesting to tell our readers.

SUCCESSFUL BREEDING AT MISSION HEREFORD HERD.

A visit to the Mission Herd of Herefords, owned by J. A. Bunting of Mission San Jose, is well worth the while of lovers of "whitefaces." Everything in the herd is excellent, and while it is a common practice among breeders of purebred livestock to sell the inferior animals, Mr. Bunting has not found it necessary to sell an animal of his own breeding, although he has refused an offer of $1000 for single individuals more than once.

Anxiety Clarice is a matron 10 years old that has the breeding and individuality to transmit true Hereford beef form with certainty. The necessity of the retention of such animals in a breeding herd cannot be emphasized too strongly or too often to young breeders.

The grand quality and true beef form of Anxiety Fairfax, a 14-month-old bull, out of Anxiety Clarice, must be mentioned, as it is seldom that such an individual is found.

Mr. Bunting's animals are not pampered, as all the breeding herd gets is pasture, supplemented by volunteer hay at the necessary season. Mr. Bunting contemplates the erection of a silo this season, as he has plenty of land on his 700-acre ranch that would grow silage corn to perfection. Such range or pasture supplemented by good hay and corn silage makes the business of raising Herefords both a certainty and a pleasure. Heretofore Mr. Bunting has always raised some market cattle, but in the near future he contemplates eliminating everything except purebred Herefords.

McCUNE'S FORMULA FOR HOG FEEDING.

H. D. McCune, the Poland-China breeder of Lemoore, believes in giving his stock plenty of feed. He feeds ground barley in self-feeders and supplements this with equal parts of alfalfa meal and ground milo; also a small portion of ground barley and tankage. His hogs look as though he has the right combination.

BASSETT HOGS WELL FED.

M. Bassett & Son of Hanford have seemingly more than the average of beautiful Poland-Chinas combining quality, bone, size and uniformity of type. It is very evident that Mr. Bassett believes that judicious mating, combined with proper feeding, will produce swine of the desired type. Do not think that their hogs are being pampered, for they are given free range of considerable acres with only open shelters. A variety of home grown feeds like Indian corn, rye pasturage combined with milo maize, rolled barley and alfalfa meal shows some reasons for growing the superb animals they have.

PAYS TO RAISE OWN FEED.

H. E. Spires, manager of Hilcrest Farms, Caruthers, believes in raising as much as possible of the feed necessary for his Holstein cattle and Duroc hogs. Corn silage and alfalfa hay take care of the cattle end of it pretty well. Indian and Egyptian corn, with mangel beets and an alfalfa run, keep the hogs in excellent condition. The mangel beets help in a long winter like this to furnish a succulent feed for the pigs. Mr. Spires is milking about 25 head of pure-bred Holsteins at present, and is leveling and checking more land for alfalfa so he can increase his herd.

SALES PAVILION AT TULARE.

R. C. Sturgeon of Tulare, secretary of the Tulare County Livestock Association, says that work will progress at once on the sales pavilion which was to have been built months ago, but which was prevented by war-time restrictions.

The association has already purchased a block of 32 lots in the outskirts of Tulare and has $7,000 in sight to erect the buildings. The sales pavilion will be 60x60 feet, and there will be stalls for 150 head of cattle and pens for 60 to 75 hogs. The sales pavilion will be equipped with seats and electric lights and will be modern in every way. An office with the necessary furniture and telephone will give every advantage when necessary.

The very successful sale held by the Tulare County Duroc-Jersey Association, of which Mr. Sturgeon is also secretary and treasurer, brought the need of this sales pavilion strongly to the minds of all stockmen of the locality. A recent sale of horses and mules was marred by lack of a proper place for holding the sale. It is planned to hold a second Duroc sale in a few months and it is expected that the new sales pavilion will be ready for use at that time. The pavilion will be used not only for sales purposes, but also for holding various livestock exhibitions.



Veramont Stock Farm
Taylorsville, Cal.
HEREFORDS
The practical, beef-producing kind, raised under range conditions. See herd of young Bulls and Heifers at SANTA CLARA, CAL.
COWS FOR SALE.
H. M. BARNGROVER, Santa Clara, Cal.

CARRUTHERS FARMS
LIVE OAK, CALIFORNIA
Shorthorns and Berkshires
HOME OF THE CHAMPIONS
Ten splendid young Bulls for sale, also several heifers. We have on hand the best lot of young Berkshires we ever raised. Come and see them. Prices reasonable.

ORMONDALE SHORTHORNS
Are all heavy boned, and of Scotch and Scotch-topped breeding.
Suited for either the range grower or breeder.
EVERY ANIMAL POSITIVELY GUARANTEED.
Whether you buy or not, visit our ranch, 7 miles from Palo Alto on Woodside Road. We welcome inspection. Prices and pedigrees on application.
SHORTHORN CATTLE
DUROC-JERSEY SWINE
ORMONDALE CO. REDWOOD CITY, CAL. R. D. No. 1

HILLCREST STOCK FARM
(T. S. GLIDE)
SHORTHORN CATTLE
Shropshire & French Merino Rams DAVIS, CALIFORNIA

BRIGHTON FARM SHORTHORNS
One three-year-old bull bred by H. R. Clay.
Three outstanding under-a-year bulls sired by Sir Type, a son of Cumberlands Type. A few under-a-year heifers of same breeding.
Also registered Berkshires of both sexes of best breeding.
H. L. & E. H. MURPHY Perkins, Sacramento Co., Cal.

The World's Largest Herd of Registered
HEREFORDS
The home of MISS RIALTO 2ND, NEVER defeated Grand Champion. Over 900 breeding cows, representing choicest blood lines. Great Bulls in service. Look up our records at the BIG livestock shows.
THE HEREFORD CORP. OF WYOMING, Box 876, Cheyenne, Wyo.
Wm. Cox, Herdsman. Raymond S. Husted, Vice-Pres., Gen. Mgr

OAK KNOLL FARM
LAKEPORT CALIFORNIA
We have sold all our young boars and are now booking orders for March delivery. Highlander, the $1,000 Grand Champion Boar, heads our herd of
CHESTER WHITES
SAN FRANCISCO OFFICE, 601 BALBOA BLDG.

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Gives Greatest VALUE for LEAST MONEY. IT MAKES THEM FAT.
HAUSER PACKING CO. LOS ANGELES

Red Polled Cattle
15 head fine, purebred bulls and 10 heifers, 8 to 12 months of age. For further information address:
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Petaluma, Cal.

FOR SALE
600 Hampshire
300 French Merino EWES
With 100% Lambs. Large, proli sheep, well adapted to range har ships. Write or call for full pa ticulars.
W. F. Rominger
Phone 55 F 22 Woodland
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Hereford Bulls
RANCHMEN TAKE NOTICE
I have for sale FIVE CAR LOADS of splendid, purebred, coming two-year-old HEREFORD BULLS, in fine condition and very cheap, quality considered. Will sell them singly or in car lots
C. R. THOMAS, 910 Van Nuys Building, Los Angeles, Cal. Phone Broadway 3062.

Bred Sows and Gilt
Bred to Iowa Wonder and Model Jon These are the two best boars I could b Their breeding is A-1.
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REAOAKS SPECIAL
Registered Big Type Poland-Chinas
Bred Sows and Gilts, 25c. per lb.
F. O. B. Gilroy.
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TAMWORTHS
(The Bacon Hog)
Largest Herd in the State
DUROC-JERSEYS
Mature Stock and Weanlings of both sexes. Sure to please.
SWINELAND FARM,
W. O. Pearson, Prop. Woodland, Cal.

BERKSHIRE BREEDERS BOOSTING BUSINESS.

[Written for Pacific Rural Press by Frank B. Anderson, Secretary Western Berkshire Congress.]

Many plans for popularizing the Berkshire breed of hogs on the Pacific Slope are being considered by the new officers of the Western Berkshire Congress. One of their innovations will be the holding of sales of registered guaranteed animals of all ages and both sexes in various communities, which will put this breed of hog right before the farmer who may never make the effort to attend a congress sale or write to a breeder for an animal.

The first sale will be held at Martinez about the middle of April, and from the entries already promised to J. Francis O'Connor, the director in charge of this sale, a goodly number of hogs will be consigned. Sales will be held at other places at least once a month.

As a challenge to all breeds, grades and crosses, the Berkshire people will ask that the State Fair provide a class for barrows, farrowed on or after March 1st of each year. This should prove one of the best features of the State Fair hog show.

At the first meeting since their election at the Congress meeting at Davis the new officers voted to make this an active year for the advancement of Berkshire interests. To secure an active boost campaign for memberships, J. Francis O'Connor offered a boar or sow pig from Riverby Princess, P.-P. I. E. grand champion, or Redwood Lady 100th, 1917 national champion, to the breeder securing the most new members before July 1. Muddox put up a silver cup to the breeder securing the greatest number of new breeders during the year.

As an inducement to boys' pig clubs to use Berkshires, $15 a head was set as the price for weanling pigs of this breed when sold to boys for these popular contests.

An invitation has been extended to the American Berkshire Congress to hold its 1920 meeting with the Western Berkshire Congress at the University Farm at Davis next February.

ROASTING THE HOG SYNDICATES.

Have you forgotten the multiplication table? If so, brush up, for you will need to use it in figuring up the profits in the hog business—that is, as represented by the hog syndicates.

Charles Lamb, you will remember, wrote a delightful little ditty about the deliciousness of roast pig, but his enthusiasm pales into insignificance when compared with the lurid literature now being put out by the numerous hog syndicates operating in this State.

Give these concerns credit for one thing—they hire ad writers who could persuade a man to buy bird seed for a cuckoo clock. And how they do figure things out for you! Buy a bred sow, and you can begin to build air castles right away. Let the other fellow carry the swill and ride on the dirty feeding wagon; you can carry a gold-headed cane and ride in a twin-six. Let him smell the pig pen; you can smell the sweet-scented flowers around your palatial home, built with a small part of the profits from your hog investment. You don't need to wait until your old age to lead a millionaire's life, either. For every $150 you invest you should make $135 the first year and $607.50 in five years, and still have the original investment secure.

But is that investment secure? You don't buy land or even stock. You put your money into brood sows, and while these rainbow painters picture a glowing future, what dependable guarantee have you? True, they agree to replace your sow if she dies or has less than twelve pigs a year, but suppose they go broke—where's your come-back? How many concerns have lasted the five years over which the estimates are made? We can tell you of several that have had post-mortems held over their remains, but we can't think of a single one that has been here at the blowing of the five-year whistle and has been able to make realities of its estimates.

High-sounding promises with nothing but hot air back of them do not assure profits or shorten the road to independence. If these people put the sin in syndicate, let's knock the prop from under their propaganda. Shouldn't the Swine Breeders' Association get busy and swat the syndicates?



Stock need a spring tonic.

Most stock ailments come from winter conditions. Dry feed and lack of exercise weaken the digestive system, stunt the appetite, and poision the blood so that stock get wormy, do poorly, and waste feed.

Right now all farm stock need help—for it is freshening time, farrowing time, and plowing time.

Dr. LeGear's Stock Powders

are the most effective tonic you can use—will quickly put your stock in tip-top condition. Get more milk from your cows, more work from your horses and mules, bigger and quicker gain from your hogs, sheep and beef cattle.

My stock powders are *my own personal prescription* developed in my 26 years of actual experience as a graduate veterinary surgeon. They contain Iron for the blood, Nux Vomica for the nerves, tonics for the appetite and digestion, laxatives for the bowels, kidney regulators and worm expellers.

Dr. LeGear's Stock and Poultry Remedies are sold by 40,000 of the best dealers—never by peddlers.

Dr. LeGear's Poultry Powder keeps hens healthy, insures winter eggs, and means more profits to you.

Dr. LeGear's Antiseptic Healing Powder cleanses, drys and heals sores and cuts quickly.

Dr. LeGear's Lice Killer (powder) rids your flock quickly of lice, protects chicks, etc.

Free sample—ask your dealer.

Get a liberal *free sample* package of Dr. LeGear's Stock Powders or Dr. LeGear's Poultry Powder, also free copy of Dr. LeGear's reference book on Stock and Poultry.

Dr. L. D. LeGear Medicine Co., 767 Howard St., St. Louis, Mo.

Dr. L. D. LeGear, V. S.
(In Surgeon's Robe.)

Graduate of Ontario Veterinary College (Toronto, Can.), 1892. Nationally famous specialist in stock and poultry.

26 years' actual veterinary practice.

My positive guarantee.

Get a package of any of my remedies, test them thoroughly. If you are not satisfied I have authorized my dealer to refund your money.

Dr. L. D. LeGear, V. S.

BEWARE OF ACORN-FED HOGS.

More acorn-fed hogs are being offered to the packers than they can handle, as they make a poor quality of pork for which there is a very limited demand. There is now a spread of 4 cents between grain-fed and acorn-fed hogs, and the packers say that this will have to be increased to 6 cents if heavy offerings continue. Recently one of the San Francisco packing houses was offered a lot of acorn-fed hogs at 10 cents delivered, but could not accept them.

Because local buyers are having difficulty in selling soft hogs to the packers, they are offering feeder hogs that have been raised on acorns to farmers who have a surplus of barley. These hogs average 150 pounds and with barley at $2 farmers figure that they can make good money feeding these hogs for 60 days and marketing them at 225 pounds. They figure that the hogs will be classed as grain-fed and will bring the top price.

But no matter how much grain is used in finishing off a hog that has been raised on acorns, he will shrink heavily and will yield a poor grade of pork for which a poor price will have to be paid. This is because of the absence of a property called stearin. It is found in grains, and accounts for the expression, "hard, grain-fed hogs." But it is not found in acorns and its absence causes the flesh to remain soft.

The recent experiences of the packers convince them that the farmers should be informed of the impossibility of finishing off acorn-fed hogs on grain at a profit, and should be warned of the attempts of buyers to unload these hogs on farmers for this purpose.

MORE AND BETTER HOGS.

The California Swine Breeders' Association has just issued a new edition of its popular little booklet, "More and Better Hogs in California." It tells of the opportunities in this State, gives a forecast for the industry and describes the part that the association is playing in furthering the interests of swine breeding and in putting the industry on a sound basis. It also contains a model constitution and by-laws for county units which are now being organized. A copy of the booklet can be obtained free by addressing the secretary, Prof. J. I. Thompson, University Farm, Davis, Cal.

It is reported that on account of the floods in Sutter county and the consequent loss of pasturage, several dairymen are obliged to sell off their herds.

Poultry for Profit

[Written for Pacific Rural Press by Susan Swaysgood, Pomona.]

A BANNER YEAR FOR TURKEYS.

Turkeys are or should be hatching out now in California, and this ought to be a banner year for these money-making birds. I never saw such a fine collection of breeders as those exhibited at the Liberty Fair, and those turkeys are now being offered to turkey breeders through the columns of the Rural Press.

If your stock is in any way inbred or lacking in stamina, build them up by putting in some new blood, that is the only way to get strong vitality. Turkeys will not stand much inbreeding. There must be out-crosses of fresh blood to give new vigor.

Unless you keep your birds on clean ground and feed clean, wholesome grain you cannot hope to make any great success, for turkeys are among the most natural of all our domesticated fowls, and are the most easily affected by moldy grain or sloppy, unnatural feed. Keep them free from lice by frequent dusting, as lice irritate and annoy them, especially during the hatching period. Carbola, the new disinfectant, deodorizer and insect powder combined, is one of the cheapest and best powders I have found. Since pyretheum is not grown much more, the common insect powders have been more or less irritating to the skin of the operator, as well as the fowls, but this new powder is as soft as a toilet preparation and just as effective as anything made.

When you buy new breeders that have been out on range, don't make the mistake of shutting them up to get acquainted with the premises. Turn them out and watch them until you feel sure they will not stray from the rest of the flock. If handled right turkeys can be herded just as easily as cattle.

If there is land anywhere that can be used in this way it pays to be enterprising and pre-empt on it with a good flock of turkeys, for the price will certainly not be lowered for several years, if ever. This is one crop that will never be overdone, no matter what else is.

How do I know? Well, in much the same way as Abner, when Abner was pinned down to "just how he knew." He said, "I know because I know, by gum!" And that's how I know. Really, I know because most of the land that was formerly taken up with bands of sheep and flocks of turkeys has been turned over to the production of other crops. But here is a pointer for some grape men who have vineyards. If they will plant some kind of grass between the rows of vines and raise several thousands of young turks, cutting the right wing off at the first joint and then turn the turks loose in the vineyard the crop will be worth more than the grape crop. Turks and chickens love grapes, and the acid keeps them healthy. The grass and some grain added would complete the job of fattening the turks for market.

Now, there is one point in turkey raising that is an important feature in the raising of strong, healthy birds; this is the feeding of sufficient mineral. The ground where young turks run should be stirred up often to induce the young birds to pick up a good supply of sand; another thing is to supply them with plenty of bone—ground bone in soft feeds and granulated bone for them to eat at will. Mineral of all kinds gives strength to the bony structure and keeps the inside organs in operation.

How much to feed young chickens and turkeys is a question I am often asked and cannot answer, because every breed of chickens differs in the amount of feed needed, and even chicks of the same breed differ under different conditions. Turks that are overfed suffer more ill effects than do the chicks. The only safe way to feed small turks and chicks is to stop just as soon as you notice the eagerness go from the quest for more. This requires watching and careful calculation of what is already on the ground, but it is better to feed a little short than too much.

In feeding young stock, don't have different ages, or different breeds eating together. If you do there is a great probability that some will get too much and others too little. Such things as greens mixed in with a fair feed of grain, helps to digest the whole mass, but when a chick's crop is hard with dry feed and no succulent feed with it, there is always a danger of impacted crop, or indigestion in some shape. Watch the chicks and feed according to actual needs.

POINTERS ON RAISING DUCKS.

To the Editor: I would like to add a few words to what has been said about raising ducks in a recent Rural Press. I prefer for the first few days stale bread soaked in sweet milk and then squeezed nearly dry, with sand sprinkled freely on it for duck feed. Later, try beans, cornmeal, alfalfa-meal, beef scrap, and sand moistened. I feed this as long as the ducks live, with some whole grain after they are six months old. I can get more weight of eggs from Indian Runner ducks than from chickens, and they are not strong tasting either. I doubt if this hot, dry climate is good for them. The little ducks will chill and die if they have all the cold water to swim in that they want, but they need to get their heads under the water. I will show you the contrivance I have found most satisfactory for the young ones. It is a round wooden cover over a pan of water. It can be one or two feet in diameter to fit the pen. From the circumference of the board toward the center make openings one and a half inches wide and four inches long—long way toward the center. Put this board on the pan of water and the little ducks can put their heads through these openings in the cover and down into the water, but can't get their body in the water. Then, too, little Indian Runner ducks must have shade, because they will get sunstruck and have paralysis if they get too much hot sun before they are four or five months old.—H T. B., Orland.

HENS WON'T LAY.

To the Editor: I have a flock of Leghorns and Orpingtons. They have grit, shells and charcoal before them all the time, also Surelay (dry), and sour milk. Besides, in the morning I feed them generously of sprouted barley, then Surelay mixed crumbly with sour milk, at noon another feed of sprouted barley, and at night all the Egyptian corn that they want. Why don't they lay? We have a new hen house, no bugs and no ticks.—Subscriber, Dunnigan.

Your feeding is all right and I think your hens will lay soon. Perhaps a little green feed would turn the trick or an extra quantity of sprouted oats—just a little extra sometimes does it. If your hens are old, that, too, would make a difference, but they will make up when they do get started.

H. W. Barnett, Oakland, recently shipped three pair of exceptionally fine White King pigeons to Australia, for which he received $25 per pair. He says the California breeders can work up a nice foreign trade if they are careful and ship nothing but the best.

Poultry Breeders' Directory

SUPER QUALITY WHITE LEGHORN CHICKS, hatched right in Jubilee machines from best strains of foundation stock. Our customers come back each season; we can refer you to them. Write at once before we are all sold out. Newton Poultry Farm, Los Gatos, Cal.

HATCHING EGGS FROM OUR HEAVY-LAYING, prize-winning, single comb Rhode Island Reds. Seven superb matings. The best pays. Place your order now. Mating list free. Ward's Poultry Farm, S. C. B. I. Red specialists, South Lincoln Ave., San Jose, Cal.

GIANT BRONZE TURKEYS—Gold Nugget Strain. Prove their superiority by winning Gold Special Sweepstakes for best turkeys at the following great shows: Arizona State Fair, 1916; Texas State Fair, 1917; California State Fair, 1917-1918; Los Angeles Show, 1917-1918; Pacific Coast Land and Industrial Exposition, Oakland, 1918. An unequaled record. Large turkeys can be raised at practically the same cost as small ones. Toms for sale that will increase size and improve any flock. I am the originator of the Gold Nugget Strain. J. Will Blackman, 607 East Third St., Los Angeles, Cal.

SULLIVAN'S FAMOUS BUFF ORPINGTONS—Want the best? Write Sullivans, Specialists. Oldest flock on Pacific Coast. Line bred for 20 years. Said by Walter Hogan, originator of "Hogan System," best layers of this variety he ever handled. Have won thousands gold and silver special prizes, cups and ribbons—more than all competitors combined, on the Pacific Coast. Eggs, $3.00, $5.00 per 15; $12.00 and $15.00 per 100. Breeding stock. Write for prices. Mr. & Mrs. W. S. Sullivan, 100 Market Road, Agnew, Santa Clara Co., Cal. Telephone [illegible] R. 5.

NEVER SAW CHICKS GROW FASTER—"Your pullets laid through moult." Why? Bred 20 years to lay 200-290 eggs yearly. White, Brown, Buff Leghorns; Anconas; Reds Barred White Rocks; Minorcas; Orpingtons; clearing customers $5.00. Valuable circular with proof, free. Chicks two-thirds booked to May. Reasonable, yet most week still open. Increasing our hatcheries as demanded (50,000). Many repeat orders monthly, yearly Breeders, Pullets. J. Beeson, Pasadena, Cal.

WHITE LEGHORNS are the most profitable breed of poultry. If you are in the business for profit, you will eventually have them. Early broilers; early layers; early profits; we sell only **White Leghorn Baby Chix** from heavy laying **Hoganized** hens. Safe delivery of full count live chix guaranteed. Prices per 100: February, $15; March, $14; April $12.50. The Pioneer Hatchery, 408 Sixth street, Petaluma, Cal.

BARRED PLYMOUTH ROCKS—Champion prize winners and wonderful layers. Choice cockerels, hens and pullets for sale. Hatching eggs from twelve grand matings. I have made a specialty of Barred Rocks for over twenty years. That's why I win at all leading shows. "Nothing Better In Poultry" than Vodden's Barred Rocks. Catalog free. Chas H. Vodden, Box 396, Los Gatos, Cal.

BABY CHICKS, HATCHING EGGS, BREEDING MALES—Barred Rocks, Ancona, R. I. Red, Black Minorcas, White Minorcas, White Orpingtons, Black Orpingtons, Light Brahmas, Buff Leghorns, Brown Leghorn and MacFarlane White Leghorns. Also Duck, Geese, Turkey eggs. Circular and price list free. Poultrymen's Co-operative Hatchery, D. E. Doke, Mgr., 732 So. Spring, Los Angeles.

BABY CHICKS—We specialize this season on money-making White Leghorns—hatching from stock with high records that are unimpeachable. Also Brown Leghorns, Anconas, Minorcas, Rocks, Reds, Orpingtons, and White Wyandottes. Especially interesting circular with price list ready January 1st. B. W. Archibald, Soquel, Santa Cruz Co., Cal.

GOLDCROFT BUFF ORPINGTONS fulfill every standard and utility requirement. Won San Jose show first, second, third, pullet and cockerel. Eggs, $5.00 and $3.00 from winning pens; $2.00 from general flock; $12.00 per hundred. Stock for sale. Samuel Abrams, Los Altos, Cal.

BABY CHICKS EVERY WEEK—Order early and get the date you want. White and Brown Leghorns, Rhode Island Reds, Barred Rocks, Anconas. Also hatching eggs. Safe delivery guaranteed. Write for circular. Stubbe Poultry Ranch and Hatchery, Palo Alto.

FINEST HATCHERY IN THE WORLD—CHICKS, White Leghorns, Rhode Island Settings—1000's—hatched right in our $60.000 brick and concrete hatchery from our Hoganized heavy layers. Stock, eggs. Pebbleside Poultry Farm, Sunnyvale, California.

BOOK YOUR ORDER NOW for S. C. White Leghorn baby chicks from hens from a trapnested strain of 192 to 297 eggs. My hens are noted for their exceptionally large eggs. Price, $15 per hundred chicks. Mrs. L. A. Benoit, Rt. C., Box 183, Modesto, Cal.

RHODE ISLAND REDS—Rose and single comb Rhode Island Red hatching eggs from 220-egg record layers. Cockerels, rose and single comb. Pens. Improve your color, type, and egg capacity. Write for mating list. Wm. Larm, 3915 39th Ave., Fruitvale, Cal.

SPRING CHIX—Rhode Island Reds, Barred Rocks, Buff Orpingtons, Black Minorcas, Buff, Brown and White Leghorns, from Hoganized stock, bred to lay. Satisfaction and safe delivery guaranteed. Tobener Poultry Ranch, Washington Ave., San Jose, Cal.

PRUSSIAN HILL POULTRY RANCH—A few fine Blue Andalusian Cockerels, $3.00 and $5.00. Hatching eggs. Rocks, Minorcas, Andalusians, $2.00 for 15; Baby chicks at 20c., 25c., and 50c. each. Geo. I. Wright, Mokelumne Hill, Cal.

ATKINSON'S PEERLESS ANCONAS lay more and eat less than other breeds. 50 big husky cockerels $5 and up. 200 pullets, trios and pens for sale. Hatching eggs. Catalogue free. J. W. Atkinson, Box B, 130 Willard street, San Jose, Cal.

HATCHING EGGS—White Leghorns, Light Brown Leghorns, Dark Brown Leghorns, White Rocks. $2.50 per 15; $10.00 per 100. All bred to highest possible standard of beauty and utility. Mahajo Farm, P. O. Box 597, Sacramento, Calif.

RHODE ISLAND REDS—Single and rose comb. Stock. Hatching eggs from 220-egg record layers. First prize winners in leading California shows. Baby chicks for sale. Wm. Larm, 3915 39th avenue, Fruitvale, Cal.

S. C. RHODE ISLAND REDS EXCLUSIVELY—"Pacific Coast Aristocrats." Hoganized flock. Booking orders for day-old chix and hatching eggs. Order early. Rosedale Poultry Farm, Motor A, Box 200A, Ceres, Cal.

FOR SALE—We have a pen of six, five and better fingered White Leghorn hens and a four-fingered cock, all beauties. A chance to breed a three hundred-egg hen. Will receive offers. C. B. Atterbury, Turlock, Cal.

THE BEST HATCHING EGGS—Columbian and White Wyandottes, Rhode Island Reds, Anconas, Buff and White Leghorns, Utility, $2.00. Exhibition, $5.00 per 15. Circular free. George Aumock, Palo Alto, Cal.

SANTA CLARA VALLEY HATCHERY has the chicks for you from six different standard breeds, all bred for egg yielders. Can furnish references from my old customers if desired. Lincoln Ave., San Jose, Cal.

RHODE ISLAND REDS—Best all-purpose bird. Oakland show. First cock, second cockerel, fifth pullet on four entries. Hatching eggs. Prices for asking. John L. Reed, Route C, Box 36-B, San Jose, Cal.

S. C. WHITE LEGHORN EGGS for sale, from heavy-laying, prize-winning strain, headed by males from 280-egg stock, range raised. Setting, $1.50. Hundred, $8.00. Mrs. Sanders Hayes, Longvale, Cal.

BABY CHIX R. I. REDS
My specialty. Bred for eggs, size, color. Hens on free range means strong chix. 16c each; 15c in 1000 lots. Denton Poultry Yards, Box 360, Campbell, Cal.

RAISE CHICKENS, rabbits and pigeons on half acres with city conveniences. Market at the door. Profits by intensive cultivation will surprise you. Write for information. F. B. Caldwell, Broadmoor, San Leandro.

BABY CHICKS—Hatched from our S. C. White Leghorns, a result of many years' careful selection and breeding. San Jose Poultry Yards, Fifteenth and Margaret streets, San Jose, Cal.

BABY CHICKS—Hatched from our own stock in our own hatchery. Hens are of S. C. White Leghorn utility stock, bred for commercial laying. H. A. George, Route 2, Box 29, Petaluma.

FOR SALE—Bourbon Red turkeys and eggs for hatching, $5.00 per setting of 13 eggs. Book your orders early. Albert E. Balmer, Alhambra Valley, Martinez, Cal.

WHITE WYANDOTTES—Eggs for hatching from our heavy laying prize-winning stock. Baby chix. Choice breeding cockerels. R. W. Stawetski, Route B, San Jose, Cal.

BABY CHICKS—from Hoganized breeders, 180 egg type and up. White Orpingtons and Sicilian Buttercups. Order early for future delivery. M. S. Woodhams, San Mateo, Cal.

BLACK LANGSHANS—Crabtree's Imperial Strain. Winners everywhere. 250-egg type. Choice hatching eggs, $3, $4, and $5 setting. Jas. Crabtree, 1836 57th Ave., Oakland.

MODEL POULTRY FARM—White Leghorn specialists. Our fifteenth year. Baby chix and hatching eggs for sale. Our prices are right. W. C. Smith, Prop., Corning, Cal.

BARRED PLYMOUTH ROCK EGGS for sale. Good range flock headed by cockerels from 260 to 290-egg stock. $1.50 per setting. Mrs. J. A. Vassar, Laytonville, Cal.

EGG BRED—Buff, Brown, White Leghorns, Golden Campines, Dark Cornish. Winners wherever shown. Send for circular. Percy Ward, 3142 Ward St., Fruitvale.

EASTMAN'S "BRED-TO-LAY" Hoganized and trapnested Barred Plymouth Rocks. Baby chicks. Eggs; cockerels. Fairmead Poultry Farm, Fairmead, Cal.

R. I. REDS, Silver Spangled Hamburgs, Speckled Sussex. First prize stock. Eggs and baby chicks. Mrs. A. Golden, 643 S. 8th St., San Jose, Cal.

BABY CHICKS—Booking orders for spring deliveries. White and Brown Leghorns, Rhode Island Reds, Barred Rocks. E. W. Ohlen, Campbell, Cal.

SAVE THE BABY CHICKS—Write today for our valuable booklet, "Making Every Chick a Chicken." Mailed Free. Box 593, Modesto, Cal.

BABY CHICKS (White Leghorns) shipped on approval before remitting. No weak ones charged for. Schellville Hatchery, Schellville, Cal.

BABY CHICKS—(White Leghorns) from good laying strain of Hoganized and trapnested stock. Rose Hill Hatchery, Turlock, Cal.

BABY CHICKS—We have the large heavy-laying S. C. White Leghorns, severely culled last year. Send for prices. Tupman Poultry Farm, Ceres, Cal.

HATCHING EGGS—Barred Rocks, White Leghorns, and R. I. Reds, $5.00 per hundred, $1.25 per 15. J. A. Brannin, Corning, Cal.

FOR SALE—White Leghorn chicks from heavy laying stock. Hatched right. Prices right. Madera Hatchery, Madera, Cal.

CHICKENS, DUCKS, GEESE, GUINEAS, Pea Fowl, Pigeons. Wm. A. French, 545 W. Park St., Stockton, Cal. Stamps.

BLACK MINORCA EGGS—$1.50 per 15. Special mating, $2.00. Edward A. Hall, Rt. 1, Box 39, Watsonville, Cal.

BUFF ORPINGTONS, BUFF DUCKS, BOURBON RED TURKEYS—The Ferris Ranch, Rt. 2, Box 144D, Pomona, Cal.

FOR THE BEST laying strain of White Plymouth Rocks and Rhode Island Reds, write W. H. Carpenter, Oakley, Cal.

FOR SALE—Laying White Leghorns, $1.50 each. Also fine Mammoth Bronze turkeys. N. E. Mulick, Willows, Cal.

THOROUGHBRED BUFF ORPINGTON EGGS from heavy-laying stock. Settings $1.50. Mrs. M. Lopez, Lathrop, Cal.

BRONZE TURKEY EGGS—Limited number for delivery in April. No more stock. Albert M. Hart, Clements, Cal.

PUREBRED S. C. B. MINORCA EGGS, $2.00. Special matings, $3.00 per 15. Mrs. J. W. Moore, Exeter, Cal.

RHODE ISLAND RED EGGS for hatching. Mrs. Richard Holdridge, P. O. Box 282, Dixon, Cal.

LIGHT BRAHMA EGGS—13, $2.00. Stock for sale. J. Dolan, 146 Wyandotte, Stockton, Cal.

PEKIN DUCK EGGS—Settings $1.50. Mrs. W. E. Court, Rt. 1, Lathrop, Cal.

RABBITS.

MONEY IN RABBITS—We are now paying $6 per pair for all you can raise. Send stamp for particulars. H. E. Gibson Co., Arcadia, California.

RABBIT CULTURE AND STANDARD—Official standard description of the various breeds, 75 cents. Caldwell, Broadmoor, San Leandro.

STEEL GRAY FLEMISH, NEW ZEALANDS—Breeding does and bucks. Prices reasonable. Golden State Rabbitry, 2522 Hopkins St., Oakland.

SAN FONG RABBITS—15-16-lb. Steel and Gray Flemish Giants. Prize winners at San Jose and San Francisco. Sanborn Young, Los Gatos.

NEW ZEALAND REDS—Pedigreed, registered and utility stock. Write your wants. E. Pennin, 86 Cambridge, San Leandro.

NEW ZEALAND REDS—First-class utility breeding stock and young for sale. F. B. Caldwell, Broadmoor, San Leandro.

DR. B. HEARN, VETERINARIAN—Breeder New Zealand and Flemish Giant Rabbits. R. R. 2, Porterville, Cal.

R. & S. RABBITRY, 2922 35th Ave., Oakland. Fine utility Flemish and New Zealands. Stamp for reply.

WHITE MICE for laboratory purposes $1.50 dozen. Also Guinea pigs. Neidhardt, 6 Hull St., San Jose.

POULTRY, RABBIT AND PIGEON NOTES.

[By Walter Hickling.]

Poppy Hill Poultry Farm, Oakland, owners of a flock of 800 Barred Rocks, reports that its orders for hatching eggs and baby chicks are 5000 ahead of this time last year.

Sanborn Young, Los Gatos, the Flemish Giant breeder, has one of the most modern and up-to-date rabbitries in the State. He raises a fine strain of steel gray and gray Flemish, for which there is a large Eastern demand.

Percy Ward, Oakland, has mated up his second prize Los Angeles White Leghorn cock to a fine pen of hens. The show exhibitors who beat this mating will have to go some.

James Crabtree, Oakland, says that most people are under the impression that the Black Langshans are not good layers, but his show records in the utility class prove that they will average about 250 eggs.

Ward's Poultry Farm, San Jose, owners of a flock of 200 Rhode Island Reds, has recently moved to its present location so as to have more ground and it is intended to increase the flock to 800 birds by the coming year.

Ed Ellis, San Francisco, reports business so good that he does not have to advertise. Wrong again. Consistent advertising is the best policy. Prepare for the lean years.

Pebbleside Poultry Farm, Sunnyvale, hatched out 513,000 baby chicks last year and expects to pass this number this year. On its different ranches it expects to have 11,000 White Leghorns and Rhode Island Red chickens.

At the present time there are around 50,000 hens in the Runnymeade Colony at Palo Alto and by the amount of new building going on there will be at least 100,000 hens.

V. C. Howe, San Leandro, is disposing of his utility rabbits and putting in thoroughbred pedigreed stock of all varieties, but will specialize mostly on New Zealand Reds and Flemish Giants.

RAISING CHICKENS ON SHARES.

[Written for Pacific Rural Press by Susan Swaysgood, Pomona.]

This question is often put to me, "What shares ought I to get if I furnish the land and paultry, the other fellow furnishing the feed and labor?"

DISSATISFIED WITH THE VENTURE.

Candidly and honestly, I don't care to answer such questions. They can be best answered by those doing the work. I once took some chickens on shares in Dakota where feed was no question at all, nothing but the labor being involved on my part; but really, I never was satisfied with the deal because just as I had a nice bunch ready to take in to my investor a mink and a weazel made such short work of the distributing part that we were all at sixes and sevens. The man I got the start from was really white about it and said he would stand his half of the loss, and I finally did get the matter settled according to the dictates of law, but never was satisfied with myself about that deal.

I took it then, and do yet, that it was my part to prevent those animals getting the chickens. My boys said, "How are you going to do it?" And that was a squelcher, but I know it could have been done and should have been done, even though it cost more to house against weazels than the chickens were worth.

VARIOUS AND SUNDRY DRAWBACKS.

Now, with feed as high as it is and chicken thieves running amuck, to say nothing about predatory animals, disease and losses from other sources, I simply would not gamble with other people's chickens. Ordinarily the owner of the land, buildings and chickens should get a fifty-fifty deal; but when as many factors enter into it as at present, if he is to get that kind of a deal he must assume some responsibility. For instance, if a man loses 100 chickens from a cause outside of his control, the man who holds the contract should assume half the loss—always providing the party of the second part takes proper precautions to safeguard both his share and the party of the first part's interest in the poultry.

Around Riverside chicken thieves travel in autos, and to save noise the chickens are chloroformed into passivity, then allowed to recover when the wind is blowing in on them. In the case of people living away out in the country it is fairly safe to go into a contract on equal shares, the difference depends on locality.

PROBABLY TUBERCULOSIS.

To the Editor: My hens on a whole look perfectly healthy, yet every week or so one becomes sick and dies. The first thing noticed is that they will stand around huddled up, with a black comb, and so weak they can hardly walk. Occasionally they will be light in weight, but almost always heavy, and sometimes even have a full crop. I always catch these and put them away from the flock, and in a few hours they are dead. They have free range, and I feed them gyp corn and soaked whole barley with Surelay in a hopper before them at all times. They have plenty of shell and grit and a good deal of sour milk. I have lost about a dozen this winter and all apparently from the same cause. But only one at a time, and a week or so apart.—C. T. B., Escalon.

Somewhere in the flock is a germ of tuberculosis and it will naturally affect those members of the flock that are susceptible. If you fed highly of meat scraps one might think it was liver trouble, but I never knew a case where sour milk was fed that liver trouble had a footing. This disease is often termed "going light," and some hens do waste away until they are just a bunch of feathers, but many die in full flesh as well. You should burn every carcass, not bury it, and spray both house and yards quite often with some good germicide so as to kill the bacilli. This is about all you can do.

FEEDING TURKEYS DURING THE DANGER AGE.

To the Editor: What can I feed little turkeys till they are past the danger age?—W. L. S., Lakeside, San Diego county.

The less you feed the better. Don't cram them with anything. Keep grit and sand before them and give clabbered milk, a little chopped onion, lettuce, hard-baked bread crumbled or ground in food chopper, a little hard-boiled egg chopped in with it, but no hard grain. Get them to eat sprouted oats or other green stuff as soon as possible, and let them run out. It is not so much what you feed as it is how much you feed little turks. Never crowd them.

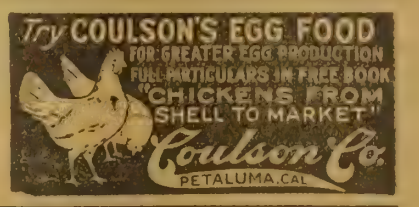
COMING HOME TO THE RURAL PRESS.

We feel delighted over the assurance that Californians who have been at the front count the return to the companionship of the Rural Press one of the joys of their homecoming.

One brave man who has seen a lot over there writes: "The reading of the Rural Press is one of the best things I am coming back to."

A parent gives these instructions: "Keep on sending the Rural to the home address of our boy, who is still in France. We want to have it ready for him when he comes back."

If dry bread is ground and kept on hand in jars or pasteboard boxes, it is much more convenient for use than if ground just when one wants to use it.



Chickens Sick or Not Laying?
Most poor layers are "OUT OF CONDITION" or have Colds, Roup, Bowel trouble, Sore head, Chicken pox, etc. GERMOZONE is the best remedy for all these disorders. At dealers or postpaid 75c, with 5 book Poultry Library. GEO. H. LEE CO., Dept. 423 OMAHA, NEB.

Make Poultry Pay

One of our subscribers was completely disgusted with poultry raising. Every morning forty of his hens would brag about what they were going to do, but at night he would find that only about eight had laid. The rest had simply lied.

So he bought a copy of our poultry book and in less than two weeks his hens had quit lying and gone to laying. They were shelling out enough extra eggs to pay for the book in less than two days.

California Poultry Practice Tells How

This great book will do as much for you. It was written by a Californian for Californians. The author, Mrs. Susan Swaysgood, after years of successful experience, has succeeded in showing the farmer how to make poultry raising more profitable. She knows what to tell and how to tell it. She deals out hard-headed poultry sense and still has every paragraph full of snap and sparkle.

The book deals with actual conditions—not theories—and covers every phase of the industry. It gives advice about location, buildings, equipment, choice of breeds, best way to begin, how to select stock, etc. There are valuable instructions for incubating, brooding, culling, feeding, breeding for heavy laying, showing, treating diseases, marketing products, etc. You will find everything necessary to insure your success.

Now Is the Time to Start

Never was there a better time to take up poultry raising in earnest. The nation's supply of meat animals is not keeping pace with the increase in population, and the people must turn to poultry raisers for nitrogenous foods. Eggs will be the cheapest concentrates, and table fowls the cheapest meat.

A golden market awaits all poultry products here on the coast, where we don't even produce enough to supply the local demand. As a government expert puts it: "The Pacific Coast offers a wider and more inviting field for future development in poultry raising than any other section of the United States."



Costs Only a Dollar

But play safe. Start right by getting this book and following the methods which have already proved successful. It will cost you only a dollar; you would not sell it for ten.

Send Coupon Today



Garden Time is Coming

Now is the time to study your garden conditions and prepare for flowers later

California Garden Flowers

By E. J. Wickson.

A book of over 250 pages, hard-somely illustrated, bound in cloth, written to meet California conditions, will help you plan your yard and effects. For sale at all book stores at $1.50 per copy, or by the

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625 MARKET ST., SAN FRANCISCO

A Reliable Remedy for Roup

Putting coal oil on the water for chickens is a very old recipe, so old, that we have almost forgotten it in trying the new things, but it is just as good now as it ever was. Another good germ destroyer is benetol. Used in the mouth and throat on canker two treatments will cure; or painted on the lumpy warts of chicken pox it will cure, but as a drink chickens will not take it unless forced down the throat with a medicine dropper, so that as a flock remedy it will not work, but must be used individually. When this is done the operator should put on some old duds, and it is just as well to wear spectacles as a guard for the eyes, then, when the job is finished, wash your hands in hot water and benetol and you are perfectly safe.

THE HOME CIRCLE

DELIVERANCE 1918.

From brave soldiers' bloody graves,
From lurking danger 'neath the waves,
From brutal fiends who murdered babes—
Thou hast delivered.

From shrieking shell, from bursting bomb,
From blackened heart, from lying tongue,
From lustful men whom women shun—
Thou hast delivered.

From fierce deeds of gruesome sight,
From warped conscience urging "might,"
From savage Hun forgetting right—
Thou hast delivered.

God of Peace and length of days,
God of all nations to Thee we raise
Joyful songs, thanksgiving, praise—
Keep us delivered.
—Elizabeth Hairston Leigh.

THE HORSE THAT LIKED RED.
(A True Story.)

Our horses are continually doing intelligent things that seem very remarkable, but King is the only one we ever knew to have a favorite color. This is a true story of how our horse King showed that he could distinguish colors, and that his favorite color was red.

King was a beautiful big bay colt, just being broken, and Bettie was his young mistress. Bettie loved the horses so much that, when she went through the meadows where they grazed, she always filled her pockets with goodies for them—apples or corn, and sometimes sugar or salt. The horses knew her so well, and were so sure of the treat, that, as soon as they caught sight of her, they started towards her, coming in all directions from the far-off hillsides.

After she had divided her goodies among them, she had a long string of horses and colts trailing behind her as long as there was hope of anything more to eat. When they found that nothing more was forthcoming they gradually dropped off and went back to their hillsides—all except King, for King seemed to love Bettie for herself, apart from the good things she had to give. Even on those rare occasions when she came empty-handed into the fields, King trotted by her side, and escorted her as far as bars and fences would permit. Other members of the family, and her companions, often walked with her in the meadows, but King always faithfully trotted by Bettie's side, and could never be coaxed to leave her for any length of time. This devotion pleased Bettie, and when Cousin Grace came to visit her, one of the first things she did was to take Grace into the meadow to see King.

It was a lovely day in early spring, and, though the meadow was blue with violets and the air all golden with sunshine, there was a touch of winter in the wind, that decided the girls to wear their sweaters. Bettie's was light blue and Grace's was bright red. They both had their pockets full of corn, and the horses crowded around them until the corn was all gone; then they wandered away, and only King remained.

But, instead of trotting by Bettie's side, as he had always done before, he walked behind Grace—at first about a yard distant, but gradually drawing nearer, until at length he walked so close that every few steps his nose touched her shoulder.

Grace was a little timid about having the big horse so close. If she stopped for a moment, he bobbed right into her. They tried to send him away, but King knew Bettie too well to be frightened off. At length he came so close to Grace that his nose rested on her shoulder, and in that order they were compelled to continue their walk, for they could not prevail upon King to take his head away from Grace's shoulder.

Bettie thought this the strangest thing. The girls did not imagine that it was the red sweater King liked. They thought he had taken a fancy to Grace. After that, whenever they went into the meadow—Grace, of course, wearing her red sweater—the same thing happened. King always walked by Grace, with his nose against her shoulder.

At length there came a day when the weather was too warm for sweaters, and the girls went out without wraps. Then it was that they began to call King fickle, for he paid not the slightest attention to Grace, but trotted along by Bettie, as he had done before Grace came. This went on for some time, King always singling out Bettie, and never noticing Grace.

But one day the girls brought forth their broad-brimmed summer hats, for the sun was very hot. Bettie's hat was trimmed with blue, and Grace wore a broad band of bright scarlet ribbon around hers. No sooner did they enter the meadow than King started towards them with long, quick strides, and, ignoring Bettie, laid his long nose against the red ribbon on Grace's hat. The girls exclaimed in astonishment at this. Grace tried to pat his face, but King tossed his head away from her hands and laid his nose against the red ribbon.

"He used to keep his nose on your shoulder, and now he wants to keep it on your head," remarked Bettie.

"Yes; I remember how he used to snuggle up against my red sweater," replied Grace.

"And now he snuggles up against your red ribbon," said Bettie.

Then she suddenly understood.

"Why, Grace!" she exclaimed, "I believe it is the red he likes."

And so it turned out to be. King knew red, and loved it. Blues and yellows and pinks and greens he did not seem to notice, but the first glimpse of scarlet brought him swinging across the meadow with long, quick strides, to place his nose against his favorite color. — The Presbyterian.

SPRING FASHION NOTES.

A new fashion favorite is the Victory Red blouses in both plain and frilly styles.

Black seems very popular for evening wear and jet is a very favorite trimming.

Chic little neck pieces of one or two skins will be the reigning vogue in furs this spring. The smartly dressed woman will wear small furs.

New wash fabrics of colored organdies in many shades, novelty crepes and fancy new printed voiles are being shown.

Dolman capes are growing in popularity as spring advances. They are made of beautifully soft materials with gay linings.

Sport coats in heavy silk, with collar and cuffs of white, or of taffeta, with collor and cuffs of Angora wool, are new this spring.

Bags and blouses and even hats are being beaded this spring—you can have a design printed and buy the beads to work out a handsome design.

Trimming that is closely applied to the hat and then veiled with tulle still retains popularity. Roses of varying colors applied in that manner on a modified black sailor are very effective.

One of the fads of the hour are vests, vestees and waistcoats and these are shown in jersey, novelty silks, poplin and in fact all the popular materials, many of them handsomely hand embroidered.

Ostrich is very much in evidence in the dressier spring hats. In some cases it is applied flat and forms the entire crown covered with tulle, and in other cases, laid flat upon the brim with the ends drooping a bit at the back. So far, there are no heavy plumes shown, but they may come later.

Many of the evening dresses for girls are made of bright taffeta with the skirt a succession of small ruffles. Others are of crepe de chine foundation with the skirt of ruffled net and bodice of plain silk. This ruffled net comes 40 inches wide and may be bought by the yard.

Separate skirts are to be very good style this spring—wool plaids and the new knitted wool fabric for practical wear and plaid silks, baronette satins and the distinctly new checked satin for more dressy use. These skirts are made either plain or pleated. Many of the good stores make these skirts for a nominal sum above the price of the material.

Almost a craze is the popularity of the novel necklace. The distinguishing note of a costume is many times the necklace of unique beads strung upon heavy silk cord of a favorite color and terminating in a gay tassel. Then there are also the bead necklaces woven by the wounded soldiers of France that are lovely in tint and perfection of workmanship.

HEALTH WARNINGS.

Foreign countries report an increase in tuberculosis following influenza.

The U. S. public health service is warning the public to beware of tuberculosis developed after influenza. A thorough examination of the lungs is necessary by a competent physician, and care should be taken to build up the strength with right living, good food and plenty of fresh air. Every effort should be made to break up prolonged colds, for they might be the beginning of a tubercular condition.

JELLIED FISH.

One and one-half cups cold flaked fish, 2 tablespoons chopped capers, 1 tablespoon granulated gelatine, 1 cup boiling water, 2 tablespoons lemon juice, ¼ teaspoon salt, 2 tablespoons cold water. Mix the fish and capers. Arrange in a mold. Soak the gelatine in 2 tablespoons of cold water. Add the boiling water and stir until the gelatine dissolves, then add the lemon juice and salt. Pour this jelly carefully over the fish and set in a cool place to harden. Cut into portions and serve on lettuce with salad dressing. If desired, celery or hard-boiled eggs cut in slices may be added to the fish.

Janice—Do you know, Horatio, dat every boy hez a chance ter be de President?

Horatio (thoughtfully)—Well, I'll sell my chance for ten cents.—Sacred Heart Review.

More Light Than 20 Oil Lanterns

AT LAST—the light of lights! A lantern that lights with common matches just like the old style oil lantern, but makes and burns its own gas from common gasoline, giving a brilliant, steady, white light of 300 candle power.

MOST BRILLIANT LIGHT MADE

Brighter than the brightest electric bulb. More light than 20 oil lanterns. Cheapest and best light made. Costs less than one-third of a cent per hour. Safer than the safest oil lantern. The



Coleman Quick-Lite

No wicks to trim — No globes to wash. No dirt or grease, no glare or flicker. Absolutely safe. Fuel can't spill—no danger if tipped over. Will last a lifetime. Write our office for Catalog 21-R. P.

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When you come to Sherman, Clay & Co., we prefer to consider your requirements first for there are all grades of Pianos and what would be the proper instrument for the Living Room may not be the best for the children's piano lessons. Take us into your confidence and we know we can fill your every requirement as to price, terms, style, tone, etc. We will serve you to our best ability and the transaction will be mutually satisfactory.

We invite you to call at any of our stores—or write us asking for illustrated catalog and prices.

We are dealers in Steinway and other Pianos, Pianola Pianos, Aeolian Player Pianos, Player Music, etc.

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Convert *your old-fashioned* bathrooms

into modern bathrooms to which you can conduct your guests with a feeling of pride.

The combination of beauty and simplicity contained in Pacific Plumbing Fixtures make them the vogue. Their added convenience, and the amount of unnecessary work they save, will more than compensate for their moderate cost.

Write for a copy of the Book of Bathrooms. It's a 56-page book, brim full of helpful ideas on bathroom arrangement.

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The toughly constructed tread keeps the casing protected from mileage enemies. Norwalk Tires have no equal for service on rough country roads. Ask for literature.

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Here is the famous Oliver Typewriter offering you a saving of $43. The $57 Oliver is our identical $100 model, brand new, never used. Not second-hand nor rebuilt. The same as used by many of the biggest concerns. Over 700,000 sold. We send an Oliver for Free Trial. Not one cent down. If you want to keep it, pay us at the rate of $3 per month until the $57 is paid. This is the greatest typewriter bargain in the world.



Write today for our new book, "The Typewriter on the Farm."

The Oliver Typewriter Co.
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FARMS FOR SOLDIERS.

Aye, give returning soldiers farms,
'Twill be the least of wrenches
To substitute the rural ditch
For trenches.

The language learned in driving mules
Will not grow old and mossy;
It may be used with equal vim
On Bossy.

And when it comes to hunting pests
The boys will think them beauties
If they can swat potato bugs
For cooties.

—McLandburgh in N. Y. Sun.

FRESHENING THE KITCHEN.

If there is to be any freshening of the kitchen after the winter, it should be done before real warm weather comes. When so much of the time of a housekeeper is spent in her kitchen, it should certainly be made a cheerful, attractive room.

To have it easy to keep clean, the walls should either be painted or covered with a washable wall paper. A wainscoting of plaster half way up the wall and the remainder finished in a continuous line makes a room look large and airy.

If the woodwork is to be painted, do not select either too dark or too vivid tones, but rather a light tan or buff or light gray. Pure white in a kitchen makes a good deal of work to keep clean.

In painting dark wood-work, have your finishing coat of enamel, as it washes easily and keeps clean better. Kitchen shelves are much easier to care for if they are painted instead of being covered with paper, which must be changed to freshen them. With paint, a damp cloth will easily suffice.

If you have a large kitchen with adjoining pantry that necessitates many steps to prepare a meal, try rearranging the kitchen so that utensils are placed near where they are to be used, putting in a set of shelves near the sink and hooks near the stove to hold necessary articles, using your pantry more as a store-room.

At this season the contents of the pantry should be overhauled and all cereals and meals used up before summer, as they are liable to become "buggy." All supplies not used should be put into glass jars that can be tightly covered.

All screens should be looked over carefully and repaired or replaced, so the first warm days will not bring you a host of unwelcome visitors.

WHY ALWAYS MAYONNAISE?

The present-day cook is content if she knows how to produce two salad dressings — mayonnaise and French. These are the two most useful dressings, but there are others that are good and add to the variety. Here are some tried recipes that are worth adding to one's list:

WITH PINEAPPLE JUICE.

Beat two eggs until frothy and add a quarter of a cup of pineapple juice and one-fourth of a cup of lemon juice. Put in double boiler and stir constantly until it thickens. Season with a little salt and set aside to cool. This is delicious with any fruit salad, but especially so with one made of apples, nuts and celery.

FOR POTATOES OR CABBAGE.

Beat slightly two eggs in a double boiler and add a rounded tablespoon of butter, slightly melted. Add half a cup of sour cream and season with mustard, pepper and salt. Cook until it thickens.

FOR PLAIN LETTUCE.

Add to a cup of mayonnaise dressing a cup of whipped cream. Stir in a little paprika and chili sauce to make it a light pink, also a little sugar.

WITH BOILED EGGS.

Mash the cooked yolks of three eggs until smooth and then the yolk of one raw egg and work in half a teaspoon of salt and a dash of mayonnaise. Add a gill of olive oil, drop by drop, mix in gradually three tablespoons of vinegar. This is good with any sort of salad.



A Social Help

Let's suppose it's a church or school social—or a Red Cross rally—or a "get-together" meeting of the Farm Bureau—or what not—

Will Ghirardelli's be there? What a question! For this delicious, appealing food-beverage is *always* in order at any social function. It means cheer and comfort and warmth! It provides a social help that no hostess (whether she has in mind a "big affair" or a "little party") can afford to overlook.

In ½ lb., 1 lb. and 3 lb. cans—at the store where you do your trading.

Say "Gear-ar-delly"

D. GHIRARDELLI CO.

Since 1852 San Francisco

Ghirardelli's Ground Chocolate





"FLUEY"—

SLANG FOR GONE - UP THE FLUE

Your good money and hard work—gone—absolutely wasted in smoke, soot and fumes. A sixty to ninety per cent loss that must be suffered when wood or coal is the fuel.

To entirely eliminate all loss and produce a clean fire of real service, has been the fulfilled mission of the "Premier" Burner, making an oil-gas that measures full in the tremendous heat units of kerosene. Thus through perfection permanently maintained, the simple, but natural action of the burner has won its way to popular favor in meeting an ever increasing demand.

You can install it yourself—applied to any stove without changes being made.

In asking for Circular "B" give size and style of stove, that complete drawings may also be sent you. All the information you want for the asking.

THE BURNER IS $5.00 - PREPAID ANYWHERE
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STRAWBERRY PLANTS

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Moreanthus Lentula, 50c per lb.; 5 lbs. or more, 15c per lb., by mail, prepaid anywhere in California.

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KILL THE SQUIRRELS With Liquid Flame

THE CALIFORNIA SPRAYER CO.
6001-6029 Pasadena Avenue,
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Market Comment

The Butter Market Recovers.

There was a reaction from the severe decline in prices continued throughout the past week in each of the four large Eastern markets. The average advance was about 2c for 92-score butter, Boston leading with a net gain of 3c, Chicago 2c, New York 1½c, and Philadelphia 1c. Consumptive demand has shown a gradual increase, which, together with the firm market, good weather conditions and active trading, restored a feeling of confidence. Receipts for the five markets, Chicago, New York, Boston, Philadelphia and San Francisco, for the week—up to and including Friday—were 99,662 tubs as compared with receipts of 103,313 tubs for the previous week, or a reduction of 3651 tubs. Cold storage stocks for the five markets showed a reduction of 2,210,967 pounds, as compared with a reduction of 1,423,378 pounds for the previous week.

$10 for Sugar Beets Tentatively Fixed

The price to be paid for sugar beets in some sections this season is still an unsettled question. Tentative contracts have been made with a number of growers at the rate of $10 per ton, which is the price that the Food Administration, after an exhaustive examination of the cost of sugar-beet production, declared was a fair price for the 1918-19 crop. The producers' price for beet granulated sugar has been reduced by the refineries recently from $9 to $8.90 a hundred in all of the Rocky Mountain States and States west of the Rockies.

Citrus Markets Strong.

F. O. B. quotations on navels are made at $4.50 for good fruit, and delivered prices are on the basis of $5.50@5.75, while averages in auction markets have reached $6.85 in the East. There are about 8000 more cars of navels to move. Valencia quotations have started at $4.10. The demand for lemons continues strong from all points. Prices delivered range from $4 to $4.50. There is no accumulation of stocks on tracks at present. About 1500 cars now remain in storage, compared with 180 to date last season.

Oriental Beans Discourage Growers.

No beans will be grown in Sutter Basin this year unless there is a free movement of last year's crop before long. The growers are still holding their beans and are condemning the Government for allowing importation of Oriental beans to knock the prices below what they figure as the costs of production last season. It is likely that barley will be planted instead of beans except around the edges, where rye is already growing.

Cotton Futures Now Permissible.

The Cotton Futures Act, which was signed this week by President Wilson, is now effective. Under it only thirteen grades of cotton—from low middling up—can be delivered on future contracts, and all cotton so delivered must be classified by Government grades.

Strawberry Vines $8 Per 1000.

It is reported that the strawberry growers of Castella (Shasta county) make more money out of their vines than they do out of their berries. This season it is estimated that they shipped to Watsonville growers 900,000 vines for an average of $8 per 1000.

Hops Still Very Much Alive.

Hop contracts have been closed recently in Sacramento for the coming crop at 24 cents a pound, it is reported. Some hop fields which had been torn up are being replanted.

1919 Grape Prices Look Good.

High prices for the 1919 vintage of wine grapes are predicted by growers in Yolo. It is said that Japanese buyers are already in the field offering $20 a ton.

Heavy Egg Exports.

Poultry dealers claim that exports of eggs from the United States to European markets are now the greatest ever recorded.

THE MARKET REPORTS

Figures Given Are Independent and Reliable.
Prices Quoted as Paid to Producers.

SAN FRANCISCO

San Francisco, March 5, 1919.

WHEAT.

The following prices were announced by the Federal Grain Corporation last year and are still in effect. They are figured f. o. b. San Francisco, Los Angeles, Seattle, Tacoma and Portland and guarantee the grower a minimum of $2 f. o. b shipping point:

Per bushel—	
No. 1 hard	$2.20
No. 2	2.17
No. 3	2.13
No. 1 soft	2.18
No. 2	2.15
No. 3	2.11
Club or Sonora, No. 1	2.16
do, No. 2	2.13
do, No. 3	2.09
Recleaned for seed, per ctl.—	
California Bluestem	$4.15@4.25
Early Baart	4.15@4.25

BARLEY.

No interest is shown in any of the grains and as a consequence prices sagged all along the line. There have been no developments in regard to the disposition of the large barley crop in the hands of the growers of this State, and every week seems to add to the desire of the holders to dispose of their crop. If a decided cut in price would move the barley crop promptly, it is believed that such a cut would be made. But in the present situation it is not believed that such action would move the crop and the disposition seems to be to meet the very moderate demand with the best price that seems possible of attainment.

Choice feed, per ctl	$1.90@1.95

OATS.

Oats are weaker on lack of demand. No sales except of small quantities are reported, and no demand is in sight.

Red feed, per ctl	$2.10@2.15
Red for seed	2.50@2.70
Black for seed	Nominal
Recleaned Red or Black for seed	$3.00@3.10

CORN.

Corn is reflecting the general weakness of the grain market and lower prices have been made in the hopes of stimulating a demand. So far there have been few purchases at the lower prices.

California	$2.50@2.60
Egyptian, choice	2.60@2.80
Milo	2.50@2.70

HAY.

Receipts of hay showed a falling off this week owing to the stormy weather of last week. The rains have been beneficial to growing crops, and all sections report sufficient moisture at the present time. Owing to the condition of the weather, there was practically no market last week, as dealers refused to go to the hay yards. Quotations are therefore nominal. The main item of interest during the week was the call of the Government for prices on 900 tons of double compressed hay for shipment to Manila. It is reported that the Government will soon be in the market for a round lot of hay for the various cantonments.

No. 1 wheat, per ton	$22.00@23.00
No. 2 wheat, per ton	16.00@20.00
Choice tame oat, per ton	21.00@23.50
Wild oat, per ton	16.00@18.00
Barley hay, per ton	16.00@18.00
Alfalfa, per ton	16.00@19.00
Stock hay, per ton	14.00@17.00
Barley straw, per bale	.50@ .80

FEEDSTUFFS.

The feedstuffs market reflects the unsettled condition in the grain market. Buyers are holding back and purchasing only from hand to mouth. Quotations are nominally unchanged.

POTATOES, ONIONS, ETC.

Potatoes continue to be something of a drug, and while the market cannot be said to be weak it has developed no strength. Onions have taken a sudden jump, reaching $3.50 to $4 on the wharf, and some have been sold to the retail trade in the commission district as high as $4.50. The Eastern demand is the cause of the radical advance in price. The general vegetable market was in better condition this week than last. A couple of cars of Hubbard squash from the south brought 3 cents a pound. Some excellent appearing asparagus is on the market, selling at from 35 to 50 cents per pound. Cucumbers, lettuce and celery were higher. Southern tomatoes are off the market and the arrivals from Mexico are not the best.

String beans	25c
Lima beans	None
Carrots, per sack	$1.25@1.50
Asparagus	.35@ .50
Rhubarb, San Jose, per box	3.00@3.50
do, Strawberry, per lb	10c
Cucumbers, hothouse, box of 30	3.00@3.50
English, dozen	2.50
Eggplant, per lb	20@25c
Lettuce, per crate	$3.00@3.25
Celery, crate	7.00@8.50
Tomatoes, Southern, per crate	None
do, Mexican	$3.00@3.50
Sprouts, per lb	6@8c
Potatoes—	
Rivers	$1.50@2.00
Oregon	1.75@2.10
Washington	1.75@2.00
Idaho	1.85@2.00
Sweets, per sack	3.00@3.50
Onions, Warehouse Stock—	
Yellows	None
Australian Browns	$3.50@4.00
Garlic, new	25@35c
Green corn, Alameda, per sack	None
Okra, per box	None

BEANS.

Garbanzos made an advance this week. They are pretty well cleaned up and the higher price for this description was on account of their scarcity. There was no change in teparies, but all other descriptions showed a marked weakness and sold at lower prices. It is understood that a big advertising campaign will be started soon and that several varieties of beans are likely to reach 5 cents.

Bayos, per ctl	$6.25@6.40
Blackeyes	3.25@3.40
Cranberry beans	5.75@5.90
Limas (south, recleaned)	7.25
Pinks	5.25@5.40
Mexican Reds	6.00@6.15
Tepary beans	3.00@3.25
Garbanzos	10.00@10.25
Large whites	6.00@6.15
Small whites	6.60@6.75

POULTRY.

The blizzard in the Middle West last week held up poultry shipments both east and west, and as a consequence the prices advanced in the Eastern market and only two cars arrived here to relieve the local situation. The market here is very firm at last week's top prices, with somewhat higher quotations on small broilers. The present outlook is for a steady market from now until Easter. Several Jewish holidays in prospect has had a strengthening effect on ducks and geese.

Turkeys, live, young spring, lb	34@36c
do, old	30@34c
do, dressed	40@42c
Broilers, 1½ to 2 lbs	52@55c
do, 1¼ lbs	60c
do, ¾ to 1¼ lbs	60@63c
Fryers	42@45c
Hens, extra, per lb., colored	38c
do, Leghorn	40c
Smooth young roosters, per lb. (3 lbs. and over)	38c
Old roosters, colored, per lb	23@24c
Geese, young, per lb	35c
do, old, per lb	30c
Squabs, per lb	65c
Ducks	33@35c
do, old	33c
Belgian hares	18@20c
Jack rabbits	$3.00@3.50

BUTTER.

The butter market for the week has been steady at higher prices. A good steady business has kept all the markets pretty well cleaned up. In San Francisco the price was too high to admit of shipments East, but a demand from the Puget Sound region caused several shipments to go north. Following are exchange prices, with discounts deducted:

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extra	54	54½	56½	58	57½	56½
Prime firsts			Nominal			
Firsts	48	48		48	48	Nom.

EGGS.

Eggs continued firm throughout the week, with prices a cent and a half lower for extras and a half cent lower for pullets. Shipments continue to go north and south and the local demand is fully equal to taking care of all increases in the surplus. Quotations are exchange prices less commissions:

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	38	38½	37½	37½	37	37
Extra 1sts	Nom.	—	—	—	—	—
Firsts			Nominal			
Extra pullets	35½	34½	34½	34	34	34½

CHEESE.

California cheese is firm and higher in sympathy with the price of butter. While the business is not heavy, sales are showing an increased interest. Following are exchange quotations less the usual commissions:

Fancy California flats, per lb	29½c
Firsts	27½c
Oregon triplets, fancy	34½c
Oregon Y. A. fancy	37c
Monterey cheese	22½@25c

FRESH FRUITS.

Stocks of apples are moving rapidly out of storage, and the bulk is being shipped out of the State. The local demand is normal and prices all along the line, both for California and Northwest apples, has been advanced.

California apples	$2.50@3.50
Northwest apples	3.00@4.00
Winter pears	2.00@3.50
Persimmons	None

CITRUS FRUIT.

Oranges were advanced in price by 25 cents for the top and 50 cents for the lower grades. The citrus market is otherwise unchanged.

Oranges, navels	$3.50@4.75
Mandarins	1.75@3.00
Tangerines	3.00@3.50
Lemons, fancy	4.00@4.50
do, choice	3.50@4.00
do, standard	3.00@3.50
Lemonettes	2.00@3.00
Grapefruit	2.00@3.00

HONEY.

A local dealer reports that one of the beemen not affiliated with the Honey Association has offered light amber honey at 16 cents. The dealer is trying to get a customer at a cent advance, but has not yet sold the offering. It is reported that considerable Australian honey has been shipped by a steamer to arrive in this port in the near future. But it is understood that this honey is coming here merely for trans-shipment and that none of it will be sold on this market.

DRIED FRUITS.

The dealers are now offering 15 cents for dried apples; but are not buying much fruit on account of the recent advance in the price of cold storage goods. If the demand for the fresh fruit for shipment continues at the present or higher prices, the dried fruit men will have to advance their bid to secure much additional stock.

HIDES.

The market is lower on new hides, calfskins having dropped 3c to 4c a pound within the past two days.

Wet Salted—Native steers and cows, 50 lbs. up, 16@18c; 30 to 50 lbs. up, 16@18c. Kips, 15 to 30 lbs., 21@22c; calf and veal, under 15 lbs., 31@32c; bulls and stags, 13@14c.

Horse Hides—Wet salted, large prime, each, $6.00@6.50; medium, prime, $5.00@5.50; small, $3.50@4.00.

LOS ANGELES

Los Angeles, March 4, 1919.

BUTTER.

In sympathy with a sharp advance in San Francisco and higher Eastern markets, extra's advanced here the past week up to Monday 4 cents and the close was firm. A good demand continues to hold even at the higher prices and very good receipts.

We quote:

California extra creamery	59c
do, prime firsts	57c
do, firsts	56c

EGGS.

While eggs continue to come in quite freely, the market held steady throughout the past week, and demand very good both from the consuming trade and near by towns. Receipts by rail for the past week, 2274 cases.

We quote:

Fresh ranch, extras	37c
do, case count	35c
do, pullets	34c

POULTRY.

Receipts light the past week and altogether local. Demand very good on hens, fryers, and broilers higher under scarcity.

We quote from growers:

Broilers, 1 to 1¼ lbs	42c
Broilers, 1½ to 1¾ lbs	50c
Fryers, 2 to 3 lbs	42c
Roasters (soft bone), 3 lbs. and up	34c
Stags and old roosters, per lb	23c
Hens	33@34c
Turkeys	36@37c
Ducks	34@35c
Geese	28c

VEGETABLES.

General tone of the market the past week was firm under lighter offerings, and all choice offerings in very good demand. Potatoes, with light offerings, made quite an advance and moved in a fair way. Sweet potatoes in moderate demand and steady. Onions very scarce, in fair demand and sharply higher. Cabbage unchanged but meeting with a little better demand. Cauliflower steady and selling fairly. Squash coming in less freely and higher and meeting with a little better demand. Celery steady and selling fairly.

We quote from growers:

Peas, per lb	10@12c
Potatoes—	
Northern Burbank, per cwt	$2.20@2.40
Idaho Russets, per cwt	2.20@2.25
Sweet potatoes, per cwt	2.25@3.00
Garlic, per lb	50c
Onions—	
Australian Brown, per cwt	$3.50@4.00
White Globe, per cwt	3.00
Cabbage, per 100 lbs	.75@ .90
Celery, local, per crate	4.00@7.00
Celery, northern, per crate	8.00@9.00
Cauliflower, standard crate	1.00@1.25
Hubbard squash, per cwt	2.00
Banana squash, per cwt	1.50
Pumpkins, per cwt	.75
Rhubarb, per 30-lb. box	2.25

FRUITS.

There is no change in this market since a week ago. Apples continue to make up the offerings, and all choice stock is in good demand at the quotations. Offerings are growing lighter every week and holders are independent.

We quote from growers:

Apples—	
King Davids, Northwest pack	$3.00@3.25
Black Twigs, Northwest pack	3.00
Baldwins, Northwest pack	3.00
White Pearmains, 4-tier	2.25@2.50
Yellow Newtown Pippins, 4-tier	2.75@3.00
Bellefleur, 4-tier	2.00@2.25
Bellefleur, 4½-tier	1.75@2.00
do, 3½-tier	2.00@2.25
Jonathans, Northwestern pack	3.00@3.25
Winesap, loose, per lb	6½@7c
Roman beauties, Northwestern, per peck	3.00@3.25

HAY.

Alfalfa was in fair demand from the dairy people the past week at steady prices. Grain hay very dull and weak quotations.

We quote f. o. b. Los Angeles:

Barley hay, per ton	$21.00@24.00
Oat hay, per ton	25.00@28.00
Alfalfa, northern, per ton	20.00@21.00
Alfalfa, local, per ton	21.00@22.00
Straw, per ton	9.00@10.00

BEANS.

With the Government still out of the market and the general trade buying sparingly, prices were lowered sharply the past week, and even the lower prices failed to bring any improvement in the demand.

We quote from growers:

Limas, per cwt	$7.00
Large white, per cwt	6.00
Small white	5.50
Pink, per cwt	5.50
Blackeyes, per cwt	3.00
Tepary, per cwt	3.00

COTTON.

The market the past week worked lower. There was a dropping off in the export movement and the South was a steady seller. Monday of the current week in New York closed 5 to 20 points lower than Saturday and there was little speculative support given to the market. March closed at 22.05c and May at 21.15c.

Special Livestock Market Report

San Francisco, March 5, 1919.

CATTLE—The movement of beef cattle to the local market, while only moderate in volume, sufficed to meet the light consuming demand. In the Eastern markets the cattle values sagged, which had a weakening effect on the local market, without, however, lowering quotations:

Steers—	
No. 1, weighing 1000@1200 lbs.	12¾@13c
do, weighing 1200@1400 lbs.	13c@13¼c
do, second quality	11½@12c
do, light	9@10c
Cows and heifers—	
No. 1	10@10c
do, second quality	8@9c
do, common to thin	6@7c
Bulls and stags—	
Good	6½@7½c
Fair	5½@6½c
Thin	4½@5½c
Calves—	
Lightweight	11½@12c
Medium	10½@11c
Heavy	8 @10c

SHEEP—The live mutton market in San Francisco is inactive, owing to the inertness of the retail trade in all grades of sheep and lamb. Prime fat lambs, however, are in good request, and premium prices are offered for lambs having the right kind of finish. Slight rise in prices.

Lambs	15@15½c
Yearlings	12½@13c
Sheep, wethers	12@12½c
do ewes	9@10c

HOGS—The run of hogs to this market continues fairly heavy, though the quality of some lots is not up to standard. Too many soft hogs are still coming in. The stabilization price of $17.50 per cwt. Chicago is being continued for the time being, pending an expected announcement on this subject from the President. Quotations ½c higher.

Hogs—	
Hard, grain-fed, 100 to 150	16½c
do, 150 to 250	17c
do, 250 to 300	16½c
do, 300 to 400	16c

Los Angeles, March 4, 1919.

CATTLE—Offerings of steers continue very good and demand only moderate and the tone of the market weak. Good cows are scarce, firm and in demand at quotations.

Per cwt, f. o. b. Los Angeles:

Beef steers, 1000@1100 lbs.	$11.00@13.00
Prime cows and heifers	9.50@10.50
Good cows and heifers	8.00@9.00
Canners	6.00@ 6.50

HOGS—A very good run was had the past week and quality of most offerings good. Market slow and rather weak. Killers confining their purchases mainly to such lots as needed for the fresh meat trade.

Per cwt., f. o. b. Los Angeles:

Heavy, avr'ging 275@350 lbs.	$14.00@15.50
Mixed, avr'ging 225@275 lbs.	15.00@16.00
Light	16.00@16.50

SHEEP—Receipts light and the tone of the market was firm in sympathy with stronger markets East. Demand, however, fair.

Per cwt. f. o. b. Los Angeles:

Prime wethers	$9.50@10.50
Prime ewes	8.50@9.50
Yearlings	10.00@11.00
Lambs	14.00@15.00

Rough docked 20 lbs., piggy sows 40 per cent.

Portland, March 4, 1919.

CATTLE—Steady to stronger; receipts, 28. Steers, best, $13.50@14.50; good to choice, $11.75@12.75; medium to good, $10.75@11.75; fair to good, $9.50@10.75; common to fair, $8.50@9.50. Cows and heifers, choice, $10.50@12.00; good to choice, $8.75@9.75; medium to choice, $7.75@8.75; fair to medium, $6.00@7.00; canners $3.50@5.00; bulls, $6.00@9.00; calves, $9.50@14.50; stockers and feeders, $7.00@10.00.

HOGS—Firm; receipts, 385. Prime mixed, $17.35@17.50; medium mixed, $17.00@17.25; rough heavies, $15.25@15.50; pigs, $13.00@15.00; bulk, $17.35@17.40.

SHEEP—Steady; no receipts. Prime lambs, $15.00@16.00; fair to medium, $13.00@14.00; yearlings, $10.00@11.00; wethers, $9.00@10.00; ewes, $6.50@8.75.

EASTERN.

(U. S. Bureau of Markets.)

Chicago, March 4, 1919.

HOGS—Receipts, 25,000; market irregular, 15c to 30c higher than yesterday's general trade. Bulk of sales, $17.75@18.15; butchers, $17.85@18.20; light, $17.50@18.10; packing, $17.00@17.85; throwouts, $16.50@17.00; pigs, good to choice, $16.00@17.00.

CATTLE—Receipts, 14,000. Beef steers, 25c to 50c lower; she-stock mostly 25c lower; bulls steady; calves 25c higher; feeders about steady; estimated tomorrow, 6000. Beef cattle: Good, choice and prime, $16.35@20.00; common and medium, $10.50@16.35. Butcher stock: Cows and heifers, $7.50@15.50; canners and cutters, $6.25@7.50. Stockers and feeders: Good, choice and prime, $11.40@15.00; inferior, common and medium, $8.25@11.40; veal calves, good and choice, $17.25@18.00.

SHEEP—Receipts, 9000; strong to 25c higher; six loads; Colorado fed lambs sold at $19.50. Lambs, choice and prime, $19.35@19.50; medium and good, $18.00@19.35; culls, $15.00@16.50; ewes, choice and prime, $13.25@13.50; medium and good, $11.00@13.25; culls, $5.50G9.00.

WEEKLY BUTTER AVERAGES.

Cents per pound for Extras.

Week Ending	San Francisco 1918	San Francisco 1919	Los Angeles 1918	Los Angeles 1919
Jan. 2	50.40	66.10	50.16	63.16
" 9	51.08	61.50	50.00	64.00
" 16	52.33	61.70	50.50	64.16
" 23	52.50	55.83	52.00	62.16
" 30	53.00	44.91	51.83	49.00
Feb. 6	50.80	43.58	49.66	47.33
" 13	52.00	46.80	48.00	47.60
" 20	51.41	51.58	48.00	53.16
" 27	51.30	53.90	49.33	55.00
March 6	50.66	56.16	50.00	59.00
" 13	51.16	....	49.50	....
" 20	47.83	....	47.00	....
" 27	46.30	....	43.30	....
April 3	43.16	....	42.16	....
" 10	39.25	....	39.50	....
" 17	39.00	....	36.83	....
" 24	40.50	....	38.16	....
May 1	40.83	....	39.00	....
" 8	40.66	....	39.00	....
" 15	40.46	....	39.00	....
" 22	44.33	....	41.00	....
" 29	42.30	....	39.00	....
June 5	43.90	....	41.58	....
" 12	44.92	....	40.58	....
" 19	46.50	....	41.75	....
" 26	47.42	....	43.00	....
July 3	48.08	....	46.00	....
" 10	48.90	....	47.50	....
" 17	50.83	....	48.66	....
" 24	52.66	....	45.16	....
" 31	52.16	....	51.00	....
August 7	52.16	....	50.83	....
" 14	51.66	....	49.00	....
" 21	52.25	....	49.58	....
" 28	53.00	....	50.00	....
Sept. 4	53.00	....	50.00	....
" 11	54.90	....	50.33	....
" 18	57.80	....	51.67	....
" 25	61.33	....	56.17	....
October 2	64.75	....	58.00	....
" 9	64.50	....	59.33	....
" 16	62.50	....	60.00	....
" 23	61.75	....	60.00	....
" 30	60.50	....	59.50	....
Nov. 6	59.60	....	58.83	....
" 13	60.00	....	57.00	....
" 20	61.00	....	57.25	....
" 27	61.90	....	58.75	....
Dec. 4	62.60	....	60.00	....
" 11	63.00	....	60.16	....
" 18	63.50	....	61.01	....
" 26	64.60	....	62.16	....

WEEKLY EGG AVERAGES.

Cents per dozen for Extras.

Week Ending	San Francisco 1918	San Francisco 1919	Los Angeles 1918	Los Angeles 1919
Jan. 2	52.80	75 00	48.16	69 50
" 9	60.91	69.91	50.66	66 66
" 16	65.66	58 70	55 00	62 41
" 23	65.66	52.58	58.00	54.66
" 30	61.25	48.75	54.00	52 33
Feb. 6	58.50	42 00	51.66	44 00
" 13	44.40	40 99	44 83	37 50
" 20	44.75	36 41	40 83	39 33
" 27	42.40	37.40	39.58	33 00
March 6	36.83	37.58	35.00	37.99
" 13	37.91	....	38.00	....
" 20	40.66	....	39.66	....
" 27	39.50	....	40.00	....
April 3	38.91	....	38.33	....
" 10	37.58	....	36.33	....
" 17	39.16	....	36.83	....
" 24	40.50	....	39.66	....
May 1	41.66	....	39.33	....
" 8	40.08	....	37.00	....
" 15	39.16	....	38.83	....
" 22	40.50	....	39.00	....
" 29	38.66	....	37.41	....
June 5	40.80	....	38.83	....
" 12	41.00	....	33.75	....
" 19	43.33	....	33.00	....
" 26	44.32	....	39.08	....
July 3	44.91	....	41.75	....
" 10	48.30	....	45.00	....
" 17	47.66	....	45.50	....
" 24	47 91	....	45.16	....
" 31	48.83	....	46 56	....
August 7	49.50	....	46 58	....
" 14	52.08	....	48.00	....
" 21	56.33	....	50.17	....
" 28	59.20	....	53.00	....
Sept. 4	62.40	....	56.33	....
" 11	63.70	....	58.67	....
" 18	61.30	....	59.00	....
" 25	60.17	....	55.67	....
October 2	65 42	....	59.75	....
" 9	65.08	....	60.00	....
" 16	71.30	....	62.66	....
" 23	78.88	....	70.33	....
" 30	86.41	....	79.33	....
Nov. 6	87.90	....	78 00	....
" 13	86.00	....	78.00	....
" 20	77.25	....	72.00	....
" 27	79.80	....	72.33	....
Dec. 4	82 00	....	73.83	....
" 11	82.08	....	74.33	....
" 18	79.65	....	72.33	....
" 26	82.00	....	71.66	....

Classified Advertisements

Rate in this directory 3c. per word each issue.

MISCELLANEOUS.

WANTED—Salesmen and agents. Exclusive territory granted. Powerene is equal to gasoline at 5c a gallon. Is guaranteed to be harmless to remove and prevent carbon, doubling the life of all gasoline motors, saving repairs, adding snap, speed and power. An amount equal to 20 gallons of gasoline will be sent to any address in the U. S. for $1. W. Porter Barnes, Santa Rosa, Cal. Dept. A15

FOR SALE—Cunningham Land Pulverizer. Practically new. As a pulverizer and packer the Cunningham" has no equal. It also conserves moisture, which is of vital importance to all farmers and orchardists. Address Room 1170 Merchants National Bank Building, San Francisco.

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All sizes standard pipe and straight iron screw casing. All kinds of fittings. Guaranteed good as new. Write for prices. Wessbaum Pipe Works, 100 Eleventh street, San Francisco.

FOR SALE—3 bottom power lift P. & O. tractor plow, $150. Double 6 ft. John Deere disc harrow, $100. 1-ton auto or truck trailer, $100. 8 ft. Dunham double roller crusher, $75. All practically new. Barker Fortuna, Cal.

FOR SALE—SPALDING-ROBBINS ENGINE PLOWS—One 5-shear and one 6-shear. Fine condition. Do excellent work. Price is right. Terms. Room 1120 Merchants National Bank Building, San Francisco, Cal.

PATENT ATTORNEYS.

WEBSTER, WEBSTER & BLEWETT, Savings and Loan Bldg., Stockton, California. Established 50 years. Send for free book on patents.

ALL SIZES OF PIPE and screw casing, both new and second-hand, dipped and undipped. Guaranteed. Prices right. Shecter Pipe Works, 804 Howard St., San Francisco.

FOR SALE—Fourteen 50-gal. oak wine barrels, used but once, like new. Guaranteed to be in fine condition. Price, $4.25 each f. o. b. Watsonville. G. W. Cornell, Watsonville, Cal.

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CABBAGE CUTTER—SIX KNIVES—Slices vegetables rapidly. Excellent for potato chips. Prepaid, $1.00; three for $2.00. Lusher Brothers, Elkhart, Indiana.

FULLY EQUIPPED CHEESE FACTORY at Woodbridge, Cal. Located in center of dairying district. For sale or rent. Inquire, Ralph C. Clark, Lodi, Cal.

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CO-OPERATION (not operated for profit) reduces living expenses. Particulars and catalogue from Co-operative League, Commercial street, San Francisco.

FOR SALE AT A BARGAIN—18-35 Yuba Tractor in first-class mechanical shape—farming implements included. Apply D. P. Corcoran, Gridley, Cal.

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FOR SALE—1465 acres, 750 of which is good farming land, and if properly farmed is capable of producing from 7000 to 10,000 bags of grain; balance good pasture. All fenced in three fields with 4 wires and redwood posts. Good 6-room house (new); large barn, windmill and 10,000 gallon steel tank; water soft and quantities of it, which is piped into each field. Also have 8 or 10 other stock and grain ranches, some with government land joining, ranging in size from 80 acres to 1280 acres. Write me your troubles and requirements and see if I can smooth them out. C. P. Gould, 142 Forest avenue, Pacific Grove, Cal.

FOR SALE—The famous Bane Almond orchard at Orland. On account of labor conditions, as well as physical condition, I have concluded to sell my almond orchard, either in subdivisions of 10 acres, or as a whole. For particulars address P. D. Bane, Orland, Glenn Co., California.

FOR SALE OR RENT—3000 acres of good, level land in Fish Lake Valley, Mono Co., Cal. Good for alfalfa, beets, potatoes, hogs, cattle, bees. Part for sale at $10 to $25 per acre; part to rent at your own terms. For particulars address, H. Varnell, Watsonville, Calif.

FOR SALE in Klamath Co., Oregon, 600 acres good, level, unimproved land, good for alfalfa, grain or stock. Price $10.00 per acre. Address, W. H. Johnson, 22 Maple Ave., Watsonville, Calif.

FOR SALE BY OWNER—Good fruit ranch in Happy Valley irrigation district, Shasta county. Healthy climate. Good markets. Wm. de la Rose, Rt. 1, Box 137, Redding, Cal.

FOR SALE—160 acres, 90 in alfalfa, 50 acres in barley. Plenty water. All fenced and cross fenced. $175 per acre. Terms. C. L. Barnett, Shafter, Kern Co., Cal.

FOR SALE—160 acres of first-class alfalfa land in the newly completed Cottonwood irrigation district. Roy Logan, R. F. D., Redding, Cal.

FOR SALE—Block 7, Martin's addition to Windsor. Address, Box 37, Ryde, Cal.

SEEDS AND PLANTS.

YOUR ALFALFA SEED should meet the needs of your soil and moisture conditions. One of the seven different kinds of Green Gold brand seed will yield heaviest and live longest because they are selected for particular conditions. Our illustrated booklet tells you all about each kind. Write for it now. Bomberger Seed Company, Desk B, 725 Tenth street, Modesto, Cal.

GENUINE FROST-PROOF CABBAGE PLANTS—Well rooted. Winter grown in open field. Early Jersey and Charleston Wakefield, Succession and Flat Dutch. Postpaid, 250 for $1.00; 500, $1.50; 1,000, $2.50. By express, $2.00 the thousand. Prompt shipment and satisfaction guaranteed. Union Plant Company, Texarkana, Texas.

BUDDED AVOCADOS—Fuerte, Sharpless, Lyon, Dickinson, Blakeman, Puebla, Spinks, Taft Linda, Rey, Queen, Knight, and others. A fine stock of field-grown trees, $2.50 for one, $2.00 each by the 100, 25c per tree for packing. Newbery-Sherlock, 2202 East Colorado St., Pasadena.

SUDAN GRASS SEED.

Selected, recleaned Sudan Grass seed at a price that will appeal to you. For price and particulars, J. W. Schuster & Son, Pond, Kern county, Cal.

TREES! TREES!—Eureka and Placentia walnuts on black; a general assortment of high-grade nursery stock. A. R. Marshall's Nurseries, 1217 Ross street, Santa Ana, Cal.

FOR SALE—About one ton of nice Sudan Grass seed at 17½c. per pound, f. o. b. Modesto. Also about a ton of Black Amber Sorghum at $3.75 per hundred, f. o. b. Modesto. C. F. De Witt, Box 427, Modesto, Cal.

YOUR GARDEN THIS YEAR WILL NOT be complete unless you have a few hills of the world's finest muskmelon, "Casad's Special." Send for seed package, 25c. R. C. Casad, grower and originator, Covina, Cal. R. F. D.

NONPAREIL AND DRAKE ALMONDS on bitter almond, Bartlett pear (blight immune roots), foothill grown. Lowest prices of the season. Walnut, pecan and fruit tree scions. Tribble Bros., Elk Grove, Cal.

STRAWBERRY PLANTS—Seventy-five cts. per hundred. Eight varieties. Burbank's Thornless Blackberry, twenty cents each; six for one dollar. Variety Farm, Clovis, Cal.

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SMOOTH PERUVIAN ALFALFA SEED is worthy of your consideration. Grows earlier, quicker, and weighs heavier. R. O. Reeve, Winton, Cal.

GENUINE FRANQUETTE WALNUT GRAFTWOOD, 3c. per foot. Ogden Bolton, Jr., Route 4, Box 447, Santa Rosa, Cal.

ONION PLANTS, California Red, 75c. per 1000. Now is the time to plant. Monroe, The Tree Man, Orland, Cal.

BEET SEED FOR SALE—Choice Giant half sugar beet seed in any quantity. W. J. Brown, Route A, Gilroy, Cal.

WANTED.

WANTED—Reliable man in every county to sell the patented and guaranteed "Sahara Drier" to farmers and fruit growers. Simple in construction, fire proof, no mechanical apparatus to get out of order. No expert help to operate. Burns any kind of fuel at cost of 50c. per day. One-ton machine sells $550. Must be reliable man and acquainted in his district. Good pay, easy work. Address California Dried Products Co., 149 California St., San Francisco.

POSITION WANTED as manager of hog ranch on diversified farm. Experienced with registered stock, irrigated crops and deciduous fruits. Address, H. Duveneck, 1004 Paru St., Alameda, Cal.

WANTED—Married man with experience to raise Mammoth Bronze Turkeys. George A. Smith & Son, Corcoran, Cal.

Livestock men who wonder how much business Coast packers do will be interested in the report of the Western Meat Company, showing that during 1918 they purchased livestock as follows: Hogs, $2,747,634.63; calves, $132,486.96; cattle, $4,333,052.83; sheep and lambs, $1,471,348. The total amount paid for livestock during the year was $8,684,522.42.

NEW HARNESS

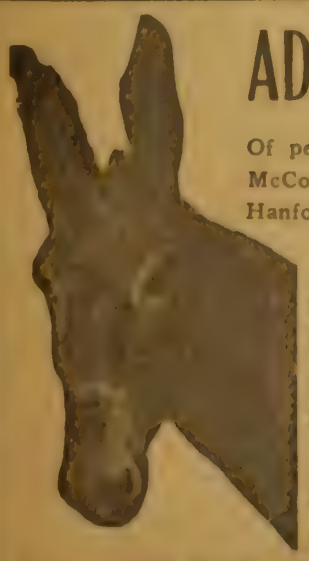
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ADMINISTRATRIX SALE!

Of personal property of the estate of James W. McCord, to be held at the ranch, 2 miles south of Hanford on the Corcoran Highway,

MARCH 12, 1919

3 registered Shire Stallions, 3 and 4 years old

6 registered Shire Mares

3 registered Shire yearling Colts.

5 young Jacks 5 young Jennets.

The above listed registered stock to be sold in connection with 75 head general purpose horses and mules. Terms cash.

BESSIE McCORD, Administratrix



'Chain' *'Usco'*

Make Your Car Help

America is asking for a Victory Harvest this year.

Every country's short of everything. You never had such an eager market. Every additional bushel you can make your fields produce means just that much more in the bank for you.

Make your car help. Think of the time, energy and good, hard cash it will save for you! Think of the speed it will put into those trips to town.

Its dependable service means a lot to you.

And there's no such thing unless you give it good tires to travel on.

There's a United States Sales and Service Depot dealer in the nearest town. He will gladly point out the United States Tires that will meet your requirements to perfection.

For the line of United States Tires includes tires to meet any possible need.

There are five different types for passenger cars as well as both pneumatic and solid tires for trucks.

They're all good tires—the best our seventy-six years in the rubber business have taught us to make.

Once you discover what they mean to your car—their wonderful dependability, their real goodness—you'll stick to United States Tires just as tens of thousands of other farmers are doing right now.

Try it and see. Ask our Sales and Service Depot to help you.

United States Tires are Good Tires

Vol. XCVII—No. 11

THE PACIFIC RURAL PRESS

Forty-ninth Year

SAN FRANCISCO — MARCH 15, 1919 — LOS ANGELES

Shells and Culls Pay for Marketing Walnuts

Written for Pacific Rural Press by John J. Fox

"The California Walnut Growers' Association is primarily a sales organization, marketing the output of walnuts produced by individual grower-members of affiliated local associations. The growers' walnuts are graded, cleaned, and packed by 24 local walnut growers' associations operating throughout the principal walnut sections of California."

EACH of these local, non-profit, co-operative walnut growers' associations has contributed on an average $7 an acre towards providing its own receiving, grading and packing plant, conveniently located on a railroad siding, where the walnuts of members are received and processed at actual cost to members. This packing plant is usually acquired and paid for by the members of the association paying an assessment of one to two dollars per ton of the walnuts they deliver, for a period of from three to five years—until the plant is entirely paid for. Every member of a local association has voting power, usually determined on a tonnage basis. These associations are usually organized on the membership plan, without capital stock, all property rights and interests being determined on a tonnage basis. They have their own by-laws, elect a board of directors, who in turn appoint a president, secretary-treasurer, etc.; also nominate one of their number to act as a director of the California Walnut Growers' Association, whose great central establishment is situated in the city of Los Angeles. This establishment is the largest employer of women in the city—over 400 women are at work here for seven months in the year.



Trees are well protected by a dense foliage. Walnuts are susceptible to sunburn.

How Walnuts Are Received.

The grower, when he delivers his nuts at his own local warehouse, gets a door test. His fruit is examined by an expert inspector of the local association, who determines to which grade the delivery belongs, and a receipt is given for the weight. Most local associations pay the grower on delivery—about 80 per cent of the association price on the grade delivered. The final payments are usually made at the conclusion of the shipping season, such payments being the actual returns for each grade of fruit the grower has delivered, less only the actual cost of grading, cleaning, packing and marketing. This is usually about half a cent a pound for handling and packing and about 3 per cent of the f. o. b. value of the walnuts is paid to the California Walnut Growers' Association for the cost of marketing.

The Cost of Marketing Is Reduced.

The selling of the output of the main of the crop through one great centralized agency has, it is said, cut the cost of marketing California walnuts exactly in half. For, prior to the union into one entity, all local associations paid a commission of 6 per cent to commercial shippers for the marketing of their respective outputs.

The selling end of the California Walnut Growers' Association as operated at present is as follows: Usually in January the board of directors authorizes about one-half of the associations' estimated output to be sold for delivery during the coming fall. The contracts thus made cannot be cancelled, either by the buyer or the association, unless the total output of the association should fall below the quantity authorized to be sold. In which case the goods produced would be delivered to buyers pro rata under their contracts. The sales department determines on past experience the quantity and grades it can offer to the principal markets. In every jobbing center of importance there exist "food product brokers" and each food product shipper selects one of these brokers in each market as his exclusive representative.

These brokers secure orders for account of the shipper, attend to making deliveries on arrival of goods, and act in every way as the shippers' local representative, protecting his interests wherever possible. They usually receive from 1 to 5 per cent of the sales price as a commission for their services, depending upon the commodity handled. The association pays a uniform commission of 1½ per cent of the f. o. b. value of walnuts unshelled and 2½ per cent on shelled walnuts, which amount is included in the association's total selling cost of 3 per cent on unshelled walnuts. In June the directors have another estimate of the growing crop made and again authorize a sale for fall delivery. These offerings are again allotted to the various markets of the country according to population, etc., to insure the widest and most thorough distribution. Thus, by the time the crop is ready for shipment, the entire estimated crop of all grades has been sold.

Aid in Determining Prices.

The method pursued in determining proper prices is through advices received from salaried agents that the association maintains in France and Italy—the principal countries producing walnuts in competition with California. These agents report the extent and condition of foreign crops, prices offered and all information about these crops, while the same information is gathered from all home sources. During the harvest season orders are prorated among the various associations. When an order is sent to any of these locals to ship, an inspector employed by the California Walnut Growers' Association makes a thorough examination of the shipment to go forward. This has to meet in every respect with the terms of the contract in size, appearance and cracking test. A bill of lading, inspector's certificate and a bill for the goods are then forwarded to the California Walnut Growers' Association, who bills them to the purchaser, draws a draft on him, deposits it in the bank and immediately returns 90 per cent of the association price for the goods to its point of origin.

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EDITORIALS

THE FRUIT OUTLOOK.

BARRING too little rain and too much dry wind in the south end of the State, the outlook for plenty of fruit and a demand for it, straight and free and released from the doubts of the war period, seem to be as clear as anything ever is in farming lines. There has recently developed a distant scream for California fruits which has set the established canning combinations on edge and they are building, outfitting and figuring on canning materials as though they had a gold mine to cover-in from the coming trade. And this expectation seems quite reasonable. The way the canned product has survived restrictions, embargoes and outcasting from patriotic war economy as a luxury has been a great joy and encouragement to those who really had faith in it and appreciation of its superlative dietetic service. Even while hampered by all the war handicaps, it struck out boldly and succeeded in driving all the croaking ravens from its sky. It did supreme war service and has been demobilized and paid off in its own coin of good-will with a bonus of beneficent publicity upon which the canning industry will advance to attainments quite unforeseen under the old conditions. One of the results will be the reheartening of our horticultural industries and assurance that they have an expansibility involving a promise that the eager planting of this year will prove the beginning of a new era of development.

* * *

TO CAN ALL THAT WE CAN CAN.

VERY good indications, from the point of view of the fruit and vegetable growers, are that the canning business is going to be too big to be cornered. When a large merger was effected a few years ago there was apprehension that there might not be unbound legs enough left free to kick and competition for growers' products would therefore disappear. But there have since appeared several other combinations with ample desire to control everything they could and this year there appears another to be known as the "Co-operative Canneries of California, Inc.," which proposes to use six million dollars in combining growers with twenty-six hitherto independent canneries located from Sonoma to Los Angeles—these canneries to be brought under the new organization's control either through purchase or lease with the right to possess. This proposition is now being given publicity at meetings in the fruit districts and growers will doubtless have opportunity to judge of its reasonableness and resources. All that we know about the matter at the moment is that it indicates a confidence on the business end of cannery production which argues a concession of desirability in growers' raw materials, which constitutes a warrant for increased production at good prices. And if canners insist on being furnished so much fruit, who can say how much more must also be produced to keep our fresh-shipping and drying industries busy—for they also have as good or better chance than ever to win the world!

LABOR CHIEF EXHORTS FARMERS.

AND now the Secretary of Labor takes a whack at the farmers. Is it possible that the Secretary of Agriculture and the various Councils of Defense have scolded themselves out of breath and still find the farmers unregenerate and recalcitrant? Surely the latter must be a hard lot if the Government finds it necessary to turn all its machine-guns upon them! The philosophy of the fact is too much for us, but the fact is this: The Secretary of Labor has just issued a proclamation to the newspapers entitled "American farmer may profitably lead in the country-wide revival of building." It would of course be a very proper suggestion from anybody that farmers should build new and better homes for themselves and for their assistants, both bipedal and quadrupedal, and thus raise the standard of American living—if they have money which can be thus reasonably and profitably invested. But the Secretary of Labor does not confine himself to any such fraternal and wholesome suggestion. He lifts the lash of the too common conception that the farmers have had more war profits than any other class of citizens and now they ought to blow them in for the benefit of the building trades and their suffering mechanics! In order that we may be sure not to misrepresent the argument in the proclamation to which we refer, we take these premises and conclusions, in the exact words and order in which the proclamation conveys them, viz.:

Of all the persons in the country today, the farmer alone can build a new house, silo or barn for less of the wealth he produces than he could before the war.

Building costs are from 40 to 65 per cent and labor is from 20 to 30 per cent higher now than before the war.

The building material and the laboring man's dollar, which in 1913 bought one dollar's worth of farm products, today will buy only 49 cents' worth of farm products—therefore the farmers' dollar will go farther in buying building materials than the material man's dollar will go in buying farm products.

Private interests throughout the country are being urged to immediately start such building projects as were suspended during the war. The farmer can build more advantageously than any other private interests.

* * *

GRINDING WITH WATER THAT IS PAST!

SUCH is the argument and the specific facts alleged to support it. We are willing to grant that the farmer can build more advantageously than others because farmers as a rule build nearer to reasonable needs, nearer to modest anticipations of comfort in home-living and nearer to the principles of thrift and economic return than most other builders. We are willing to grant also that it will be very greatly to his advantage to have all the silos, better barns and better improvements for turning out and holding products which he can get. But that is just as far as the argument truthfully goes and its truth stops just where it is necessary to stop to produce a false impression. It cites the high prices of farm products and wishes the reader to infer that such prices were net to the producer—therefore he secured and presumably still has all the purchasing power which such high prices indicate! The effort to foist such a view upon the credulity of the general public is unfair to farming and the effort to argue with farmers to resume building on such a basis would be laughable were it not that the farmers' patriotic determination to carry on in spite of sacrifice is slandered by it. Farmers' organizations have been appealing to the Government bureaus for months to publish the data collected by them showing the cost to the farmers of the products which are credited with such great relative purchasing power, but no such publication came at the time when the producers needed defense and support. To claim now that labor cost is only 20 to 30 per cent higher than before the war, as this argument does, is to convey the impression that such was the proportion which labor received from the farm crops which are mentioned as giving the farmer's dollar such wonderful purchasing power. Everyone who grew those crops knows that the labor cost was 50 to 100 per cent greater than before the war and everything else the farmer used in making the crops was in the same category. What is the sense in exhorting farmers to go to building with dollars which they did not get. "The mi will never grind with the water that is past!"

* * *

HOW FARMERS WERE LEFT IN THE DAR

WE HAVE just stated that leading farme organizations were manifesting much ind nation that they were denied the results investigation into the cost of production of fa products and were clearly charging that the D partment of Agriculture had been overlorded some way so that it would refuse them the or knowledge upon the basis of which they co safely undertake large increase of production. have never been able to discern from our distar of 3000 miles from the seat of government up what ground these Eastern organizations we basing their claim of the subjugation of agric ture to other interests, but now everybody see to be in a fair way to find out something abo it. We have just received from the Natior Board of Farm Organizations a copy of a re lution of the House of Representatives calli for the appointment of a select committee of ni to investigate and report upon the administrati of the Department of Agriculture with respect charges publicly made by Dr. W. J. Spillman, fo merly in charge of the division of the departme which had to do with studies of production-co of various crops. This document printed by ord of Congress definitely claims that the departme is dominated by trusts' interests and is close connected up with a propaganda effort to secu popular and institutional education in agricultu which should be pursued from the point of vie of trust magnates and not from the point of vie of producers' success and welfare. The preamb to the resolution calling for an investigation co ers fifteen pages of type and is very specific in allegations, which can be very easily proven tr or otherwise. At this moment we have to only with the single matter of refusing inform tion which is the basis of economic safety farming and which the department had been i vestigating for several years with a large sta of experts. This declaration in the preamble very suggestive:

The opposition of Secretary Houston to cos investigation was no sudden inspiration. Ear in his administration there was circulated throug the department a typewritten sheet said to ha been written by a member of Mr. Rockefeller General Education Board and was said to repr sent Mr. Rockefeller's views, in which Secretar Houston concurred. The sheet purported to ou line the duties of the department. It stated th the department should make no investigations tha would reveal the profits made by farmers or tha would determine the cost of producing farm proc ucts. No representative of the department shoul ever under any circumstances even intimate tha it is possible to over-produce any farm produc The entire business of the department was to teac farmers how to produce more than they no produce.

The reader must remember that this allege program of the department was not a war policy It was promulgated within the department as piece of "secret diplomacy" before we went int the war—before there was any war at all per haps, because Secretary Houston's administratio began a year and a quarter before the kaise started on his Hun-kadory escapade. It was ap parently a trust magnate's idea of the farmer duty—that farmers should keep at their job, work ing like slaves so that the rest of the people coul have more and more food to trade and gamble in whether the farmers get any pay for their worl or not: the poor devils cannot starve because the can always eat a part of their crops! In thi way a trust idea of proper agricultural educatio would prevail and a sort of economic perpetua motion would be set up!

* * *

HOW A TRUST-VIEW BROUGHT HARDSHIP

HOW this outrageous view of the farmers relations to food production has brought hardship to producers can now be at leas dimly discerned: if the investigation is pursued i may be made clear. When the war-need of food production arose it found the Food Administration without data for price-fixing on the basis of cost of production because the Department of Agriculture had proceeded upon the doctrine that farmers ought not to know and had either scrapped its machinery in that line of investigation or, in pursuit of the same doctrine, refused to pub-

ish the information it had. Therefore, Mr. Hoover iad to find the value of corn by dividing the rice of pork or finding the price of pork by mul-iplying the price of corn and thus by monkey-ng with a lot of variables try to create a con-tant! It was a national disgrace that no one, or lack of data, could figure the value of a crop y what it cost to produce it plus a fair profit. But nevertheless the department still had its olicy of ruthless production in full working order nd the farmers, glowing with patriotism, which s always their strongest emotion, enthusiastic-lly embraced and resolutely pursued it—though early all efforts brought them sacrifices because here was no rational basis for fixing values upon hat the products really cost and now they are ft with great unsalable surpluses, although hun-reds of millions are reported on the edge of star-ation. Such experiences as these seem to be the asis of the claim which national farming organ-zations are making for investigation of the poli-ies and practices of the agricultural branch of he general government. Perhaps something can e done at once for the relief of those who are ow holding products for which obtaining produc-ion-cost seems hopeless. In any event, it is pos-ible to do something to relieve farm production rom the domination of the trust-idea that farm-rs should never be informed how small their rofits are as compared with the profits gathered n distribution and in speculative trade—for fear ney become discontented and inconveniently in-istent upon a fairer share of the profit of keeping ne world alive! ✍ ✍ ✍

MORE REPRESENTATIVES, LESS REPRESENTATION!

SOME readers may recall our previous peevish plaint that the farming industry was getting too many representatives at the national capital and that this fact seems to militate against ne industry gaining representation enough. Until ecently there were two "temples" at which farm-rs could worship: the "National Board of Farm rganizations" and the "Farmers' National Head-uarters," which had nothing apparently to do ith each other, and now we are advised that the Washington representative of the National range" has been established and domiciled in Vashington and perhaps will have nothing to do ith either of the two first mentioned. If it keeps n at the current rate, we shall have as many epresentatives of farming at the national capital s we have representatives of foreign governments, oth houses of Congress will have to provide agri-ultural galleries just as they do diplomatic gal-ries, and our farming representatives will have little to do with our industrial affairs as for-gn diplomatists do. Meantime our distinguished iend, Samuel Gompers, sits as the one high priest the Labor Temple and when he plans a drive legislation or administration he gives the wink all his lower orders of priests and they go out solid formation and come back with the goods! contrast we have, to promote co-operation nong farmers, three outfits which refuse to co-erate with each other, and, so far as we can e into the future, the more outfits we have to omote national fairness to farmers the worse we are likely to be! We are not criticising ne National Grange for its action, for we do not now what particular reasons it may have for it, nd we regard T. C. Atkeson of West Virginia, ho is its representative, as a thoroughly qualified nd trustworthy officer. We are simply weeping er the general disagreement in politics, econom-s or sociology which holds farmers apart but has such effect upon the elements of organized bor, capital, commerce or finance. Why should ich disagreements act as glue for all these terests and as dynamite for the farming interest?

QUERIES AND REPLIES

By the Editor.

Inquirer Must Give Full Name and Address.

Spray for the Pest, Not for the Tree.

To the Editor: What is the best spray to use r fruit trees—apricot, peach, orange, grapefruit, lince, fig?—M. T. B., Bakersfield.

We do not spray for the tree itself but for the st or disease with which the tree is afflicted. me pests and diseases infest several kinds of trees and others may infest only one. You may then have to use one or several sprays on the trees you name, according to the troubles they have which you must overcome. The first thing to do is not to consider the kind of tree, but the nature of the trouble you have to fight.

Rather Too Much Thompson.

To the Editor: Did Thompson Seedless grapes knock out the currant industry?—G. H., Reedley.

No: hardly that. The importation of Greek currants into this country was about thirty million pounds in 1913 and ten million pounds in 1917, but owing to advance in prices the Greek importers received only a third more gross money in 1913 than they did in 1917: that is, one and a third million dollars in 1913 and a million in 1917. It was the war which was more instrumental in knocking quantities down and prices up than anything else. However, it was a great boon to American consumers that California seedless and seeded raisins were available as a substitute. Otherwise they would have had to pay enough for their imported currants to enable the Greeks to buy Constantinople. It is also a little too much to credit Thompson with all we have done with seedless raisins, for the production thereof is still almost one-third Sultanas. It is also a question whether our seedless raisins will ever wholly knock out the so-called currants. The two are different and the latter are strongly entrenched in the affections of the cooks. There is now a drive on to grow Corinth grapes and make "currants" in California and we may have to work it that way to submerge the Greek islands!

Wire Girdle for Bark Grafts.

To the Editor: I am sending a sample of bark grafting of walnuts, which I have used with some success. When scions are in place the stump is to be well waxed on sides and top and on the tips of scions. The wire is put on before the scions are inserted and taken off in about four weeks or sooner if it begins to cut too badly.—J. H. Allison, St. Helena.

The scions are cut with a shoulder and are driven down under the bark of the stump of an amputated stem or large branch in the usual way. Before this is done the stump is encircled by a single wire of about No. 14 gauge—cut long enough so the ends can be given a twist which draws the wire tight around the bark. The obvious intention is to support the bark as the wedge of the scion forces it out and thus hold the scion tightly in place. It seems to be a very effective and quickly adjusted binding—easily released when it has served its purpose.

Mulberry Grafting.

To the Editor: We have some mulberry trees planted around the house which we used for shade, but on account of the berries dropping they are a nuisance. Can you tell me of any fruit or nuts that could be successfully grafted onto these trees, which are about four years old?—Subscriber, Turlock.

The mulberry takes nothing but another mulberry and is not keen to do even that. Top-grafting into the stump of an amputated stem or branch does not usually succeed. The way to make a change is to cut back and bud into the new growth of shoots from the stumps in June or July. In this way you can bud-in a variety like the Russian, which is not much given to fruit-bearing. But if your trees are handsome and shadeful, we would not take the chances of ruining them. We would rather give the hens a short run under the trees once in awhile during the fruit-ripening and let them clean up the place for you.

Grafting-Over Peach Trees.

To the Editor: Which is the best time to graft peach trees to apricot? How long will it take an old peach tree that is grafted to an apricot to make a tree? Which is better to graft on—peach trees, apricots or prunes?—J. H. W., Fowler.

You are probably too late to begin getting ready now. Grafts should be in place by the time the growth is starting and a job of cutting back and other preparation takes some time if you propose to work-over many trees. Peach grafting is a ticklish job and needs an experienced man to do it. It also needs sound stumps to make it worth while. There is not much use in working over a lot of sunburned wrecks. Peach budding is much easier than grafting. Cut back now and bud in the best new shoots in June. Both apricots and prunes take well to the peach.

HERE IS YOUR OPPORTUNITY

Do you want to settle down in a permanent position that will assure you a definite income during the period that promises to have an over-supply of labor?

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Straight salary; permanent work, with advancement. Lack of experience no barrier. If you are willing to learn and want to earn, let us tell you how to do it. To save time tell us about yourself in your first letter.

Exposed Straw for Fertilizer.

To the Editor: Has wheat straw that has been exposed to the elements since last harvest any material value as fertilizer for orchard or grain land?—H. J. J., Philo.

Surely: straw does not contain things that get away very fast. In fact, if it has weathered and decayed without stack burning it is better than new straw because it will rot more readily and use up less soil-moisture in the process. But of course clean straw has not very high fertilizing value, though its effect on heavy soil with surplus moisture is notably good. It may do as much good under such conditions as it may do harm if you get too much of it in a light soil or under scant rainfall.

Killing Salt Grass.

To the Editor: What is the best way to get rid of a small patch of salt grass which lies lower than the land around it? If I should turn off about three inches of the top and follow with six or eight inches of a subsoil, turning it on top, would the salt grass come up through?—F. J., Tulare.

That would be a good way to get the land ready for starting some other plant like alfalfa, but the alfalfa will not stick and the salt grass will come back unless you can underdrain and wash the alkali out of the low place, where it naturally gathers with the water and increases by evaporation of the water which carries it.

Grafting Olives.

To the Editor: What is the best time for grafting olive trees? Is it advisable to cut back grafts one year old which have made a vigorous growth?—E. F. D., East Auburn.

The best time is just as the buds are starting for the spring growth—which is later than the start of deciduous trees. Grafts may be cut back to secure lower start of laterals and to lessen the danger of blowing over in case of very heavy growth.

Figs in a Peach Graveyard.

To the Editor: I have land where the peach trees have died and I want to plant figs on the land, which is somewhat sandy. Do you think that figs would do well on the land?—S. F., Sanger.

There is danger that whatever in soil or treatment killed the peaches will also knock out the figs, though the Mission fig might come through. One can hardly give an intelligent opinion without knowing what killed the peaches.

The Right Kind of Currants.

To the Editor: What is the best variety of currants to plant in this district.—J. H. W., Fowler.

If you mean bush currants, they are not a good proposition in your valley. Of red currants you might get garden satisfaction with Fertile de Palluau and Crandall Black—the only ones of their kind that you have any chance with.

California Weather Record

The following rainfall and temperature record is furnished the Pacific Rural Press by the United States Department of Agriculture Weather Bureau at San Francisco for the week ending at 5 p. m., March 11, 1919:

Stations	Rainfall Data: Past Week	Rainfall Data: Seasonal To Date	Rainfall Data: Normal To Date	Temperature Data: Max'm	Temperature Data: Min'm
Eureka	.60	41.54	35.78	52	34
Red Bluff	.04	25.37	19.03	62	24
Sacramento	.52	16.02	15.06	60	36
San Francisco	.18	23.40	17.47	61	42
San Jose	.04	16.32	12.90	62	34
Fresno	.01	4.52	7.09	65	34
San Luis Obispo	.01	11.66	11.44	66	34
Los Angeles		6.06	12.16	77	43
San Diego		6.32	7.83	77	39
Winnemucca	.20	3.27	5.35	54	14
Reno	.18	7.70	4.98	53	16
Tonopah	.14	3.61	5.70	46	8

SNOW ON GROUND.

Emigrant, 132 inches; Tuolumne Cap., 54 inches; Yosemite, 9 inches; Hawthorne, 11 in., 65 inches; Colorado, 1 inch; Mt. Lassen, 12 inches; Independence, 1 inches; Sierraville, 10 inches.

Line-Breeding Produces World Record Animals

Written for Pacific Rural Press by R. H. Whitten

A FEW weeks ago we announced that Sophie's Agnes, a six-year-old Jersey, had produced 1000.07 pounds butterfat in a year, being the first cow of the breed to pass the coveted mark. In this issue we present her picture, but not merely to be looked at and admired. We might give an extended story of the way she was fed and cared for which would prove interesting reading, but there is something more important still.

It would be the height of absurdity for a dairyman to duplicate the grain that was fed Sophie's Agnes and attempt to equal her record by feeding it to any old cow. He would be able to increase that cow's production considerably, but to approach anywhere near Sophie's Agnes' record he should look for a cow of equally good breeding. The story of how this queen of the Jerseys was produced carries a lesson that all who breed dairy cattle should know and make use of if great success is to crown their efforts.

For a quarter of a century C. I. Hood, owner of Hood Farm, where Sophie's Agnes was bred, has studied and experimented with line-breeding. He favored the Sophie Tormentors, and with the doggedness of a true scientist he line-bred them. And the pedigree of this new champion seems to prove the merits of line-breeding, the aim of which is to concentrate and perpetuate the blood of a few good animals of the same strain. It also proves that champions can be bred from champions, and that heavy production, persistency and high testing for butterfat can be "bred on."

The pedigree of Sophie's Agnes traces back to the great cows Merry Maiden and Brown Bess of the Chicago world's fair test, and comes down through the progenitors of winning cows in the St. Louis cow demonstration. At the St. Louis fair Figgis, the 12-year-old daughter of Sophie's Tormentor, was made grand champion cow. A grandson of Figgis was bred to a daughter of Figgis, and in this way Sophie's Agnes was produced. She is out of Figgis 91st of Hood Farm, by Hood Farm Pogis 9th, who is also the sire of Sophie's Agnes' sire, and who has 79 daughters in the Register of Merit. Her sire, Pogis 99th of Hood Farm, has the greatest bunch of high producing daughters that any bull of his age can claim, and his dam, Sophie 19th, the grandam of Sophie's Agnes, was until recently the champion cow of all breeds for long distance production. Figures speak louder than words, and these records should be enough to convince the most skeptical of the merits of line-breeding.

LINE-BRED ANIMALS SELLING HIGH.

Perhaps it was the way this cow was line-bred that caused F. W. Ayer to buy her last summer for $10,099—the top price for a cow of the breed. Anyway, the demand for line-bred animals during the past year has been noticeable, and in September $30,000 was paid for a half interest in the Jersey bull, Financial Sensation, who is one of the most intensely bred bulls ever put at the head of a herd. He traces seven times to the great cow Interest, five times to Finance, three times to Financial King, and twice in three generations to Financial Countess, one of the greatest cows of the breed.

Furthermore, Greystone Jersey Farm, purchaser of the half interest in Financial Sensation, also bought twenty intensely bred Finance-Interest females for $20,000 to breed to this bull of their own line of breeding. There you have the very last word in line-breeding efforts, and the owners feel that they will be doing the breeding world a tremendous service in demonstrating the folly of indiscriminate breeding, and showing the wisdom of intelligent line-breeding—"breeding in the paths of certainty," as they term it.

BLOOD LINES MUST NICK.

Hugh G. Van Pelt, of the Waterloo Jersey Farm, who sold the half interest in Financial Sensation, says it is imperative that the blood lines of a bull be such that he will nick well with the herd on which he is to be used. To determine this question necessitates a knowledge of outcrossing, inbreeding and line-breeding. The reason animals do not nick with each other is because their blood lines are not congenial, or because the sire is not intensely enough bred to assert himself with certainty and transmit his characteristics and those of his ancestors with uniformity.

Outcrossing is usually the reason for the failure. Very often outcrossing is thought of only as crossing two breeds. There are few who believe in the advisability of this, and none who do not recognize that crossing of breeds leads away from purity of breeding and into the channels of uncertainty.

Outcrossing also means the mating of animals belonging to the same breed but representative of families not much more closely related than



Sophie's Agnes—1000.07 pounds butterfat in one year. A world record cow, the result of line-breeding, being a double granddaughter of Hood Farm Pogis 9th.

distinct breeds may be. This does not lead away from purity of breeding, but does have the objection of rendering uncertain results. Used for a distinct purpose, out-crossing has produced excellent results when employed by expert breeders, but when it is followed merely because the bull is a good individual, has a large record mother, or has sired some good daughters in another herd, the method is uncertain to the degree that a few good animals may be produced and a large number of disappointments are very likely to make their appearance.

INBREEDING AND LINE-BREEDING.

Inbreeding is the opposite extreme for outcrossing. Perhaps it is because outcrossing and inbreeding are extremes that they are more largely used by American breeders, for Americans are given to following extremes in the hope of securing quickly that which European breeders have attained by scores of years of patient, thoughtful, intelligent breeding.

Inbreeding means the mating of animals very closely related, as the breeding of brother to sister, half-brother to half-sister, son to dam, sire to daughter, and so on. It is an excellent method of breeding when properly employed, but experience has taught that great skill on the part of the breeder is necessary for its proper use.

Inbreeding intensifies. If it intensifies only the good characteristics of animals with no ill results, then certainly it would be the wise and simple method. But inbreeding intensifies faults as well as perfections, and faults intensified are as difficult to eliminate as perfection intensified is easy to maintain. It is, therefore, plainly seen that inbreeding should be used only when animals so mated have attained a high degree of excellence without possession of a serious fault.

Line-breeding is safe breeding, provided it is employed in a family of excellence—that is, a family endowed with largeness of production, excellence of type and acceptable breed characteristics. Line-breeding is a conservative method. It may be referred to as just between the extremes of outcrossing and inbreeding. Line-breeding implies the mating of animals remotely related, such as grandsire to granddaughters, great-grandsire to great-granddaughters, uncles to nieces, and second cousins.

This method of breeding perpetuates good blood and, like inbreeding, it intensifies excellent characteristics, but it differs from inbreeding in that it permits of bringing in the blood of other animals or families in a gradual manner and without outcrossing to correct deficiencies. If in the beginning a good class of blood is selected and persistently, generation after generation, good judgment is used in selecting the blood of other families brought into the herd, and it be insisted that the new blood be brought in along with additional blood of the family already there, the excellent characteristics of the herd are maintained and the deficiencies corrected.

GREATEST ANIMALS FROM CLOSE-BREEDING.

A study of the history of the world's greatest animals in all classes of livestock reveals that the most headway has invariably been made by close breeding, says Mr. Van Pelt, and our investigations lead us to agree with him.

Sticking to the Jersey breed, the very latest world's record reported by the association, was made by an inbred cow—Old Man's Darling 2nd, bred and owned by Pickard Bros., Marion, Oregon. As a junior four-year-old she recently made 984.86 pounds butterfat in one year, thus eclipsing the former record by 96.86 pounds.

As stated in the association report, Pickard Brothers have given a most remarkable example of what can be accomplished by judicious inbreeding, as they took a bull that had already proved his great qualities and used him on one of his best daughters. In other words, Golden Glow's Chief is both the sire and the grandsire of Old Man's Darling 2nd; that is, he is her sire and the sire of her dam. The new champion has a previous record of 694 pounds butterfat made as a two-year-old. She is a show animal as well as a producer, and was grand champion at the Oregon State Fair in 1916.

This record is not given to recommend the practice of such close breeding by the average farmer, for as before stated, inbreeding is liable to intensify faults as well as good qualities, and only when great skill is used does it give good results. It is not necessary to go to the extreme of inbreeding to fix type and characteristics fairly well, and the average breeder will do better to practice line-breeding instead.

HIGHEST PRICED HOLSTEIN BULL LINE-BRED.

To take just one illustration of line-breeding outside of the Jersey breed, let us consider the Holstein bull calf, Carnation King Sylvia, who sold for the record price of $106,000. How was he produced? The breeder, Arthur C. Hardy, went contrary to the advice of his friends and adopted the principles of scientific line-breeding. He bred May Echo Sylvia to her grandson, King Echo Sylvia Johanna, thereby bringing into her offspring the now famous $106,000 bull calf, the desired King of the Pontiac's blood—a double cross of her own blood, combining it with that of Johanna Rue 3rd Lad, through one of the finest cows of the Holstein breed, Belle Model Johanna 2nd.

One authority, in commenting on this young bull, says: "There is something more than the quality of his brothers and sisters, and the individuality of the bull, by which he may be judged. It is the intensified blood which was transmitted to him by a double cross of his mother's blood. Added to that is the blood of the famous King of the Pontiacs, which also had become fixed in the system of breeding which produced him. Added to this are the phenomenal records of his ancestry on both sides for generations back, so that in this bull we have the characteristics which unite to make him a desirable animal.

"He has the blood of his immediate ancestry well fixed, and cannot help but transmit the remarkable qualities of the famous cow, May Echo Sylvia. His ancestry on both sides are high-producing animals without a single exception. Consequently, there is not any possible chance for the law of reversion to manifest itself. The element of chance has been removed so far as the prepotency of the bull is concerned. The owner must, however, know the blood lines of the females with which he is mated. It would be nothing short of a calamity to use this bull in a herd where there is no relation of the hereditary material that is in him. The chief advantage of line-breeding is that the results can be predicted almost with a certainty, because the blood lines in line-bred animals all blend together and tend toward permanent improvement."

We are beginning to learn that mating two animals of the same breed, registered in the same record association, does not constitute all there is to successful breeding. The animal that is to be has the right to have intelligence used in the selection of sire and dam. The constructive breeder does not wait for a female to come in heat before deciding to what bull he will breed her. For weeks he has been studying blood lines, type and individuality, and while if a cow, for instance, is weak in some particular point, as her top line, he breeds to a bull especially strong in that point, still he does not get entirely away from the same blood lines. He practices scientific line-breeding, taking individuality as well as pedigree into consideration, and thus his operations result in a continued improvement of his herd, and a fixation of the characteristics of the foundation animals.

Potato Growers' Vital Needs Discussed

Written for Pacific Rural Press by R. E. Hodges

CALIFORNIA produced 90,175 acres of potatoes in 1918, of which 25,000 acres were grown in the delta, as stated by Deputy State Horticultural Commissioner George P. Weldon at the meeting of potato growers in Sacramento, March 6. Mr. Weldon quoted the U. S. Bureau of Crop estimates in saying that the average yield for the delta was 155 bushels per acre and that it ranged from 90 to 300 bushels. He asked Eugene V. Grubb, the internationally renowned potato expert, who was present, whether 300 bushels per acre should be considered a good yield.

"Three hundred bushels per acre would mean a loss to the grower under present conditions," retorted Mr. Grubb. "Yields in the delta should be not less than 500 bushels per acre and would be if disease were eliminated."

"There are good reasons why the yield is so low," said Mr. Weldon. "Diseases may be chiefly responsible, but not entirely. Aside from a very few seed potato specialists, no seed potato breeding has been carried on in California."

MORE INFORMATION NEEDED.

Mr. Grubb added that potato growers need not only good seed true to type, but also they need information on cultural methods. They should double the production per acre to make potato growing profitable without costing consumers so much.

MORE FIELD INSPECTION NEEDED.

Mrs. Carl Nielsen of Sebastopol emphasized the need of inspection of potato fields to prevent the spread of newly introduced diseases. Last season a valley in Southern California which grows about 1000 acres of potatoes was smitten for the first time with a disease which killed potato plants when they came into bloom regardless of when they were planted. Nobody knew then nor afterward what caused the trouble, but potato acreage will be scarce there next season. Mrs. Nielsen believed it to be early blight, the first appearance of this disease in California. H. A. Hyde of Watsonville noted that early blight had been found in Imperial county. Mr. Grubb referred to the opprobrium heaped upon him by Europeans after he had found potato wart disease general in Europe and had been instrumental in getting a quarantine on all European potatoes imported to America. The presence of the wart disease in Europe had not been advertised here, but Mr. Grubb found it so dreaded in certain countries that it had been made a prison offense not to report the disease whenever it was noticed. The Isle of Jersey put on a quarantine or embargo against potatoes from any other part of the world. Notwithstanding our precautions, the disease was in 1918 reported from 29 counties in Pennsylvania alone. The Colorado potato beetles had been extinct in the Greeley district of Colorado for over thirty years when they reappeared destructively four or five years ago, and since then have killed an entire crop in Montana. They are moving westward and we may find them in our fields one sorrowful day. They had better be rounded up on that day, for if they escape they will cost millions.

William Harrison of the U. S. Department of Agriculture at Marysville spoke from the experience of years in Colorado and from travels in Europe in pointing out two great needs of potato growers. One is proper inspection of all potatoes to protect our industry from new pests and diseases and to handle any outbreaks before they spread. This would be accomplished by giving the State greater control of quarantine. The other is investigation by the University Farm at Davis of cultural problems and the spread of information on how to increase the yield. Colorado Agricultural College has done a lot of this. Mr. Harrison recalled fields producing 400 to 500 bushels per acre in Colorado and said it was merely a matter of education. Probably the State Horticultural Commissioner should do the inspecting, quarantining, and police work, and the University should do the investigational and educational work.

U. S. STANDARD GRADING NEEDED.

Mallory Enos, potato dealer of the Pacific Coast, remarked that he was in Idaho in December when Food Administration grading regulations were taken off from potatoes. He found dealers there who are a menace to the industry because they buy and ship inferior cheap potatoes and break the market for potatoes graded under United States regulations, which cost consumers less per pound of nutriment than the cheap ones. He and other shippers got together with Farm Bureau backing and organized a shippers' association to improve the quality of shipments. Since then a bill has passed compelling shipment of Idaho potatoes by United States grades. Colorado is already in line and other States are coming to it. The United States grades are compulsory in interstate commerce and ought to be compulsory in California.

BILL TO ENCOURAGE BETTER SEED.

The meeting adopted resolutions unanimously endorsing Senator H .W. Slater's bill, No. 709, providing for a State potato inspector subject to the State Horticultural Commissioner and empowering the latter to establish such rules as may be deemed necessary for examination and certification of potatoes grown in California "for the purpose of producing approved varieties or a higher quality of seed. He shall issue to each grower a certificate showing the variety, quality, and freedom from insect pests and diseases of the seed crop examined, and each certificate shall show the amount of seed which can be sold thereunder." Five thousand dollars a year are to be appropriated to save this act from the failure which has attended the present potato inspection law, as stated by State Horticultural Commissioner G. H. Hecke. No fixed specifications for certified seed are named because the possibilities vary from season to season and the State Horticultural Commissioner will under the proposed bill be enabled to vary the requirements seasonally. The potato inspector will in the progress of his work discover newly introduced menaces to the industry and probably take prompt measures to control them. The bill as introduced was unanimously endorsed as covering all needful points desirable to include for present improvement of the potato industry. Mrs. Nielsen pointed out that while fruit growers and nearly all other classes have received financial support from the State and the University, potato growers have had none. A committee appointed to bring the necessity of the bill to the Governor's attention were assured by the Governor that he believed it a worthy cause and hoped the appropriation could be arranged. Senator Slater had presented the matter to Marshall De Motte of the Board of Control and was assured that it would be given careful consideration.

OTHER STATES ARE AFRAID OF OUR POTATOES.

"We have been obliged to send our inspector to California the past four years in order to secure California potatoes free from tuber moth. Last year we returned several cars badly infested, several having county inspection certificates. Only two cars inspected by our men have been rejected in four years. Can see no reason why you should not make as good inspection as we can. Am not sure we can send our man this year. Unless your inspectors are more efficient than heretofore, we may be obliged to establish embargo on all potato shipments from your State."—Telegram from State Horticulturist M. L. Dean of Washington to California State Horticultural Commissioner G. H. Hecke, Feb. 20., 1919.

"Condition of potatoes in shipments from California to Oregon has not been satisfactory to us. We are fearful that tubermoth may get lodgment in Oregon. Cannot you strengthen your inspection so that it will be unnecessary for us to resort to an absolute quarantine of potatoes from California?"—Telegram from President Chas. Park of the Oregon State Horticultural Society to Mr. Hecke.

About 300 carloads of our potatoes go to Oregon and Washington per year, and it has kept Mr. Hecke busy to prevent an absolute embargo, because he has no way of standardizing the county horticultural inspection, nor of making it more efficient under the present laws.

Canada and Idaho have an absolute embargo against California potatoes. Washington, Oregon, Colorado, and Texas are likely at any time to put on such an embargo. California must have efficient inspection of outgoing potatoes; we must have expert inspection of our fields; we must have sufficient quarantine inspection to prevent introduction of new pests. We sorely need a working law such as Senator Slater's bill, which will encourage the growing of better seed potatoes and incidentally spot all insect pests and diseases. Write to your Legislators at once to support this bill in the Finance committees.

A home service conference of Red Cross delegates from a large area, from Carmel and Pacific Grove to Santa Cruz and from Monterey to Hollister, was held at Watsonville last week to discuss plans to assist our returning service men to find employment. Addresses were delivered by speakers from divisional headquarters in San Francisco.

Fruit trees thoughout the State are in fine condition to bear a heavy crop, according to George H. Cutter, president of the California Fruit Exchange. Spraying has been well done generally. Japanese plums are coming into full bloom and two weeks of clear weather will set the fruit in large quantity.

Almond Trees { Nonpareil, Texas, Peerless, Drake Seedling
On Almond and Peach Root.
Peach Trees { Tuscan Cling, Muir, Lovell
Prune Trees { French, Imperial, Stuart
Pear Trees { Bartlett on Japan Root
Olive Trees { Mission, Manzanillo

These trees are budded from carefully selected bearing stock and are guaranteed true to name.

Our prices are right and within the reach of every grower.

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NO MORE ATTRACTIVE, BETTER GROWN, OR FINER ASSORTMENT ON THE COAST.

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Spring Orchard Notes

Soil Conditions in the Orchard.

Throughout Northern California cover-crops in orchard and vineyard have been very poor, with a few notable exceptions, where manure has been applied or warm in situations. Barley seems to have done the best and many plantings of melilotus are in fine condition to make a big growth. A great deal of plowing has been done, but the rains in many places will delay plowing where the ground has been too wet to put a share into. The rains started cover-crops up in fine shape, but later the long dry spell, accompanied by cold weather, not only delayed growth but wasted some that had already been made. These conditions, which cut our cover-crops down, have proved of benefit to the deciduous fruit trees and vines by holding them in check yet in fine, vigorous condition, so that blossoming time has been delayed to the added safety of the crop. From present appearances it will be the last week in March before prune trees generally will be in full bloom. And it has almost always been March frosts that have been most damaging to prunes. Apricots are coming out nicely and in some sections will be well in bloom by the time this notice appears.

Generally, after a very rainy winter, a good deal of sour sap shows up in the young trees, but as this spring has been so uniformly cool after the rains we are hoping that less of this trouble will show up than usual. We noticed this week (March 8) several apple men had switched to lime-sulphur to complete spraying which had been started with crude oil emusion. Tree planting of deciduous fruit is likely to continue to the end of the month, as the trees are still dormant (except almonds). We have noticed various areas where the holes have been dug, but the ground was still too wet for the best results in planting. A week's fine weather will work wonders in most sections and then every team and tractor will be busy.

Dry Sulphur for Brown Apricot Scale.

Last August (issue of the 24th) we mentioned the fact that brown apricot scale had been killed on a six-year-old Satsuma plum tree by the use of dry sulphur blown on. The result was attained by L. Woodard of Campbell, three miles from Los Gatos. This week we went to look at the tree again. It hasn't made much growth owing to the fact that it was almost put out of commission by the brown apricot scale last year during the early growing period, but it is now full of bloom, ready to burst, and is absolutely free from scale so far as we could see, and we examined it closely. Mr. Woodard had just finished sulphuring his vines on May 1 and in passing this tree, every inch of whose twigs was massed with scale and the sparse foliage curled and black with sooty fungus, he gave it a thorough good blowing of sulphur. When we saw it in August not only were the scale dead but the shells had fallen off, too, only leaving their little white outlines on the twigs and small limbs. The owner thinks, and with good reason, that the possibilities of dry sulphur, well blown on, as a remedy against brown apricot and similar scales, are incalculable. If he uses it again, he would prefer to do it when the scale is soft rather than wait till May. He is going to try it on his lemons if any scale develop on them, and is satisfied that he can control the brown apricot scale with the dry sulphur in his apricot orchard which he winter sprayed with buggo. It looks as though Mr. Woodard has made a discovery and a valuable one. As he says, if sulphur fumes are effective in destroying mites, there is no reason why they should not prove equally fatal to tiny scale insects.

Lime and Fertilizers.

These should be applied in the orchards without any more delay. In Santa Cruz county the Farm Bureau has fifteen liming demonstrations under way, according to Farm Advisor Washburn, under varying conditions of soil and altitude, including Watsonville, Aptos, Soquel and Happy Valley. Ground limestone and refuse from the kilns (lime ashes) have both been used and applied at the rate of two tons to the acre on prunes, cover-crops and field crops. In the prune orchard demonstrations no result was noticeable last year, but this year a distinct line is noticeable in Highland prune orchards where it was applied a year ago. Bur clover has appeared where there was none before. All the lands where lime was applied tested acid. Every farmer in the Highland district is a member of the Farm Bureau.

Training Thompson Seedless.

More fruit, better foliage and better canes for the ensuing year are obtained by bending the canes low, as recommended by Professor F. C. Bioletti and A. E. Way, in charge of the experimental vineyard at Kearney (Fresno county). Their records for several years of production prove these claims. The canes should be inclined downward and buds are developed along their whole length. This system carries all four canes on the lower wire. They should not be twisted round the wire but bowed over, or so much cutting is necessary to remove them at pruning time.

Spray Cherries Now.

Cherries should be sprayed now against spider and thrips. Use lime-sulphur, winter strength, till the buds burst. Then, if your pollination is right, there won't be so many of those red-nosed ones that always drop off—those that develop a little swelling on the end. As a jockey once remarked in pointing to an enlarged knee joint on a horse, "Where there's an enlargement there's always a weakness." The owner of the animal replied merrily, "Well, all I can say is that you've got a terrible big head."

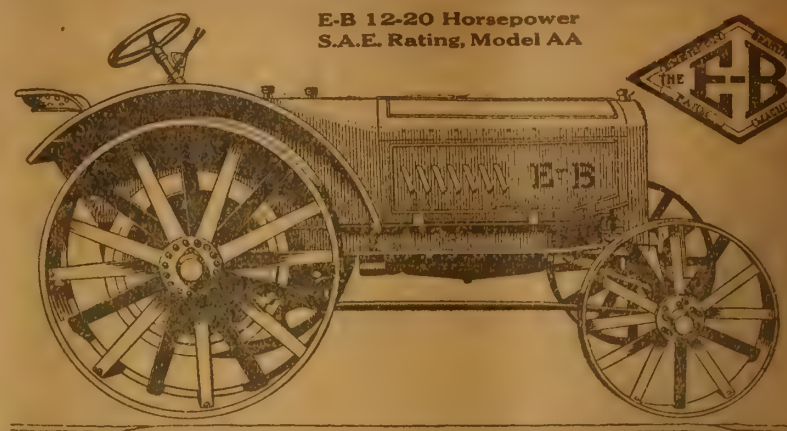
Prune Those Newly-Planted Trees.

One sees a few newly-planted orchards with the trees left just as they came from the nursery. They must be headed back at once to from 18 to 24 inches high. No matter what kind of deciduous tree it is or what method of training you intend to adopt, the young tree has to be "built" and the first step is to cut it off. If only to establish a balance between the cut root and the top, this action would be demanded.

Mustn't Spray Fruit Trees Any More!

"It shall be unlawful for any person * * * to operate any machine used for spraying of any * * * materials that contain any poisonous ingredients consisting of lead, arsenic, * * * paris green, or other poisons injurious to the health of workmen, either by absorption or inhalation." Such is the essence of Senate Bill 372 introduced by Senator W. A. McDonald of San Francisco. Must be Mr. McDonald doesn't like fruit, for if his bill were enacted into law, the bugs and fungus diseases would work worse havoc to our orchards than did the Germans in the orchards of France. The bill would have no chance in an agricultural committee without proper amendment, but it is in the committee on Public Health. Luckily Senators Evans, Johnson, and Jones are on this committee and they know something of the value of spraying fruit trees. Labor unions are said to have proposed the bill because they complained that by use of the sprav machines, one man could paint as much of a ship as six men could by hand.

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S.A.E. Rating, Model AA



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NO overheating even though you work the E-B 12-20 AA Tractor all day in tough going. That's because it has unusually large water gasket space, a gear-driven fan and a high-grade radiator of ample capacity. When other tractors of the same rating become overheated and stop work, this tractor is always ready to go ahead.

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The rating of 12-20 is given to the E-B AA by the Society of Automotive Engineers—the most conservative rating known. As a matter of fact, this tractor possesses 25 per cent surplus power for emergencies—hard spots, hills, etc.

Any one of the family who can run an automobile, can operate an E-B AA. Its auto-type control and remarkable lightness for its power makes handling easy. All gears, including drive, run in oil and are absolutely protected from all dust, dirt and sand. Every part of the motor's driving mechanism is dust-proof enclosed. Ask your E-B dealer for complete facts.

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OSBORNE HARVESTING MACHINERY
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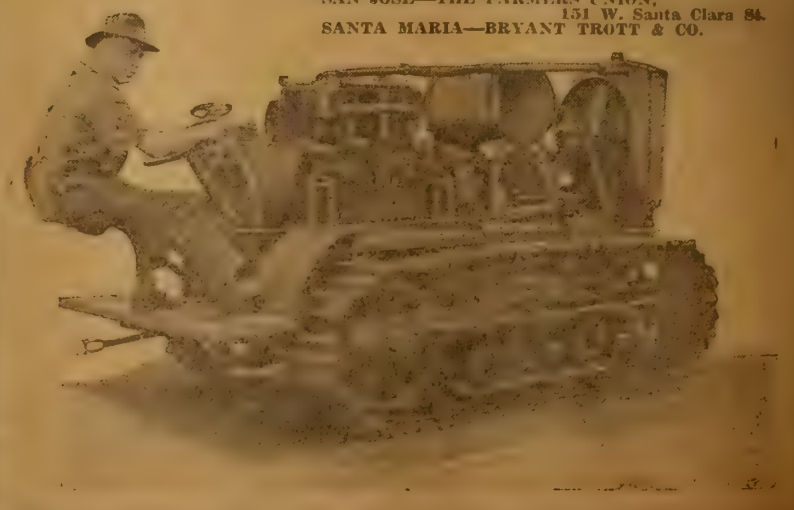
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Write for Catalog.



THE CONCORD WALNUT—ITS HISTORY.

To the Editor: Referring to Geo. M. Westcott's communication of March 8 about the introduction of the "Concord" walnut, the facts are as follows: Ten years ago Prof. Wickson mentioned casually to me one day that Mr. Eli Hutchinson of Concord was growing a very promising walnut. I acted on the suggestion and, after writing Mr. Hutchinson, I visited his place and was shown over his walnut orchard, where many trees were grafted over to Mr. Westcott's variety. Mr. Hutchinson introduced me to Mr. Westcott, who took us to the original tree. Before I left, I had arranged with Mr. Hutchinson to get grafting wood and that evening suggested that I would name it "Concord," which pleased him and he mentioned this to Mr. Westcott. I propagated what trees I could in the nursery, Mr. Hutchinson kindly furnishing me with 20 pounds of the nuts, which I mailed as samples to walnut growers about the State. Every year since then, in our annual catalogue, we have alluded to this introduction, and for several years published the fact and a cut of Mr. Westcott's original tree.

The "Concord" was not well received for many years, but since trees have come into bearing in many sections it has suddenly jumped into favor, even Southern California, which usually sees little good to come out of the north, is planting many of these trees. There no doubt are better varieties, and no one has a monopoly in it. All nurserymen who grow walnut trees now propagate it, and I would ask the grower in Contra Costa county who recently wrote me offering first-class grafting wood, to immediately advertise the same in the Rural Press.

If Mr. Wescott had raised and distributed trees and named the tree "Concord" before my visit to Mr. Hutchinson and himself, then I most cheerfully grant him all the honor due, but I never before had any intimation that such was the case, nor, I think, had Mr. Hutchinson.—Leonard Coates, Morgan Hill.

ORANGES SUBSTANTIALLY COLORED.

Orange standardization caused warm discussion in the Senate Agricultural Committee Monday evening. Tulare and Southern California want oranges to be considered mature if they test 8 to 1 and have 25 per cent of color or if they have "substantial" color before being picked. Butte county growers contended for a definition of substantially colored as being two-thirds colored. The present law having no definition, the State Horticultural Commission has prepared color plates to define it. These color plates are called 80 per cent colored by the U. S. Department of Agriculture. Butte county growers accuse Tulare people of sweating their 25 per cent colored fruit, which was not contradicted. They also contend that their fruit two-thirds colored on the tree is thoroughly good eating. Tulare and Southern California people, who ship just after the Butte crop is marketed, object to the latter shipping fruit, which leads consuming markets to condemn all California oranges as being too sour to eat, thus breaking the prices for the Southern crop. Seventy per cent was finally agreed upon by the committee as the proper definition of substantial color.

SPRING PLOWING OLIVES.

L. C. Utt, olive grower of Pala, San Diego county, gets results without tearing up the feeder roots in the orchard at that time of the year by the fact that from forty acres he shipped 92 tons of olives this season. "The heavy drop of blossoms and young fruit in the spring is often due to this cause," is the statement of Mr. Utt.

Thorough disking during the late spring and summer is all the culture his orchard gets. Irrigation is available in this orchard, of course, but his system seems practical and will apply to non-irrigated orchards as well.

TREES

PEACH APRICOT ALMOND
PLUM PRUNE PEAR
APPLE CHERRY OLIVE
FIG ORANGE Lemon, Etc

More Than a Million High Class Fruit Trees per Year to California Planters

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Drive Out Vicious Pests With FRUIT-FOG

While the season is young, prepare to wage a war on the pests of your orchard, groves or vineyard. Scales, mites, worms, and fungi in great numbers take a heavy toll from your crops' profits. Yet this damage can be entirely prevented and the vigor of your fruit plantation kept at top-notch by thorough Fruit-Fog spraying. Experts say, three things are necessary in good spraying—the use of the right material, at the right time and in the right way. Thousands now know that the "right way" is to insure thoroughness by using

HAYES FRUIT-FOG SPRAYERS

Fruit-fog Sprayers are the highest type of spraying apparatus. The high pressure maintained and the scientific Hayes nozzle are absolutely essential to produce Fruit-fog. Each Fruit-fog outfit is built to highest mechanical standards of finest material. Each is tested to 500 lbs. pressure and guaranteed to maintain 300 lbs. working pressure at full rated capacity.

Equipped With Fairbanks-Morse Engines

A uniform, dependable power plant is necessary to efficient power service. Hayes Fruit-fog outfits are equipped with the famous "Z" Engine, made by Fairbanks, Morse & Co. This power plant was selected by our experts after every desirable make on the market was carefully tested



Ask Mr. Favor

MR. E. H. FAVOR, head of our Horticultural Department, is a nationally famous authority on fruit growing and spraying. For many years he was editor of one of our leading fruit papers and was actively associated with two State experiment stations in scientific work.

Mr. Favor's experience is at the command of any fruit grower in America. If you have any orchard problem that perplexes you just "Ask Mr. Favor." He will write you personally

Nation Wide Service

Over 30 years' pump experience is behind Hayes spraying apparatus. Fairbanks Morse is a nationally accepted guaranty of quality and economy.

We maintain stocks and parts for sprayers and engines in 24 cities. No matter where you are, expert service is only a few hours from you. This is a feature of utmost importance.

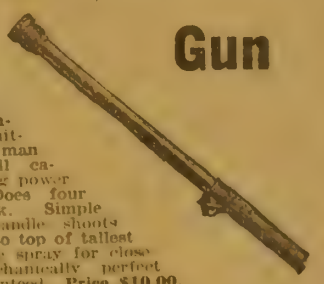
New Spraying Manual

Mr. E. H. Favor, our scientific horticulturist has just completed a new manual of spraying. The work is a real text book clearly and concisely written, a one-volume encyclopedia on spraying. It is fitness printed and durable bound. The established price is $1.00 but we will send you a copy if you send us the name with 25c. stamps or coin

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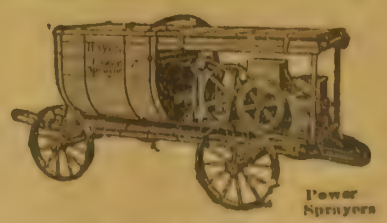
Hayes FRUIT-FOG Gun



Combines amazing speed with the thoroughness of Fruit-Fog. One man handles full capacity of big power sprayer. Does four days' work. Simple twist of handle shoots long spray to top of tallest tree or wide spray for close work. Mechanically perfect Fully guaranteed Price $10.00.

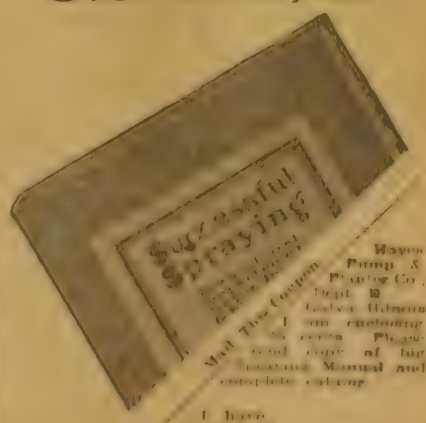


Large Hand Sprayers



Power Sprayers

Over 50 Styles



Mail This Coupon Hayes Pump & Planter Co. Dept. E Galva, Illinois

I am enclosing 25 cents. Please send copy of the Spraying Manual and complete catalog

I have fruit trees

Name

Post Office

Street and Number

State

Here and There in the Fruit Business

[Written for Pacific Rural Press.]

Chico Wants Convention Next.

A strong delegation of Butte county fruit growers is planning to attend the fifty-first Fruit Growers' Convention, to be held at Riverside this spring, and will press their claims to have the fifty-second convention held in Chico. The Board of Supervisors has already set aside $500 for advertising and other expenses in connection therewith and a similar sum is pledged by the Chico Chamber of Commerce to make things go. Chico means business and has a good hand to draw to. Who else is sitting in?

A New Catalogue.

We are in receipt of a new catalogue of seeds, plants, trees, etc., from Theodore Payne, Los Angeles, which contains, in addition to a compendious garden calendar, a new tomato that promises to appeal especially to the canning industry. It is a round, deep red tomato, averaging about half a pound in weight, according to M. Payne, with a very high sugar content; solid flesh and few seeds, thus making a good shipper as well. Send for this catalogue if you are making garden or raising truck or flowers.

A Farm Bureau Coalition.

A joint meeting of the directors of the El Dorado and Placer County Farm Bureaus was held at Auburn and arrangements were made for the holding of inter-county farm bureau auction sales at that town at stated times for the sale of their products—fruit, field crops and livestock. The directors of the county farm bureaus are being chosen from among the best business men among the growers, who know what they want to do and do it.

Prices on Prunes.

Offers by independent buyers of 9c and 9½c for prunes of the coming season's crop were reported from Sonoma county last week (Healdsburg), but no sales that we hear of. Some sales have been made by Visalia and Hanford growers at 8c and 8½c, also a few in Sacramento county. There have been a few sales reported in Santa Clara county at 8c and 9c, according to H. C. Dunlap of the Prune and Apricot Growers' Association.

A Promising Demonstration.

W. Boyne is planting out some ten or fifteen acres to apples and pears on the Santa Cruz road, five miles from Watsonville (near Five-Mile House). He is going to follow the new system of pruning "from the egg." This orchard is on old redwood land and should give results well worth watching. Mr. Washburn, the Farm Advisor, will keep a careful record, which will be of especial interest as regards pears.

Santa Cruz County Bees.

The Santa Cruz County Farm Bureau will endeavor to establish a small apiary in every farm center in the county, which will be handled under expert directions from the University. The results will prove which is the locality best suited to beekeeping and why—also what effect it will have on contiguous fruit crops in the amount and quality of fruit set, above the average.

Heavy Planting of Strawberries.

In view of the heavy demand last season and the expected demand for 1919, there has been a heavy planting of strawberries, especially in the Mountain View district and San Juan. The Banner appears to be the favorite. The Watsonville and hill sections seem to be about stationary—as many plants being set out as there are old ones going out of commission.

Nevada County Rejoices.

A report from Grass Valley says that the fruit outlook for the coming season is very favorable, for the rains have filled up the ground, the springs are full and the mountains are packed with snow. As in other sections, the protracted cold, seasonable weather has held the fruit trees in check and blooming will be later than last year by at least a week.

Bean Straw as Fertilizer.

The value of bean straw as a fertilizer is said to exceed that of barnyard manure. Here are the comparative values: Bean straw contains organic nitrogen 28 pounds to the ton, phosphoric acid 6 pounds and potash 38 pounds. Barnyard manure contains 10 pounds of organic nitrogen to the ton, 5 pounds of phosphoric acid and 10 pounds of potash.

A Model Sulphur House.

D. L. Reed of Reedley has a sulphur house 54 feet long, open at both ends, with rails for the cars to run on. An air-tight door in the center divides the house in two if necessary. This sulphur house holds 672 trays, which equal about five trays to a lug box of dried peaches. It is economical in handling the fruit.

Monterey County Planting Heavily.

Over one thousand acres have been planted to apricots this year in Monterey county and about as many almonds, according to Horticultural Commissioner Hickman. Aromas has been a center of especial activity and is well adapted to the apricot.

Olive Planting in Palestine.

The Nathan Straus Palestine Advancement Society has contributed $1,000 towards the planting of an olive grove in Palestine, which will bear the name of President Wilson. The president of the society is Louis M. Cole of Los Angeles.

Four hundred and sixty-seven liquor licenses have been extinguished in one county—Kent, England—since 1905, the sum paid by the government in compensation for them being £424,014 (about two millions of dollars). Kent is called the "Garden of England" and in this county most of England's hops are produced.

ENGINES and PUMPS



ALPHA ENGINES

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Here is a pumping engine so well designed and so accurately machined of sound materials through and through that it requires practically no attention from one season to another—economical, dependable power without mechanical troubles.

The Alpha is the easiest starting, most perfectly balanced engine made.

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Prices and terms

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10 to 1100 gal. per min.



Viking Pumps require less power—a smaller engine—for a given quantity of water than other types. A positive-acting, slow speed, single stage pump that operates at highest efficiency under any head up to 200 feet. Details upon request.

De Laval Dairy Supply Co.

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SEED POTATOES

1000 SACKS OF SELECT BRITISH QUEENS
Absolutely clean. Grown on sandy soil. Good producer.
Price, $1.75 per 100 lbs. Send for sample.
EUGENE ELPHICK, GROWER, SEBASTOPOL, CAL.



Olive Trees

such as these are grown only on our foot-hill locations.—Note the good roots—for hardiness they have no equal.

We have a fine lot of Mission and Manzanillo trees, both on Picholine roots and grown from cuttings. We have had splendid success on all Olive plantings—a most important assurance to you.

Submit a list of your tree wants for special quotation. Do it right now.

We have also a complete assortment of Shipping Plums, Cherries, Prunes, Bartlett Pears, Fall Pears, Peaches, Almonds, Apricots, Walnuts, etc.

Our foot-hill grown trees are free from root diseases common to other localities. Our trees insure your future profits in fruit growing.

And remember—we will accept Liberty Bonds as full or part payment for trees. Write us today.

Address Dept. H.

J. E. Bergtholdt
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SILVA-BERGTHOLDT CO.
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"Behind each tree is our guarantee"

FERTILIZERS

Feed the Crops

that

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Without fertilizer, crops will decrease and deteriorate in quality.

With more fertilizer, crops will increase and improve in quality.

Bigger and better crops mean bigger profits to you.

GOLD BEAR

FERTILIZERS

are scientifically manufactured to meet California soil conditions and crop necessities. They are made from animal products that contain the necessary elements to feed your crops.

SEND FOR OUR NEW FERTILIZER BOOKLET

Western Meat Company

SAN FRANCISCO, CAL.

PURE ANIMAL MATTER AMMONIATES

GOLD BEAR FERTILIZERS

FOR CALIFORNIA SOILS

SHELLS AND CULLS PAY FOR MARKETING WALNUTS.

(Continued from first page.)

The balance is paid at the close of the season—less cost of selling.

GRADING AND BLEACHING.

When the nuts are first received at the local warehouse they are passed through a suction culler, which takes out 95 per cent of all light nuts, from whatever cause. The association controls the patent of this machine, which gives their fruit a guarantee otherwise impossible to obtain except by some similar method.

The walnuts then pass over an endless belt between two rows of operatives and are culled by hand and are then washed and bleached. Each growers' nuts are run through the entire plant as a separate unit. Returns are made to the grower at a uniform price per pound for each grade of shelled walnuts (also by-product) derived from his particular shipment.

A double handful of nuts is taken from every 10 bags for a cracking test and kept on file at the office as a sample of each shipment—a check against unwarranted claims. The cracking standard is guaranteed—this being 88 to 90 per cent "full" on No. 1 walnuts. The close inspection carried out keeps the guaranteed quality of Diamond Brand nuts in the first class.

BY-PRODUCT PLANT.

Cull and off-grade walnuts that used to be so difficult to sell and which resulted in giving our nuts a bit of a black eye, are now taken out and net the grower more than he used to get for his main crop. The light culls and off-grade nuts are now passed through a cracking machine and graders developed by the association and produce shelled nuts of four grades that are in demand by the market. The best grade of "halves" bring as good a price as No. 1 walnuts used to. The cracking machines crack eight pounds of nuts a minute and these are picked over—graded and sorted by girls. They have returned an average of 16 cents a pound net to the growers. The shells are used in the making of dynamite.

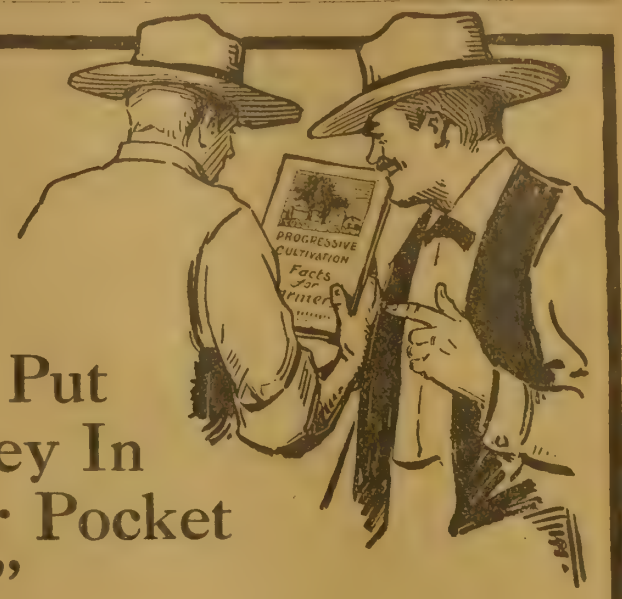
It is claimed that the walnut producer pays a less percentage of cost in marketing than any other food producer. He obtains 70 per cent of what the consumers pay instead of an average of 56 per cent. The selling expenses of the association this year was expected to be only 2½ per cent f. o. b., including the costs of advertising, officers' salaries and everything. No director or officer of the California Walnut Growers' Association can buy or deal in walnuts outside of the association.

Sacks are provided to growers for delivery of their fruit and no sacks are delivered till they have been well steamed under pressure to avoid any possibility of transmitting any insect pest. The fruit is shipped in 100-pound bags. Two hundred and fifty to 500 bags go to a carload. The shelled walnuts are packed in 20-pound cases. Over 40,000 cases of walnut meats were produced and marketed by the association in 1917, though this branch of the business is only in its infancy.

The federation of the Growers' Association has rendered possible the present remarkable system. For it is the economical utilization of waste (which only a large system can employ) that pays all the expenses of doing the business—a principle probably first employed by our large meat packers, who practically make their profit out of the twiddly bits and the "squeal."

CANNERY OUTLOOK SANGUINE.

The canneries are getting ready for a big season, extending their plants and building others. For there is a greater demand for California canned goods now than ever. One large canner who attended the recent annual convention of canners in Chicago says he believes the demand for canned fruits and vegetables this year may exceed in some instances what can be supplied. There is a heavy and growing demand in the export trade for canned fruit and vegetables.



"It'll Put Money In Your Pocket Too."

"That's where I got mine—out of this book! It taught me how to use dynamite. And I wouldn't trade *that* knowledge for a farm."

"Better take my advice, Fred, send for this book, read it, and then use

HERCULES DYNAMITE

"Progressive Cultivation" is a 68 page book, fully illustrated with photographs and diagrams. It tells you all about the many uses of dynamite on the farm and in the orchard. This book will be sent to you *free!* All you have to do is to sign the coupon printed below and mail it to the Hercules Powder Co.

Better send for it *today.* *It will put money in your pocket.*

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THE BASIS FOR ORCHARD PERFECTION — TRADE MARK — CROW TREES

FRENCH on Myro., 6 to 8, 4 to 6, and 3 to 4 ft
" on Peach, 6 to 8 and 4 to 6 ft.
" on Almond, 4 to 6 ft.
" on Apricot, 6 to 8 and 4 to 6 ft.
IMPERIAL on Myrobalan, 4 to 6 and 3 to 4 ft.
All budded and selected bearing trees.

CHERRY, leading Commercial sorts, all sizes.

EUROPEAN SYCAMORE (Platanus Orientalis) 8 to 10 and 6 to 8 ft.

A FULL LINE

of all that is best in Fruit, Nut, and Ornamental Trees, Vines and Plants; and our prices are low. Write for our Price List; free.

CROW'S NURSERIES, - GILROY, CAL.

CALIVADA

Sheep **Manure** Steer

From highest nitrogenous feed
Decomposed and concentrated by age in their own liquids containing the highest percentages of Nitrogen, Phosphoric Acid, Sulphate Potash, and readily available Humus.
Shipped commercially dry. Cars average 22 to 24 tons. Saves four-fifths labor in application. Thousands of tons now being shipped to citrus and deciduous growers in California.
Write for samples, prices and particulars today to insure prompt delivery.
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SUPERPHOSPHATE

is a wonderful fertilizer for ALFALFA

Excellent, also, for Fruit Trees, Vines, etc.
For sale by

The Mountain Copper Co., Ltd.
332 Pine St., San Francisco

Horticultural Jottings

The strawberry season opened with small shipments of fruit that brought $4 a crate.

At the Fresno date nursery there are 18,000 seedling date palms now four years old.

Orange county is said to lead in the production of Valencia oranges, Eureka lemons and walnuts.

It is estimated that 10,000 acres of new raisin grapes will come into bearing this year.

Two hundred acres are to be planted to cantaloupes in one tract in the Livingston district, Merced county.

Dana Perkins has shipped 20 tons of olives from his 22-acre Mission orchard this year. The trees were planted in 1897.

The Prune and Apricot Growers' Association is now making a delivery to the U. S. Navy of 17,000 cases of canned prunes.

It is reported that growers are being offered $80 a ton in the Santa Clara Valley for apricots for canning. Orchard run peaches are said to be started at 11c.

Apple shippers are offering $35 a ton for Watsonville apples on the trees for the coming season, according to H. A. Hyde, who says also that apple nursery stock will be absolutely cleaned up.

Twenty-six canneries in various parts of the State will pool their interests in a $6,000,000 corporation, it is reported, and launch a campaign for foreign trade.

About 4000 boxes of apples a week is still sold through the San Francisco commission houses at a value of $13,000. Prices have ruled high throughout the season.

The Associated Raisin Company, Fresno, will spend $750,000 this year on new buildings, plant extensions and improvements. Last year they spent nearly a million for these purposes.

Shade trees are to be planted along the concrete highways of Contra Costa county each bearing a bronze plate with the name of a war hero if the memorial committee's plans are realized.

A "Manual of Insect and Plant Disease Control" has just been issued by the College of Agriculture of the University of California. About thirty selected formulas for disease and insect control are given. Send for it.

E. A. Bolster of Grass Valley has an experimental orchard of ten acres of walnuts, including Mayettes, Franquettes and Eurekas. They have made a splendid growth and promise well for this section new to the walnut industry.

Beekeeping is on the increase in San Diego county, which produces some of our finest honey. All over the State fruitmen are waking up to the importance of keeping bees, and the farm bureaus are furthering the movement.

Strawberry growers are contracting their fruit at 10c a pound to the canneries this year. Florin district, Sacramento, has 900 acres and the Central Coast counties 880 acres, according to R. G. Risser, Bureau of Crop Estimates.

The Hopper Ranch, 2300 acres, in Knights Valley, was sold last week to a Mr. Tuttle of Colorado for $75,000. This is in Sonoma county and the ranch will continue to be run as a dairy, though some of it is well suited for orchard.

Work will begin at an early date on the construction of a three-story cannery for the California Packing Corporation at Sacramento. It will cost a million dollars. When completed the old plant at Sixth and G streets will be dismantled.

Senate bill No. 372 and Assembly bill No. 306, which would prohibit spraying with arsenate of lead, Paris green, and even lime-sulphur, are the laughing stock of the countryside, as their passage would call a halt on the fruit industry.

Second payments on the 1918 Thompson Seedless and Sultana raisins will be made this week by the Associated Raisin Co. amounting to about $5 a ton on both A and B grades of Sultanas. The final payment will be made next fall.

A good deal of lime-sulphur spraying of peaches has been completed. Those men who have not been able to get on their ground and whose trees are in bloom can still use the Bordeaux mixture against curled leaf and as the second peach blight spray.

Last year's prune crop in Washington and Oregon totaled about 29,000 tons—made up of 27,000 tons of Italian prunes and 2000 tons of French. The entire crop has been practically cleaned up, including about 14,000 tons taken by the Allied Governments.

Some years ago the opossum was introduced into New Zealand for purposes of sport. It has now become a pest, for it eats berries, fruits, and even seedling nursery trees, and exerts an appreciably deterrent effect on the natural regeneration of the young forest.

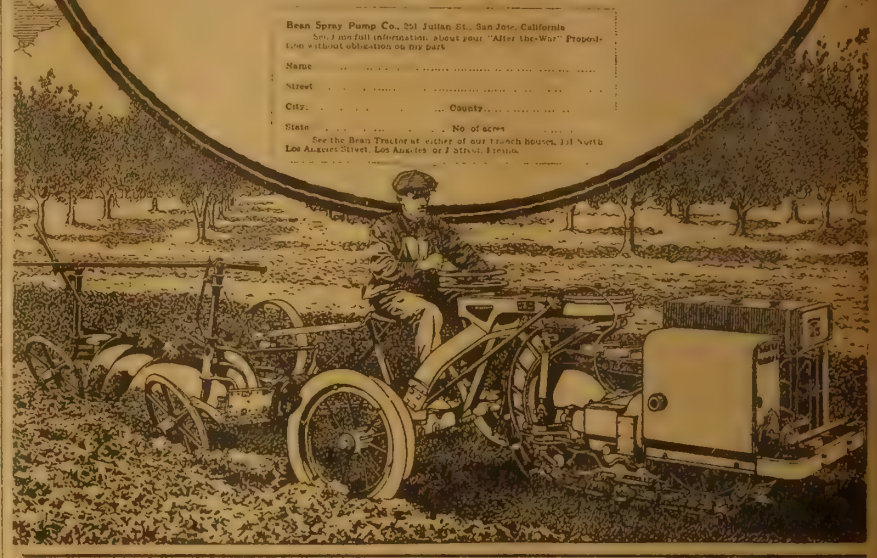
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NOW READY
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STRAWBERRY PLANTS
Ettersburg No. 80, 84, 89, and 121, and Eureka, Treble, Ossie, Nor-, Fantastic, and Fendalcino, the cream of 30 years of strawberry breeding. All originated by the undersigned, mostly from wild species. Big, strong plants, 25 of any variety, for $1.00; 100 in one to four varieties, $3.00, delivered free by mail. Order early, as stock is limited. Descriptive catalog for the asking.
Monanthos Lentils, 20c. per lb.; 5 lbs. or more, 15c. per lb., by mail, prepaid anywhere in California.
ALBERT F. ETTER
Ettersburg - California

"After-the-War" Proposition
Buy Guaranteed Tractor Now on Easy Terms
SEND coupon for our special "After-the-War" Proposition on the 1919 BEAN 6 H. P. TrackPULL Tractor. Specially built for orchard work by makers of special orchard machinery for 34 years—such as the famous Bean Power Sprayers.
Easy Terms now let you pay practically to suit yourself.
After-War Prices, now effective, are guaranteed until June 30th. In case of reduction before that date, purchasers will be refunded difference in price in cash.
Our Guarantee Bond further protects you against repairs for your first season of three months.
An equally liberal proposition, so far as we know, has never been made on any other tractor.
BEAN TrackPULL Tractor
Get all the facts. Send the coupon now for complete proposition in detail. It proves that there is now no advantage whatever in going any longer without your tractor. You can make your purchase on this plan as soon as you've read it. Sending the coupon doesn't obligate you. Tear it off and mail it.
BEAN SPRAY PUMP CO.
Also Manufacturers of the Famous Bean Power Sprayers
Bean Spray Pump Co., 251 Julian St., San Jose, California
Send full information about your "After the-War" Proposition without obligation on my part.
Name .....
Street .....
City ..... County .....
State ..... No. of acres .....
See the Bean Tractor at either of our branch houses, 121 North Los Angeles Street, Los Angeles or I Street, Fresno.





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Made of Corrugated sheet metal—several hundred per cent stronger than smooth metal.



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Made of genuine Open Hearth Iron or Kentucky Copper-bearing Metal.



SURFACE PIPE
Lock-seamed under tremendous pressure. Built heavy and strong.

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NURSERY NOTES.

"We have had a good season and will clear up all deciduous fruit, also ornamental, so far as practicable," said Max Crow, the Gilroy nurseryman, when we saw him this week. He further said that this was a banner year so far as demand was concerned, propagation during the last year of the war having been lighter. Roses are a little slow in moving, but there is a large and steady demand for shrubbery.

Leonard Coates of Morganhill says that war conditions have created an extensive demand for home orchards, people putting in one or two specimens of different fruit trees, apart from commercial orchards, to provide fruit for their own consumption. Mr. Coates has a large assortment of ornamental trees and shrubs established in cans—flowering crabs, flowering peaches and cherries among them—and his nursery force has all the work it can take care of. We noticed a lump of asphaltum from which the barrel had been chopped away.

Mr. Coates said that it was a waste of money to use expensive wax in grafting. He now uses this asphaltum for all his grafting without the admixture of any other ingredient, and it only costs about two cents a pound. It never checks and the bees don't get away with it.

LARGE END OF THE RISK, SMALL END OF THE PROFIT.

To the Editor: In your issue of February 1, I asked for a little information and I received it. Since that time I have talked with pear growers and used my pencil some. I will just say that I fully agree with the editor, in that we should join the Pear Growers' Association. Even the alfalfa growers have formed an association and are doing fine. Because one bank defrauds and we lose our deposits, we do not stop banking. I see no use entering into detail, as Mr. S. has furnished plenty. It looks to me (and those I have talked with seem of the same opinion) that the producer has the large end of the risk and the small end of the profit. I may be wrong. Lake county is assured by the State Highway Commission of our highway to Hopland this spring, so let us get together and join the Pear Growers' Association, tend our orchards well and lift this growing business at least to an equal of the rest of the State.—J. M. D., Lakeport.

ALMOND GROWERS SUPPORT MARKET COMMISSION.

Relative to the proposed legislation affecting the State Market Commission, the California Almond Growers' Exchange, as representatives of one of the leading agricultural interests of California, denounces the attempt to deprive us of expert marketing advice as unwise and unjust, and appeals to every member of the Legislature and to the Governor to oppose these bills and all others inimical to the farming industry, the success of which is so supremely important at this time. They call upon the farmers' organizations in California and upon all farmers not members of any organization to demand of their Senators and Assemblymen in the present Legislature to defeat the proposed handicap as outlined in Senate bill No. 639 and Assembly bill No. 46.

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Zante Currants for Wine Counties

[Written for Pacific Rural Press.]

"Why is the Zante currant evoking more interest in the raisin districts of Central California than it is in the wine-growing counties?" This was a very pertinent question asked, the writer by Fred P. Roullard, Horticultural Commissioner of Fresno county. He thinks this movement should be transferred to the north, where Muscats for drying cannot safely compete with the San Joaquin in this fruit. It has been shown that it grafts readily on our wine varieties and, being an early ripener, can be cured, while Napa and Sonoma counties still have plenty of sun for curing and no fear of rain damage. These two counties could produce far more than we now import and though they will be perhaps less profitable as a crop than either Thompson Seedless or Muscats, the two counties can produce the Corinth and get away with it where they could not produce the Muscat commercially and even the Thompson Seedless is problematical, even at a poorer quality. The proposed Zante currant industry is a new one and winemen naturally do not care to risk their all on an experimental business of which they know nothing.

If any enterprising men are experimenting on an acreage basis in either of these two counties, the Pacific Rural Press would like to be notified and keep tab on results. Scions of these Zante currant grapes should be applied for early for next season.

The U. S. Department of Agriculture says that there is an established market in the United States for 30,000,000 pounds of dried currants annually. This demand is fixed and can be depended on. From 8,000 to 10,000 acres of grapes would be necessary to meet this demand, hitherto supplied from abroad. Grafting over, they say, is only advised on resistant stock vines that have not already been changed by grafting.

THE SUMMER PRUNING OF APPLES.

[Written for Pacific Rural Press.]

Roy C. Brock, an apple grower in the State of Washington, has increased his yield and income from Baldwin apples by a system of summer pruning evolved on scientific principles and his increased profit amounts to 37½ per cent. His summer pruning is done near the close of the period of wood growth, at which time the fruit is ready to utilize the surplus of sap that is thrown to it by the summer pruning and checks any tendency to new wood growth. The work has to be done at exactly the right time and this is up to the judgment of the grower, as seasons differ in conditions pertaining to development. Mr. Brock has made an elaborate chart of growth and works from it. On his marked trees the record is made by measuring the length of new growth for each 30-day period and when he finds that there is an average growth yet to be made of not to exceed one inch the summer pruning is done. A limb or twig that has no fruit on it is not touched, neither is a tree that has less than three bushels of apples on it, as the object of the pruning is to increase the quantity of sap to the fruit in its final stages of development. The terminals are pinched back, only larger growths being cut, and all water sprouts kept out.

CACTUS FRUITS IN MID-WINTER.

To the Editor: I sampled some cactus fruits growing without care in a vacant lot in Santa Rosa today. Most of the fruits had seen better days, but I found no difficulty in getting all the sound fruit that I wanted. Until now I had supposed that when Jack Frost put in his appearance it meant the finish of the cactus fruits, but today's experience proved to me that it takes frost to put the finishing touches on the flavor. Every farmer that has soil and climate suitable for cactus growing should at least try a few slabs. If, after giving them a fair trial, they do not come up to his expectations, a blow at the roots with an axe finishes them for all time.

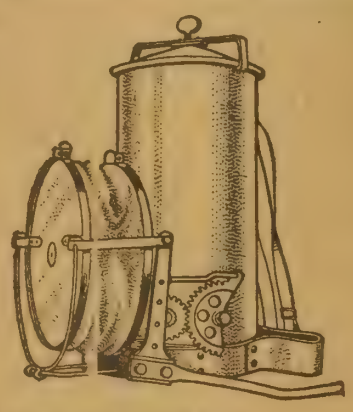
Fresh fruit on the 26th of February is a mighty scarce article with the average soil tiller. I am not up on cactus, but to my taste the darker the fruits the better the flavor. This may be imaginary, as the dark fruits have a much richer appearance than the lighter ones.—Chas. Blom, Santa Rosa.

ASSOCIATION GROWS.

Large additional acreage of prunes has been signed up by the California Prune and Apricot Growers, Inc., in Napa and Sonoma counties. Between 80 and 95 per cent of the growers of Ventura county are also said to have signed up their acreage. The officers of the association have planned a searching visit in the prune producing sections of Southern California, where a large acreage of apricots has been signed up.

It was decided at a recent meeting of farmers and merchants to hold a county fair at Roseville this year under the auspices of the County Farm Bureau.

AMERICAN BEAUTY DUST SPRAYERS



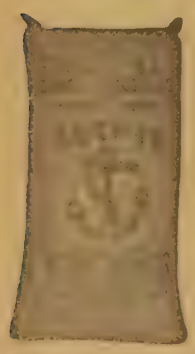
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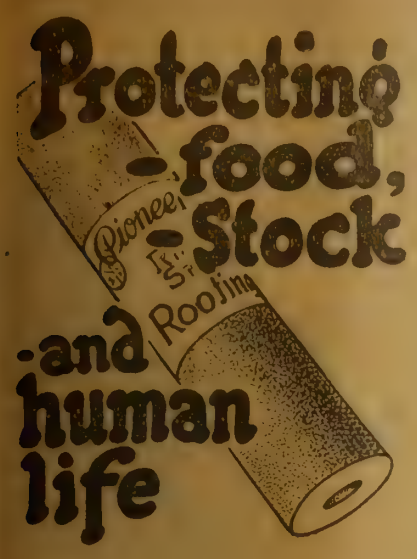
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PRUNES AND APRICOTS FACE A CLEAN MARKET.

The Prune and Apricot Growers' Association says that they start the year with an absolutely clean market and brands of a quality that cannot be questioned and which have been maintained in the face of a hard harvesting season. For the first time in two years the export trade is again open and buyers clamoring for our wares. The association—one of whose reasons for being was to obliterate speculation—is neither speculating in selling or in setting prices till conditions warrant it. The trade has never been interested in the early purchase of futures except at most conservative prices. Association members may confidently anticipate for their dried prunes and apricots a figure better than the average secured by growers selling independently of the association. Barring embargo, England will again be in the market for canned apricots, while the Scandinavian and other markets will be buying the dried article. The competition for apricots between canners and the dried fruit market should insure good returns to growers.

PEACH MEN GETTING BUSY.

The California Peach Growers' Association is going to make a Statewide campaign for dried peach meetings, the first two of which took place February 21 and 22 in Southern California in conjunction with the Prune and Apricot Growers' Association. The fact that co-operative work has put all classes of dried fruit on a paying basis has convinced hundreds of new growers that they had better be "inside" than out. The fact that markets have been so extended that not only is the product of a vast new acreage taken care of, but that there is no holdover, as in old days, is proof that the consumer is well satisfied to pay for quality under a guaranteed brand. Never has it been more important than now that growers should stand shoulder to shoulder—as will be seen ere long.

J. S. Wilson of Dinuba, president of the California Peach Growers' Association, is now developing a new place at Madera. He has 100 acres of young peaches there—half Muirs and half Tuscans and Van Emmon clings—and 20 acres of Kelsey plums. We wrote of his Almerias last year grafted on an old Zinfandel vineyard. He now has 35 acres of Zante currants, two years old, two-thirds of them on Feher Szago root.

THE BIG CANNERY PROBLEM.

It is reported that a movement is on foot to organize the independent canners and apricot producers of the State into an $8,000,000 company to fight the Armour and Swift interests. The new Producers' Warehouse Company at San Jose, which represents the Armour interests there, expects to have the largest output of any fruit cannery in the world. Some growers who were present at a meeting last Saturday in San Jose are reported to have expressed uneasiness in the effect the big canners will have on the Prune and Apricot Growers' Association, in that they may absorb the apricots for canning and leave few for drying. If the canners can pay the price for green fruit that beats drying it, the grower is going to sell green generally—always has. The cannery is one of our most important California industries and the largest market for green fruits and vegetables. Every producing center welcomes one of these establishments if it is under the management of men of stability and good standing. It encourages effort for first-class fruit, finds employment and brings money into a neighborhood.

Speaking of the walnut worm whose identity has now been definitely established as the codling moth, Professor Ralph E. Smith, U. C., has this to say: "I believe that this is the worst pest which has struck the walnuts so far and its spread into new territory should be hindered by every possible means.



TOP DRESSING TALKS

Deciduous Orchards. Run-down deciduous orchards may be greatly benefited by the application of 100 pounds of ARCADIAN Sulphate of Ammonia per acre about four weeks before the blossoming period. Where the soil has lost most of its nitrogen 200 pounds may be added with most beneficial results.

Truck Crops. Beets, peas, beans, lettuce and similar crops are all heavy nitrogen feeders, especially when being forced for the early market. Broadcast 100 pounds or more of Arcadian per acre when seeding or shortly before, and harrow in.

Lawns and Pastures. On an established sod, 100 pounds per acre will promote growth and vigor. The application should be made when the grass is dry, for if wet, the Sulphate will adhere to the leaves and burn them. An irrigation soon afterwards, however, is very beneficial.

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ARCADIAN Sulphate of Ammonia is the well-known standard article that has done you good service in your mixed fertilizers for years past. Especially kiln-dried and ground to make it fine and dry. Ammonia 25¼%. Made in U. S. A. Arcadian is *The great American Ammoniate.*

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Field and Garden Suggestions

[Written for Pacific Rural Press.]

Placer Hay and Grain.

Probably 25 per cent of last season's grain hay crop grown in Placer county is still on hand, but is likely to move before the new crop comes on, according to Walter Jansen. The dirtless hay bill is not worrying growers because soil here does not get into hay. Barley is moving at $1.65 to $1.75 to the grower, according to quality, which is rather light. Oats are normally a more important crop here than barley. These are selling locally for feed. Lower markets for coming crops of hay and grain are expected as a natural post-war condition. Wheat acreage has increased 15 to 20 per cent, as estimated by Mr. Jansen, the increase being at the expense of oats. White Australian is the principal variety. Last year a few acres of Baart were planted in small lots, and the results were so satisfactory that over 3000 acres of this variety have been planted this season.

Elementary Agriculture in Schools.

"A prosperous farmer yesterday asked me if corn was good for hogs," said Manager A. J. Nevraumont of the California Seed Co. "A friend of mine planted a war garden last year. He covered carrot, beet and other seed four or five inches deep in the sand. Later on, in a friendly way, he told me our seed was no good. Four years ago a printer started farming at 55 years old. He bought a lot of cheap pear trees and over 1000 of them died. They were not so cheap at that. The next spring he bought some good pear trees and the other day told me that never before had he realized what a difference there might be between good and poor trees. Another friend of mine, a successful eye specialist, sunk all the money he made by trying to operate a ranch down country."

These instances were cited to show the utter ignorance of farming displayed by many city folks and to prove the need of teaching the elements of agriculture in our elementary schools. "More white folks would be farming," said he, "if they knew more about it." He might have added that the city folks would do a better job regulating the farmers if they knew more about farming.

Early Seedbed, Late Bean Planting.

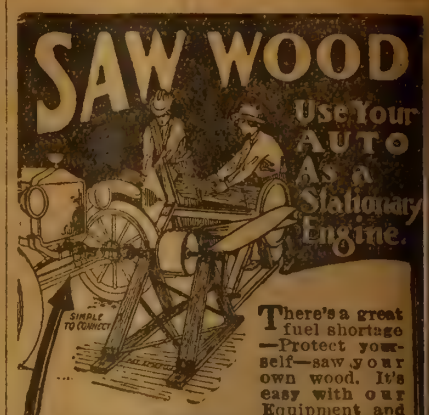
One of the best Chinese farmers in the delta last season raised 22 sacks of pink beans per acre while his neighbors produced only eight sacks. It costs him no more rent, takes no more investment in tools, and the extra labor is paid for handsomely by the extra yield, as told us by A. J. Nevraumont of the California Seed Co. Chung prepares his land a long time ahead of planting, and if it rains and crusts that is the least of his troubles. It gives him an excuse for further cultivation and killing of weeds, while at the same time improving the seedbed. He is in no hurry to plant until the ground feels warm to his hands. He says the neighbors plant while it is too cold and wet, so they get poor stands.

Sweet Potato Seed Condemned.

Two carloads of sweet potatoes consigned for seed purposes to the Japanese Farmers' Association of San Diego from Los Angeles county were recently condemned by Horticultural Commissioner G. R. Gorton. They were found infested with eel worms, scab, and rhizoctonia. While these troubles are found quite generally on white potatoes in California, apparently there is need of protecting sweets from similar infection.

Rice Seed Per Acre.

Ninety pounds of rice seed per acre is enough on new ground, according to J. V. Biard of Glenn county; but 95 to 100 pounds are needed the second year; and he is drilling 100 to 105 pounds this spring on ground that raised crops last year and the year before.



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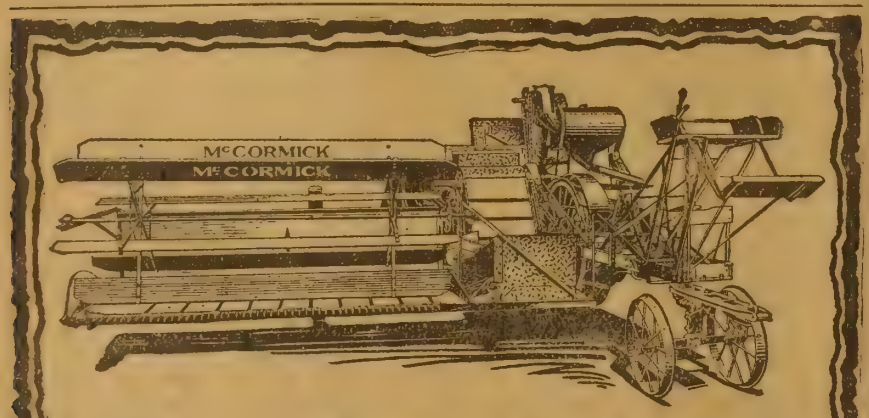
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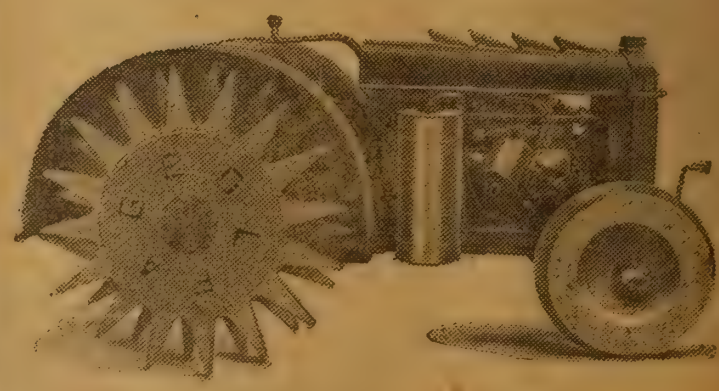
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WALKING TRACTOR

THE Fageol Walking Tractor is small and compact, weighing little more than a team. It turns in a seven foot radius—and readily goes through a small gate or door.

The Fageol is especially valued by the orchardist, who finds this tractor will walk in and out among his trees and under low hanging branches.

Learn more about the Fageol in orchard work. Write for Catalog giving full description.

BUTLER-VEITCH
INCORPORATED
Sales Organization—Fageol Products
306 Syndicate Bldg., Oakland, Cal.



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RUDDLE & MENNILLO
SOUTHERN CALIFORNIA DISTRIBUTORS FOR
"FAGEOL" WALKING TRACTORS
231 North Los Angeles St. Los Angeles, Cal.



Diener's Mammoth White Corn

Put on the market for the first time. Our own production. It grows from 12 to 15 feet high, bearing from 1 to 3 ears; ears averaging from 10 to 12 inches in length, and 7 to 10 inches in circumference and containing up to 1400 kernels of white dented corn. It is very sweet when in milk. It is good both for dry corn and for ensilage, giving an enormous amount of green fodder.

Price .....50 cents a pound; 25 pounds, $10.00; 100 pounds, $35.00

The Diener Tomato

This is a novelty of 1918, raised by us. It is in every way perfect. The first fruit average two pounds each and are as smooth as an apple. The flesh is dark red and there is but little seed. The vines are not rank, but cover the fruit well against sunburn. The amount of fruit to a plant is astonishing, and bearing commences early. The fruit has a sweet flavor and is not acid like so many other varieties; but the most astonishing thing of all is that this tomato will grow and bring a box of fruit to perfection without any irrigation whatever, only once watering when planted. For canning and shipping purposes this tomato cannot be excelled.

Price per packet of seed.....50 cents.

RICHARD DIENER CO. Inc., Kentfield, Marin County, Cal.

Agricultural Notes

Cotton planting has begun in uthern California, also potatoes d sugar beets. Cereal crops are ll established and a good color. ore rain is needed.

With anything like a moderate mand during this month there will no surplus of California rice left millers' hands. It has been sold fast as it has been milled.

Cotton was around 35 cents a und at the close of the picking ason. Prices fell and since the gning of the armistice it has been nging from 21 to 25 cents.

It is reported that the Rice Grows' Association of California has arnged for the sale and exportation milling rice and near that grade. veral Marysville growers have alady disposed of their crops at $10 a hundred.

Weevil control work is said to ve saved alfalfa worth $114,000 in illard county, Utah, during the st year. This district is the largt producer of alfalfa seed, claimg to turn off one-sixth of the alfa seed in the United States.

The Pacific Pea Packing Co. at kdale now has over 1000 acres peas in the district. This year ll be their largest pack. Two ndred and eighty acres of peas are owing at Salida, where a hulling ation has been erected, whence the lled peas will be hauled to the nnery on trucks.

People were afraid to plant wheat the Sutter basin this season, when ey could have planted in December, cause the new levees which now tirely surround them had not been sted. The recent floods gave them good test, but it is now too late to ant wheat.

The new water rates for rice growrs under the S. V. W. S. Canal ompany are increased to $8 a year er acre, a dollar higher than last ar. Excess will be charged at 1.65 per acre-foot. These prices re regulated by the Railroad Comission and are to remain in force r the current year only.

The average production of potaoes in California has fallen from 00 to 400 sacks to the acre to 90, ccording to O. W. Newman of the tate Horticultural Board. Eugene Grubb, the great authority on potatoes, says that the numerous diseases attacking the tuber in this State are becoming a serious menace to the industry.

Price of $2 per cental is now being asked for best river potatoes. Light shipments of asparagus have been bringing 20 cents and more a pound. Steady demand for fresh vegetables.

twenty carloads of lettuce a day has been shipped from the Imperial Valley—336 cars having been shipped out up to March 1, which constitutes perhaps half the crop. Sizes are small, due to early cutting for a good market and to the cold weather holding back growth.

Fred Hertmeyer of Happy Valley, near Santa Cruz, used at the rate of two tons to the acre of lime on some of his sandy loam land last year that tested acid. The subsequent crop was string beans and the crop harvested was from three to six times heavier on the limed portion than on the unlimed. This land was tested by the Farm Advisor beforehand and showed acid. Still better results are expected this year.



Western Pulverizer Mulcher and Packer

All farmers realize what it means to keep their soil in proper condition.

Up-to-date farmers use tools that produce results.

What Are You Doing?

Should you be interested in the latest machine for perfect seed beds, write us for more data.

BAKER, HAMILTON & PACIFIC CO.

SAN FRANCISCO, CALIF.

BE SURE YOU PLANT THE RIGHT ALFALFA

This Booklet Tells Which



There are more disappointments and partial failures caused by planting alfalfa unsuited to the soil and moisture conditions than from any other cause.

Don't Be Disappointed. You will find this booklet a real aid in explaining and illustrating which of our selected kinds of alfalfa is best suited to your particular requirements.

Write for It Now and ask for latest price list. It may save you and right before you go ahead.

Bomberger Seed Co.

(Desk A)

725 Tenth St., Modesto, Cal.



Water! Water!

WHERE and WHEN you want it —for house, barn, field, all year 'round. BORE YOUR OWN WELL.

Standard Well-Boring Outfit

Hard or soft. Bores wells 8 to 16 in. dia. up to 1000 ft. deep. One man bored 4-in. well 100 ft. in 10 hours and put in casing.

BORES 100 FT. WELLS BY HAND

One day's work pays for it

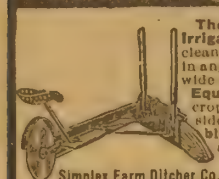
Easy to get 50 cts. to $2 per ft.—make $20 to $50 per day boring wells for neighbors. One man bored 75 wells, another 47 and another bored 35. Satisfied users in 46 states. Every claim *guaranteed* and *proved*. Write TODAY for information and testimonials.

★ Thousands used during war by U. S. and English Governments. ★

THE SPECIALTY DEVICE CO.

Dep't 48 106 West 3rd Street Cincinnati, O.

Ditch Your Land With This Simplex



The Ditcher-Terracer for irrigation work, laterals and cleaning old ditches. Works in any soil. Makes narrow or wide cut. Ditches a mile a day. Equals 100 men. Insures crops on wet land. Saves hillsides. Mostly steel. Reversible. Write for book, prices and terms. Money back guarantee.

Simplex Farm Ditcher Co., Inc., Box 77 Owensboro, Ky.

THE H. C. SHAW CO., Stockton
B. HAYMAN CO., Los Angeles
Distributors.

Farm Interests in the State Legislature

[By Our Special Sacramento Correspondent.]

Eggs and Milk to Be Investigated.

The high prices of bread, milk, and eggs are to be investigated during the next twenty-five days by a committee of three from each house of the Legislature, as provided in the resolution of N. J. Prendergast of San Francisco, finally passed last Tuesday. Twelve hundred and fifty dollars are appropriated for the purpose. Debate was warm in both houses and efforts were made to add various other food commodities and apartment houses to the investigation. Farmers in the Legislature were divided on the question, but Assemblyman F. J. Cummings, a dairyman of Ferndale, said that he would welcome the investigation because when the truth is brought to the public there will be less noise about the high price of milk. Assemblyman Bismark Bruck of St. Helena objected because milk and egg producers are already operating on close margins of profit. E. S. Hurley of Oakland wanted to know, if poultrymen are now making any profit at 45c a dozen, how much profit they might have been making a month or two since at 90c a dozen. This sounded like a clincher in the absence of any statement regarding the increased egg producing activity of hens and cheaper feed this month. Assemblyman Harry Polsley of Red Bluff quoted a letter from Prof. J. W. Gilmore of the University of California saying that in general a pound of wheat will make a pound of bread. The by-products more than pay the cost of milling. With wheat at 3 2-3c per pound, only the transportation of flour and the baking and selling costs of the bread should be added to the price of the original wheat. The difference between the cost price of a pound of wheat and a pound of bread seems greater than it need be.

Egg Grades to Be Legally Defined.

A bill introduced by Senator A. P. Anderson of Oakland provides that eggs shall be graded, according to details included in the bill, by candling in a way approved by the State Board of Health. Records of candling must be kept subject to inspection; and on the top layer in each case shall be placed a card stating when and by whom it was candled. After 30 days from the date when the act takes effect, no person may engage in the business of buying, selling or trading in eggs without a license, except retailers who do not buy direct from producers and who do not sell in lots of more than one case. Apparently it is not intended to prohibit a producer from selling his own eggs without a license. Recandling is to be done according to rules of the State Board of Health. The grades required are so definite that we print them in full:

Section 1. For the purposes of this act eggs shall be graded as follows: Eggs or fresh eggs, Eastern eggs, cold storage eggs, second grade eggs and eggs unfit for human food.

(a) The term "eggs" or "fresh eggs" shall be used only for eggs that are sound, sweet, clear and full (not more than two and five-tenths per cent evaporation and which contain not more than one and five-tenths milligrams of ammonia per one hundred grams of egg), and which have not been held for more than fourteen days after having been dropped from the hen. The terms "ranch eggs," "farm eggs," or similar terms which are usually used to indicate fresh eggs, shall be construed to mean fresh eggs, as defined in this paragraph.

(b) The term "Eastern eggs" shall be used only for eggs that are sound, sweet, clear and full (not more than three and two-tenths per cent evaporation and which contain not more than two milligrams of ammonia per one hundred grams of egg), and which have not been held more than twenty-one days after having been dropped from the hen.

(c) The term "cold storage eggs" shall be used on all eggs which have been held in cold storage for a period exceeding thirty days. They shall be sound, sweet, clear and reasonably full and shall contain not to exceed four milligrams of ammonia per one hundred grams of egg. Cold storage eggs when offered or exposed for sale shall be marked by a sign or label in letters at least two inches high, These are cold stored goods."

(d) The term "second grade eggs" shall be used for all eggs which are not covered by paragraphs (a), (b), (c) of this section, and which are not classed as "eggs unfit for human food."

(e) The term "eggs unfit for human food" shall be used for all eggs that are addled or moldy, a black rot, a white rot, or a blood ring; or if it has an adherent yolk, or a bloody or green white; or if it be an incubator egg; or if it contain more than four milligrams of ammonia per one hundred grams of egg; or if it consist in whole or in part of filthy, decomposed or putrid substance.

Sec. 2. No person, firm or corporation shall sell, offer or expose for sale, or have in his possession or traffic in, any egg unfit for human food, unless the same is broken in shell and then denatured so that it can not be used for human food.

Recommended by Senate Agr. Com.

The Senate Agricultural Committee has reported favorably the following agricultural bills: No. 33, Slater, $50,000 to be spent in the next two years as premiums at county and district fairs, in amounts not greater than those put up by the associations receiving such aid; No. 271, Rigdon, correcting an error in the previous law which prevented the State Veterinarian from receiving his full salary of $4,000; No. 363, Jones, appropriating $50,000 for the State Commissioner of Horticulture to use as emergency money in case a new fruit pest is discovered or an old pest assumes alarming activity (with such emergency money Florida could have saved millions of dollars in the citrus canker fight and Texas could have prevented the spread of cotton boll weevil all over the South; with such money Texas did yeoman work on the pink boll worm); No. 556, Breed, appropriating $150,000 to be used by the University regents in extending the system of farm advisors, provided the measure which proposes Federal co-operation shall pass Congress; No. 524, Boggs, authorizing the State Board of Control to procure construction of a navigable cut-off from the mouth of the Stockton channel to the Calaveras river; No. 35, King, to clean up weeds along roadsides. The Committee on Drainage has recommended No. 59, Duncan, validating Butte County Drainage District 100; No. 81, Slater, providing for disincorporation of drainage districts.

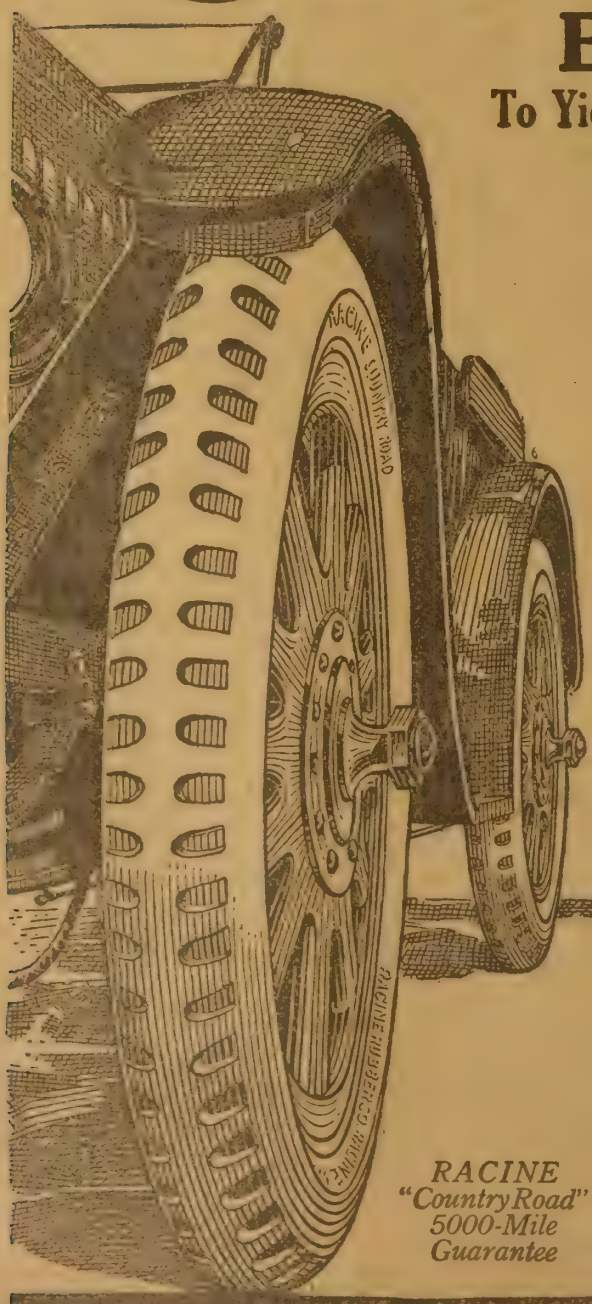
ONE-THIRD ACREAGE IN CROPS.

The United States proper contains about 1,900,000,000 acres of land, of which 1,140,000,000 are tillable, according to Secretary of Agriculture David F. Huston. Approximately 367,000,000 acres were planted to crops in 1918. Two-thirds of the tillable land in the United States was not cropped in the year of most urgent need that we have ever seen. A great deal of this lacks water, but much of it can be supplied.

Thirty thousand bags of delta onions have been sold in Stockton in two weeks, prices running to $3.75 and $4 a cental at the highest.

RACINE TIRES

RACINE RUBBER COMPANY EXTRA TESTED TIRES



Extra-Tested

To Yield Your Money's Worth in Miles

THERE is only one right way to buy tires—on the strict basis of character. Then you run no risk. You are sure to get your money's worth in miles.

By the thousands, farmers are turning to Racine Extra Tested Tires. More and more they realize that "Extra Tested" is the assurance of true tire character. They know that the extra care in Racine Rubber Company factories gives them extra wear, whether they choose the "Country Road" or the "Multi-Mile Cord."

Racine Country Road Tires

Racine Tires are carefully extra tested, step by step through every stage in manufacture. Fabrics and selected rubber are painstakingly selected, inspected, then given all the Racine Extra Tests. Imperfections simply can't slip by.

Racine "Country Road" Tires are specially constructed, as the name implies, for country road service. They have the extra endurance that hard usage demands. It will pay you to do businsss with the dealers who sell these quality tires.



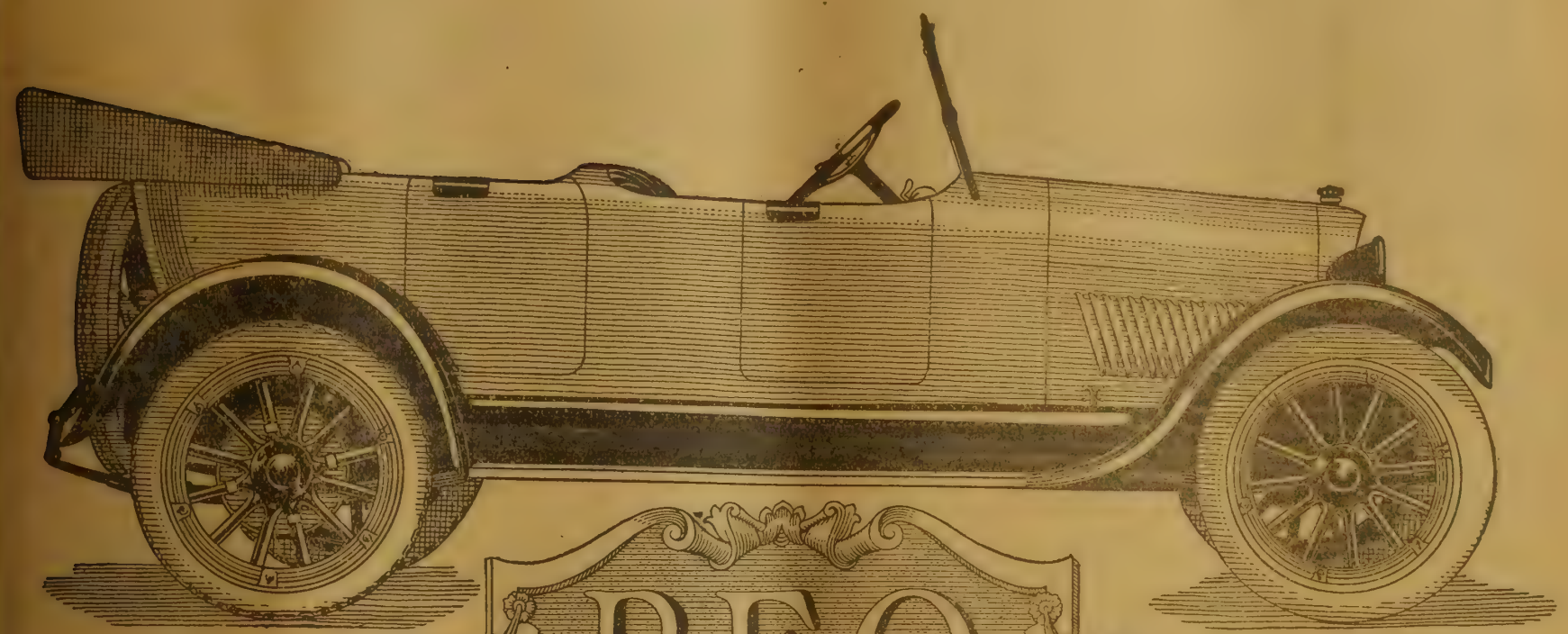
For Your Own Protection Be Certain Every Racine Tire You Buy Bears the Name

RACINE "Country Road" 5000-Mile Guarantee

Racine Rubber Company

Racine, Wisconsin

Write for the Informative Book—Extra Tests and Extra Miles



This Is March!—And History Repeats Itself

SPRING IS ALREADY HERE! We are a little late with our regular annual hurry-up message.

ALWAYS AT THIS PERIOD we find it necessary to warn tardy or indecisive buyers that only those who place their orders early—which means at once—can hope to get Reos for Spring delivery.

REALLY, WE MIGHT save the trouble of writing a new advertisement each year—the same copy would fit just as well one year as another.

THE SAME STORY might be told in the same way—so consistent and so persistent is the year-after-year demand for Reos.

FOR, NEVER SINCE THE DAY the first Reo left the Lansing factory and went into the hands of its delighted owner—never since that time has it been possible to make enough automobiles to supply all who wanted Reos.

ORDINARILY—and to a normal degree—that is from the factory standpoint, an ideal condition.

BUT IN MARCH of each year the condition becomes aggravated by an excessive over-demand that is at times discouraging to say the least.

CERTAINLY WE COULD build twice or four times—or ten times—as many Reos per annum as we do.

BUT THE REO POLICY has never been to build the most automobiles—only the best.

WE MAKE ONLY AS MANY Reos as we can make and make every Reo as good as the best Reo that ever came out of the factory.

THAT'S THE REASON for the tremendous demand that always exists for Reos. Reo quality—Reo low upkeep—due to a strict adherence to that Reo policy.

REO IS FIRST CHOICE of discriminating buyers. That's the kind of folk for whom we design and build Reos.

THEY ARE THE KIND of buyers a manufacturer and a dealer appreciates and therefore most dislikes to disappoint or to offer substitutes.

AND WHILE OCCASIONALLY a dealer who also handles some other line will try to sell a customer his Second Choice, because he can't get enough Reos to supply his local demand, he never really likes to do so.

ALL DEALERS PREFER to sell Reos—because they stay sold. And every Reo sold sells several more.

THEN THERE ARE the repeat orders from present Reo owners.

ALWAYS THESE HAVE constituted a large percentage of the Reo demand. They are getting to be a larger percentage from year to year because of the larger number of Reos that have been many years in service. Longer than any other comparable car.

OF COURSE a Reo owner always wants another Reo—the percentage of re-sales to Reo owners is amazing and a matter of which we are most proud.

TO ALL SUCH, THEN, we issue the usual March warning—see your Reo dealer at once and place your order.

MAKE IT DEFINITE by paying him a deposit and specifying a date for delivery. Else he cannot, in fairness to other buyers, reserve a Reo for you.

THEN REST SECURE in the knowledge that you will be one of the "lucky ones" to get a Reo this season.

THERE WON'T BE—cannot be made—enough to go round. That is now as certain as the same thing always has been certain in all previous years since the inception of Reo.

SO DON'T DELAY. Decide now. Order at once.

TODAY won't be a minute too soon.

Reo Motor Car Company, Lansing, Michigan

"THE GOLD STANDARD OF VALUES"

Bulk Grain Shipment Growing in Favor

[Written for Pacific Rural Press.]

Railway equipment for shipping grain in bulk is as complete on California railroads as they are in Eastern States, where the bulk method of handling is the customary way of shipping the crop. The railroads of California have handled a considerable quantity of grain in bulk in the last two or three years, and the box cars which are used at present to ship grain in sacks can be easily fitted with grain boards or grain doors and made available for handling California wheat and barley in bulk. The railway freight tariff is based on grain, without specification on form of shipment or requirement of sack packages.

GRAIN CARS READY.

Following the practice of Eastern railways, grain boards are fitted to the box car doors, and each just above the level of the indicated loading line of the lightest weight grain to be handled. This grain loading line, which can be seen in many box cars, appears at various heights above the car floor, and indicates the level necessary for reaching the minimum load, or rated capacity of the freight car. Wheat being the heaviest grain ordinarily handled, the wheat level is the lowest indicated on the car walls. Barley, oats and corn all are given different loading levels.

RAILROADS WILL ACCEPT

Modern box cars, if they are not already so, can easily be made grain tight, and at the beginning of the Eastern grain-moving season it is customary for the railroads of the wheat belt of the Middle West to carefully repair the box cars to prevent leaks and waste of grain, as they endeavor to protect all other forms of products shipped on their lines. It is a part of their service that they are ready to render without extra cost or without undue delay.

At present, ordinarily about 700 sacks of wheat are shipped in the modern box cars, this quantity approximating the loads ordinarily handled through Eastern railroads where the bulk method of shipping grain prevails, amounts to between 90,000 and 95,000 pounds of wheat or about 1500 bushels.

MEANS PROMPT SHIPMENTS.

The shipment of grain in bulk in California would greatly expedite the movement of the crop from the fields to the terminal storage facilities, because of the great saving in the time in loading and unloading the cars. At present, under the system of shipping and handling the grain in sacks, several hours are required to load and unload a carload of sacked grain, whereas with the bulk method of handling the crop less than one-half the time and far less than one-half the number of men could do the work which is at present such a costly part of the grain-moving job.

BULKING ELIMINATES LOSSES.

Shipment of grain in bulk would also eliminate large losses at present attendant upon the handling and shipping of California wheat and barley in sacks. These losses will approximate 6-10 of 1 per cent for each transfer. It is easier also to control the losses due to rats, mice and other vermin where the grain is stored and handled in bulk on the farmer's home place, and at the warehouse, in the railway car, or at the terminal storage plant.

FARM BUREAUS SELECT THEIR OWN PROJECTS.

[Written for Pacific Rural Press.]

That farmers are to take the leadership in deciding what projects they want to undertake in the Farm Bureaus is indicated in a movement fostered by Farm Advisors all over the State and illustrated by a meeting held recently in the Willow Oak Farm Center of Yolo county. Suggestions were asked by Farm Advisor N. P. Searls as to what subjects the members wanted to investigate particularly during the coming year. They were marked on a blackboard as they came from the crowd. They included: 1, Alfalfa culture; 2, livestock improvement; 3, marketing; 4, livestock feeding, especially silage; 5, pruning and spraying; 6, poultry; 7, irrigation; 8, raisins; 9, grain growing and marketing; 10, crop rotation; 11, soil fertility; 12, boys and girls; 13, double cropping; 14, septic tanks; 15, electric power; 16, free markets; 17, landscape gardening. As the subjects proposed include almost all of agriculture, they chose four on which to specialize in the coming season—1, fruit growing; 2, livestock; 3, marketing; 4, septic tanks. They still have some ambitious program, but it is their own; and as such they are likely to have a greater interest in carrying it through.

In the bean centers it is estimated that fully ten per cent of the beans delivered at warehouses will be injured from being damp when threshed. F. L. Rutherford of Modesto lost 25 sacks out of 150.

"My WADE Saws Four Cords an Hour!"



"The Wade is certainly the farmer's friend. I have cut 1600 cords of yellow fir wood with it, and it's as good as the day I bought it."—Dan Ross, Corbett, Oregon.

Why break your back sawing wood by hand, when the powerful little Wade Portable Gasoline Drag Saw will *outsaw 10 men at one-tenth the cost!* Light, simple, economical. Cuts wood of any size. Averages 8 cords to a gallon of gasoline. Thousands of Wades now in use. When not sawing wood, the 4 h. p. engine will operate other light machinery.

Wade Portable Gasoline Drag Saw

Prompt delivery on Wades from over 100 points U. S. and Canada.

Used and Specified by U. S. Government

347 HAWTHORNE AVE., PORTLAND, ORE.

FREE! Big illustrated Catalog of the Wade—also story of "How Dan Ross cuts 40 cords a day." Write today

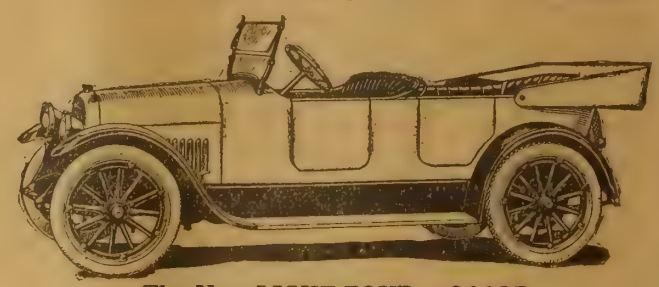
Studebaker

Established 1852

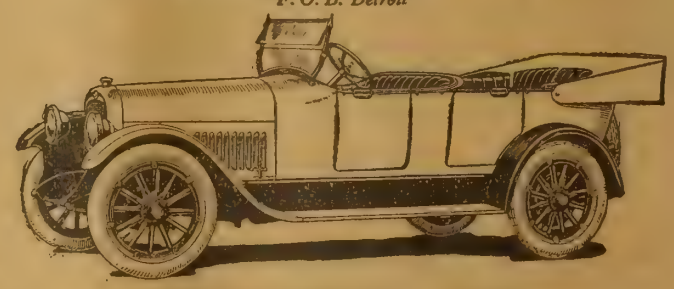
Have You Seen the New

STUDEBAKER CARS?

Built to Meet the Needs of Rural Service and Proved On the Country Roads of America



The New LIGHT-FOUR — $1125
F. O. B. Detroit



The New LIGHT-SIX — $1585
F. O. B. Detroit



The New BIG-SIX — $1985
F. O. B. Detroit

THE three New Studebaker Cars are distinctive in design, with powerful and economical motors, built for heavy duty service; intermediately located transmission; genuine leather upholstery; Gypsy top with oval plate glass windows in rear; permanent and lustrous finish.

To make sure of their ability to deliver continuous service under all conditions, original cars of each new model were given a 10,000 mile endurance test on the worst country roads of America. Thousands of cars in owners' hands have since convincingly proved their correctness of design and mechanical excellence.

Studebaker manufactures completely in its own factories its motors, bodies, tops, axles, transmissions, steering gears, springs, fenders, and cuts its own gears and other vital parts, thus eliminating middlemen's profits. Only because of these manufacturing advantages and large quantity production is Studebaker able to build such high quality cars at their respective prices.

The name Studebaker is your assurance of lasting satisfaction.

STUDEBAKER

Detroit, Mich. South Bend, Ind. Walkerville, Canada

Address all correspondence to South Bend

GOVERNMENT BUYS BEANS DIRECTLY FROM GROWERS.

The orders for 150 carloads of California beans recently placed with the Food Administration Grain Corporation will be bought directly from the growers, in order to give the producers all the relief possible in the present condition of the bean market. The orders will be fairly distributed among the bean growers of the State.

The order is confined to certain varieties of beans. In case more beans are offered than the amount to be purchased in each district, only a part of each offer will be accepted to make up the amount. Conditions under which the 150 carloads will be purchased and the prices to be offered were announced by R. A. Lewin, the Government local agent as follows:

Large whites, 8½ per pound; teparies, 5c per pound; small whites, 8½ per pound; blackeyes, 5c per pound; pinks, 7c per pound; cranberries, 8½c per pound; reds, 7c per pound; Henderson bush, 8½ per pound.

INSPECTION.

All beans furnished must be choice recleaned quality of the average of the season 1918, as per standards established by the California Bean Dealers' Association and the San Francisco Chamber of Commerce. Certificates of inspection from the San Francisco Chamber of Commerce must be furnished for all deliveries.

WEIGHTS AND BAGS.

All beans must be packed in bags of 12-ounce burlap, each holding 100 pounds net weight. Bags must be in good condition.

Be sure that the beans fill the above requirements before offering them. Those desiring to participate in this order, mail written offer to the office of the Grain Corporation, San Francisco, stating variety, amount, and location, name of warehouse where stored, giving number of warehouse receipt. Delivery in all cases must be made in public licensed warehouses.

CALIFORNIA BEAN PRODUCTION BY VARIETIES IN 1918.

[E. E. Kaufman, U. S. Gov't Field Agent.]

Owing to the importance of the bean crop and the difficulty experienced at harvest and threshing time in many sections of the State on account of unseasonable rains, a special inquiry was instituted concerning the probable production by varieties, together with average "pick" and quality of the crop. Further data on the acreage harvested and average yield per acre was also secured.

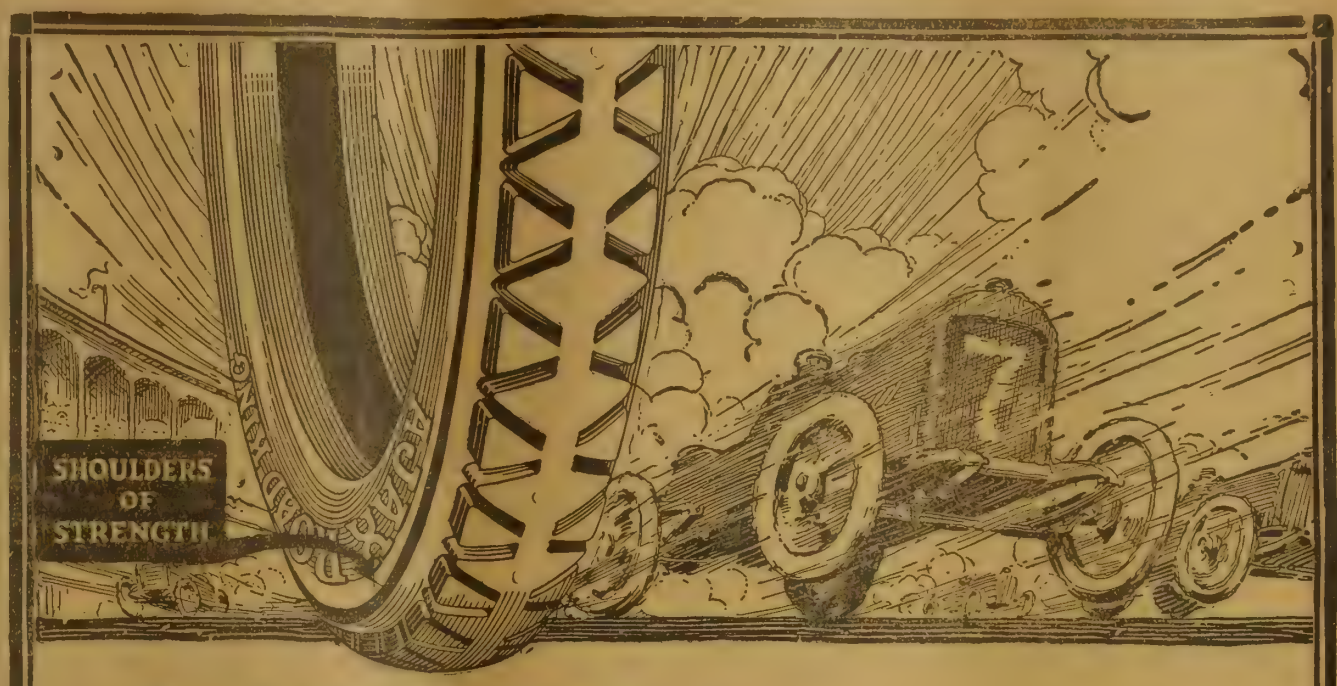
The acreage harvested is estimated at 592,000; no charge being made from the December figure. The average yield per acre is reduced from 15 to 14½ bushels, making the revised figures on production 8,584,000 bushels—equivalent to 5,150,400 centals. The quality of the 1918 crop was only 85, compared to 97 in 1917. The average "pick" (trash split and otherwise defective beans) was 10.5 per cent in 1918, compared to 4.3 per cent in 1917. In some counties the "pick" was exceedingly heavy on account of rain, while hardly any district entirely escaped.

Following is the estimated production by varieties in centals, or 100-pound sacks:

Limas	1,545,000
Small white	978,000
Large white	618,000
Pink	721,000
Red kidney	90,000
Blackeye	463,000
Cranberries	103,000
Mexican reds	154,000
Bayos	118,000
Teparies	257,000
Henderson bush	134,000
Miscellaneous	33,000

EARLY KERN CANTALOUPES.

As Kern county apricots follow those of Imperial county on the extremely early markets, before northern apricots are ready, so it is expected that Kern county cantaloupes will fit in with and between those from the Imperial and Stanislaus cantaloupe districts. Turlock interests believe that at least 200 acres of early cantaloupes will be grown around Shafter and the Weed Patch in Kern county this season.



AGAIN-
AJAX WINS!

AJAX Tires—for the second consecutive year, are crowned champions of America's dirt tracks. Gruelling, grinding contests at state fairs all over the country again prove why Ajax Tires stand first in favor with the farmer.

58 Championships For Ajax

Nine World's Championships—49 Track Championships, were won in 1918 by demon auto racers using Ajax Tires. Ajax Tires swept the field in many races. They outstripped competition on dirt tracks. They stood up and won under severest service.

Ajax Tires—the same tires that won 58 great championships in 1918—will give you the same good service they give the dirt track racers. Remember this: they win on the roads you drive on. The dirt track is a country road with a fence around it.



AJAX ROAD KING

MORE TREAD ON THE ROAD

Ajax Tires win because of greater inbuilt strength. They alone have Shoulders of Strength. See the shoulder in the picture. Note how it braces the Ajax Road King tread. Shoulders of Strength give the Ajax Road King more tread on the road, more strength where strength is needed.

Buy Ajax Tires at your nearest Ajax Tire Supply Depot.

AJAX TIRES

Factories: Trenton, N. J. Branches in Leading Cities

AJAX RUBBER COMPANY, Inc.
NEW YORK

Free Booklet, "Ajax Shoulders of Strength" mailed on request

Mechanical Power on the Farm

Users of tractors, engines, pumping plants, motor trucks, automobiles, electric motors, and other mechanical farm power are invited to make this department an exchange of their experiences and troubles.

PLOWING "AWAY" WITH THE TRACTOR.

[Written for Pacific Rural Press.]

Three or four years ago the writer was watching the work of a Holt tractor in a large prune orchard and admiring the work it was doing when he noticed one of the standards torn off by catching in a large root and the driver proceeded nearly to the end of the row before he missed it. This orchard of 80 acres was formerly worked by two six-horse teams, each attached to a two-gang Eureka plow with 12-inch bottoms. The owners had ingeniously framed these two plows into a single tool and were using it attached to their new Holt. They still work the old Eurekas with Oliver bottoms and last month we asked one of the brothers how he avoided such accidents as the one described above. The answer was: "When we are plowing away near the trees we set the rolling coulters one inch below the point. Then if it comes in contact with a large root the point is lifted clear over by the action of the coulter and damage to root or plow is obviated." It is, however, imperative that the ground be not permitted to get too hard before plowing, otherwise the coulters would hardly permit the shares to enter on heavy land.

We noticed this same outfit working in a 10-foot vineyard. One round to a row completed the work, plowing either to or from the vines. In this way, when plowing away from the vines, a small 8-inch hand plow was attached to the rear end of the frame and this was handled by an elderly Mexican. The chain is long enough to give sufficient play to squirm the hand plow out of the way of any arms that stuck out too far. The Mexican was one busy little traveler and no cigarette was in evidence.

All the heavy work of this 320 acres of strong bottom land is done by the tractor and outside work for neighbors as well. Of the 320 acres, over 100 acres are in orchard and 57 in vineyard — the rest being farmed for corn, grain hay, alfalfa, etc.

The care of the tractor takes from one to two hours a day—for sometimes it is worked for long days amounting to two shifts. At any rate, there are ten less horses to take care of and the care of ten horses means a great many hours of chores and over 50 tons of feed, etc., to be handled. The time saved in completing operations while the ground is in shape means an incalculable saving in moisture and condition, less difficulty in working down and a saving in expense over the old horse system.

NEW DOUBLE-ROLLER PULVERIZER.

The Oliver Chilled Plow Co. has recently undertaken to distribute an "Oliver" double-roller, smooth-edged pulverizer, the rear rollers being of smaller diameter than the front ones, all of them cutting two or two and a half inches deep, the rear ones cutting the ridges left by the front line. It has bronze bearings, particularly well protected from dust. The Oliver people are also handling pulverizers of similar style with spurs on the sides of the rollers to break up clods where soil has dried out enough so the spurs are needed, and would not clog.

FIGURE ON WATER LIFT FIRST.

"Lots of people buy land before they figure on the cost of water. When they find how much more it will cost than it does at other places, they are appalled and quit," says Mr. Little of Woodin & Little, San Francisco pump dealers. "One district I have in mind is boosted for alfalfa. There the water must be lifted 100 feet or more and the alfalfa must be sold, or fed for dairy products to be sold, in competition with another district I have in mind where the water lift is only 20 feet. Such competition ought to be figured before the land is bought."

POWER PROFITABLE ON THE RANCH.

[Written for Pacific Rural Press.]

The following is taken from a recent letter from Sonoma county:

"Your article on "Power Profitable on the Modern Fruit Ranch," appearing February 8, was great. It is certainly a fine lesson in the proper economic use of power on a modern fruit farm. We use four-horse outfits wherever we can, though, on sprayer, plows and double disks. We use several small engines. We tried motors, but our "juice service" was so poor that we cut them out. We are unfortunately situated on a spur and falling trees, etc., raise cain with perfect service. However, with more men returning from abroad and more money available for public service companies, these difficulties may be overcome. There have been a number of tractors purchased by the farmers this year, many by men who never owned anything but hay-burners for power. Quite a number of the old places, larger holdings, have been divided, sold or leased owing to the shortage of farm labor and the increased business pressure of the farming business."—D. M. B., Sebastopol.

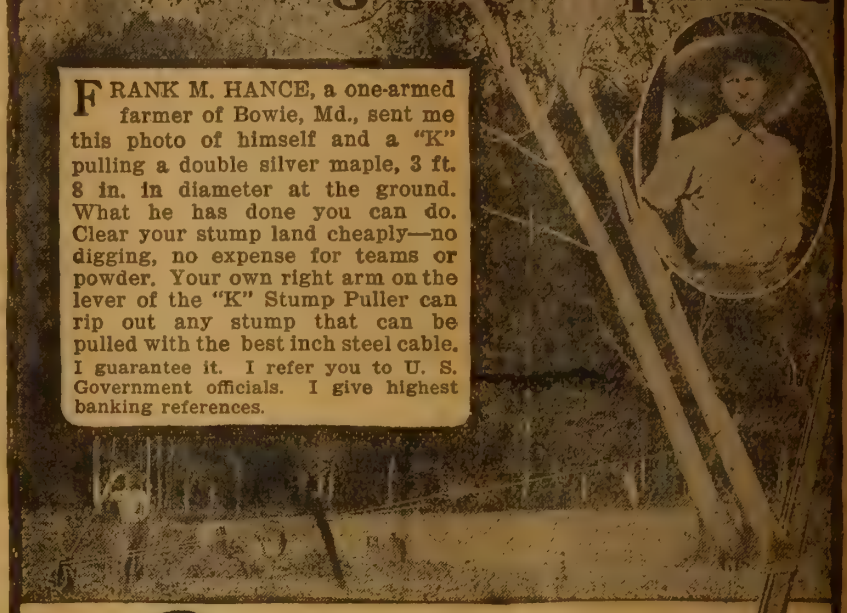
PUMP SAVED RICE CROP.

Rice must have water continuously from the time it is about four inches tall until it is mature, or you might as well give it up, says J. V. Biard of Glenn county. One of his neighbors foresaw water shortage last summer. He put down three 12-inch wells about 228 feet deep in July and saved his crop on 1100 acres. It yielded 40 sacks per acre.

The Avery Co. plans to give a free correspondence course on their tractors to anyone who sends his name to their office at 67 Beale street, San Francisco. They sold over 700 tractors in California in the first year, recently ended, of their business here.

Stump Land Worth Money To Day

This one-armed man Pulls big trees by hand



FRANK M. HANCE, a one-armed farmer of Bowie, Md., sent me this photo of himself and a "K" pulling a double silver maple, 3 ft. 8 in. in diameter at the ground. What he has done you can do. Clear your stump land cheaply—no digging, no expense for teams or powder. Your own right arm on the lever of the "K" Stump Puller can rip out any stump that can be pulled with the best inch steel cable. I guarantee it. I refer you to U. S. Government officials. I give highest banking references.

HAND POWER K Stump Puller

ANY red-blooded man with a "K" can outpull 16 horses. Works by leverage—same principle as a jack. 100 lb. pull on the lever gives a 48 ton pull on the stump. Made of best steel—guaranteed against breakage. Has two speeds—60 ft. per minute for hauling in cable or for small stumps—slow speed for heavy pulls. Works equally well on hillsides or marshes where horses cannot go.

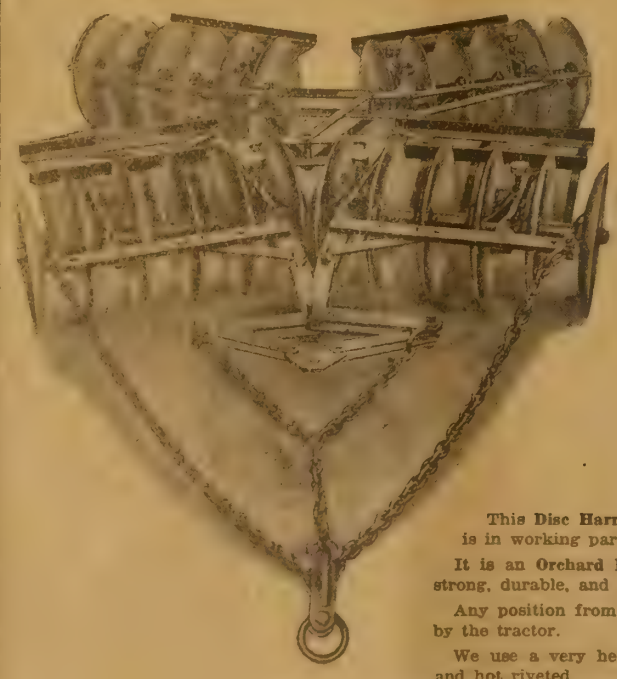
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FREE BOOKLET Simply send your name and address for my free booklet on Land Clearing. It tells many things you should know.

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Box 12
182 Fifth St.
San Francisco,
Calif.

Weight, without cable, 171 pounds

The KILLEFER AUTOMATIC DOUBLE-DISC HARROW





Automatically Straightened

The small cut shows the Automatic Double-Disc Harrow, automatically straightened. To accomplish this, the tractor is backed up until the hook on the draw chains can be placed in the hole on the front end of the adjusting swivel; then, by going ahead about 18 inches, the disc is drawn straight. To set for working position again, pull out the hook and go ahead. This can all be done by the driver from the seat of most tractors.

A Real Tractor Disc

This Disc Harrow is built especially for tractor work. Every pound of material in it is in working parts.

It is an Orchard Disc, and a Field Disc, that has never been excelled. It is low down, strong, durable, and the adjusting feature is very simple and positive.

Any position from straight to almost a plowing angle may be obtained. This is all done by the tractor.

We use a very heavy disc and heavy material throughout, well braced and hot riveted

Built in All Sizes From 5 Ft. to 12 Ft.

This Disc, along with our complete line of Tractor Tools, will be demonstrated at the Tractor Show to be held at Sacramento the first part of May.

The Killefer Manufacturing Co.

2209-21 Santa Fe Ave. Box 156 Arcade P. O. Los Angeles, Cal. "Killefer Quality"

Done by a Fifteen Horsepower Tractor

[Written for Pacific Rural Press.]

It was for soft sandy soil, where footing is difficult and dust flies freely, that Phil Rutherford of Stanislaus county bought a Lauson tractor last spring. He had been told that no wheel tractor would be satisfactory under his conditions and he wouldn't buy one until it had been demonstrated satisfactorily. Now, nearly a year later, he is enthusiastic.

"With proper lugs," says he, "it pulls the maximum plow load without slipping. We plow an acre per hour with three 14-inch moldboards going down to 10 inches deep and using less than two gallons of fuel per acre. The tractor has also been running a 26-inch Case thresher, easily threshing 600 bags in ten hours with no overloading. I have pulled the entire thresher outfit anywhere in this sandy country without trouble, though occasionally, where footing was soft and the thresher sank deep in the sand, we have used horses extra for short distances. I find that its horsepower is rated at only two-thirds of its capability, which means to me that the danger of overloading is reduced to a minimum."

Paul Foster of the Hopland Stock Farm writes that their 15-drawbar-horsepower Lauson easily pulls three 14-inch moldboards or four disk plows or an 8-foot double disk harrow. It is also used for irrigation pumping, for operation of a large Acme cutter and silo filler and is now being run in two shifts of eight hours each, an electric lamp having recently been obtained. Mr. Foster states that the tractor develops more surplus power than a 20-horsepower motor, and he appreciates the fact that all wearing parts are fully enclosed and run in oil.

A. D. Stafford of Sacramento county started using a Lauson last fall and after two months of operation said that he plowed ten to thirteen acres per day with four Oliver fourteens on stubble. On the heaviest soil, that had not been plowed for 16 years, only three fourteens were pulled.

"I use about two gallons of distillate per acre," says Mr. Stafford. "I figure that fuel and oil to plow an acre cost about 30 cents. It would take three six-horse teams to do the same amount of work. The tractor goes right along with 32 feet of harrow. We have never had it overloaded, and with a little attention to the engine each day it gives us no trouble."

C. H. Long of Merced county sandy soil plowed 20 acres eight inches deep, using only 30 gallons of distillate. While this ground turns easy, it is also most difficult to get footing for either horses or tractors to pull anything.

MILKING MACHINE POINTERS.

E. E. Graham of Fresno, who has been using a double unit Empire milking machine successfully for over thirteen months, makes the following suggestions:

The first essential is to be on the lookout constantly for leaky rubbers in the milking cups, as they will spoil a cow.

Before applying the cups, examine all of the teats carefully and start to milk the cow by hand until the first milk, which is always thick, has been milked off; then put on the cups. Adjust the pulsations of the machine to about the ordinary speed of hand milking.

Never use the machine on a cow that has just come fresh until all of the fever has left her bag, which ordinarily will be in about two weeks.

Be sure to strip each cow thoroughly by hand after the machine has completed its work.

Milk at the same time every day. A cow adapts herself to this regularity and will give more milk than when milked at irregular periods.

EVENING TRACTOR COURSES.

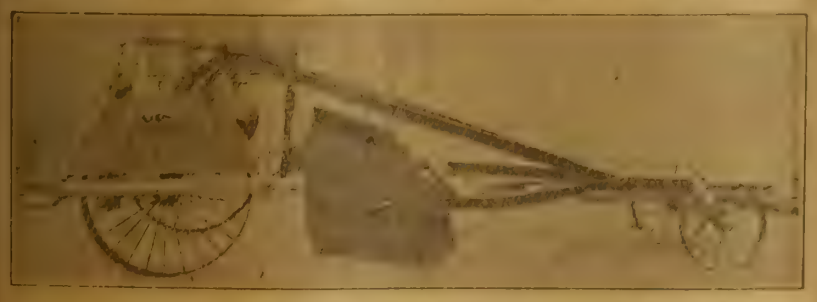
To the Editor: We are planning to give in the near future several evening courses in tractor work which will be taught in San Francisco and San Jose. Our ability to extend this kind of instruction to other parts of the State depends very largely upon the number of students which can be found in a given locality.—H. H. Bliss, University Extension Division, Berkeley.

We Manufacture Levelers for Any Power From 6 Horses to a 75 H. P. Tractor

A Schmeiser Leveler

of the "Giant" Type

WILL WORK WONDERS ON YOUR FARM



Moving immense amounts of dirt daily, and working on ground too tough for horses and Fresnos to tackle, SCHMEISER POWER LAND LEVELERS are now being used with utmost success by a great many ranchers, large and small—also by contractors—saving their owners time, labor and money.

WE SEND THEM ON THREE DAYS' TRIAL.

So extremely simple, a child could operate one, as a simple twist of the wrist raises and lowers the bucket or holds it stationary, as the case may require.

YOU SHOULD

send for our latest catalog, J-600, which is full of interesting information on Labor Saving Devices and machines for moving the earth.

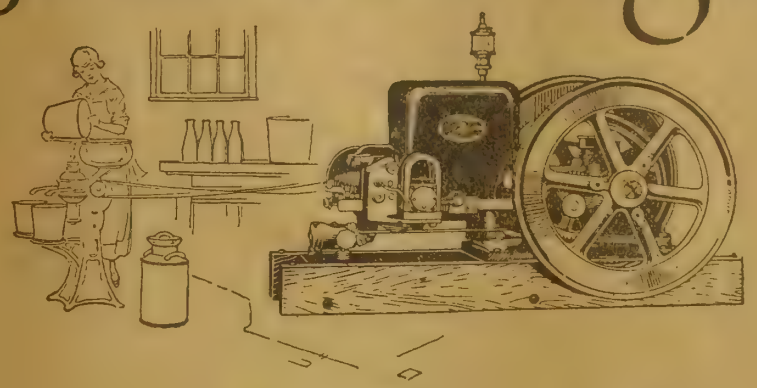
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Manufacturers of

Sure Pop Almond Huller and Separator, 3 sizes; McGurvin Fruit and Olive Graders, any size; Schandoney & Harrington Equalizing Hitches, any size; Diamond Spoked Harrows, Baker Clips, Clevises; and Schmeiser Portable Automatic Hay Derricks. We sell the Martin Ditcher and Grader.

See this New "Z" Engine



IT is a 1½ H.P. "Z" Farm Engine — recently perfected after three years of experimental work and successfully uses

KEROSENE

This completes a line of farm engines — 1½ H.P. to 15 H.P. — all of which efficiently operate on this economical fuel. Over 15 million dollars worth of "Z" Engines on the farms of over 200,000 keen farmer buyers — are proving to their satisfaction that buying a "Z" from their local dealer resulted as our advertising promised.

Also runs on Distillate Coal Oil Tops or Gasoline

Throttling Governor—Built-in Oscillating Magneto

Prices—1½ H.P. $61.00—3 H.P. $100.00 — 6 H. P. $179.00 — F. O. B. Factory

Buying a "Z" from your local dealer assures maximum engine value and service.

Fairbanks, Morse & Co.

MANUFACTURERS CHICAGO

CUT THIS OUT—SAVE IT

CUSHMAN ENGINES

For Pumping

Why purchase an engine for pumping only. CUSHMAN engines run smoothly, steadily, almost noiselessly. They use gasoline or distillate, with guaranteed economy. High speed, with throttle governor and perfect balance, gives smooth, continuous flow of power and insures uniform speed, so that the pump or machines gives out its fullest capacity.

Built Light—Built Right

So that explains why they are more durable than the common types weighing four or five times as much. There are no violent, irregular explosions nor the ever-changing speeds of the heavy hit-and-miss types.

Only All-Purpose Farm Engines

When pumping is over use your engine for other work. Being light, compact and with wide range of speed, it is easily and quickly adapted to use [illegible]. All sizes furnished with friction clutch pulley, Schebler carburetor, throttling governor, forced water circulation, battery or magneto ignition.

The Cushman Satisfies Every User—Satisfy Yourself

SEE YOUR DEALER OR WRITE FOR CATALOG.

THOMAS R. BROWNE

Factory Representative

OFFICE AND WAREHOUSE: STOCKTON, CAL.

An Improved Variety of Dent Corn

The accompanying picture shows part of the field of a new variety of White Dent corn, taken on the grounds of the Richard Diener Co. at Kentfield, Marin county. Mr. Diener has been working on this corn to increase the size and yielding qualities for several years and believes he has fully succeeded in his efforts. This corn is this year put on the market for the first time, under the name of "Diener's Mammoth White corn." Mr. Diener describes this corn as follows: "The plant is of immense size, growing up to 15 feet high, and the ears are from 10 to 12 inches long and from 7 to 10 inches in circumference. A single ear weighs from 1½ to 2 pounds and contains up to 1400 kernels, which are very white. For ensilage, we think there is nothing like it to give so much fodder to the acre and of so high a quality. The amount of dry corn harvested of this variety is astonishing. We have had a great many visitors from all parts of the United States, who know all about corn, and they were all convinced of the high qualities of this variety."



The Standardization of Cantaloupes

[Written for Pacific Rural Press.]

The cantaloupe growing business is assuming large proportions in the upper San Joaquin. There are now three cantaloupe growers' associations at Turlock—the T. M. and G. Association, the United Growers' Association, and the J. W. Falk Association, all three of which are reported to have returned good prices to their members last season. Some men who sold to an independent buyer are said to have come out behind, the reply to one of whom we published in a recent issue of this paper. Another man is reported to have addressed the manager of the T. M. and G. in these terms: "I stayed out of the association last year and sold 'outside' because I didn't like you. I figure that I lost $8000 by not being in the association, but I am going to be with you from now on."

In the early part of last season shipping began early and ten or twelve cars got away before the horticultural commissioner, A. L. Rutherford, knew or had organized for inspection. Three-fourths of the fruit was green and even this small lot resulted in stagnating the cantaloupe market for a week or ten days. Then it picked up and was good all the balance of the season. Inspection was very close, and after the first break no fruit was allowed to get away that was not ready to market.

The nearer cantaloupes are to being ripe when they are picked, Mr. Rutherford says, the better they carry, especially if they are gathered in the cool of the day and kept shaded. He says that they have demonstrated that you can pick ripe cantaloupes and ship them to New York if properly iced so that they are in perfect condition to eat on the very day they arrive. Those that slip the stem free and the half-slip both carry a long distance better than a green cantaloupe and are a delicacy on arrival instead of a disappointment. The careful inspection of cantaloupes, which was at first looked upon as an intrusion on their rights by some of the growers, is now recognized as one of the best influences in extending a demand for the dainty cantaloupe and in safeguarding the interests of the grower. Table grape growers know this too. It's the early shipper and the small packer who wants to fill an order on time, "never mind about quality," who tries to get by.

HOGGING DOWN MILO.

George L. Horine, the Duroc breeder of Winton, writes us of the good results he had in hogging down milo. He had a patch of which a portion blew down badly before he could harvest it, and as other work was pressing he turned his growing pigs into the field and gave the matter no further thought. Mr. Horine has found the feeding of milo in the head to penned-in hogs a poor practice, but practically all of the grain eaten by the pigs running in the field was digested. This was proved by the fact that hardly any of the manure contained whole grains.

In addition to the milo, the pigs had access to alfalfa pasture and salt. While not a perfectly balanced ration, it provided a good diet, as was proven by the fact that a barrow from the lot was recently butchered weighing 204 pounds at six months and one week of age. He had not eaten out of a trough since he was weened and had not known what a pen was, yet he grew out well and his flesh was firm.



Make your Ford Transportation even more Economical.

NEARLY a million Ford owners have found that maintenance and tire costs are reduced approximately 30 per cent and a large saving is made in fuel by the

For FORD Cars — HASSLER — For FORD Trucks

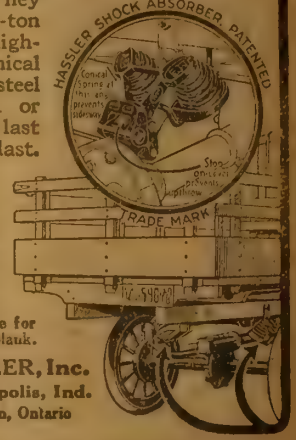
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Shock Absorber

PATENTED

They protect riders from disagreeable shocks and jolts—make any Ford ride as smoothly and comfortably as a $2,000 car. They make the car safer, preventing sidesway at high speeds. The same shocks that disturb the passengers, also rack, strain and wear out the car. Hasslers prevent squeaks, rattles and deterioration. They make a Ford car or a Ford one-ton truck last longer and give it a higher resale value. The spiral, conical springs of chrome-vanadium steel compress on either upward or downward movements. They last and make the car or truck last.





10-Day Trial Offer

Don't ride without Hasslers because someone tries to discourage you. They are a quality product—worth their price. The Hassler dealer in your vicinity will put them on for 10-days' trial. Your money refunded if you say so. Write for name of dealer and Trial Blank.

ROBERT H. HASSLER, Inc.
1190 Naomi St., Indianapolis, Ind.
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"Over There" and "Over Here"

Necessity has taught the thrifty peasants of Europe the golden value of manure. Every ounce is painstakingly returned to the soil, even if it must be done by hand to get good distribution. That is why "Over There" they get such large yields per acre.

"Over Here" we have not been forced to raise as many "bushels per acre," but modern machinery enables us to produce more "bushels per man."

Progressive farmers who realize the value of manure and leading authorities agree that one of the best paying machines for the farm is the

NISCO The New Idea

"Last Winter my son purchased one of your spreaders, though I had an old one that I thought he could get along with. I know of no better way to tell you what I think of yours than to say that it is just as far ahead of my old one as the old one was ahead of the fork and wagon. Every farmer should have one."
Marion Sears. Indiana.

"I have used one of your Spreaders for four years and it has given the best satisfaction. We spread manure every day during winter and even when weather conditions are very unfavorable. I would not give your machine for any other make of spreader that I have ever seen. I consider it the best paying investment a farmer can make."
C. M. Hatch. Ohio

"NISCO" Straw Spreading Attachment—Gives You Two Machines in One.



Saves time, spreads even and wide, pulverizes thoroughly and distributes the manure just right to get its full value. One man with the "Nisco" can do more and better work than several with pitchforks.

The "Nisco" Spreaer has been widely imitated, but an imitation is never more than an imitation. To get the best spreader get THE ORIGINAL—the "Nisco"—the machine that revolutionized old-fashioned methods, that has always been the leader, that has stood every test.

See the wide spreading "Nisco" at your dealers. Look him up or write us for his name. We will send you our booklet, "Helping Mother Nature," which gives much valuable information on soil fertility. Send for a copy today.

New Idea Spreader Co.
Spreader Specialists. Coldwater, Ohio
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WITTE Kero-Oil Engines

Twice the Power at Half the Cost

Sizes 2 to 30 H-P.—Select Your Own Terms—Direct-from-Factory prices. Write your own order. Save $15 to $200. Prompt Shipment. Big new catalog, "How to Judge Engines" FREE—by return mail. Postpaid.

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Money Back if not satisfied on my New 90 Day Engine Offer

Fertilizer Adds 65 Sacks Potatoes Per Acre

Sixty-five sacks per acre of Burbank potatoes was the increase which resulted from application of fertilizer to Delta land by Weyl & Zuckerman last season. They sold at a premium of ten or fifteen cents per sack. A check containing eight acres of level island soil was selected, where potatoes and beans had each been grown two seasons. Strips across the check including one acre were fertilized with a commercial fertilizer containing about eight per cent of potash and six per cent phosphoric acid. Nitrogen is already plenteous in this soil. Alternate acres were left unfertilized as checks on the experiment. About eight sacks per acre of seed were cut into one-eye pieces and planted in the furrows by hand as the fertilizer was drilled in along in May. The entire eight acres were planted and handled in all respects just the same. Standing on the levee in July, the unfertilized acres looked like strips of bare roadway in comparison with the fertilized strips. In the fall, the fertilized acres yielded 175 sacks each, while the others averaged 110 sacks of potatoes inferior in plumpness and shape. About 500 acres will be fertilized by these people for potatoes in 1919.

Yolo Grain and Rice Situation

[Written for Pacific Rural Press]

[Written for Pacific Rural Press.]

Last year Yolo county grew 13,000 acres of wheat. This year over 40,000 acres have been planted, according to Farm Advisor N. P. Searls, who says that the increase of wheat is wholly at the expense of barley. It is chiefly Club, with a little Bluestem and all the Baart for which seed was available. It is practically all in beautiful condition at this writing.

However, there were 10,000 acres in rice last season, which may be replaced by barley or other crops in 1919. Although the Yolo Water and Power Co. has applications in for water to irrigate 11,000 acres, no water will be used for rice, as stated by competent authority, unless Clear Lake, from which practically all the irrigation comes, shall attain a level over three feet above zero. "Zero" is the level at which water ceases to flow by gravity through the canal system. In the emergency of food scarcity last year and at the suggestion of the Food Administration, Lake county people who control the water below zero mark permitted it to be pumped out two feet below zero to save the rice crop. The canal company has a right to all the water above zero and has been able to sell to 600 Yolo water users at $150 per acre-foot. There is a move on in the Legislature which Yolo people claim would give the Lake county owners a right to charge what they please for the water. Consequently there is some feeling between the water users and the Lake county people which may prevent their use of water below zero in the near future. It is stated by good authority that three feet of water above zero will be devoted first to alfalfa and fruit irrigation, which suffered last year in favor of rice growers. At this time the water is about two feet four inches above zero. About the middle of March it will be decided how many acres of rice may be undertaken safely. About three feet would be required for the 11,000 acres of rice alone, the lake being about 40,000 acres in area. Thus six feet of water in Clear Lake would mean over 11,000 acres of rice, while three feet would mean other crops instead of rice.

PUBLIC HEARING ON AGRICULTURAL BILLS.

A public hearing will be held by the Senate Agricultural Committee Monday evening, March 10, at the Capitol on the following bills: No 361, relating to the appointment of county horticultural commissioners their duties and their removal; No 362, fixing salaries of country horticultural commissioners, their deputies and inspectors; No. 364, amending the apple standardization law; No. 513, which is the new fruit and vegetable standardization bill discussed in our other columns; No. 34, the estray bill, which provides that all premises must be fenced or their owner may not take up trespassing stock nor claim damages. No. 641, which provides that dogs must be licensed and prevented from chasing cattle, sheep, etc., as sketched in a recent issue.

FINAL ESTIMATE ON 1918 BEANS.

The final estimate of the bean crop is for a production of 8,800,000 bushels, of which 2,610,000 bushels were limas. Last year's production was 8,091,000 bushels, of which 2,080,000 bushels were limas. Rain during September and October did some damage, the Salinas Valley being the hardest hit, but quality suffered more than quantity. Conditions throughout the Sacramento and San Joaquin valleys were very spotted, the average yield varying from three to thirty centals to the acre. The lima bean area and the small white section in the Santa Maria Valley and Lompoc district were particularly fortunate in escaping damage from rain.

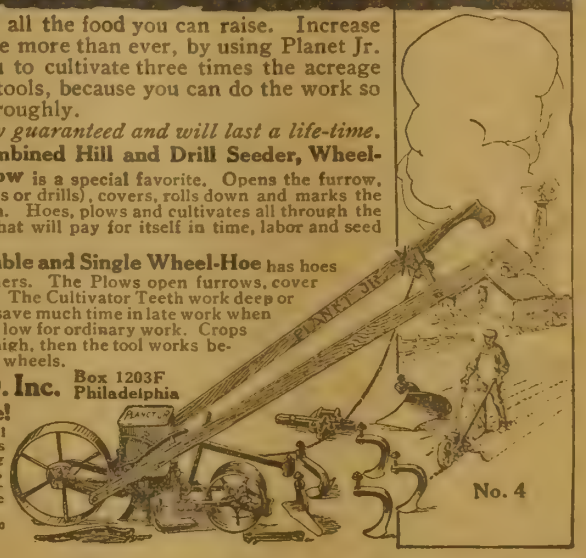
Cultivate triple acreage with Planet Jr. tools

Your country needs all the food you can raise. Increase your production. Raise more than ever, by using Planet Jr. tools. They enable you to cultivate three times the acreage possible with ordinary tools, because you can do the work so easily, quickly and thoroughly.

Planet Jrs. are fully guaranteed and will last a life-time.

No. 4 Planet Jr. Combined Hill and Drill Seeder, Wheel-Hoe, Cultivator and Plow is a special favorite. Opens the furrow, sows all garden seeds (in hills or drills), covers, rolls down and marks the next row all at one operation. Hoes, plows and cultivates all through the season. A hand machine that will pay for itself in time, labor and seed saved in a single season.

No. 12 Planet Jr. Double and Single Wheel-Hoe has hoes that are wonderful weed killers. The Plows open furrows, cover them and hill growing crops. The Cultivator Teeth work deep or shallow. The Leaf Lifters save much time in late work when plants are large or leaves too low for ordinary work. Crops are straddled till 20 inches high, then the tool works between rows with one or two wheels.



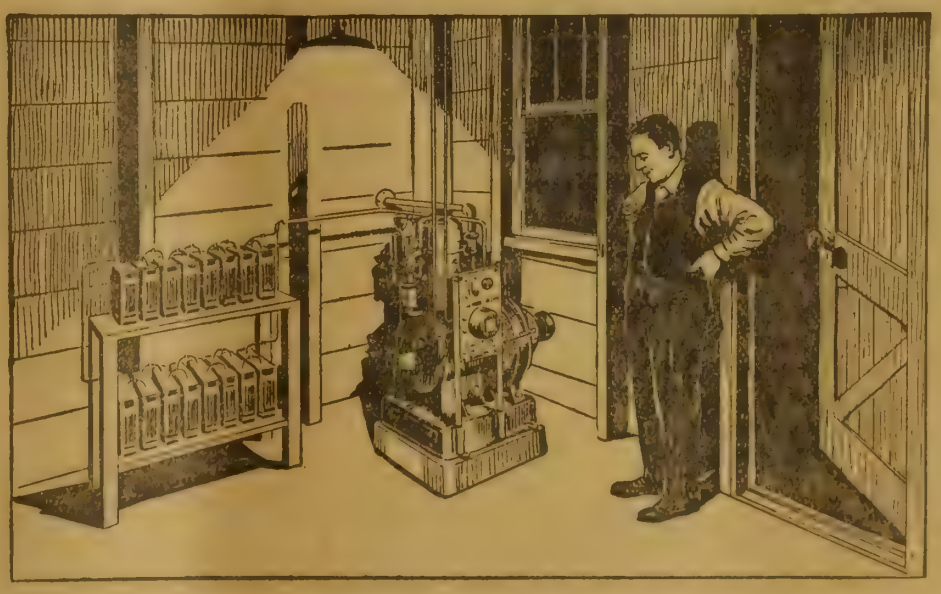
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For every power use, this direct-connected set will furnish the electricity at low cost

The Western Electric Company believes that electric power will do for farming what it has done for other industries. It believes that every business farmer will consider the purchase of a sturdy, dependable power plant when offered by a manufacturer with unlimited resources for making good every promise. It backs up this belief by offering the Western Electric Power and Light plant in one neat, compact unit—the result of many years of experimenting.

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The Western Electric man near you will demonstrate this plant to you—and tell you about the many Western Electric labor savers for farm and home: all have been proved practical on farms everywhere.

Write for booklet No. 14-PRR and we will tell the Western Electric man to get in touch with you.

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The fuel is poured into the base of the engine which burns kerosene as well as it does gasoline



Give Cows More Freedom They'll Give You More Milk

Long ago shrewd farmers and dairymen found out that cows cannot produce properly unless they are warmly housed, rightly fed and made comfortable. You know this and you know also that it means dollars and cents to you. Give your cows more freedom and comfort and they will produce more for you.

There's no denying the fact that cows are always more comfortable in STAR Stalls and Stanchions. The STAR Stanchion fits the cow's neck as though it was made to order. You can adjust it to just the right width by loosening two screws. The STAR Alignment Device keeps her in line at the gutter—lengthens or shortens her bed instantly. This means a clean cow bed and clean cows.

With the STAR "Unit System" you can put in one stall or a hundred to fit your herd and add more stalls as your herd increases. There are many features in STAR Stalls and Stanchions that you do not find in other barn equipment. Features that are the result of many years of dairy barn experience, and that mean much to you in cow comfort and in your profits.

Send for the New STAR Catalog. Ask for Free STAR Barn Plans

STAR Stalls and Stanchions are but a part of the complete line of STAR Equipment for farm buildings. Ask for our catalog. If you are thinking of building or remodeling also ask for free STAR Barn Plans.

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The STAR Line

Barn Equipment
Litter Carriers
Harvester Hay Tools
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Garage Equipment
Coaster Wagons
Tank Heaters and Other Farm Specialties

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The Cause of Bitter Milk

Every year at this season we receive many inquiries regarding the cause and remedy for bitter milk and difficult churning.

There are two different kinds of bitter fermentation — one that is present at the time of milking and one that does not appear until after the milk has been left standing for twelve hours or more. Also, bitter milk is usually more prevalent in the winter than during the summer months. This is because at low temperatures the bacteria which cause bitter milk develop faster than the bacteria which cause milk to sour. The result is that when milk is contaminated with both kinds of organisms, gaining entrance through the dust in the barn air or from unclean utensils, the milk turns bitter before it sours.

This very often happens with cream, and under such conditions it will not churn readily, because the abnormal fermentation has hardened the fat globules so that they will not stick together.

Bitter cream, and the resulting difficult churning, can be overcome by means of a starter. This starter need be nothing but clean sour milk which has developed a mild acid in the milk and caused it to clabber. Sometimes a little buttermilk saved from the previous churning may be used. There is a little danger in using buttermilk, as the fermentation may not be what you want. There may be some of the abnormal fermentation in it. For that reason, clean skimmilk set away at 80 degrees Fahrenheit and kept at that temperature until it clabbers makes the best starter. If pure culture starter is available, it is better than the home-made skimmilk starter.

The kind of feed a cow eats has an effect on the flavor of the milk and churnability of the cream. Dry feed causes hard fat globules. The lack of variety in the ration, and especially the absence of green or succulent feed, throws the cow's system out of order and she cannot ward off an atack of gargot or any other disease which may cause bitter milk in the udder. The lack of exercise has the same effect.

Cows that have not been fresh for a year or more often give milk that has a bitter taste, the cream from which is difficult to churn. This is because a change in the chemical composition of the milk salts takes place; also the fat changes in consistency, and the globules become hard and small and do not stick together so readily. Consequently, cows should freshen at least once a year so that there will not be this change in the fats and salts.

The proper ration, which includes plenty of laxative feed, plenty of exercise and fresh air, and clean quarters usually will prevent the appearance of the bitter fermentation in the udder. A clean barn, clean cows, clean milkers and sterilized utensils will prevent the bitter fermentation after milk is produced.

If the milk tastes bitter when drawn, look to the cow for the trouble. If it develops after standing, clean up the barn, the utensils, the cow and the milker. There is nothing that can be added to the bitter milk or cream to overcome the fermentation. A clean starter, however, will be helpful.

Those Troublesome Warts

Warts on cows' teats generally do not cause much trouble at first, but after they are well developed they tend to make a teat tender to handle, and unless they are removed a "chronic kicker" is liable to be developed.

If the warts occur in large numbers, or one wart is quite large, removal is difficult while the cow is in milk. The preparations which will remove warts quickly are acids which eat, and they cause wounds which cannot be healed readily when the teat has to be manipulated twice a day.

Warts are of two kinds—flat and pendulous. For flat warts, castor oil or pure olive oil applied after each milking and rubbed in well will remove them in time, but patience is necessary, as it is a slow process.

To treat a pendulous wart, snip it off with sharp scissors, applying carbolated vaseline twice daily to heal the wound and keep the skin soft and pliable. The bleeding which follows the clipping will subside without any after treatment. If the wart starts to grow again, touch the spot lightly with a caustic potash pencil, and be careful to apply it only to the wart surface. It may be necessary to repeat this treatment a few times.

The best time to remove warts is while a cow is dry. If they are pendulous, snip them off nearly even with the flesh and use a caustic pencil as already suggested. If they are flat, paint them with a mixture of one part salicylic acid and seven parts collodion, and allow to dry. In two or three days the dead scabs that will have formed should be removed and the warts again treated in the same manner. Continued treatment will cause the warts to soon disappear without injuring the teat in any way.

There are several other treatments that are used with good results. A silk thread is often tied around long, slim warts. The heads soon drop off, and the stubs are then touched with a caustic pencil. Butter of antimony is used, being applied with a feather. This is very strong and care should be taken not to touch the teat at all. Nitric acid and sulphuric acid are also applied with a feather.

Whatever treatment is used, two or three applications may be necessary, and when the wart is killed the scar should be rubbed with carbolated vaseline, castor oil or olive oil to soften it.

For sore teats a simple salve made of one part oxide of zinc and ten parts vaseline, applied after each milking, is excellent.

Calf Enemies

WHITE SCOURS
BLACKLEG

Your Veterinarian can stamp them out with **Cutter's** Anti-Calf Scour Serum and **Cutter's Germ Free** Blackleg Filtrate and Aggressin, or **Cutter's** Blackleg Pills.

Ask him about them. If he hasn't our literature, write to us for information on these products.

The Cutter Laboratory
Berkeley, Cal., or Chicago, Ill.
"The Laboratory That Knows How"



Contagious Abortion

Don't sell the aborters. Clean out the infection. Breeding animals are worth more than ever before. Control of Abortion is doubly necessary.

The Abortion infection causes Barrenness, Retention of Afterbirth and Calf Scours in addition to Abortion. Unless checked it is likely to run through your entire herd.

B-K is a powerful non-poisonous antiseptic—scientifically correct for this work. Used as a douche, it dissolves the slimy albuminous matter in the vagina and uterus, kills the germs, stops discharges and controls the infection. B-K is much more effective than lysol, carbolic acid, Lugol's solution, bichloride of mercury and coal tar disinfectants, all of which tend to coagulate or thicken the albumins.

Contagious Abortion is being successfully controlled in many herds by following our simple plan with B-K. Send for "evidence."

FREE BULLETINS: Send for our valuable bulletin No. 52 on "Contagious Abortion," also "145 Farm Uses" and our "Trial Offer." If your dealer does not have B-K send us his name.

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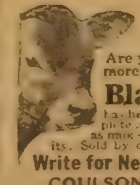
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Are you getting them? Calf profits mean more to you now than ever before.

Blatchford's Calf Meal

has been known since the year 1900 as the complete milk substitute. Costs less than half as much as milk — prevents scouring — promotes early maturity. Sold by dealers or direct from the makers.

Write for New Data See actual figures showing you how to increase your calf profits
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Hawaiian Methods of Topping the Market

Using purebred bulls and running fewer cattle on the range—this is the secret of the remarkable record made by the Hawaiian Meat Company of Honolulu in increasing the dressed weight of beef carcasses from an average of 449 pounds in 1910 to 653 pounds in 1918.

Prof. Gordon H. True of the University Farm, who judged livestock at the Territorial Fair in Hawaii a year ago, visited the Hawaiian Meat Company's plant and was much impressed with the methods employed. Since then he has kept in touch with the progress of the company, and has just received the above information.

Several years ago the company found that it had too many cattle for the size of its range, so the number was reduced, and it was found that it was much better to under-stock the range than to overstock it. Purebred bulls have been used for a long time, and these methods result in producing beef more economically, and consequently in increasing profits.

ENCOURAGING A BACKWARD STEP.

"Wanted—A Durham grade bull. 12 months old. Apply to Farm Advisor."

Would you believe it if we told you that such an advertisement appeared in a California farm bureau monthly? That's the gospel truth.

Farm advisors are supposed to advocate breeding up, and to discourage the use of all bulls not purebred. And how any farm advisor would allow an ad of this kind to appear in his paper is beyond us. Unless it was from a packing house, it ought to have been thrown out as "objectionable advertising."

THE GUARANTY SALE

"The Holstein Classic"

Thursday, March 27, 1919

State Fair Grounds, Sacramento, Cal.

THE HIGHEST RECORD BULL EVER SOLD AT PUBLIC SALE IN THE WEST.

THE HIGHEST RECORD COW EVER SOLD AT PUBLIC SALE IN THE WEST.

EIGHT COWS WITH OFFICIAL RECORDS FROM 30 TO OVER 37 POUNDS BUTTER IN 7 DAYS.

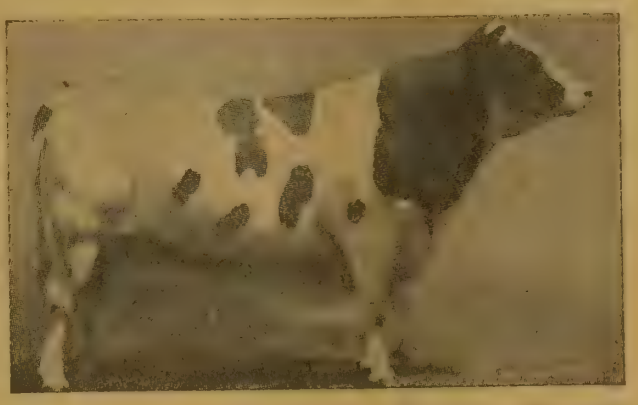
THIRTY DAUGHTERS AND SONS OF COWS WITH OFFICIAL RECORDS FROM 30 TO OVER 41 POUNDS BUTTER IN 7 DAYS, nearly 50% of the total number in the sale.

FORTY DAUGHTERS AND SONS OF SIRES WHOSE DAMS HAVE OFFICIAL RECORDS FROM 30 TO OVER 40 POUNDS BUTTER IN 7 DAYS, over 60% of the total number in the sale.

EVERY ANIMAL POSITIVELY GUARANTEED TO BE A BREEDER; EVERY ANIMAL TUBERCULIN TESTED AND SOLD SUBJECT TO 60-DAY RETEST BY THE BUYER.



THE $106,000 BULL, CARNATION KING SYLVIA—Richly bred females in calf to him consigned by Carnation Stock Farm, Seattle.



JUDGE SEGIS—Famous proven son of King Segis. Very highly bred females in calf to him consigned by Hollywood Farm, Hollywood, Wash.



KING HENGERVELD HENRIETTE—30-lb. senior 4-year-old daughter of King Hengerveld. Consigned by A. W. Morris & Sons.



GEORGIE PONTIAC 2ND—23-lb. 2-year-old granddaughter of Rag Apple Korndyke 8th, milked 95 lbs. in one day. Consigned by McAlister & Son.



TOBE MANOR DE KOL—Great young cow now on semi-official test, a show cow and a producer. Consigned by Albert E. Smith, Sumas, Washington.

Nearly 50 of the Wonderful Females are Bred to Outstanding Bulls

Including: **CARNATION KING SYLVIA**, the $106,000.00 bull; **JUDGE SEGIS**, great proven son of King Segis; **CHIMACUM SPRING FARM KING PONTIAC**, son of Spring Farm King Pontiac; **"IT,"** whose get are always in demand at high prices; **KING KORNDYKE PONTIAC 20th**, the $6500.00 son of Miss Valley Mead De Kol Walker; **SIR AAGGIE DE KOL ACME**, son of the 35-lb. cow, Aaggie Acme of Riverside 2nd, whose strictly official record of 1331.78 lbs. butter in one year is a world's record; **SIR AAGGIE MEAD DE KOL**, whose seven nearest dams average 1093 lbs. butter in one year, highest in world; **SIR AAGGIE DE KOL ACME 2nd**, five of whose seven nearest dams average 1105 lbs. butter in one year, second highest in world; **MATADOR SEGIS WALKER**, sire of the latest 40-lb. senior 3-year-old; **KING SEGIS ALCARTRA PRILLY**, twice grand champion at California State Fair; **KING SEGIS ALCARTRA ABBEKERK**, 30-lb. son of the $50,000.00 bull; **KING SADIE VALE IDYL SEGIS**, son of the 35-lb. 4-year-old K P Idyl Segis; **PRINCE HISKE WALKER**, full brother to the 34-lb. 4-year-old Lady Hiske Walker; **PRINCE GELSCHE WALKER KORNDYKE**, the $4000.00 son of Prince Gelsche Walker; **KING PONTIAC NETHERLAND SEGIS 3d**, son of the twice 34-lb. cow, Gerben Abbekerk Maid.

Six Great Young Bulls in the Sale

There are only six bulls in this sale and every one of them is out of a dam with an official record of from 30 to over 41 pounds butter in 7 days, every one of them is by a sire whose dam has an official record of from 30 to 37 pounds butter in 7 days. Beautiful individuals, and as a group they offer a remarkable selection of high record breeding.

REMEMBER that the cattle for this sale have been selected from fourteen high class Pacific Coast herds by a Committee of Four, F. L. Morris, James W. McAlister, Jr., H. V. Bridgford, and C. L. Hughes.

CONTRIBUTORS TO SALE:

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BRIDGFORD COMPANY, Knightsen, Cal.
CARNATION STOCK FARM, Seattle.
ALEX WHALEY, Tulare, Cal.
GOTSHALL & MAGRUDER, Ripon, Cal.
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LIVESTOCK QUERIES

Subscribers wishing an immediate reply should send money order for $1. No charge for questions answered through this department. Inquirer must give full name and address.

Jerusalem Artichokes for Hogs.

To the Editor: Are Jerusalem artichokes good for hogs? If so, where could I get seed and at what price? Do they grow and yield well, or could you give me the name of any other artichoke that would do better as hog feed? Are mangels good hog feed?—J. P., Paso Robles.

[Answered by Prof. J. I. Thompson, University Farm.]

We have not used Jerusalem artichokes experimentally, but they are grown in a number of places in this State. They resemble potatoes in composition and are perennials. If planted in the spring in rows, and cultivated during the summer, they should be available for the hogs in the early fall. They could be harvested like potatoes, but usually the pigs are turned in to gather the crop. The total feeding value is approximately that of potatoes, which means that at least four pounds are required to equal one of barley. Hogs should not be expected to subsist on these alone, but for best results should be allowed some grain at the same time. Probably four to five tons per acre could be secured under good conditions. The seed tubers can be secured of seed dealers. Ours were purchased from the Valley Seed Company, Sacramento. Mangles have about one-half the feeding value of artichokes, being somewhat higher in water content, and also relatively higher in protein, but would answer about the same purpose in the ration for hogs. It is quite probable, however, that a greater yield of mangles can be secured than of artichokes, but the labor cost of growing them would probably be much higher.

[The only artichokes suitable for hog feeding are Jerusalem, but there are several varieties, of which the red colored seem to be most productive. The white are preferred for culinary uses.—Editor.]

Pneumonia in Hogs.

To the Editor: A number of my hogs have died while in the fattening pen. After death a froth would come out of their nostrils, sometimes mingled with blood. A veterinarian said that it was due to smut in the barley I fed. Out of 74 hogs recently marketed, I had four condemned as being tubercular. The hogs in general seem to be run down. What do you think is the trouble?—T. H. M., Merced.

[Answered by Dr. W. J. Lembke, San Francisco.]

I am quite positive that your hogs died from pneumonia due to too close quartering. I do not think that the smut in the barley had anything to do with it because this would affect the digestive organs first. Avoid having your hogs bunched up at night as they will become overheated and take cold easily when they get out in the morning to feed. Tuberculosis is almost always due to infection from cows through skimmilk, and if you are not sure that your herd is free from tuberculosis you should heat the skimmilk to 150 degrees and hold it there for 30 minutes before feeding it to the hogs.

Horse Has Bad Teeth.

To the Editor: I have a horse with a very foul breath and occasionally she discharges at the nose. What is the trouble?—A. J. L., Lakeport.

[Answered by Livestock Editor.]

Foul breath is usually due to decayed teeth, and if you will make a careful examination probably you will find some of the teeth split or badly decayed so that they can be easily extracted. Occasionally long teeth in old animals wear away another tooth and make a cavity in the jaw, which becomes very foul, but perhaps your horse's teeth simply need floating. The constant grinding of food causes them to wear irregularly, and about every six months or a year the sharp corners should be filed off.

Cure for Worms in Horse.

To the Editor: I have a horse that passes white worms, some of them 6 to 8 inches long. She eats well, but seems to tire out easily. What can I do for her?—W. D. L., Palo Alto.

[Answered by Dr. E. J. Creely, San Francisco.]

Your horse has what are known as round worms and you should give her each morning in her feed a teaspoonful of the following powder: Dessicated iron sulphate 1 pound, bicarbonate soda 1 pound, pulverized gentian root 4 ounces. This will cause the feces to become black. You will not get results for several days, but gradually the alimentary tract will be emptied of the worms. You will find the powder good also as a blood tonic.

Cow Has Nasal Catarrh.

To the Editor: Will you kindly give me a remedy for a cow that gets "snotty nose" from pasturing where my sheep are fed? Sometimes she fills up so tightly that she cannot breathe through her nose. —C. N., Medford, Ore.

[Answered by Dr. E. J. Creely, San Francisco.]

Your cow has chronic nasal catarrh due to the inhalation of irritating matter into the nasal cavity. Thoroughly clean the dried up discharge and then apply the following ointment once daily: Lanoline 4 ounces, petrolatum 4 ounces, balsam peru 1 ounce, bismuth subgalate 1 ounce, oil pine needles 2 drams.

World Record Cow at Palo Alto

Palo Alto Stock Farm, Palo Alto, have the honor of owning a world record Holstein cow, developed in their own herd. This cow, Johanna



Johanna Princess Mooie 2nd, holder of two world records as a junior three-year-old.

Princess Mooie 2nd, made the creditable record of 25 pounds butter from 600.3 pounds milk in seven days when she freshened as a junior three-year-old. But she was kept on test through her entire lactation period and made two world records for combined milk and butter production—one of 19.19 pounds butter from 484.4 pounds milk in seven days at eight months after calving, the other 1175 pounds butter from 25,625 pounds milk in one year. She calved at three years and four months, and completed her test February 23, carrying a calf six months of the time.

Mr. Tichenor bought this cow as a calf. She was sired by Sir Hengerveld Clyde, a young bull by Sir Hengerveld Model Johanna, who already has five 30-pound daughters out of 20 tested. He is a half brother to Belle Model Johanna 2nd, the first cow to make three records over 35 pounds, and the dam of the sire of the $106,000 bull calf, Carnation King Sylvia. With such royal breeding great results would naturally be expected, but good breeding must be supplemented by scientific feeding and care, and this the cow received at the Palo Alto Stock Farm.

DISPERSAL SALE

E. R. PUTZ HOLSTEIN HERD

WEDNESDAY, APRIL 2nd, 1919
LATON, CALIFORNIA

Here is one of the big opportunities of the present sale season, a complete dispersal of a successful dairy herd.

45 REGISTERED HOLSTEIN COWS, HEIFERS AND BULLS

While no official testing has been done in the herd, the blood lines are of substantial quality, and many great bargains will undoubtedly develop from this sale. For instance, there are 24 GREAT-GRANDDAUGHTERS OF PONTIAC KORNDYKE in the herd, ranging from calves up to 2-year-olds, and some of these young things are about as safe an investment as it is possible to find.

Practically all of the cows are young, and have been selected and retained in this herd because they are profitable dairy cows.

Local dairymen have found this herd a popular source of supply for bulls, and there has never been a surplus of bulls of breeding age on hand. At sale time there will be a few choice youngsters to offer.

45 HIGH GRADE HOLSTEIN HEIFERS AND COWS

These are all sired by registered bulls and are the kind of milkers that Mr. Putz has found profitable. They are well marked, mostly young, and a good clean lot straight through.

IF YOU WANT A SERVICE BULL

look the herd sire PRINCE LUNDE KORNDYKE 2ND over carefully. He is a grandson of the mighty PONTIAC KORNDYKE, and the dairymen who are fortunate enough to have a grandson of that great sire at the head of their herds are mighty few and far between. He is a FIRST-CLASS INDIVIDUAL.

Every animal, both purebred and grade, is tuberculin tested and sold subject to retest by the buyer.

Note.—Mr. Putz's farm is 9 miles north of Hanford on the paved county highway; 3½ miles east of Laton; 10 miles west of Kingsburg.

Catalogue free on request.

Management

California Breeders Sales and Pedigree Company

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The Great Opportunity For Stock Owners

During the immediate future the stock owners of America will enjoy the greatest money-making opportunity of a generation. *There is an acute world-shortage of animal products.* The investigators of the U. S. Food Administration report that the flocks and herds of Europe are so reduced that they must be kept for breeding purposes in order to make good these losses.

America must supply the hungry nations with animal foods. This insures a ready market and good prices until Europe's animal population is restored.

Pratts Animal Regulator

will help every American stock grower "speed up" every producing animal and secure his full share of this profitable business. It increases growth and production and reduces feeding costs. This fact has been convincingly demonstrated by leading stock growers during the *fifty years* since the original Pratts was placed on the market.

Its regular use overcomes the evil effects of heavy feeding, confinement and lack of exercise, conditions which of necessity accompany modern methods of stock production. It keeps stock of all kinds *healthy* and *vigorous*, and *prevents losses* from the common profit-destroying disorders.

Give Pratts to your horses, cattle, sheep and hogs and watch your profits grow! Give it a careful test at our risk.

Our dealer in your town has instructions to supply you with Pratts Preparations under our square-deal guarantee—*"Your money back if YOU are not satisfied"*—the guarantee that has stood for nearly fifty years.

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Shear With Machine

Out ways of shearing leave too much wool on the sheep. Wool is scarce and commands high prices. Buy that sheep shearing machine NOW—they're going to be scarce this season. Get a Stewart No. 9 Ball Bearing Machine with 4 sets of knives. Price only $14. If your dealer can't supply you send us his name. Write for 1919 catalog.

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REGISTERED HOLSTEINS

Creamcup Herd offers service bulls and bull calves of 34-lb. breeding. Females offered for foundation stock. Tuberculin tested.

M. M. Holdridge, San Jose, Cal.
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Two miles out North First Street.

The Farmer's Dollar Goes Farthest

To the Editor: I am surprised that you are getting money from the farmer and still suggest lower prices for butter and other things, when we are getting so little as it is and are paying so much for everything we need on the farm.—A Subscriber.

No, brother, you got us wrong. We didn't advocate lower prices. We are for the farmer's best interests first, last and always, and we want to see him get as high prices as possible. But we want to see prices established in such a way that they will remain stable, and that is why we are so strong for educating the consuming public to the real food value of farm products. Then the dear public will be willing to stand for raises in prices, and won't curtail consumption or resort to boycotts. And everything 'll be lovely.

But where do you get that stuff about paying so much for everything needed on the farm, and getting so little for farm products? You must have been drawing on your imagination, for we have a table compiled from data secured by the Department of Agriculture, showing that since the beginning of 1914 there has been an increase of 60.7 per cent in the prices received by farmers for their products, and an increase of only 30 per cent in the prices paid by farmers for articles of common use on farms. We judge that you are a livestock farmer, and if so we've got an even bigger laugh on you, for the prices received by farmers for livestock and livestock products alone have increased 68.8 per cent.

Oh, what an unreliable thing is the human imagination! And how often we use it instead of facts and figures. How often we just take it for granted that things must be so, without stopping to investigate. In the language of the prose-poet: "The burdens that make us groan and sweat; the troubles that make us fume and fret, are the things that haven't happened yet."—Livestock Editor.

AUCTION SHOWS EAGERNESS FOR COWS.

Few auctions on the Pacific Coast have moved so much farm machinery and livestock in so short a time and at such good prices as the one held on the Glide ranch, near Freeport Ferry, March 6, by Auctioneer Ord L. Leachman. Over 900 "pieces" went under the hammer in seven and a quarter hours. The sale totaled $37,233.45, which was about $12,000 more than the owners expected. Heavy showers and mud did not seem to dampen the spirits of the bidders. Over 900 people ate lunch there. Two hundred and sixty-one grade Holstein cows and four bulls were sold. The milking cows averaged over $124 and the dry stock averaged $92.50. Bulls, purebred unregistered, went at about $150. Good, heavy work horses averaged about $130 and colts averaged around $50. Hogs sold at better than market prices, though they were a very indifferent lot.

LITTLE LEAKS.

In many instances animals do not get the feed actually intended for them due to improper and faulty construction of feed boxes and hay racks. Many feed boxes are so shallow and small that much feed is wasted as the animals eat from them. In order to prevent this waste the feed boxes should be repaired. They should be at least 18 inches wide, 24 inches long and 12 to 14 inches deep. It is often advisable to feed the concentrates with silage to prevent waste.

Hay racks should be constructed to prevent animals from tossing or pulling hay under their feet. All hay racks should have a tight bottom to prevent the loss of leaves and finer particles of hay. The leaves of hay, especially of the legumes, contain most of the protein and are, therefore, that part of the roughage which the animals need.

A 31 POUND COW

heads the list of good cows and heifers with official milk and butter records that we will sell at public auction for

WALTER F. MITCHELL
VISALIA, CALIFORNIA
THURSDAY, APRIL 3rd, 1919

Mr. Mitchell is selling all of his cows and heifers of milking age, some good bred and unbred heifers, and a few choice young bulls, a total of

60 REGISTERED HOLSTEIN COWS, HEIFERS and BULLS

This is one of the longest established herds in the lower San Joaquin Valley, and while official testing has been done within only the past couple of years, high-class bulls have been used in the herd and the many good records of milk and butter production now held in the herd are proof of the soundness of the blood lines.

19 GRANDDAUGHTERS OF SEGIS PONTIAC DE KOL BURKE

will be in the sale. This blood is proving its first rank quality in both short time and long time tests, and these heifers are bound to make good in the hands of whoever is fortunate enough to buy them.

39 COWS and HEIFERS BRED TO PRINCE HISKE WALKER

Here is a consideration of prime importance to every buyer of foundation breeding females. The choice cows and heifers in this sale will speak for themselves, but bred to such a bull they take on a much greater value. Prince Hiske Walker is practically certain to have at least 60 living daughters before he is 5 years old, most of which will be in hands where they will be developed.

PRINCE HISKE WALKER WILL BE SOLD

Mr. Mitchell parts with this great young sire only because it is his young daughters that are being retained as future breeding females in the herd. Prince Hiske Walker is a full brother to the 34-lb. junior 4-year-old Lady Hiske Walker, representing the blood that is making the greatest records on the Pacific Coast. He is a high-class individual, is only just past 4 years old, and his calves are uniformly most promising.

Every animal positively guaranteed to be a breeder; every animal tuberculin tested and sold subject to retest by the buyer.

Note.—Mr. Mitchell's Packwood Farm is about 7 miles north of Tulare, just off the paved State Highway. Call and see the herd before sale day, if possible.

Catalog free on request.

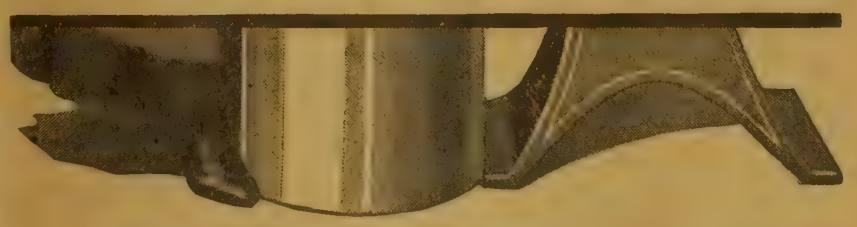
Management

California Breeders Sales and Pedigree Company

C. L. HUGHES, Sales Manager, Sacramento, Cal.
Auctioneer—COL. BEN A. RHOADES, Los Angeles.



Eight Good Reasons Why You Should Buy a DE LAVAL



GREATER CAPACITY: New capacities have been increased 10%, without increase of speed or effort required in operation.

SKIMS CLOSER: The improved bowl design, together with the patented milk distributor, gives greater skimming efficiency.

EASIER TO WASH: Simple bowl construction and discs caulked only on the upper side make the bowl easier to wash.

EASIER TO TURN: The low speed of the De Laval bowl, the short crank, its unusually large capacity for the size and weight of the bowl, and its automatic oiling throughout, make it the easiest to turn and least tiring to the operator.

THE MAJORITY CHOICE: More De Lavals are sold every year than of all other makes of separators combined. More than 2,325,000 are in daily use—thousands of them for 15 or 20 years.

TIME TESTED: The De Laval was the first cream separator. It has stood the test of time and maintained its original success and leadership for 40 years the world over.

EQUIPPED WITH SPEED-INDICATOR: Every new De Laval is equipped with a Bell Speed-Indicator, the "Warning Signal" which insures proper speed, full capacity, thorough separation and uniform cream at all times.

SERVICE WHEN YOU NEED IT: The worldwide De Laval organization, with agents and representatives ready to serve users in almost every locality where cows are milked, insures the buyer of a De Laval quick and efficient service whenever he needs it.

DE LAVAL DAIRY SUPPLY CO.

THE LARGEST DAIRY SUPPLY HOUSE ON THE PACIFIC COAST

ALPHA GASOLINE ENGINES — JAMES BARN EQUIPMENT
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61 BEALE STREET, SAN FRANCISCO

EVERYTHING FOR THE DAIRY

Catalog of any of these lines mailed upon request

THE MORRIS CONSIGNMENT

GUARANTY SALE
MARCH 27, 1919

A FOUNDATION IN ITSELF

We are contributing to this sale four of the finest females that ever went out from our herd, and a great young bull that is just right to use on them.

THREE OF THESE are daughters of the great PRINCE GELSCHE WALKER, sire of Miss Valley Mead De Kol Walker, the highest record living junior three-year-old of the breed. They are carrying their first calves and the dams of two of them have records of 31.91 and 32.76.

A BEAUTIFUL YOUNG COW that has just made over 31 pounds with second calf and is milking over 100 pounds a day at the present time. She is by one of the best sons of Hengerveld De Kol.

EVERY FEMALE IN OUR CONSIGNMENT is bred to SIR AAGGIE MEAD DE KOL—the highest record long distance bull in the world—whose seven nearest dams average 1093 pounds butter in a year and over 31 pounds in seven days—one of the seven now in test increasing this average to over 1100 pounds.

THE CALVES THAT THEY ARE CARRYING may some day be worth more than the whole consignment brings in this sale.

FOR A HERD SIRE we have included a beautiful ten-months-old son of LADY HISKE WALKER, 34.25 pound junior four-year-old daughter of PRINCE GELSCHE WALKER—three-quarter sister to MISS VALLEY MEAD DE KOL WALKER, 36.81 pounds in 7 days and 1113 pounds in a year as a junior three-year-old. He is sired by SIR AAGGIE DE KOL ACME who is destined to a high rank among Holstein sires. Sir Aaggie's dam is the world record daughter of KING MEAD OF RIVERSIDE, Aaggie Acme of Riverside 2d that made 35.38 in seven days—1331 pounds in a year (strictly official) and 2426 pounds in two years (world's record when made).

HERE IS AN EXCEPTIONAL INDIVIDUAL—beautifully marked—dam and sire's dam average almost 35 pounds—three nearest dams almost 33 pounds, and over 900 pounds in a year, including dam's junior two-year-old record—excellently bred—and better still, their type is such as you would wish to breed into your herd.

Write for His Pedigree.

A. W. MORRIS & SONS, Corp.
WOODLAND, CALIFORNIA

Clean Your Barn

The Louden Way



One man with a **Louden Litter Carrier** on Louden overhead steel track system can clean the barns in half the time that two men would take without it. **That's** Louden economy. On **every** up-to-date farm—**your** farm—the **Louden Litter Carrier** and steel track system will earn its cost many times a year.

Track can be bracketed to barn wall—out one door—in at other, and in this way no switch is needed. Manure loaded direct on wagon or spreader—its full fertilizing value thus saved.

Louden Litter Carriers

are made of heavy galvanized steel—wear for years; have improved worm gear—**1 pound on chain lifts 40 pounds in box**; box stands at any elevation—raised or lowered any distance up to 25 feet; have many **special** advantages not found in other makes. Send today for valuable **free** book on manure uses, and catalog of hay and litter carriers, sanitary steel stalls, cow stanchions, etc., for modern barns.

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SHORTHORN CATTLE
Shropshire & French Merino Rams DAVIS, CALIFORNIA

The World's Largest Herd of Registered
HEREFORDS

The home of MISS RIALTO 2ND, NEVER defeated Grand Champion. Over 900 breeding cows, representing choicest blood lines. Great Bulls in service. Look up our records at the BIG livestock shows.

THE HEREFORD CORP. OF WYOMING, Box 876, Cheyenne, Wyo.
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ORMONDALE SHORTHORNS
Are all heavy boned, and of Scotch and Scotch-topped breeding.
Suited for either the range grower or breeder.
EVERY ANIMAL POSITIVELY GUARANTEED.
Whether you buy or not, visit our ranch, 7 miles from Palo Alto on Woodside Road. We welcome inspection. Prices and pedigrees on application.
SHORTHORN CATTLE
DUROC-JERSEY SWINE
ORMONDALE CO. REDWOOD CITY, CAL. R. D. No. 1

Rubbing Elbows with Other Breeders

[Written for Pacific Rural Press by Thos. F. McConnell.]

BEAUTY AND UTILITY AT HILLCREST FARM.

The combination of beauty and utility impresses one who visits the Hillcrest Stock Farm of T. S. Glide at Davis. Approached from almost any direction, the buildings stand out on an elevation above the great floor of the Sacramento plain. It is a viewpoint from which to get an appreciation of this great agricultural region.

Here some of the choicest specimens of the historic Shorthorn are to be found. We saw mostly young stuff—bulls and heifers of blocky, low-down, thick-meated type so much desired by modern fanciers.

One heifer, Spicy Lady, pure white in color, showed almost perfect Shorthorn type. She is low-down and broad and has wonderful handling qualities, with a beautiful head, indicating the quiet disposition looked for in a good beef animal.

Count Amaranth, the senior herd bull since the death of Knight Perfection, is an animal of strong individuality, with one of the greatest fronts ever seen on a Shorthorn. He has never been fitted for show or forced in any way, but last November, when three years old, he weighed 2150 pounds and he looks as though he could easily be made to weigh 2500 pounds.

Mr. Glide will only have two head in the coming Shorthorn sale at Davis, which is to be regretted from the buyer's standpoint.

KEEP THE GOOD ONES BREEDING.

Among a herd of 36 breeding cows at the ranch of H. H. Gable, Esparto, the seventeen-year-old matron, Louise Alamo by Imported Lemster, stands out as one of those individuals which, if kept in a herd, is sure to make that herd noted for his or her particular type. Young breeders cannot too often be urged to retain such animals in their herds when discovered and not to part with them to make some other herd famous. This ability to quickly recognize such individuals is a sure indication of the successful breeder.

Mr. Gable, who is president of the Pacific Coast Hereford Breeders' Association, has found the demand for stock very heavy and is completely sold out, so he will have none in the Davis sale.

POLAND-CHINAS AT SUNNYSIDE.

Not much has been heard about R. F. Guerin of Sunnyside Ranch, Visalia, as a Poland-China breeder, but for about two years he has been quietly picking up some of the best things offered at different sales and developing a high-class herd to carry in connection with his Holsteins.

At the recent Kings county sale Mr. Guerin and his wife each made a good buy. Mrs. Guerin was the successful bidder on the "Ladies' Special," one of William Bernstein's consignment, and Mr. Guerin picked up Ideal Bessie and Reggie's Girl, two crackerjacks from the H. D. McCune consignment.

Mr. Guerin believes in grinding all feed for his hogs, as well as his cows, and from records obtained from him the results seem to justify the practice. Mr. Guerin expects to improve his equipment for handling pure-bred swine and to go into the game on a larger scale.

McCUNE RAISING TOPPY POLANDS.

When it comes to raising a profitable litter of pigs, H. D. McCune, Lemoore, thinks that the litter sired by Young Jumbo and raised by his sow Rosebud Quality 1st shows up pretty well. Two were sold at weaning time for $50 each and four others sold for $115, $150, $190 and $205 respectively at the recent Kings county sale. Two are still retained in the McCune herd at a conservative valuation of $250 each, so this makes a grand total of $1,260 for the litter of eight.

Mr. McCune made the second highest average—$237.37 per head—at the recent Kings county sale, with nine head consigned. This is a mighty good showing for a man comparatively new at the game, but Mr. McCune is an excellent feeder and caretaker and keeps his stock in fine condition. They are always contented and have to be driven out of comfortable positions in order to be shown.

Too many new breeders expect the breed to do it all. They feed lightly and on the approach of anyone their pigs will come running toward their feeding place, like Oliver Twist, plainly calling for "more." If it does not seem possible to supply them with grain enough to keep them growing and contented, some supplemental cheap feed, or pasture, must be provided, or success will not be attained. Mr. McCune feeds his hogs a slop of four parts ground barley, two parts Suremilk and one part tankage. The brood sows get good pasture and the growing pigs have access to self-feeders containing ground barley.

FARM BUREAU SALES FAVORED.

Farm Bureau auction sales are considered a wonderful success by H. E. McMahon, Lemoore, whose ranch is one mile east of Stratford, and he will be greatly disappointed if the Federal Government does not continue appropriations making it profitable for such methods of marketing hogs to go on. Mr. McMahon is a comparatively new breeder of registered Poland-Chinas, but he has an excellent start with eight good gilts just commencing to farrow. He pastures his brood sows on alfalfa and finds a ration of rolled milo, skimmilk and one-fourth pound tankage per head daily a good one. He is careful not to feed enough tankage to cause scouring.

SPEED IN DEVELOPING A RANCH.

From all indications one of the coming livestock and fruit ranches of the Hanford section is that of the Hanford Ice Company, managed by George C. Adyelott.

Four years ago there was not a fruit tree nor a purebred herd of livestock on the 600 acres now being developed. Mr. Adyelott has already set out over 200 acres of peaches, markets 400 to 500 high-grade Duroc hogs annually, has 15 purebred Duroc sows to farrow this spring, milks two strings of cows of which about 12 are registered Holsteins, and besides has quite an acre in alfalfa.

Just as soon as time will permit, Mr. Adyelott intends to get into the purebred livestock game in earnest and he is liable to freeze someone out when he does, as he has a whole refrigeration plant to do it with.

HOGS RAISED BY THE BEST OF MEN.

The raising of registered Poland-Chinas is becoming so popular in Hanford that many business and professional men are getting into the game. Of course, we all know that Will Bernstein, the popular baker and confectioner, long ago fell before the allurements of raising purebred swine and has become one of the most prominent breeders in the State. Dr. Crawshaw, among the physicians, also has some of the "American Beauties," and among the latest converts is Attorney Harry P. Brown, who recently purchased 10 beautiful bred Poland-China gilts and a boar from M. Bassett & Son, and has them nicely housed on his home ranch west of Hanford.

Mr. Brown has raised market hogs for some time, but just "hog" did not appeal to him when he could raise the real thing in the shape of registered Poland-Chinas. He does not know how extensively he will engage in the business, but two of the gilts have already farrowed fine, healthy litters, and as the location is ideal we may prophesy a good business along these lines and not go far wrong. While Mr. Brown intimates that the hog raising is simply incidental, it is not as though he knew nothing about it, as his experience and observation with market hogs will not allow things to go far wrong.

R. C. Sturgeon, Tulare, reports recent sales of Holstein bulls to W. B. Stitt, Tulare, and W. H. Neese, Lindsay.

Count Glory Takes the Count

Count Glory, the undefeated Shorthorn bull, owned by W. M. Carruthers, Live Oak, is no more. Evidently something became lodged in his throat and in coughing to extricate it he broke a blood vessel, which resulted in his untimely death.

Count Glory was sired by Count Avon, he by Avondale, he by Whitehall Sultan—all international grand champions. His dam was by Imp. Red Knight. He began his show ring career at Ames, Iowa, where as a calf he defeated his sire. In California he was grand champion at the State Fair three years in succession, the last time being in 1918, after which he was retired.

The death of Count Glory means a loss not only to Mr. Carruthers but to the State and to the Shorthorn breed. He was only four years old and many more years of service were expected from him. However, Mr. Carruthers has 30 cows in calf by him, also two corking good bull calves sired by him—one out of a Mayflower cow, the other out of an Avondale cow. Both will be kept and developed as successors to their illustrious sire and to assist Hallwood Villager, the noted white Shorthorn bull, who now becomes senior herd sire at Carruthers Farms.

Official Grading of Range Bulls

J. A. Bunting, the Hereford breeder of Mission San Jose, sends us a statement regarding the law in Idaho, which requires a registered bull with every 25 cows turned on the range, and stockmen cannot get on the Government reserves without complying. This, of course, means better bulls and better cattle as a whole, and while most range men are buying good bulls some are put on the ranges that really have nothing to their credit except their papers. It is apparent that some Western breeders look to the range as a dumping place for their culls. They seem to classify their registered bulls into three classes—herd headers, farm bulls and range bulls—the latter being no better than culls.

An Idaho breeder makes a suggestion which Mr. Bunting would like to see adopted in this State—making compulsory an official grading of bulls, the State to have a competent judge to pass upon all bulls and give each one a rating. There would be three grades, the first scoring from 95 to 100 points, the second from 85 to 94, and the third from 75 to 84, thus castrating all bulls scoring under 75 points. The bulls that could not make the lowest rating should not be eligible to registration and certificates of inspection should accompany all applications for registration. The bulls should be passed upon when four or five months old and the breeders should pay a fee for every one inspected.

If this were done, a buyer would be able to get a pretty good line on animals offered by mail, saving traveling expense and mail order disappointments and resulting in greater satisfaction to all concerned. How would the plan work out?

EWES MUST HAVE EXERCISE.

[Written for Pacific Rural Press by E. O. Amundsen, Farm Advisor, Placer County.]

An experience with sheep during February may be of value to other sheepmen of the State.

A number of ewes, heavy with lamb, became sick and a few died. Those carrying twins seemed to be more generally affected than others.

They staggered, then would stand listlessly, with a glassy stare in the eyes, eat very sparingly or not at all, and finally die within a few days. The symptoms somewhat resembled vegetable poisoning, but no suspicious plants could be found in the hay or pasture. Also, the only ones affected were heavy ewes. They were well fed and cared for—in fact, exceptionally so.

There seemed to be no question but that these were cases of parturient paralysis, which has been found in other States and even in Australia.

Well-fed ewes are, in all instances, the affected members of flocks. Lack of exercise is given as the primary cause. Investigations showed that on farms where the ewes had to rustle for a portion of their feed and in so doing secured exercise, were entirely unaffected, while on adjoining farms, with the same kind of pasture, but where ewes had been fed well, there were cases of paralysis.

Of course, it is not to be inferred that ewes should be starved, but they should be made to take exercise and this is best accomplished by making them rustle for some of the feed.

On account of the recent drop in price of butterfat, many high-grade dairy cows were shipped from Tipton to Los Angeles. It was reported that buyers were paying better than $100 each.

FOR SALE

600 Hampshire 300 French Merino EWES

With 100% Lambs. Large, prolific sheep, well adapted to range hardships. Write or call for full particulars.

W. F. Rominger

Phone 55 F 22 Woodland

CAPAY, - - CALIFORNIA

Red Polled Cattle

15 head fine, purebred bulls and 10 heifers, 8 to 12 months of age. For further information address:

F. A. MECHAM ESTATE,

Petaluma, Cal.

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Purebred Stock Sales a Specialty

Sales Conducted in All Parts of California.

Ben A. Rhoades, Auctioneer

1501-3-5 So. Main St., Los Angeles, Cal

Allied Horses Clipped

Horses of Allied Armies were clipped regularly. Army veterinarians knew that clipped horses were much less liable to sickness—did better work and gave longer service. The machine adopted was the Stewart Ball Bearing No. 1. The Stewart lasts a lifetime and costs only $9.75. Send $2.00—pay balance on arrival Or write for new 1919 catalog.

CHICAGO FLEXIBLE SHAFT COMPANY
Dept. A 103, 12th St. & Central Ave., Chicago, Ill.

Pacific Coast Hereford Breeders'

SECOND SALE



University Farm, Davis, Calif.

Wednesday, April 9, 1919

Drafts from leading Pacific Coast Hereford herds in this sale will afford buyers an opportunity to secure the seed of some of the best families of the breed.

Why not buy a good registered heifer or cow in this sale and make the beginning of a purebred registered herd? Some of the most famous and successful breeding herds have been founded on just such beginnings.

If you want to buy a good-sized herd of registered females of foundation breeding quality you can find them in this sale, and there are bulls fit to mate with them.

A choice selection of bulls especially qualified for range service will also be found in the sale, good growthy fellows of the type and breeding that produce the heavy, quick-maturing kind of cattle.

Catalog of sale free on request. Please mention Pacific Rural Press.

Sale under auspices of

PACIFIC COAST HEREFORD CATTLE BREEDERS' ASSOCIATION

W. R. Madden, Secretary, Dixon, Cal. H. H. Gable, President, Esparto, Cal.

Auctioneers
Col. Fred Reppert, Decatur, Ind.
Col. Ben A. Rhoades, Los Angeles

Management
CALIFORNIA BREEDERS SALES & PEDIGREE CO.
C. L. Hughes, Sales Manager, Sacramento, Cal.

BRIGHTON FARM SHORTHORNS

One three-year-old bull bred by H. R. Clay.

Three outstanding under-a-year bulls sired by Sir Type, a son of Cumberlands Type. A few under-a-year heifers of same breeding.
Also registered Berkshires of both sexes of best breeding.

H. L. & E. H. MURPHY Perkins, Sacramento Co., Cal.

Second Spring Sale of Shorthorns

Under Auspices of California Shorthorn Breeders' Association

At University Farm, Davis, Calif., on

TUESDAY, APRIL 8, 1919, at 1:30 P. M.

50 Head of Shorthorns, comprising 25 head Cows and Heifers, and 25 Bulls. An opportunity is afforded of securing foundation and breeding stock of exceptional quality. For catalogue apply to

California Shorthorn Breeders' Association

320 SHARON BUILDING, SAN FRANCISCO, CALIF.

Auctioneer FRED REPPERT, of Decatur, Indiana

LIVESTOCK DIRECTORY.

Rate in this directory 3c per word each issue.

SWINE.

Berkshires.

CASTLEVIEW GIANT TYPE BERKSHIRES are the thrifty, typey, quick-growing kind that will make larger profits for you. Prizes and Championship honors are awarded—by the greatest judges in America—only to animals possessing the essential qualities for economical meat production, viz: heavy bone, good feet, broad strong backs, large hams and easy feeding qualities. Our grand champion herd includes Riverby Princess, grand champion sow of the world; Rockwood Lady 100th, 1917 grand champion of America; Mayfield Laurel 15th, 1917 grand champion of California. Bred sows, bred gilts and fine weaned pigs for sale.
Castleview Ranch, Santa Rosa, Cal.

ANCHORAGE FARM.

MONEY-MAKING BERKSHIRES—The prolific, easy-feeding kind that make the highest priced pork from the lowest priced feed. They will increase your profits. Prices reasonable; satisfaction guaranteed. Write for free booklet, describing our worlds reserve champion, STAR LEADER. We are now making a special offering of bred sows and gilts.
Anchorage Farm, Orland, Cal.

$35.00—$35.00—$50.00
BARON DUKE 201ST
Omaha Grand National Champion
BOAR PIGS: 3, 5, and 6 months old, from 650 pound prize-winning sows. We will sell nothing that we wouldnt use ourselves.
SANDERCOCK LAND CO.,
906 K St., Sacramento.
In charge of Natomas Land sales.

GRAPEWILD FARMS BERKSHIRES
A few spring boars and fall pigs by Big Leader, Grapewild Farm Leader and Majestic King.
A. B. Humphrey, Prop., Escalon, Cal.

CROLEY'S BALANCED HOG FEED—The cheapest feed to fatten hogs. Write Geo. H. Croley Co., Inc., Livestock Supplies, 8th and Townsend streets, San Francisco.

BERKSHIRES bred at Imperial Stock Farm are the kind that satisfy. Write us or call and be convinced. R. J. Merrill & Son, Morgan Hill, Cal.

BERKSHIRES IN PERRIS — They make money for me. Write for catalogue and prices. F. L. Hall, Perris, Cal.

BERKSHIRES—Sired by Star Leader, the $1500 boar. Kounias Registered Stock Farm, Modesto.

BERKSHIRES by Ringleader 20th, greatest son of Grand Leader 2nd. Geo. M. York, Modesto.

FOR REAL GOOD BERKSHIRES write Frank B. Anderson, B 724W., Sacramento, Cal.

CARRUTHERS FARMS BERKSHIRES — Cholera immune. Live Oak, Cal.

REGISTERED BERKSHIRES—Write R. D. Hume, Dos Palos, Cal.

BERKSHIRES—Fair Oaks Ranch, Willits, California.

Poland-Chinas.

SOW BARGAINS—We are offering some exceptionally nice tried sows, bred and open gilts, at attractive prices. They are all sired by the undefeated and world's grand champion Superba and out of big type sows, which cost me $200 and over. Investigate before buying elsewhere. Rough's Greenfields, Arlington Station, Riverside, Cal.

ELDERSLY FARM—We are offering some excellent tops from our fall and spring pigs at attractive prices, sired by one of America's best-bred boars, Big Black Bone Wonder, with grand championship breeding on both sides. He is a real 1000-lb. boar. J. H. Ware, Live Oak, Cal.

NOW BOOKING ORDERS for spring pigs, either sex, from my prize-winning, large type Poland-China hogs. Also will book a few orders for bred gilts, February and March farrow, and a few good, serviceable, aged boars. Hale I. Marsh, Modesto, Cal.

THE BEST IN THE WEST — California Gerstdale and President's Equal are my herd sires. Fall and spring boars now ready to move—each one a corker. Dr. J. A. Crawshaw, Hanford, Cal.

BARGAINS IN POLAND-CHINA SOWS—All immune. Good mothers and prolific. Registered stock. Also boars. Write for details. N. C. Hansen, Coachella, Cal.

BOOKING ORDERS for spring pigs, sired by "Bob Big Boie" 281289, litter brother of the Junior Champion at Sacramento, 1918. P. E. Mitchell, Atwater, Cal.

WEANLING PIGS, both sexes, Gerstdale Jones and Caldwell's Big Bob blood lines. Booking orders for spring. Forest View Ranch, Paradise, Cal.

OXBONE HERD offers March boars for sale from King's Big Bone Leader, grand champion at State Fair, 1918. Write F. E. Fay, Tipton, Cal.

BEST POLAND-CHINA BLOOD from hog belt. Immuned September pigs. Line bred Big Bob March pigs. R. W. Jickling, Elmira.

WAUKEEN HERD POLAND-CHINAS—Big type herd boar, the $700 Grand Champion of California. Les McCracken, Prop., Ripon, Cal.

40 SOWS and daughters of Big Bone Bob and I B A Wonder sows for sale. Price right. N. K. Horan, Lockeford, Cal.

POLAND-CHINA GILTS — Four months, $25.00. Registered and vaccinated. Edward A. Hall, Rt. 1, Box 39, Watsonville, Cal.

BIG TYPE POLAND-CHINAS—Stock from the best herds of the Middle West. N. Hauck, Alton, Humboldt county, Cal.

WANTED — Thoroughbred Poland-China sows or gilts due to farrow in April. Address, Bert Pomeroy, Oakdale, Cal.

20 HEAD of Big Bone Bob, Grand Model and I B A Wonder Stock for sale. J. W. Wakefield, Acampo, Cal.

LAKE SIDE STOCK FARM—Large, smooth and big boned Poland-Chinas. Geo. V. Beckman & Sons, Lodi, Cal.

REGISTERED POLAND-CHINA SWINE—Prize winners. Finest stock in the State. M. Bassett, Hanford, Cal.

POLAND-CHINAS—Quality and bone our hobby. Fall boars for sale. H. D. McCune, Lemoore, Cal.

FOR SALE — POLAND-CHINAS—June gilts sired by A. Price. Write W. S. Adams, Gridley, Cal.

BIG-BONED POLAND-CHINAS—From Eastern prize-winners. D. H. Forney, Route G, Fresno.

POLAND-CHINA PIGS WITH RIBBONS—Prices right. Johnnie Glusing, Winton, Cal.

POLAND-CHINA PIGS — Bernstein, Trewhitt, and Ross blood. B. M. Hargis, Tulare.

POLAND-CHINAS—A few young service boars for sale. R. F. Guerin, Visalia, Cal.

REAOAKS RANCH herd of registered Poland-Chinas. W. J. Hanna, Gilroy.

BIG-BONED POLAND-CHINAS — Stock for sale. E. S. Myers, Riverdale, Cal.

POLAND-CHINAS—Young stock for sale. H. E. McMahan, Lemoore, Cal.

Chester Whites.

BILLIKEN CHESTER WHITES—One yearling boar for sale; everything else sold. Will book orders now for spring pigs. C. B. Cunningham, Mills, Cal.

PUREBRED CHESTER WHITES — August boars. Prices moderate. Cedarhurst Ranches, Route 2, Sacramento.

Duroc-Jerseys.

LIBERTY RANCH SERVICE BOAR—An outstanding youngster, farrowed August 26, sired by Cherry Volunteer, second grand champion Riverside Fair; dam by Arion Cherry King 5th. Weighed 177 lbs. at 5½ months; 49 in long, 28 in. high, 10 in. bone. Great stretch, strong back, good feet. To avoid inbreeding will sell right, or exchange for boar equally good. L. W. Serrell, Route 2, Box 32, Van Nuys.

DUROC-JERSEYS AT IRELAND—Weaned pigs from December and January litters for sale now at $25.00. Either boars or gilts. A limited number available. Mail orders filled in order of priority. Ranch at Owensmouth. City office, 1219 Brockman Building, Los Angeles.

WE WON MORE MONEY on Durocs at the State Fair than any other exhibitor. Why not buy some of this winning stock? June Acres Stock Farm, Davis, Cal.

DUROC-JERSEYS — Burke's Good Enuff, Golden Model, King's Colonel and Pathfinder blood. Derryfield Farm, National Bank Building, Sacramento.

DUROC WEANLINGS for the farmer. Easy feeders; 200 lbs. at seven months. W. W. Everett, River Bend Farm, St. Helena, Cal.

A FEW CHOICE BRED GILTS, spring boars and gilts of the best blood lines. H. P. Slocum & Sons, Willows.

BOUDIER DUROCS all sold out, excepting some sow pigs weighing 100 lbs. apiece. H. E. Boudier, Napa.

HEAVY-BONED DUROCS — A few service boars for sale. Ormondale Co., Route 1, Redwood City, Cal.

REGISTERED DUROCS — All from prize-winning stock. W. P. Harkey, Gridley, Cal.

DUROC-JERSEYS—October pigs, $15.00 to $25.00. Jack London Ranch, Glen Ellen.

REGISTERED DUROC-JERSEY GILTS for sale. D. Fricot, Angels Camp, Cal.

REGISTERED DUROCS—Stock for sale. W. J. Fulgham & Sons, Visalia, Cal.

YORKSHIRES.

LLOYTON HERD REGISTERED YORKSHIRES—Bred gilts and pigs from eight weeks up. Lloyd & Tointon, Llano Road, Santa Rosa, Cal.

Hampshires.

REGISTERED HAMPSHIRES—Fine quality. Two open gilts. Now booking orders for weanling pigs for April. Our 28-months-old herd boar being related to our young sows, will sacrifice at 15c. lb. Tom M. Bodger, Gardena, Cal.

MY HAMPSHIRES are money makers. Stock for sale. Buy now. L. A. Denker, Saugus, Cal.

HAMPSHIRE SWINE — Young stock for sale. Ira Hart, Dos Palos, Cal.

Miscellaneous.

O. I. C. BREEDERS' NOTICE—I will sell Ohio Boy, two-year-old imported boar; none better. Also boar pigs ready for spring breeding (sire Ohio Boy, dam Toddler's Beauty, imported). Write for full information. Jas. Little, Wasco, Cal.

LARGE YORKSHIRES—The ideal hog for the progressive farmer. Young stock for sale. A. L. Tubbs Co., Calistoga, Cal.

MULE-FOOT HOGS — Large type. H. T. Bailey, P. O. Box 37, Lodi, California. "The Blue Gums."

DAIRY CATTLE.

Holsteins.

A PRICE ON EVERY ANIMAL.
Herd free from tuberculosis. All sales subject to sixty days' retest. Sons of **Finderne Soldene Valdessa,** whose dam is not only a world record cow in seven-day division, but has two sisters holding world's records for yearly production.
Toyon Farms Association.
679 Mills Building. San Francisco.

HOLSTEIN HEIFERS—For sale, 20 high grade heifers, 1½ to 2 years old. Well marked, fine condition. Part of them bred to freshen this fall to Buttercup bull. C. L. Knestice, Rt. A, Box 236, Reedley, Cal.

HIGH-CLASS HOLSTEINS—I have for sale some sons of Sir Veeman Korndyke Pontiac from A. R. O. dams. Write for particulars or come see them. R. F. Guerin, Visalia, Cal.

SUNNYBROOK RANCH, WILLITS, CAL.—Young registered Holstein bulls. Also 12 head grade Holstein heifers and cows, nicely marked and well bred.

F. H. STENZEL, SAN LORENZO, CAL.—Breeder of Registered Holsteins. High test producers.

REGISTERED HOLSTEINS—A. W. Morris & Sons Corp., Importers and Breeders, Woodland, Cal.

REGISTERED HOLSTEINS — Best blood lines of the breed. R. L. Holmes, Modesto, Cal.

FANCY GRADE HOLSTEIN COWS and heifers from herd testing 100 per cent. Animals qualified for certified dairies. The Lewis Company, San Jose.

PALO ALTO STOCK FARM, Palo Alto, breeders of registered Holsteins. Heifers and service bulls. Reasonable prices.

CREAMCUP HERD — Registered Holsteins, Pontiac bull calves. M. Holdridge, Rt. A, Box 437, San Jose, Cal.

REGISTERED HOLSTEIN BULLS with world's record backing. Kounias' Registered Stock Farm, Modesto.

BREEDERS OF REGISTERED HOLSTEIN cattle and Berkshire pigs. Whittier State School, Whittier, Cal.

GOTSHALL & MAGRUDER — Breeders of registered Holstein-Friesians. Ripon, Cal.

CHOICE HOLSTEIN bulls for sale. No females. Millbrae Dairy, Millbrae, Cal.

BREEDERS OF REGISTERED HOLSTEIN cattle. McAllister & Sons, China, Cal.

HOLSTEIN BULLS and bull calves from A. R. O. cows. C. A. Miller, Ripon.

REGISTERED HOLSTEIN CATTLE—E. E. Freeman, Route B, Modesto, Cal.

HENGERVELD DE KOL BLOOD. High producers. T. B. King, Visalia.

EL DORADO HERD OF HOLSTEINS — Alex. Whaley, Tulare, Cal.

Jerseys.

SUNSHINE FARM JERSEYS — Tuberculin tested. Production counts. E. E. Greenough, Merced.

YOUNG BULLS from Register of Merit cows. W. G. Gurnett, Orland, Cal.

Guernseys.

GRAPEWILD FARMS GUERNSEYS.
A 21-months-old bull out of dam with record of 615 pounds in A. A. class, and a few young bulls up to 1 year of age.
A. B. Humphrey, Escalon, Cal.

HIDDEN VALLEY FARM offers for sale 2 young Guernsey bulls, ready for service, out of high record advanced register dams. A. J. Welch, proprietor, Redwood City.

EDGEMOOR FARM GUERNSEYS — First in the show ring and in official records. Few animals of either sex for sale. Edgemoor Farm, Santee, Cal.

PALO ALTO STOCK FARM, Palo Alto—Breeders of registered Guernseys; both sexes; prices reasonable.

Ayrshires.

NORABEL FARM AYRSHIRES—Purebred young stock for sale at reasonable prices. Le Baron Estate Company, Valley Ford, Cal.

ELKHORN FARM AYRSHIRES — Choice young bulls at reasonable prices. J. H. Meyer, 440 Montgomery St., San Francisco, Cal.

AYRSHIRES — Registered; all ages. E. B. McFarland, 412 Claus Spreckles Building, San Francisco.

MILKING SHORTHORNS.

BREEDERS OF REGISTERED SHORTHORNS—Milk strain; choice young stock for sale. John Lynch Ranch, Box 321, Petaluma.

INNISFAIL DAIRY SHORTHORNS—Registered young bulls for sale. Alexander & Kellogg, Suisun, Cal.

BEEF CATTLE.

AM A SPECIALIST in registered beef cattle and familiar with the best herds in the country. If you need Shorthorns or Herefords make use of my experience, save money and be satisfied. R. M. Dunlap, Hotel Land, Sacramento.

HOPLAND STOCK FARM—Registered Shorthorns. Prices on application. Hopland, Cal.

RANCHO SAN JULIAN SHORTHORNS—Purebred range bulls, unregistered, for sale. Estate Thos. B. Dibblee, Santa Barbara or Lompoc, Cal. John Troup, Supt.

ALAMO HERD REGISTERED HEREFORDS (founded by Governor Sparks). Herd and range bulls. Reasonable prices. W. D. Duke, Likely, Modoc county, Cal.

REGISTERED YEARLING SHORTHORN BULLS — Heavy-boned, thick-meated, Scotch and Scotch-topped breeding. Ormondale Co., Route 1, Redwood City, Cal.

REGISTERED MILK AND BEEF SHORTHORNS, bulls and heifers for sale; catalogue free. Thomas Harrison, Santa Rosa Stock Farm, Santa Rosa, Cal.

HEREFORDS—Sierra Vista Herd, Minturn, California. Over one hundred registered animals. Fairfax and Repeater bulls head the herd. On highway.

THE NEVADA HEREFORD RANCH, Jno. H. Cazier & Son Co., props., Wells, Nevada. Registered Hereford cattle. Breeding stock for sale.

REGISTERED SHORTHORNS—A few choice young bulls, grandsons of Fair Knight. Prices reasonable. Fair Oaks Ranch, Willits, Cal.

JACK LONDON RANCH—Breeders of prize-winning beef Shorthorns. Glenn Ellen, Cal. Eliza Shepard, Supt.

REGISTERED HEREFORDS—H. H. Gable, Diamond G Ranch, Esparto, Cal.

SIMON NEWMAN CO., breeders of Registered Herefords, Newman, Cal.

GEORGE CALLAHAN, Breeder of registered Herefords, Milton, Cal.

GEORGE WATTERSON—Breeder Registered Herefords, Bishop, Cal.

HEREFORDS—Mission Hereford Farm, Mission, San Jose, Cal.

SHORTHORNS — Carruthers Farms, Live Oak, Cal.

SHEEP AND GOATS.

F. A. MECHAM ESTATE, Petaluma, Cal.—Breeders and importers of Shropshire, Rambouillets and American Merinos, both sexes. Also Red Polled cattle. Take electric car at Petaluma or Santa Rosa for Live Oak Ranch.

SHROPSHIRES FOR SALE—Ewe lambs and matured bucks from Iowa. Non-related. O. J. L. Stonebraker, Route A, Chico, Cal.

DORSETS AND ROMNEYS — Dorset ram lambs for sale. John E. Marble, South Pasadena, Cal.

BISHOP BROS., SAN RAMON, CAL. — Breeders and importers of Shropshires.

KAUPKE BROS., WOODLAND, CAL. — Breeders, importers of Hampshire sheep.

CHAS. KIMBLE—Breeder and importer of Rambouillets, Hanford, Cal.

CALLA GROVE FARM, MANTECA, CAL.—Breeders and importers of Hampshire sheep.

MISCELLANEOUS.

BUTTE CITY RANCH—Shorthorns, Shropshires, Berkshires and Shetland ponies. Write for prices and descriptions before buying. Butte City Ranch, Box P, Butte City, Glenn county, Cal. W. T. Dwyer and W. S. Guilford, owners.

CROLEY'S BALANCED DAIRY FEED—The cheap milk producer; and Croley's Calf Meal, the best California calf raiser. Geo. H. Croley Co., Inc., Eighth and Townsend streets, San Francisco, Cal.

WANTED—10 dairy cows. Give price, age, milk production, butter fat test and date last calving, and description in first letter. Address, H. C. Gomes, R. F. D. 120, Concord, Cal.

REGISTERED HOLSTEINS and Duroc-Jerseys. Sturgeon Stock Ranch, Tulare, Cal.

Livestock and Dairy Notes

Livestock breeders all over the State are invited to send on postal cards, notes regarding their sales, State and County Fair intentions, new stock, etc.

Livestock Sale Dates

March 15 and 16—Reno Livestock Co., Reno, Nev. Herefords and Shorthorns.

March 17—Lodge von Heim herd, Kent, Wash. Holsteins.

March 18—Garden City Sanitarium, San Jose. Duroc-Jerseys.

March 18—Sutter & Schelbert, Modesto. Holsteins and Durhams.

March 27—Guaranty consignment sale, Sacramento. Holsteins.

April 2—E. R. Putz, Laton. Holsteins.

April 3—Walter F. Mitchell, Visalia. Holsteins.

April 8—California Shorthorn Breeders' Association, Davis. Shorthorns.

April 9—Pacific Coast Hereford Breeders' Association, Davis. Herefords.

Jane Garden Farm, Sacramento, has sold a son of Spring Farm King Pontiac to L. W. Hutchins, Turlock, and a young bull to W. Hensdale, Clarksburg.

Raphaella Johanna Aaggie, the official world record milk cow in the Napa State Hospital herd, has dropped a fine bull calf sired by King Morco Alcartra, son of Tilly Alcartra.

W. J. Higdon, Tulare, has sold to George Beck & Son, Tulare, a son of Prince Riverside Walker and the record cow, Hertinga Willis, who recently produced 1039 pounds butter from 23,960 pounds milk in one year. Also another son of the same bull was sold to C. H. Robertson, Tulare.

Orange county is establishing a herd of registered Holsteins, believing that the presence of such cattle will prove an incentive to dairymen to improve their herds. A bull, three cows and a calf were recently purchased in Arizona and are now on the county farm at West Orange.

J. R. Coon of Modesto has sold a bull calf twelve hours old to George Kounias, also of Modesto, for $200. This calf is from Florence Nightingale De Kol, sired by King Korndyke Hengerveld Ormsby.

The regular annual meeting of the Orland Jersey Cattle Club will be held at the I. O. O. F. Hall, Orland, Wednesday evening, March 26. The program will consist of election of officers, an address by the representatives of the American Jersey Cattle Club, a banquet and after-dinner speeches.

R. C. Sturgeon, Tulare, is greatly pleased with the seven-day record recently made by his Holstein heifer, Buena Alta Aaggie Ormsby. She had no preparation for the test and was not in particularly high condition, yet at two years and six days she produced 19.13 pounds butter from 411.03 pounds milk, with an average butterfat test of 3.7 per cent. This record was made at Mr. Higdon's Tulare Holstein Farm, and the heifer was handled by W. H. Redd, herdsman. Mr. Sturgeon is preparing six other cows and heifers to go on test and expects that all will make creditable A. R. O. records.

S. A. W. Carver of the Crescent Creamery Company, Los Angeles, recently pleaded guilty to a charge of selling artificially compounded milk and was sentenced to 50 days in jail. Notice of appeal was immediately

(Continued on page 424)

CALIFORNIA "BREED PROMOTION" SALES





POLLED HEREFORDS

State Fair Grounds, Sacramento, Cal., Thursday, April 10, '19, at 9 a.m.

25--Head Outstanding Individuals--25

Some Wonderfully Attractive Heifers - A Great Line Up of Young Bulls

Purely a "breed promotion" enterprise. About 20 of the most enthusiastic boosters of Polled Herefords in the United States have contributed twenty-five head of strictly high-class cattle to make the first sale of the breed ever held west of the Rocky Mountains. Each contributor has done his best to have a better animal in this sale than any of his fellow breeders. Cattle have gone here that could not have been bought at any price within reason at private treaty, but for the advancement of the interests of Polled Herefords in new territory they are consigned to this sale. "Strictly Choice" has been the requirement and nothing that will not be a real advertisement for the breed has been accepted.

California and other Western breeders will have rare opportunity to buy at their own door and at their own price very choice specimens of the breed. Every precaution has been taken by the association to see that the sale shall be so made up and so conducted as to result in future demand for hornless Herefords from the coast states.

Buyers unable to attend in person can safely send mail bids for anything in the offering. Nearly all these cattle are yearlings or just past two years old. They will stand the change in good shape and quickly become acclimated. They have their whole useful lifetime before them. They are old enough to show promise of what they will eventually develop into. Many of the yearlings can be shipped in crates by express if necessary and thus save time and money in getting them home.

SPECIAL NOTICE.—Because of the importance of beginners getting started right and recognizing that most of the buyers will be establishing new herds, we have arranged for the presence of Mr. John Letham (dean of Hereford judges and newspaper men), to be at this sale to assist buyers in selecting cattle and appraising pedigrees. Mr. Letham is doubtless the best known breeder, feeder, fitter, and judge of Hereford cattle in America. He is everywhere recognized as a student of pedigrees and his services are always in demand wherever Herefords are known. Californians should avail themselves of this unusual privilege of getting the judgment of this man without cost. If you cannot attend, send your bids to Mr. Letham. If you do attend, get him to assist you in choosing. He knows cattle, pedigrees, and values as well, if not better than any man in the country, and his services are absolutely free.

WRITE TODAY FOR CATALOG AND PARTICULARS. THE TIME IS SHORT.

Col. Fred Reppert, Auctioneer.
H. L. Schooley, in charge.

Jno. Letham, Special Representative.
B. O. Gammon, Clerk.

SALE HEADQUARTERS, SACRAMENTO HOTEL, SACRAMENTO, CALIF.

Address mail there for any of the above named parties.

AMERICAN POLLED HEREFORD BREEDERS' ASSOCIATION

B. O. Gammon, Secy.
Des Moines, Iowa.

After March 25th, address inquiries and requests for catalogs to Pacific Rural Press, 525 Market St., San Francisco.

LIVESTOCK AND DAIRY NOTES.

(Continued from page 422)

filed. Mr. Carver claimed that his company did not adulterate milk, but to tide over a shortage milk was manufactured from pure milk powder and cream—a product known as reassembled milk.

The world's one-day record for milk production has just been broken by a Minnesota cow in the herd of W. S. Moscrip of Lake Elmo, who produced 156 pounds.

Milking Shorthorn breeders are becoming more numerous every month. Thos. Harrison of Santa Rosa informs us that 23 breeders have recently been added to the ranks.

George Kounias, Modesto, has made sales recently to J. R. Coon of Modesto, E. Peterposten of Hughson, J. T. Stahamajhan of Turlock, E. J. Wheeler of Hughson, J. A. Kirk of Oakdale and John Nunes of Crows Landing.

F. W. Elleby, the Jersey breeder of Modesto, whose sale of five cows to the Hearst estate was recently reported in these columns, has purchased five registered Jersey cows and heifers and the four-year-old bull, Wildwood Critic, from David Larson, Stevinson.

A co-operative dairy association with a capital of $50,000 has been formed at Durham. Purebred Holstein cattle will be purchased. When there is a sufficient number of cows it is planned to have a cooling and bottling plant for the handling of a big retail milk business. The milk will be delivered by truck to Chico, where there is said to be a fine market because of insufficient dairies.

Beef Cattle.

The Sierra Vista Vineyard Company, Minturn, reports the following recent sales of registered Herefords: Three eighteen-months-old bulls to Cutler Bros., Visalia; two bulls of the same age to George C. Stockfleth, Clayton.

W. R. Madden, secretary of the Pacific Coast Hereford Breeders' Association, reports that the entry list for the annual sale to be held at the University Farm, Davis, April 9, shows that 80 head will be offered, consisting of 55 females and 25 bulls.

In last week's issue we stated that the Pacheco Cattle Company, Hollister, would have 50 Hereford calves from their senior herd bull, Truedale, but we should have stated heifer calves. Of course it is well known that this concern raises Shorthorns and that the bull Truedale is a truly representative animal of the Shorthorn breed.

A convention of the California Cattlemen's Association will be held at Davis, April 8 and 9, in conjunction with the annual sales of Herefords and Shorthorns. A barbecue luncheon will be served on both days. There will be delegates from all of the 49 counties where the industry is organized and special consideration will be given the marketing problem. A full list of the speakers and their subjects will be announced next week.

At the annual sale of the California Shorthorn Breeders' Association, to be held at Davis, April 8, one of the chief attractions will be the young bull California Model, consigned by the University Farm. This young bull is probably one of the best bred ever offered in California, being sired by Sultan Mayflower, the University herd sire, and out of Glenbrook's Marvel, a granddaughter of Whitehall Sultan. This cow produced California Favorite, grand champion at the 1916 International, and California Marvel, champion Shorthorn steer at the 1918 International—the latter being sired by Sultan Mayflower. In all, 60 head will be offered, consisting of 35 females and 25 bulls.

Swine and Swinemen.

John M. Bernstein, Hanford, reports that the sow he bought at the Gatewood sale farrowed a litter of seven very fine pigs.

J. E. Thorp, Lockeford, the well-known Duroc breeder, has decided to show nothing but stock of his own breeding at the State and county fairs next fall.

H. D. McCune, Lemoore, has recently sold 18 Poland-China pigs to as many members of the Lemoore and Stratford pig clubs. This speaks well for the quality of Mr. McCune's stock.

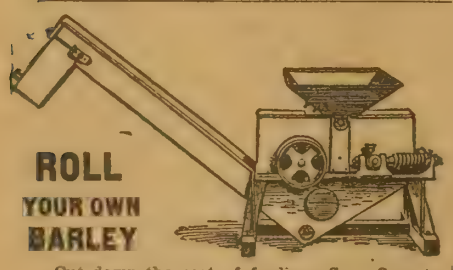
At a recent farm bureau auction sale of hogs at Visalia a top price of $15.40 was paid on 86 hogs averaging 203 pounds. There were over 50 consignors and the bidding was brisk.

In addition to the regular Poland-China futurity at the State Fair this year there will be a junior futurity for animals farrowed between March 1 and September 1, 1918. The list provides for six places and the first prize is $60.

Allen Thompson, Tulare, recently received a royally bred Duroc-Jersey sow from John C. Simon, Humboldt, Neb. This sow shows plenty of size, bone and quality and was bred to a son of Great Orion, the top pig at "Bill" Reed's sale.

H. N. Fowler, Wasco, has sold a yearling Berkshire sow to Patterson & Goodrich of Shafter for $125 and two weanling gilts for $60 each; also a weanling boar pig to Frank Sisler, Visalia. All were sired by Charmer Star Master.

Clayton N. Slocum of H. P. Slocum & Son, Willows, writes us that



ROLL YOUR OWN BARLEY

Cut down the cost of feeding. Save 3 cents per pound and the hauling. Do the work at your leisure. The No. 22 rolls 10 to 15 sacks with 3 to 4 H. P. engine. Other sizes to meet your requirements. Write for circular.

THOMAS R. BROWNE
Factory Representative. Stockton, Cal.

"E.C." INFALLIBLE



Peters HIGH GUN IDEAL PREMIER TARGET

Remington UMC ARROW NITRO CLUB

SELBY LOADS CHALLENGE GRADE SUPERIOR GRADE

U.S. BLACK SHELLS AJAX CLIMAX

Western FIELD RECORD

WINCHESTER REPEATER LEADER

Put It There

Into your favorite gun goes your favorite shell. Make sure that into your favorite shell has gone a Hercules Shokeless Shotgun Powder—either Infallible or "E. C."

These powders are the choice of many an old hand at the traps and in the field. They have won the confidence of these men on account of their unusually light recoil, high velocity, and even patterns, and uniformity in quality.

HERCULES
Smokeless Shotgun
POWDERS
INFALLIBLE "E.C."

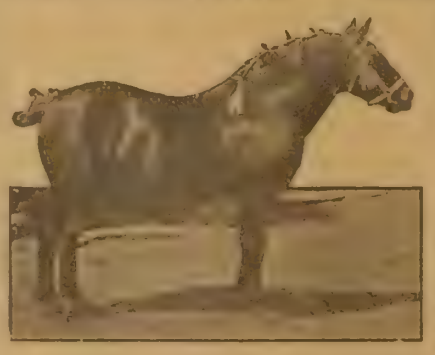
may be obtained in the fourteen different shells illustrated in the column to the left. Your favorite shell is certainly among these fourteen.

You can readily tell whether or not it contains Infallible or "E. C." On the outside of the box in which the shells are sold and on the top wad of the shell itself appears the name of the powder it contains.

Look for the name of a Hercules Powder. If you don't see it, ask for it. You can get it in the shell you shoot.

HERCULES POWDER CO.
1025 Chronicle Building
San Francisco California

Imported and American Bred
PERCHERONS - BELGIANS - SHIRES
Stallions



A Large Collection of Stallions ready for service this season.

Heavy boned, ton types, with plenty of style and action. Prize-winners and descendants of prize-winners. No better in America. State certificate of soundness and life insurance furnished with every horse. If your community is in need of a high-class stallion, come to Patterson, California, and see the largest and best collection in the West.

SPECIAL PRICES AND LIBERAL TERMS FOR THE NEXT SIXTY DAYS.
Visitors Welcome. Correspondence Invited.
N. W. THOMPSON, Patterson, California

Kings County Jack Ranch



The largest Jack and Mule farm on the Coast. The best selection. Can show you the heaviest, biggest boned animals you ever saw.
1100 to 1400 lbs. in weight.
Prices right.

Special Offer: 50 Young Mules

JOHN BURRELL, HANFORD, CAL.



Champion Ram. P P I E

SAN RAMON SHROPSHIRES
WINNINGS P. P. I. E., 1915
Aged Ram, First and Second. Yearling Ram First. Ram Lamb, First, Second, and Third Champion Ram. Yearling Ewe, Second Ewe Lamb, Second and Third. Get of sire, First Pen of three Lambs, bred by Exhibitor, First and Fourth Pen of Four Rams, bred by Exhibitor, First and Fourth. Flock, any age, Second. Flock, any age, bred by Exhibitor, Second. Flock, one year old, First. Flock, one year old, bred by Exhibitor, First. Flock under one year, First. Flock under one year, bred by Exhibitor, First. Produce of Ewe, First, Second and Third. Premier Championship for Breeder Premier Championship for Exhibitor A total, including American Shropshire Specials of 15 Firsts, 9 Seconds, and 6 Championships
Purebred Registered Rams and Ewes.
Individuals or Carload Lots
BISHOP BROS., Agents, SAN RAMON
Contra Costa County, California.

is on his way East after another
ad of bred sows, to be put in the
needa Glenn county herd of Du-
cs. He is going as far East as
ntucky to visit McKee Bros., and
en will make purchases in Central
raska.

George H. Barton has started a
land-China breeding establishment
Riverview Farms, Clements, and
s purchased a joint interest with
ung & Clark in the boar Bar-
n's Big Korver, sired by the East-
n boar Big Korver and out of
ooth Beauty, the grand champion
the 1918 State Fair.

Dr. L. J. Belknap, whose Duroc-
rsey sale will take place at San
se, March 18, at 1 p. m., writes
that no other herd of its size on
e Coast has such gilt-edge stuff as
ll be offered at this sale, and his
im seems to be substantiated by
e fact that there is already a bid
$2050 on two of the good animals
$1,025 each.

J. H. Cook, Forest View Farm,
radise, has recently been dis-
arged from the army. He had
nted his farm and expected to go
France, but is getting back into
e Poland-China game again and
determined to make a great name
r his herd boar, Cook's Hancher-
le Jones. At the Gatewood sale he
ught four Blue Valley Tecumseh
ws.

W. Bernstein, Hanford, has se-
red the services of W. T. Dice as
anager of his herd of Poland-
inas. Mr. Dice formerly raised
land-Cihnas at Fowler, but more
cently has been located at Pres-
tt, Wash. He is an experienced
eeder and feeder and Mr. Bern-
ein is to be congratulated on se-
ring his assistance. Mr. Dice ex-
cts to continue in the Poland-
ina business himself in a limited
ay, besides having active manage-
ent of the Bernstein herd.

H. C. Shinn, Tulare, has recently
ceived two exceptionally fine Po-
nd-China sows from the East—
azier's Model from Wilver Dell
rm, St. Joseph, Mo., and Model
dy from Bridges Bros., Slater, Mo.
oth have farrowed fine litters, the
tter having 10 corking good pigs
red by Bridges Bob Wonder, grand
ampion at Missouri State Fair in
17. Mr. Shinn also bought an
cellent bred sow from the McCune
nsignment at the recent Kings
unty sale. If he keeps on at the
esent rate he will have one of the
st new herds in the State.

Since our announcement in last
eek's issue that the Chicago mini-
um of $17.50 would continue tem-
rarily, pork and pork products
ve been removed from the export
nservation list. The Food Admin-
ration announced that this action
ould destroy its ability to further
abilize the price of live hogs and
at it probably would result in the
ice increasing beyond the former
minimum. This result immediately was apparent in the market, as prices immediately went up and top prices are now over $18.50—the highest since last November. It is expected that on account of the very heavy foreign demand these high prices will continue for some time.

Sheep.

The first Karakul lamb born in California recently arrived at the Kerman Karakul Sheep Company of Kerman. His skin was said to be worth $30 when he was three days old, yet his dam was merely a half-blood, coarse-wool ewe. He will be kept for breeding purposes.

Charles Kimble of Hanford reports feed as very poor on the sheep range and the young alfalfa on the irrigated pasture is frosted so that it is almost poison for the sheep. Two-tenths of an inch is the heaviest rain since last September. A select bunch of 35 young Rambouillet ewes was recently sold by Mr. Kimble to the Conway ranch at Woodland.

Sheep in the Solano and Sacramento county bottoms are in good condition. There has been a good crop of lambs and they appear thrifty and strong. The fine rains have freshened up the pastures and there is a good short bite everywhere. A little good bean straw or any other dry forage would help to keep the ewes from getting too loose until the green stuff has a little more substance in it.

Livestock Miscellaneous.

California ranks fifteenth in the Union in the aggregate value of livestock on farms January 1, 1919. Iowa was first and Illinois second. Our neighboring State, Oregon, was twenty-ninth and Washington thirty-sixth.

Henry Wheatley of Napa has imported over 100 Shire horses during the past twelve years, but he is now retiring and his Shire stallion, Desparte Banker, the English prize winner, is being offered along with other stock.

The great Vina Ranch of Tehama county, consisting of 60,000 acres, has been placed on the market and will be sold in tracts to suit purchasers under the direction of W. G. Stimmel, for several years manager of the property for Stanford University.

The first annual farmers' sale of Shorthorns, Berkshires, Shropshires and ponies at Butte City Ranch was a decided success. Practically all of the stock offered was young and most of it stayed in Glenn and adjoining counties. The calves averaged $167.25; the pigs, including many weanlings, averaged $40; Shropshires averaged $61.90, and the ponies averaged $53.50. Mr. Guilford expressed himself well pleased with the results.

University Farm at Davis is becoming the logical meeting place for associations holding their annual meetings and livestock sales. A pavilion suitable for sales has recently been completed. There is room for the livestock to be on exhibition before the sale and comfortable seating capacity for visitors. A cafeteria is on the grounds and those who wish to remain over night can be accommodated in the dormitories. The Farm authorities encourage meetings and sales at the Farm to acquaint farmers with the work that is being done there. A visit to a meeting or sale can be made a most profitable one.

Four thousand trapper licenses were issued in California last year. More skunks were caught than any other animals, the number being 10,480. The pelts are worth from $1.50 to $3 each. Other animals caught were as follows: 804 mink, 127 pine marten, 28 fisher, 59 weasel 82 badger, 2308 raccoon, 1381 ring-tailed cat, 26 river otter, 2268 fox, 55 bear, 1941 coyote, 7 mountain lion, 1488 wild cat, 111 house cat, 18 opossum, 60 muskrat, 20 woodrat and 3 mole. Mink bring better than $3 and pine marten better than $5. Coyotes are good money makers. It is a poor skin that doesn't bring $5, and they have been known to bring as high as $25.

Bred Sows and Gilts
red to Iowa Wonder and Model Jones
These are the two best boars I could buy
Their breeding is A-1.
W. D. TREWHITT, Hanford.

REAOAKS SPECIAL
Registered Big Type **Poland-Chinas**
Bred Sows and Gilts, 25c. per lb.
F. O. B. Gilroy.
W. J. HANNA, GILROY, CAL.

SWEET WATER DUROCS
California's Most Popular Big Type Sire.
GREAT MODEL
(By Great Wonder and Model Lady 4th)
M. C. Allen Winsor Ranch. Peters-Lamson
L. M. Allen Bonita, San Diego Co. & Walker

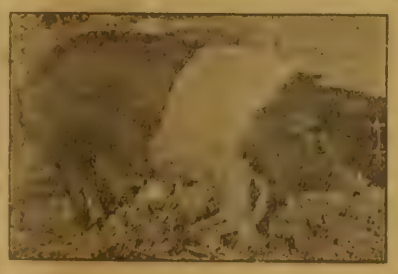
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ature Stock and Weanlings of both sexes.
Sure to please.
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ENTIRE HERD—ALL REGISTERED.
Cream of the breed. Large type, mammoth sows, senior yearlings, 7 feet long, over 36 inches tall. Mammoth Boar, Orion Cherry King, 2 years old, weight 900 lbs. The finest lot of gilts you want to look at. Blue Ribbons and Purple. No better ever offered on the Coast. Young Boars ready for service, big bone, typey fellows. Orion Cherry King and Colonel strains. Come and get them at your own price. Terms cash, or its equivalent paper. MARCH 18, 1:00 P. M. SHARP.
COL. ORD L. LEACHMAN, Auctioneer.
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SAN JOSE
One mile from depot on street car line.


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Grand Champion State Fair, 1918.
Uneeda Glenn County Herd of
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KEY HERD OF PACIFIC COAST
Won at Sacramento:
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High Orion, the world's record-breaking sire, Great Wonder, Grand Champion Iowa; King Orion Cherry, First Prize Indiana and Ohio, and other best boars of the breed. Get some of their pigs. Few bred sows and gilts left.
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Grand Champion Herd of Hampshires
FOR SALE.
Brood Sows, litters at foot. Sows bred for fall litters. Young Boars and Gilts.
Best families.
Finest individuality and clean-cut markings.
Call or write.

Address F. V. GORDON or F. A. LANGDON, Llano Vista Ranch, Perris, Cal.


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Registered Hampshire Swine
A limited number of three-months-old weanlings for sale. Am booking orders for future delivery of youngsters by Gen. Tipton. Have a few young boars sired by Duke's Allen, Grand Champion, 1917, Sacramento.
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Every point the buyer demands for a profit-making hog is found intensified in the Duroc. We can supply you with weanling pigs, either sex, and gilts from 7 to 10 months. Our herd boar has the blood of Ohio Chief Defender, Crimson Wonder, Jack's Friend, Joe Orion, Etc.
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We have sold all our young boars and are now booking orders for March delivery. Highlander, the $1,000 Grand Champion Boar, heads our herd of
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Poultry and Rabbits for Profit

Conducted by R. H. Whitten, Livestock Editor.

BREEDING FOR HEAVY LAYERS.



THE secret of successful breeding consists simply in a knowledge of how to mate birds so that they will produce an improved progeny. This knowledge can be gained by observation, study and experience, and if a breeder will give the matter the same careful consideration that any line of endeavor requires in order to achieve success he will soon be able to mate his birds properly for the best results, even without the use of the trap nest.

Not that I am against trap-nesting. I believe that it should be done on all large breeding farms, but because of the way it ties a fellow down I do not recommend the method for beginners or breeders who do not have large enough flocks to require the constant attention of one man.

Besides, the average breeder does not use the trap nest with judgment. He is so eager to develop the heaviest possible layers in the shortest time that he takes nothing into consideration but the egg yield. The heaviest layers are put in the best pens, irrespective of their constitutional vigor and other important points, and the result is a lot of weak, undersized pullets that make much lower trap-nest records than those of their mothers.

In breeding for heavy laying it is not so much a hen's ability to produce 200 or more eggs that makes her valuable, as it is her ability to produce offspring which will lay 200 or more eggs per year. Consequently, after a record has been made, it is necessary to determine whether or not the hen will prove prepotent. This is done by observing and handling her. It is possible to estimate her egg yield very closely by the same method, and as production should always be kept secondary to vigor it is much better for the farmer and the small breeder to leave trap-nesting to specialists, and to devote their time to a study of the outward signs and characteristics which are index pointers to the organic conditions within.

LOOK FOR CONSTITUTIONAL VIGOR.

This is the quality we want most of all, for without it the best layer in the world will not prove prepotent. However, while a good layer must be a vigorous bird to prove a good breeder, it does not follow that all vigorous birds will prove good breeders for egg production. Certainly there never was a more vigorous bird than the original jungle fowl, yet her record was only about 12 eggs per year. There is a meat type and an egg type, and there are just as vigorous hens in the former class as in the latter. Consequently, while constitutional vigor is of prime importance, it must go hand in hand with other qualities.

MUST HAVE GREAT CAPACITY.

First of all we must consider the hen's size and shape to determine her capacity to eat and digest, for heavy production demands the consuming and converting into eggs of an immense amount of raw material, and the body must possess machinery of large enough size to handle this feed.

Some breeders like a hen a little under standard weight, and they point to the fact that the heaviest laying hens at the different egg-laying contests have been under the standard for the breed. True, but why not tell the whole truth, which is that very few of these wonderful hens have produced other wonderful hens.

The noted authority, Dr. Raymond Pearl, of the Maine Station, once expressed his opinion that selection for any one characteristic—as for egg production—will in a few generations defeat its own end, for it will be found that the stock has deteriorated. So, when these heavy laying hens do not prove prepotent it is pretty good evidence that the strain has deteriorated, largely, I believe, because the breeders have not been particular about keeping up size.

The Holstein cows that are making and breaking world's records every few days are animals of enormous size, and those who are breeding for heavy production aim to have their stock come larger and larger, in order to have more room for bigger organs to handle greater quantities of food. The large cow is not necessarily a beefy cow. There are just as many of the beef type among small cows as among large ones, but the large cow of the dairy type is the heaviest producer, simply because she has bigger machinery and greater capacity for handling feed.

The same reasoning applies to poultry. No matter what theorists may tell you, keep up the size of your flock, remembering that the larger hen, if of the egg type, will lay larger eggs and more of them. Also, the female determines the size of the offspring more than the male, So, in order to get "roomy" pullets, it is very necessary to have large hens for breeders.

AVOID THE "BEEF" TYPE.

But when I say "large" I mean rangy, not blocky. The blocky hen is of the "beef" type, while the more rangy one is a producer. Look for a long, level back, but not a narrow one. There must be great breadth as well as length, giving a roomy barrel. The breast should be broad and deep; the ribs should be wide spread, and the back should carry its breadth right to the base of the tail.

The body should be of a wedge shape from front to rear, where there should be a deep, full bowl. The abdomen should be not only large, but soft and pliable. The hen with a hard, firm, leathery abdomen is a table bird, not a layer.

The pelvic bones should be straight, thin and flexible, and placed well apart. There should be great space between the two points of the pelvic bones and the back point of the breast-bone below. The broader and deeper these spaces are, and the more pliable the flesh, the greater the egg producing capacity.

TO DETERMINE CONDITION.

The condition of the bird can be largely determined by feeling of the breast-bone. It should be plump and well covered with meat to the point. A hen shows ill health and weakness by a shrinking of the muscles around the keel, and when this is the case her egg production is lessened. This defect, however, can be overcome by proper feeding and care, and should not permanently disqualify an otherwise good hen for the breeding pen.

INDICATIONS OF PREPOTENCY.

The head of a good layer and breeder is distinctly feminine, like that of a good milk cow—not too large or meaty. But avoid the hen with a long, thin "crow head," and a long beak, as these are signs of low vitality.

The eye is the mirror of the body, and the bird of good health should have a bright, snappy, rather large, prominent eye, almost completely filling the socket. Avoid hens with sunken eyes or partly closed eyelids.

Hens carry their health certificates on top of their heads. The bright red comb and large wattles of a laying hen indicate good health, sexual vigor and activity. The comb should be medium to large, and fine in texture. If it turns dark when the hen is held downward for a moment, she should not be used, as she has poor circulation.

For the same reason do not use a hen whose feet and legs are cold to the touch. The legs should be stout, of medium length, set well apart, and carried straight under the bird. Don't use a knock-kneed bird. The feet should be of fairly good size, the toes rather short, and the nails well worn by constant scratching.

Some breeders claim that a good egg producer has a high, close-set tail, but years of experience have proved to me that the best layer has a fully developed, well-spread tail, carried at a moderate angle. As stated before, the breadth across the back should be carried right to the base of the tail, and when this is the case the base of the tail is bound to be broad, and the tail feathers well spread instead of pinched.

(To be concluded next week.)

A SIMPLE POULTRY TONIC.

Yes, it's all right to pay a dollar a bottle for a prepared poultry tonic with a fancy name if you have plenty of money. It will help to keep more money in circulation. But for results nothing can beat common tincture of iron, and it should have a place on the medicine shelf of every poultry house.

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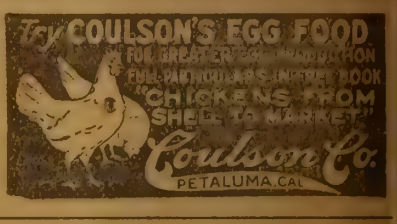
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R. J. Reynolds Tobacco Company, Winston-Salem, N. C.

ply need to be toned up a little. If any of them have pale combs and a general "played out" appearance, give each 5 drops diluted in a tablespoon of water. It is not a poison and a little more or less will do no harm.

As an antiseptic, cleansing, germ killing lotion for sore mouth or ordinary canker it is excellent. Use it full strength, applying it to the affected parts with a feather or camel's hair brush.

Poultry Breeders' Directory

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WHITE LEGHORNS are the most profitable breed of poultry. If you are in the business for profit, you will eventually have them. Early broilers; early layers; early profits; we sell only White Leghorn Baby Chix from heavy laying Hoganized hens. Safe delivery of full count live chix guaranteed. Prices per 100: February, $15; March, $14; April, $12.50. The Pioneer Hatchery, 408 Sixth street, Petaluma, Cal.

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GOLDCROFT BUFF ORPINGTONS fulfill every standard and utility requirement. Won San Jose show first, second, third, pullet and cockerel. Eggs, $5.00 and $3.00 from winning pens; $2.00 from general flock; $12.00 per hundred. Stock for sale. Samuel Abrams, Los Altos, Cal.

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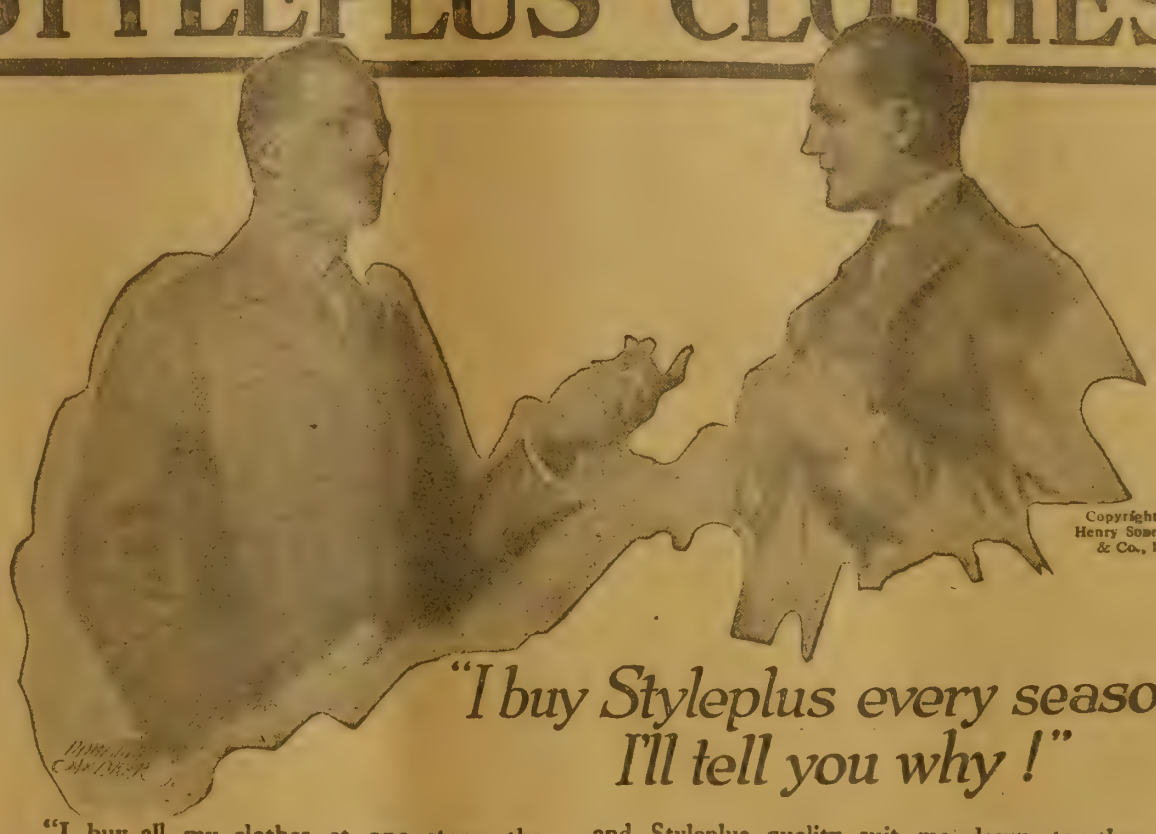
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SANTA CLARA VALLEY HATCHERY has the chicks for you from six different standard breeds, all bred for egg yielders. Can furnish references from my old customers if desired. Lincoln Ave., San Jose, Cal.

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THOROUGHBRED R. I. REDS—Thompson strain heavy layers. Hatching eggs, specially selected, $2.00 per 15. 80 per cent fertility. Mrs. C. M. Hagood, Rt. 1, 504A, San Jose.

MODEL POULTRY FARM—White Leghorn specialists. Our fifteenth year. Baby chix and hatching eggs for sale. Our prices are right. W. C. Smith, Prop., Corning, Cal.

BLACK LANGSHANS—Crabtree's Imperial Strain. Winners everywhere. 250-egg type. Choice hatching eggs, $3, $4, and $5 setting. Jas. Crabtree, 1836 57th Ave., Oakland.

BARRED PLYMOUTH ROCK EGGS for sale. Good range flock headed by cockerels from 260 to 290-egg stock. $1.50 per setting. Mrs. J. A. Vassar, Laytonville, Cal.

WHITE WYANDOTTES—Eggs for hatching from our heavy laying prize-winning stock. Baby chix. Choice breeding cockerels. R. W. Stawetski, Route B, San Jose, Cal.

FOR SALE—Bourbon Red turkeys and eggs for hatching, $5.00 per setting of 13 eggs. Book your orders early. Albert E. Balmer, Alhambra Valley, Martinez, Cal.

EGG BRED—Buff, Brown, White Leghorns, Golden Campines, Dark Cornish. Winners wherever shown. Send for circular. Percy Ward, 3142 Ward St., Fruitvale.

ANCONAS—Sheppard strain direct. Hatching eggs, $4.50 per 60; $2.00 per 15, plus postage. White Leghorn, $6.00 per hundred. A. S. Williamson, Winton, Cal.

DUCKS—Mammoth Pekins and White Runner eggs, 15c. each. Poultry of all kinds. Write us your wants. Wood Poultry Yards, 632 North 3rd St., San Jose.

EASTMAN'S "BRED-TO-LAY" Hoganized and trapnested Barred Plymouth Rocks. Baby chicks. Eggs; cockerels. Fairmead Poultry Farm, Fairmead, Cal.

R. I. REDS, silver Spangled Hamburgs, Cackled eggs. Best price stock. Eggs and baby chicks. Mrs. A. Gooden, 613 S. 4th St., San Jose, Cal.

BABY CHICKS—Pure-bred chicks for sale; S. C. White and Brown Leghorns, Rose Comb Rhode Island Reds, Barred Rocks. J. W. Olsen, Campbell, Cal.

SAVE THE BABY CHICKS. Write for free illustrated booklet. Modern Brooder Co., Chicken's Model Home, Box 504, Modesto, Cal.

BABY CHICKS (White Leghorns) scientifically reared in hot-water brooding. No chicks sold for ... Rockdale Hatchery, ... Cal.

BABY CHICKS—We have for ... Leghorns, S. C. White Leghorns, ... and Barred Rocks for prices. Fairmead Poultry Farm, Cal.

CHICKENS, DUCKS, GEESE, GUINEAS, ... Pekin Ducklings. Mrs. A. Gooden, 613 S. 4th St., San Jose, Cal.

PEA FOWLS—$10.00 and $15.00 pair. Males $6.00. Mrs. Albert Brown, Visalia.

PEKIN DUCK EGGS—Setting $1.50. Mrs. A. P. Court, R. 1, Lathrop, Cal.

A FEW PAIRS AND TRIOS of prize-winning Partridge Cochin Bantams for sale. Susan Swaysgood, Pomona, Calif.

BUFF ORPINGTONS, BUFF DUCKS, BOURBON RED TURKEYS—The Ferris Ranch, Rt. 2, Box 144D, Pomona, Cal.

FOR THE BEST laying strain of White Plymouth Rocks and Rhode Island Reds, write W. H. Carpenter, Oakley, Cal.

BLACK MINORCA EGGS—$1.50 per 15. Special mating, $2.00. Edward A. Hall, Rt. 1, Box 39, Watsonville, Cal.

FOR SALE—Laying White Leghorns, $1.50 each. Also fine Mammoth Bronze turkeys. N. E. Mullick, Willows, Cal.

THOROUGHBRED BUFF ORPINGTON EGGS from heavy laying stock. Settings $1.50. Mrs. M. Lopez, Lathrop, Cal.

BRONZE TURKEY EGGS—Limited number for delivery in April. No more stock. Albert M. Hart, Clements, Cal.

PUREBRED S. C. B. MINORCA EGGS, $3.00. Special matings, $3.00 per 15. Mrs. J. W. Moore, Exeter, Cal.

PIT GAME CHICKENS that are game. Also eggs for hatching. Frank McMann, 680 32nd St., Oakland, Cal.

LIGHT BRAHMA EGGS—13 $2.00. Stock for sale. J. Dolan, 146 Wyandotte St., Stockton, Cal.

RHODE ISLAND RED EGGS for hatching. Mrs. Richard Holdridge, P. O. Box 283, Dixon, Cal.

LIGHT BRAHMA EGGS—13 $2.00. Stock for sale. J. Dolan, 146 Wyandotte, Stockton, Cal.

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R. & S. RABBITRY, ... 55th Ave., Oakland. ... rabbits, Flemish and New Zealands. Stamp for reply.

THE HOME CIRCLE

Tears

When I consider Life and its few years—
A wisp of fog betwixt us and the sun;
A call to battle and the battle done
Ere the last echo dies within our ears;
A rose choked in the grass; an hour of fears;
The gusts that past a darkening shore do beat;
The burst of music down an unlistening street—
I wonder at the idleness of tears.

Ye old, old dead and ye of yesternight,
Chieftains and bards and keepers of the sheep,
By every cup of sorrow that you had,
Loose me from tears, and make me see aright
How each hath back what once he stayed to weep;
Homer his sight, David his little lad.

—Lizette Woodworth Ruse.

When a Play Came True

Eleanor skipped along the country roads, singing. She was going to the store — the wonderful store Uncle Henry kept in the little country village where she and mamma were visiting; the store which had a candy counter on one side, with all kinds of lovely things from the five-for-a-cent candies to those marked forty cents a pound. Then came the grocery counter, and on the other side one counter held dry goods, a few dolls, bolts of cloth, some cheap toys, and on the counter next to that was a soda fountain and ice cream.

In the middle of the store were piled cans of crackers, bags of flour, and a stand with apples, peaches, a few lemons and oranges, and over the very center hung a great bunch of bananas.

All her life of six years Eleanor's favorite play had been to keep store. Day after day she sold make-believe goods over a make-believe counter to her dolls, and to make-believe customers. Often an overturned box would be a counter, and her toys would be the stock, which she would sell over and over again and count imaginary change.

Now she was going to Uncle Henry's store, and see how he did business, and she was sure she would learn a great deal to add to her play when she went home.

Mamma had said she might go and meet Uncle Henry and come home to dinner with him. And perhaps mamma knew how she felt about stores, which was the reason she let her go a whole half hour before Uncle Henry could leave to come home.

He was all alone and very, very glad to see Eleanor, and gave her one of the store dolls to play with. Soon a woman came in for some percale, and Eleanor was free to roam where she would. She gazed at the candy in the glass case, then she wandered over to the groceries.

The woman left, and a little boy came in for a soda; then there were no more customers for a few minutes, and Uncle Henry showed her the till, where the money lay in little round divisions that looked as if a round ball had been laid here and there and had hollowed out the wood.

The door opened, and a man came in. He was old, very old, Eleanor thought, for his hair was white, and his face was wrinkled, oh, so wrinkled; but he was very tall and held himself so erect he made Eleanor think of the soldiers marching on Decoration Day.

But to Eleanor's suprise he did not ask Uncle Henry for anything. No, he spoke to her, and his eyes twinkled as he asked, "Are you waiting on customers today, madam?"

Eleanor looked at Uncle Henry, who smiled, and the old man continued, "I would like to buy some candy; will you sell me some?"

Eleanor went behind the candy counter, and waited with a thumping heart. Was Uncle Henry going to allow her really to sell some really thing to a really person? He surely was! She was so excited she could hardly listen to what the old man was saying.

"Now, what kind of candy would you choose?" he asked. "What do you think is the best kind?"

Eleanor helped him select two large chocolates, with a candied cherry inside, and two mint marshmallows, and a stick of pink and white peppermint.

She handed them to him in a paper bag, gravely took the nickel he handed her, and gave him one cent in change. Then he held the bag out to her.

"I haven't any teeth," he said politely, "so I cannot eat them. Will you be kind enough to eat them for me?"

What a delightful customer! In a few minutes Eleanor was seated on his knee, and learned that his name was Uncle Nat to all the boys and girls he knew. He was the most understandingest uncle. He knew just how she felt about keeping store, and he thought it would be lovely if she came down every noon to see Uncle Henry. He agreed with her that a month of noons was a long time, and perhaps Uncle Henry would let her wait on some of the other customers when she had gained experience.

Then they walked home to dinner, Eleanor with a hand in Uncle Henry's and one in Uncle Nat's until they came to the parting corner.

After that, every noon, Eleanor came to the store, and every noon she waited on Uncle Nat. Sometimes it was candy, sometimes ice cream, and once Uncle Henry showed her how to mix soda, and this most delightful customer and Uncle Nat in one insisted that she have one, too, with him.

And the very last day of her stay, Eleanor, with dancing eyes, sold Uncle Nat the very favorite doll she had seen in the showcase all summer.

And at Christmas time Uncle Nat smiled over a very crooked pin-ball, made with real little girl stitches, with "Uncle Nat" embroidered on it, and underneath 80 pins, which was just Uncle Nat's age.

And although she never saw him again, and Eleanor is a big Eleanor now, with boys and girls of her own age, she still remembers the kind old man who loved little girls, and made for one of them her favorite play come true.—Emma Florence Bush in the Sunday School Times.

HINTS TO HOUSEWIVES.

Shake a little soap in the starch after boiling it and the irons will not stick to the clothes in ironing.

Add glycerine to the stove blacking to make it adhere and use gloves or, lacking those, place the hand in a paper sack to protect it when blacking the stove.

Do not immerse an egg beater in water when dirty. Wash carefully with a cloth or running water and dry well.

Sagging cane seats may be corrected by wetting well the under side of the cane and turning the chairs upside down until dry.

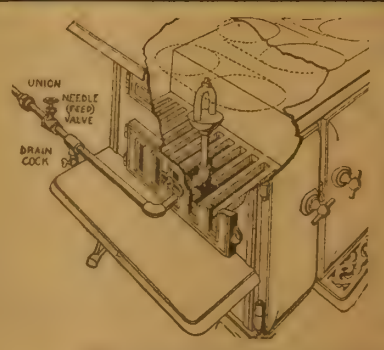
To sew lace on a round doily and have it perfectly smooth and flat, the top of the lace should be shrunk before it is sewed on. Measure the amount of lace needed, roll evenly and tie a string around the center of the roll. Then dip the upper edge of the lace into boiling water to shrink it, being careful not to let the moisture pass the string. Remove the string and hang up to dry. When dry, sew to the centerpiece before pressing and it will follow the curve without a wrinkle.

PRE-NATAL CARE.

The welfare and social workers throughout California are planning to make Child Welfare year one education and reform. According Dr. Josephine Baker, director of Child Hygiene Bureau of New Yo City, the number of children un five years of age who died in United States during the period the recent war was nine times number of United States soldi killed abroad.

The University Extension has nounced a series of lectures scientific motherhood to aid in work.





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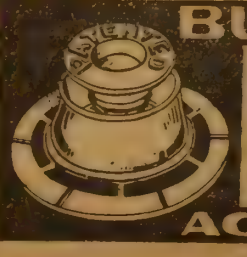
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Box 396, Station C. Los Angeles, Calif.

AGENTS WANTED Write for Prices

THE NEW SCARF.

Now that war knitting is over, many women are making most charming scarfs of delicate colors for their friends. These are knitted just as the scarf for the soldier boy was, casting on 78 stitches. After it is long enough that it will cover the back and come down on the arms to within a few inches of the wrist, take off the stitches on each end onto sock needles and knit two, purl two, just like the top of a sock, for four inches to make a cuff. To finish the cuff a row or two of white or contrasting color may be added. The top edge of the scarf may be finished with a crocheted edge of silk or Angora or contrasting wool like the cuff to give a pretty finish. These scarfs are much more dainty if the yarn is light in weight.

These make a very dainty convalescent garment when the patient is sitting up in bed, as the warmth is just where it is needed and the cuffs hold the scarf in place.

For people who sleep out of doors and have a tendency to neuritis they make a very comfortable extra wrap. If used in that way, the color should be more serviceable.

DOMESTIC SCIENCE.

Out of every hundred women in the United States who live to be fifty years of age, ninety marry and have homes of their own.

Home-making, therefore, is a trade for every girl, and no other vocation begins to approach it in numbers. Previous to the last half century, this training was given mainly in the home and by the mother. Now it is a legitimate part of school work and home-making has come to be recognized as a highly specialized science.

The domestic science movement is aided by other agencies which are directing their energies toward the betterment of the home. The Government is conducting scientific experiments in better sanitation, pure food and economical methods of buying; women's clubs are arranging lectures on these and similar matters, and household demonstrators, visiting nurses, day nurseries and journals on home economics all contribute to the improvement of the home.

FASHION NOTES.

Jersey cloth in dresses seems to be the most popular dress fabric this spring.

Not since before the war has there been such a showing of novelties in sport silks. Many beautiful fabrics in white are on display, as well as the gay colors.

Sailors of very rough straw and worn low on the forehead are nobby street hats.

Many dressy hats have unusual twists and turns and irregular lines on the brims.

The general trend in skirts is downward—many times to the ankles—and these are very scant, almost tube-like in shape.

Gingham gives promise of holding first place for spring dresses.

Silk petticoats are very soft and clinging and are shown in beautiful plain colors and combinations.

There is a new silk bloomer on the market, coming well down on the leg and designed to take the place of a petticoat.

Pumps of leather and oxfords are to be very good style this summer. The pumps are worn with cut steel buckles.

CARE OF THE SKIN.

Much of a girl or woman's beauty is in the condition of her skin, and every woman should try and discover the special treatment her skin may need. In this State, tan is so common that we hardly consider it a disfigurement, but roughness or exceeding oilyness or wrinkles should be prevented when possible.

An exceedingly oily skin may be corrected by using a lotion of rose water, alcohol and boric acid, bathing the face twice a day.

A dry skin may be softened by a lotion of rose water, glycerine, tincture of benzoin and a few drops of carbolic acid. This should be applied at night.

Too much water is bad for some skins and these should be cleansed with a pure cold cream, then washed with lukewarm water and then covered again with a cold cream to remain over night.

USE MUSTARD IN COOKING TEPARIES.

To the Editor: After reading some of the slurs on tepary beans, I experimented with the cooking. Soda water was the first thing. Boil ten minutes, drain and cover again with clear cold water. Boil ten minutes, drain, cover with hot water and season as usual, adding an onion and a good pinch of mustard, which finishes the strong odor and taste. I cook mine five hours in all and when baked add a little tomato. And you never know you are eating the repellant teparies.—K. K., Porterville.

COFFEE GINGERBREAD.

Melt one-quarter of a cup of shortening in a half cup of hot coffee, and stir in one scant cup of dark molasses, one-quarter teaspoon each of salt, cloves and allspice, one heaping teaspoon each of ground ginger and also of cinnamon, two tablespoons brown sugar. Dissolve one teaspoon of baking soda in two tablespoons of hot water, stir thoroughly into the mixture and beat in about one and one-half cups of sifted flour. Bake in a greased pan in a moderate oven.

BAKED STUFFED ONIONS.

Boil four white onions for half an hour in boiling, salted water. Drain, cool and scoop out the centers. Mix together two tablespoons of chopped walnuts, one-half cup chopped apple, four tablespoons grated bread crumbs and two tablespoons melted fat. Fill into the onion cups, set in a baking pan and baste while cooking with a little pork fat mixed with a cup of hot water.

KINDERGARTEN LEGISLATION.

Special interest is being shown this winter in legislation to promote kindergartens. It will be interesting to California women to know that the law in force in California under which the kindergartens have more than trebled is the most popular model.

As the kindergarten is recognized as a vital Americanization agency, its importance at this time is recognized.

Bank by Mail

"It is safe, convenient and insures absolute privacy. There is a sense of satisfaction and pride in having a savings account in a strong San Francisco bank. You can start an account with as little as one dollar—Your interest will be compounded semi-annually.

"Write or visit the bank and I will explain the superior service this bank gives to out-of-town depositors."

Cashier

French American Bank of Savings

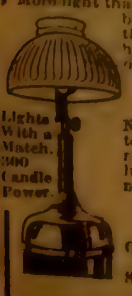
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MOST BRILLIANT LIGHT MADE

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Showrooms 324 S. Hill St., Los Angeles.

Thousands are installing the Mueller Pipeless Furnace now

—because they want to be *sure* about heating comfort and lower fuel bills next winter.

Fall is a busy time for Mueller dealers and if you wait, the first cold snap may catch you unprepared. And certainly you don't want to go through another winter putting up with the muss, discomfort and high cost of stove heat.

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The Mueller is recognized by heating experts as the highest type of pipeless furnace construction. It will burn any kind of fuel—hard or soft coal, coke, wood, lignite, gas or oil—and save you ⅓ to ½ on fuel cost. Whether your house is large or small, with a cellar or without, the Mueller can be installed easily and will serve you efficiently.

The operation of the Mueller and its superior features are interestingly explained in the booklet "The Modern Method of Heating Your Home," which we'll gladly send you free upon request. Write today for this book and the name of your nearest Mueller dealer.



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ESTABLISHED 1880

THE MARKET REPORTS

Figures Given Are Independent and Reliable.
Prices Quoted as Paid to Producers.

SAN FRANCISCO

San Francisco, March 12, 1919.

WHEAT.

It is announced that the U. S. Food Administration Grain Corporation will begin to sell its surplus wheat holdings on March 15 in an effort to prevent an increase of flour prices. It is stated that the millers have been offering from 10c to 15c a bushel above the Government price and the Government will now use its surplus to stabilize flour prices. This will have no effect on the price of wheat.

The following prices were announced by the Federal Grain Corporation last year and are still in effect. They are figured f. o. b. San Francisco, Los Angeles, Seattle, Tacoma and Portland and guarantee the grower a minimum of $2 f. o. b. shipping point:

Per bushel
No. 1 hard $2.20
No. 2 ..... 2.17
No. 3 ..... 2.13
No. 1 soft 2.18
No. 2 ..... 2.15
No. 3 ..... 2.11
Club or Sonora, No. 1..... 2.16
do, No. 2..... 2.13
do, No. 3..... 2.09
Recleaned for seed, per ctl.—
California Bluestem ..... $4.15@4.25
Early Baart ..... 4.15@4.25

BARLEY.

Balfour, Guthrie & Co. have closed a charter for 3000 tons of barley for shipment to England. This is the first step in the disposition of the surplus stock in this State. Barley was somewhat firmer as a consequence, although the local demand continued only nominal.

Choice feed, per ctl..... $1.95@2.00

OATS.

Oats were a trifle firmer this week, although there was no material change in the price, which assumed a somewhat wider range than that of the past few weeks.

Red feed, per ctl..... $2.05@2.17½
Red for seed..... 2.50@2.70
Black for seed..... Nominal
Recleaned Red or Black for seed ..... $3.00@3.10

CORN.

California yellow corn is reported weaker, with very little demand. Milo is also quoted at a lower figure. Egyptian is nominally unchanged.

California ..... $2.25@2.35
Egyptian, choice ..... 2.60@2.80
Milo ..... $2.40@2.60

HAY.

Receipts of hay for the past week were 1365 tons compared with 1228 the previous week. The receipts were just about enough to take care of all demands in this city. Trade has been light but the receipts have been moving fairly well, and with no need of storage of any arrivals to speak of. There has been some demand for export during the week and trade covering interior points is reported somewhat better.

No. 1 wheat, per ton..... $20.00@22.00
No. 2 wheat, per ton..... $16.00@19.00
Choice tame oat, per ton..... 21.00@23.50
Wild oat, per ton..... 16.00@18.00
Barley hay, per ton..... 16.00@18.00
Alfalfa, per ton..... 16.00@19.00
Stock hay, per ton..... 14.00@17.00
Barley straw, per bale..... .50@ .80

FEEDSTUFFS.

Rolled barley was marked up to $48.00 @50.00 this week. Otherwise there was no change in prices.

POTATOES, ONIONS, ETC.

There was little change in either the potato or onion markets this week. While the volume of onion shipments has fallen to a comparatively small amount the price is maintained here. Some dealers are looking for a resumption of shipments on a large scale and probably higher prices. The general vegetable market is broadening out with the increased arrivals of spring vegetables. Asparagus is now coming in in considerable quantities and its price fluctuates materially each day. Today's prices, 15c to 20c, are from 20c to 30c lower than a week ago. Garlic was somewhat scarce this week and immediately jumped to about double the price of a week ago. Green onions are now coming in from both the River district and from Alameda county. They sell at $1.00 and $1.75 a box respectively. Spinach is another green vegetable for which there is a good demand at this time of the year. It sells from $1.00 to $1.50 a box.

String beans..... 10@14c
Peas ..... 10@12½c
Lima beans ..... None
Carrots, per sack..... $1.75@2.00
Asparagus ..... 15@20c
Rhubarb, San Jose, per box..... 3.00@3.50
do, Strawberry, per lb..... 10c
Cucumbers, hothouse, box of 30.. 3.00@3.50
English, dozen..... $3.00
Eggplant, per lb..... None
Lettuce, per crate..... $3.00@3.25
Celery, crate..... Nominal
Spinach, crate..... $1.00@1.50
Tomatoes, Southern, per crate..... None
do, Mexican ..... $3.00@3.50
Sprouts, per lb. ..... 6@8c
Potatoes—
Rivers ..... $1.50@2.00
Oregon ..... 2.00@2.10
Washington ..... 1.75@2.00
Idaho ..... 1.85@2.00
Sweets, per sack ..... 2.75@3.00
Onions, Warehouse Stock
Yellows ..... None
Australian Browns ..... $3.50@4.00
Green River $1.00
Green Alameda $1.75
Garlic ..... 50@60c
Green corn, Alameda, per sack..... None
Okra, per box..... None

BEANS.

To assist in relieving the present condition of the bean market the Grain Corporation is preparing to buy about 150 carloads of beans direct from the growers. The prices which the corporation will pay are materially higher than prices quoted by dealers in this city. The Government prices are: Large Whites 8½c, Small Whites 8c, Teparies 5c, Blackeyes 5c, Pinks 7c, Cranberries 8½c, and Reds 7c. These are for beans packed in bags of 12 ounce burlap in good condition and holding 100 pounds net. Following are San Francisco dealers prices:

Bayos, per ctl..... $6.25@6.40
Blackeyes ..... 3.25@3.40
Cranberry beans ..... 5.75@5.90
Limas (south, recleaned)..... $6.50
Pinks ..... 5.25@5.40
Mexican Reds ..... 5.75@6.00
Tepary beans ..... 2.50@2.75
Garbanzos ..... 10.00@10.25
Large whites ..... 6.00@6.15
Small whites ..... 6.50@6.60

POULTRY.

The market showed a considerable strength throughout, with the exception of small broilers. An oversupply of these, attracted by the high prices of last week, reduced their price below that of the large and medium sizes. Receipts of other descriptions have been about normal, and unless an unexpected increase of arrivals materializes the strong market is predicted to continue.

Turkeys, live, young spring, lb....34@36c
do, old ..... 30@34c
do, dressed ..... 40@42c
Broilers, 1½ to 2 lbs..... 55@60c
do, 1¼ lbs..... 58@60c
do, ¾ to 1¼ lbs..... 52@55c
Fryers ..... 45@50c
Hens, extra, per lb., colored..... 38c
do, Leghorn 40c
Smooth young roosters, per lb. (3 lbs. and over)..... 42c
Old roosters, colored, per lb..... 23@24c
Geese, young, per lb..... 38@40c
do, old, per lb..... 38c
Squabs, per lb..... 65c
Ducks ..... 38@40c
do, old 38c
Belgian hares ..... 18@20c
Jack rabbits ..... $3.00@3.50

BUTTER.

The local produce and daily exchange has re-established the informal call abandoned about a year ago. This permits the members to clean up their holdings more thoroughly each day. The Eastern butter markets have been strong throughout the week with the exception of a break made last Saturday, from which recovery has since been made. The drop of 2 cents on the local market last Saturday was a reflection of the Eastern conditions, but the drop of 3 cents today is said to be due to a temporary over-supply and it is not believed that the lower price will be maintained here. Following are exchange prices with discounts deducted:

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extra	.57	57½	55½	55½	55½	52½
Prime firsts			Nominal			
Firsts			Nominal			

EGGS.

Both extras and pullets continue to develop great resistance to the lower prices normal at this season. Extras lost only 1½c during the week and pullets only ½c. At present prices it is said that holders would take long chances in attempting to place eggs in storage, but it is reported that over 600 cases were sent to the ice houses during the week. If these are bought again within thirty days they may still be sold to retailers as fresh eggs, but if the intention is to sell these eggs as storage it is difficult to figure what prices are anticipated to make such a sale profitable. Quotations are exchange prices less commissions:

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	37½	37½	37½	37½	37	36
Extra 1sts	Nom.	—	—	—	—	—
Firsts			Nominal			
Extra pullets	.35	34½	34½	34½	34½	34½

CHEESE.

Somewhat larger receipts of Fancy California flats had the effect of lowering the price of this description, while a shortage advanced the price of firsts to only one-half cent less than the fancy stock. Following are exchange quotations less the usual commission, except in the case of Monterey, which is street quotations:

Fancy California flats, per lb..... 28½c
Firsts 28c
Oregon triplets, fancy..... 34½c
Oregon Y. A. fancy..... 37c
Monterey cheese ..... 22½@25c

FRESH FRUITS.

Apples continue to show strength on outside demand. An advance of 25c on some varieties is noted.

California apples..... $2.50@3.75
Northwest apples ..... 3.00@4.00
Winter pears ..... 2.00@3.50
Persimmons ..... None

CITRUS FRUIT.

Citrus fruits were firm and in good demand. No changes in prices were made.

Oranges, navels ..... $3.50@4.75
Mandarins ..... 1.75@3.00
Tangerines ..... 3.00@3.50
Lemons, fancy ..... 4.00@4.50
do, choice ..... 3.50@4.00
do, standard ..... 3.00@3.50
Lemonettes ..... 2.00@3.00
Grapefruit ..... 2.00@3.00

HONEY.

The local market for honey continues dead. The opinion among the San Francisco dealers is that the bee men will have to accept about 12c if their product is to be sold on this market. They still have two months or more in which to sell their product abroad before the new crop begins to be ready for shipment.

DRIED FRUITS.

Some prunes of the 1919 crop have already been booked at the opening price of the 1918 crop. However, the market is considered very strong and today is probably a half cent higher than when these contracts were made. It is reported that 17½c has been offered for California Smyrna Figs, but it is not known that any have been booked. Of the last year's crop, apples are the only fruit still available and 15c continues to be bid for them.

HIDES.

Wet Salted—Native steers and cows, 50 lbs. up, 16@18c; 30 to 50 lbs. up, 16@18c. Kips, 15 to 30 lbs., 21@22c; calf and veal, under 15 lbs., 31@32c; bulls and stags, 13@14c.

Horse Hides—Wet salted, large prime, each, $6.00@6.50; medium, prime, $5.00@5.50; small, $3.50@4.00.

Special Livestock Market Report

San Francisco, March 12, 1919.

CATTLE—Beef cattle are arriving in this market somewhat more freely than was expected. It is believed, however, that prices will be maintained for the next few weeks. The Eastern market is very strong. Both range and dairy calves are scarce.

Steers—
No. 1, weighing 1000@1200 lbs...12¾@13c
do, weighing 1200@1400 lbs...13@13¼c
do, second quality ..... 11½@12c
do, thin ..... 9@10c

Cows and heifers—
No. 1 ..... 9@10c
do, second quality ..... 8@9c
do, common to thin..... 6@7c

Bulls and stags—
Good ..... 6½@7½c
Fair ..... 5½@6½c
Thin ..... 4½@5½c

Calves—
Lightweight ..... 11½@12c
Medium ..... 10½@11c
Heavy ..... 8@10c

SHEEP—Spring lambs are coming into the market in small lots, and owners are now looking for a market for future delivery, but no large sales have been thus far reported and the going price does not seem to have been established as yet, buyers and sellers being wide apart. On the whole, the market on both lambs and wethers continues strong.

Lambs ..... 15@15½c
Yearlings ..... 12½@13c
Sheep, wethers ..... 12@12½c
do, ewes ..... 9@10c

HOGS—Hogs are still arriving in plentiful supply, though not in as well-finished condition as those received during the latter part of 1918. In the East a sharp advance is expected as the result of lifting the embargo on pork products.

Hogs—
Hard, grain-fed, 100 to 150 ..... 16½c
do, 150 to 250..... 17c
do, 250 to 300..... 16½c
do, 300 to 400..... 16c

Los Angeles, March 11, 1919.

CATTLE—The market here remains much the same as a week ago. A good many steers are still being offered and the tone of the market for them weak. Cows still scarce, steady and in demand.

Per cwt., f. o. b. Los Angeles:
Beef steers, 1000@1100 lbs.....$11.00@13.00
Prime cows and heifers..... 9.50@10.50
Good cows and heifers..... 8.00@9.00
Canners ..... 6.00@ 6.50

HOGS—Not so many in the past week and the market firm under lighter offerings. Demand, however, only fair, killers taking only such lots as needed for the dressed meat trade.

Per cwt., f. o. b. Los Angeles:
Heavy, avr'ging 275@350 lbs..$14.00@15.50
Mixed, avr'ging 225@275 lbs... 15.00@16.00
Light ..... 16.00@16.50
Rough docked 20 lbs., piggy sows 40 per cent.

SHEEP—There was a little better tone to this market during the past week. Fat wethers and lambs both in better demand, and prices firm in sympathy with stronger markets East.

Per cwt. f. o. b. Los Angeles:
Prime wethers ..... $9.50@10.50
Prime ewes ..... 8.50@9.50
Yearlings ..... 10.00@11.00
Lambs ..... 14.00@15.00

North Portland, Ore., March 10, 1919.

CATTLE—Cattle receipts for today are 1350 head. Market remains steady, with everything selling readily at following quotations: Best steers, $13.50@14.50; good to choice steers, $11.75@12.75; medium to good steers, $10.75@11.75; fair to good steers, $9.50@10.75; common to fair steers, $8.50@9.50; choice cows and heifers, $10.50@12.00; good to choice cows and heifers, $8.75@9.75; medium to good cows and heifers, $7.75@8.75; fair to medium cows and heifers, $6.00@7.00.

HOGS—Hog receipts over Sunday total 2500 head. The market shows a tendency of being a little higher than last week. Quotations follow: Prime mixed, $17.50@17.75; medium mixed, $17.25@17.50; rough heavies, $15.50@16.50; pigs, $15.00@16.00; bulk, $17.50.

SHEEP—Sheep receipts over Sunday 4350 head. Market remains steady at following quotations: Prime lambs, $15.00@16.00; fair to medium lambs, $13.00@14.00; yearlings, $10.00@11.00; wethers, $9.00@10.00; ewes, $6.50@9.00.

LOS ANGELES

Los Angeles, March 11, 1919.

BUTTER.

Receipts continue to keep up well and reports from the up-country indicate a steady increase in the production. This, with a break in the San Francisco market of 1¾c during the week, caused a weaker feeling here, and on Monday extras broke 1c under the influence of freer offerings. Demand, however, fair.

We quote:
California extra creamery..... 58c
do, prime first 56c
do, first 55c

EGGS.

A steady market and a good demand was had the past week. The consumption holds up well, but was not equal to the supply, a small surplus being left each day, which went into cold storage, thus keeping the market clear for fresh stock. Receipts by rail for the week, 2443 cases.

We quote:
Fresh ranch, extras..... 37c
do, case count..... 36c
do, pullets 34c

POULTRY.

A steady market and a good demand the past week for most offerings. Local receipts were light and a number of cars were brought in from the East to make up the shortage.

Broilers, 1 to 1¼ lbs..... 42c
Broilers, 1½ to 1¾ lbs..... 50c
Fryers, 2 to 3 lbs..... 42c
Roasters (soft bone), 3 lbs. and up.... 34c
Stags and old roosters, per lb..... 28c
Hens ..... 33@34c
Turkeys ..... 36@37c
Ducks ..... 34@35c
Geese 28c

VEGETABLES.

With warm weather and very good receipts, the potato market the past week slumped off again. The trade, too, was pretty well stocked up, which also caused buyers to hold back and go slow. Onions under scarcity started the week higher and in good demand, but as the high prices the early part of the week brought in better receipts the early improvement was lost the closing days of the week. Sweet potatoes steady and in fair demand. Cabbage dull but unchanged. Cauliflower in fair demand and higher. Squash dull but unchanged, and celery steady and in fair demand.

We quote from growers:
Peas, per lb..... 10@12c
Potatoes—
Northern Burbank, per cwt... $2.60@2.25
Idaho Russets, per cwt..... 1.75@1.80
Sweet potatoes, per cwt..... 2.50@3.00
Garlic, per lb..... 50c
Onions—
Australian Brown, per cwt.... $3.75@4.00
White Globe, per cwt..... 8.00
Cabbage, per 100 lbs..... .75@ .90
Celery, local, per crate..... 4.00@7.00
Celery, northern, per crate..... 8.00@9.00
Cauliflower, standard crate ..... 1.50@1.75
Hubbard squash, per cwt..... 2.00
Banana squash, per cwt..... 1.50
Pumpkins, per cwt..... .75
Rhubarb, per 30-lb. box..... 2.25

FRUITS.

There is nothing new in the deciduous fruit market from a week ago. Apples continue to make up the offerings. The supply is fairly good, but is being steadily reduced, and the tone of the market is firm and demand very good for all choice stock.

We quote from growers:
Apples—
King Davids, Northwest pack..$3.00@3.25
Black Twigs, Northwest pack. 3.00@3.25
Baldwins, Northwest pack..... 3.00
White Pearmains, 4-tier ..... 2.25@2.50
Yellow Newtown Pippins, 4-tier ..... 3.00@3.25
Bellefleur, 4-tier ..... 2.00@2.25
Bellefleur, 4½-tier ..... 1.75@2.00
do, 3½-tier ..... 2.00@2.25
Jonathans, Northwestern pack. 3.00@3.25
Winesap, loose, per lb..... 6½@7c
Roman beauties, Northwestern, per peck ..... 3.00@3.25

HAY.

Receipts were again very good the past week and buyers backward. A fair demand was had for choice dairy alfalfa, but all else very dull.

We quote f. o. b. Los Angeles:
Barley hay, per ton..... $21.00@24.00
Oat hay, per ton ..... 25.00@28.00
Alfalfa, northern, per ton..... 20.00@21.00
Alfalfa, local, per ton..... 21.00@23.00
Straw, per ton ..... 9.00@10.00

BEANS.

There was a little more doing in this market the past week. There is a feeling that prices have now reached bottom and a number of small Eastern orders were filled at quotations the past week and some little local buying.

We quote from growers:
Limas, per cwt..... $7.00
Large white, per cwt..... 6.00
Small white 5.50
Pink, per cwt 5.50
Blackeyes, per cwt..... 3.00
Tepary, per cwt..... 3.00

COTTON.

There was a firmer tone to the market and more active trading the past week than for some time. An improvement in the goods market and bad weather in the South, delaying farm work, being bullish factors in New York Monday. March closed at 24.45c and May at 22.75c. In New Orleans May closed at 27.23c.

Classified Advertisements

Rate in this directory 3c. per word each issue.

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SILO PERFECTION.
We have it in the Monro Perfect Silo.
Before buying, get our booklet and prices.
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WANTED—Salesmen and agents. Exclusive territory granted. Powerene is equal to gasoline at 5c a gallon. Is guaranteed to be harmless, to remove and prevent carbon, doubling the life of all gasoline motors, saving repairs, adding snap, speed and power. An amount equal to 20 gallons of gasoline will be sent to any address in the U. S. for $1. W. Porter Barnes, Santa Rosa, Cal. Dept. A15.

FOR SALE—Cunningham Land Pulverizers. Practically new. As a pulverizer and mulcher, the "Cunningham" has no equal. It also conserves moisture, which is of vital importance to all farmers and orchardists. Address, Room 1120, Merchants National Bank Building, San Francisco.

REMANUFACTURED PIPE.
All sizes standard pipe and wrought iron screw casing. All kinds of fittings. Guaranteed good as new. Write for prices. Weissbaum Pipe Works, 160 Eleventh street, San Francisco.

FOR SALE—SPALDING-ROBBINS ENGINE PLOWS—One 5-disc and one 6-disc. Fine condition. Do excellent work. Price is right. Terms. Room 1120, Merchants National Bank Building, San Francisco, Cal.

PATENT ATTORNEYS
WEBSTER, WEBSTER & BLEWETT, Savings and Loan Bldg., Stockton, California. Established 50 years. Send for free book on patents.

ALL SIZES OF PIPE and screw casing, both new and second-hand, dipped and undipped. Guaranteed. Prices right. Shecter Pipe Works, 304 Howard St., San Francisco.

FOR SALE—Fourteen 50-gal. oak wine barrels, used but once, like new. Guaranteed to be in fine condition. Price, $4.25 each f. o. b. Watsonville. G. W. Cornell, Watsonville, Cal.

MADE OF REDWOOD, Hawley's Perforated wooden well casing, the best and cheapest well screen made. Send for descriptive circular. G. M. Hawley, La Mesa, California.

FULLY EQUIPPED CHEESE FACTORY at Woodbridge, Cal.) Located in center of dairying district. For sale or rent. Inquire, Ralph C. Clark, Lodi, Cal.

FOR SALE—One Bean Tractor in A-1 condition with all latest improvements. Will consider two young horses as part payment. Address L. Koepp, Napa, Cal.

CO-OPERATION (not operated for profit) reduces living expenses. Particulars and catalogue from Co-operative League, Commercial street, San Francisco.

FOR SALE AT A BARGAIN—18-35 Yuba Tractor in first-class mechanical shape—farming implements included. Apply D. P. Corcoran, Gridley, Cal.

FOR SALE—3 H. P Freeport gas engine, good condition, perfect running order. $60 crated f. o. b. Arthur King, Route 1, San Luis Obispo.

FOR SALE—5-10 Avery Tractor. Has been run three months. First-class shape. Apply, C. G. Merrell, 118 York St., Napa, Calif.

FOR SALE—20 tons baled alfalfa hay—first-class. Box 364, Dixon.

COUNTRY LANDS.

FOR SALE—1465 acres, 750 of which is good farming land, and if properly farmed is capable of producing from 7000 to 10,000 bags of grain; balance good pasture. All fenced in three fields with 4 wires and redwood posts. Good 6-room house (new); large barn, windmill and 10,000 gallon steel tank; water soft and quantities of it, which is piped into each field. Also have 8 or 10 other stock and grain ranches, some with government land joining, ranging in size from 80 acres to 1280 acres. Write me your troubles and requirements and see if I can smooth them out. C. P. Gould, 142 Forest avenue, Pacific Grove, Cal.

DAIRY RANCH FOR RENT for term of years. 125 acres in alfalfa and grain. All tools and implements furnished. Irrigating machinery, silo cutter, and tractor. Will support 40 to 50 cows. Cash or share basis. 2½ hours from San Francisco. Apply Box 1480, Pacific Rural Press.

FOR SALE—The famous Bane Almond orchard at Orland. On account of labor conditions, as well as physical condition, I have concluded to sell my almond orchard, either in subdivisions of 10 acres, or as a whole. For particulars address P. D. Bane, Orland, Glenn Co., California.

FOR SALE—7-acre irrigated dairy in Tulare county, of even, deep silt soil; under good irrigation system. Registered Jersey herd. All improvements and implements needed to farm place right. $10,000 cash is all you need. Owner, Box 211, Berkeley.

FOR SALE BY OWNER—Good fruit ranch in Happy Valley irrigation district, Shasta county. Healthy climate. Good markets. Wm. de la Rose, Rt. 1, Box 137 Redding, Cal.

FOR SALE—160 acres, 90 in alfalfa, 50 acres in barley. Plenty water. All fenced and cross fenced. $175 per acre. Terms. C. L. Barnett, Shafter, Kern Co., Cal.

FOR SALE—Block 7, Martin's addition to Windsor. Address Box 37, Ryde, Cal.

SEEDS AND PLANTS.

NONPAREIL AND DRAKE'S ALMOND on bitter almond, $12.50 and $10.00 per 100. Bartlett pear on blight immune root. Foothill grown. Packing free. Satisfaction guaranteed. Tribble Bros., Elk Grove, Cal.

YOUR GARDEN THIS YEAR WILL NOT be complete unless you have a few hills of the world's finest muskmelon, "Casada Special." Send for seed package, 25c. E. C. Casad, grower and originator, Covina, Cal. R. F. D.

WALNUT TREES, artichoke plants and Wagner rhubarb plants for sale cheap. Mammoth Walnut Nurseries, P. O. Box 826, Watsonville, Cal.

SMOOTH PERUVIAN ALFALFA SEED is worthy of your consideration. Grows earlier, quicker, and weighs heavier. R. O. Reeve, Winters, Cal.

YOUR ALFALFA SEED should meet the needs of your soil and moisture conditions. One of the seven different kinds of Green Gold brand seed will yield heaviest and live longest because they are selected for particular conditions. Our illustrated booklet tells you all about each kind. Write for it now. Bomberger Seed Company, Desk B, 725 Tenth street, Modesto, Cal.

GENUINE FROST-PROOF CABBAGE PLANTS—Well rooted. Winter grown in open field. Early Jersey and Charleston Wakefield, Succession and Flat Dutch. Postpaid, 250 for $1.00; 500, $1.50; 1,000, $2.50. By express, $2.00 the thousand. Prompt shipment and satisfaction guaranteed. Union Plant Company, Texarkana, Texas.

GRAFTING WOOD—Willson's Wonder Walnut for sale by the originator. Never has failed a heavy crop of largest, finest nuts. Youngest bearer. Also genuine Franquette wood. F. C. Willson, Encinal Nurseries, Sunnyvale, Santa Clara county, Cal.

TREES! TREES!—Eureka and Plancentia walnuts on black; a general assortment of high-grade nursery stock. A. R. Marshall's Nurseries, 1212 Ross street, Santa Ana, Cal.

STRAWBERRY PLANTS—Seventy-five cts. per hundred. Eight varieties. Burbank's Thornless Blackberry, twenty cents each; six for one dollar. Variety Farm, Clovis, Cal.

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STRAWBERRY PLANTS—American Beauty, Marshall, Magoon, etc., $6 thousand, $1.00 per hundred, prepaid for cash. Brown Berry Ranch, Capitola, Cal.

GENUINE FRANQUETTE WALNUT GRAFTWOOD, 3c. per foot. Ogden Bolton, Jr., Route 4, Box 447, Santa Rosa, Cal.

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Selected, recleaned Sudan Grass seed at a price that will appeal to you. For price and particulars. J. W. Schuster & Son, Pond, Kern county, Cal.

BEET SEED FOR SALE—Choice Giant half sugar beet seed in any quantity. W. J. Brown, Route A, Gilroy, Cal.

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WANTED—Reliable man in every county to sell the patented and guaranteed "Sahara Drier" to farmers and fruit growers. Simple in construction, fire proof, no mechanical apparatus to get out of order. No expert help to operate. Burns any kind of fuel at cost of 50c. per day. One-ton machine sells $550. Must be reliable man and acquainted in his district. Good pay, easy work. Address California Dried Products Co., 149 California St., San Francisco.

RANCH MANAGER AND MASTER MECHANIC—My age is 33. I am married, of steady habits, industrious and able manager. Taxpayer and property owner in California. Seven years of farming experience, including orchards. For five years have specialized on farm power machinery. Know Caterpillars from A to Z, also L. C. Best, Samsons, and others. Know how to keep them running. Am practical farmer and tractor expert. Have business experience; can keep accounts and conduct correspondence. Two years at college. Have mechanic's tools and service car. First-class references, including to present employers. If interested, address, Box 1470, Pacific Rural Press.

POSITION WANTED as manager of hog ranch or diversified farm. Experienced with registered stock, irrigated crops and deciduous fruits. Address, H. Duveneck, 1004 Paru St., Alameda, Cal.



Life of a Dairy Cow

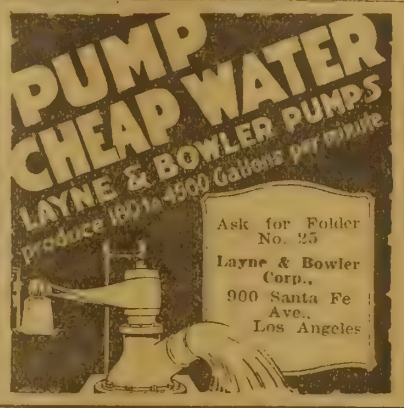
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HOLSTEIN CATTLE

Send for our booklets—they contain much valuable information.

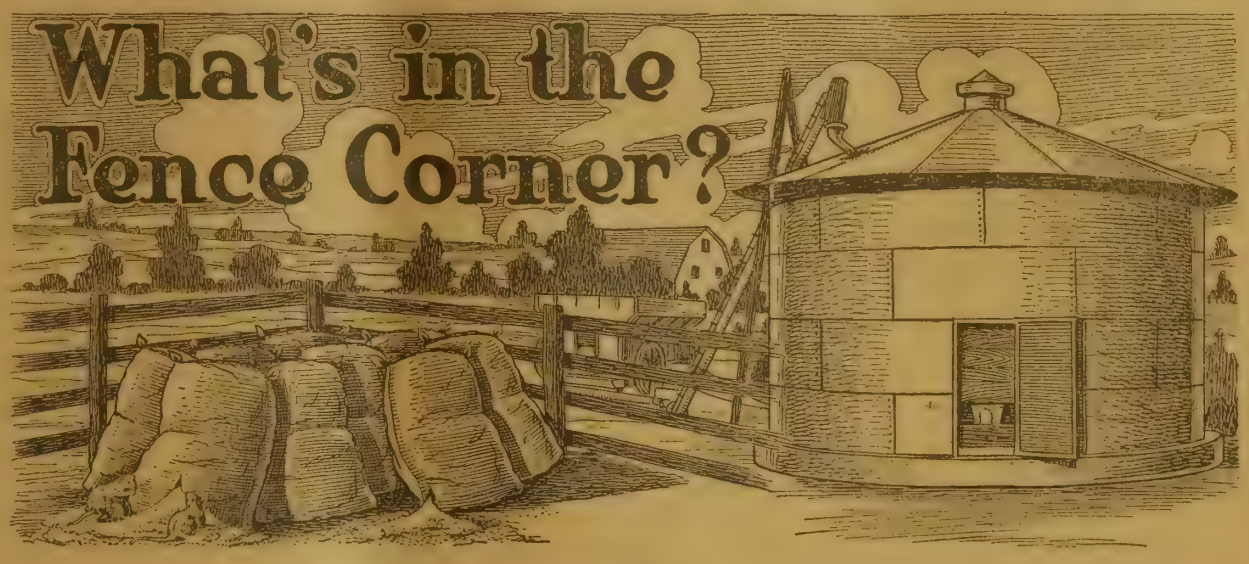
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IN CALIFORNIA, grain is generally harvested by the combined harvester, which threshes the grain and spouts it into sacks which are then sewed and left in the fields.

Sacks from the harvester remain where they are thrown for some days or weeks; later they are gathered into a pile, usually in a fence corner, where they remain for some time.

But there are other things in that fence corner besides grain. Field mice, rats, gophers, birds—gather in glee. Valuable sacks and more valuable grain is destroyed.

Early rain soaks that fence corner. Sun blisters, thieves invade—and general destruction is in that fence corner with your grain.

Stop that waste—stop that drain on your profits. Install a Calco Metal Grain Bin. Put your grain where it is safe from rats, rain and ruin. Calco Grain Bins are inexpensive, and cost but once. Afterwards they SAVE. They save grain and save money for you.

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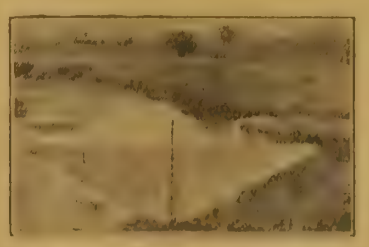
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As LITTLE difference as there is in the appearance of eggs, unless you know how to detect the good ones.

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Vol. XCVII—No. 12 THE PACIFIC RURAL PRESS Forty-ninth Year

SAN FRANCISCO MARCH 22, 1919 LOS ANGELES

Agricultural Progress Is Inimical to War

By Thomas Forsyth Hunt, Dean of the College of Agriculture, University of California

MY THESIS is that war has been made unprofitable even to the winners through recent advancements in agriculture. Farmers are good fighters. During the past four years more than one-half of the farmers of France of all ages were under arms. Nearly 20 per cent of the total population of France were in the army. More than one-third came from the land. Farmers of all nations have always been ready to defend their homes. They can always be depended upon to take up arms for law and order. No society of nations will ever destroy their sense of justice. The farmers of this country will always be ready to fight for honor and righteousness, notwithstanding their interests are subserved by peace.

The more artificial life becomes in the cities, the more artificial—some call it scientific—the practice of agriculture becomes in the country, the greater menace is war. Improved agriculture thus becomes one of the soundest economic arguments for a league of nations. The art of peace may yet prevail over the art of war.

Everyone will admit that the interests of the farmer require the establishment of a league of nations. Furthermore, his interests will be promoted by that internationalism which a society of peoples implies. These facts I consider so well established in the minds of the people at large as to require neither elucidation nor defense.

Relations of Food and War.

What I wish to do is to call attention to the fact that the improvements in farm methods which have occurred since 1870 have made war unprofitable, especially for those who live in the cities. The application of science to agriculture has occurred since the days of Bismarck. It has created new factors which must be taken into account by any peoples who will wage war. What may have been good economics in Bismarck's time is not good economics now. Why did food occupy such an important place in all the discussions relating to this great war? What was the significance of those five words that Mr. Hoover has made classic, "Food will win the war"? Taken literally, they were not true. I suppose Mr. Hoover himself would be the last man in the world to claim they were true literally. In what they imply, however, they were and are of the greatest significance.

The Lesson of a Half Century.

Why suddenly all this interest in food? There is no less land, or rainfall, or sunshine than have always been. No other war has placed the same emphasis upon food. Something must have happened.

Bear with me while I tell it to you. It will not take more than three minutes. It is so simple that any child may comprehend. It is due to the progress of agriculture during the past half century. The progress of agriculture is inimical to war. Every improvement in agriculture makes war more hazardous. The application of science to agriculture, the full force of which has been felt only in the last third of a century, has made war unprofitable especially. Allow me to repeat, for people who live in cities, Why is this so?

Since the Franco-Prussian war the yield of wheat in Germany increased from 19 to 32 bushels per acre, barley from 23 to 36, oats 25 to 44 bushels per acre. The yield of potatoes per acre rose over 50 per cent. The average yield of wheat in England is over 30 bushels per acre. A yield of 40 to 50 bushels per acre is not uncommon. There was a time in the history of Great Britain when the yield of wheat was only six bushels per acre. This little island has the same land, the same rainfall and the same sunshine, no more nor no less, than it had ten centuries ago.

Why Does War Depress Agriculture?

Agriculture is no longer a primitive occupation. An artificial status has been set up. This artificiality breaks down under war. The tendency is for yields to return to those obtained under natural conditions.

Experiments made in England and America show that soil adapted to wheat will continue year after year to produce without amendments about 13 bushels to the acre, while the same soil properly fertilized will produce about two and one-half times that amount, or 32 to 33 bushels per acre.

The acreage of cereals in France decreased during the present war 27 per cent. The production decreased 38 per cent, thus showing a decrease in yield per acre as well as a decrease in acreage.

In both France and Italy members of the Agricultural Commission were told that one shipload of fertilizer from Africa would be equal to 15 shiploads of food from America.

During the past four years Germany has been carrying on the greatest agricultural experiment of all ages. We do not yet know how much of the great advances that were made in German agriculture in a third of a century have been lost in the past four years. We will know later and Germany will know. We may rest assured that when some future German statesman proposes to make war in order to capture a coal or iron mine that German scientists will call his attention to the fertility in her soil which must not be wasted.

The decrease in production falls much more heavily upon the people of the cities than upon the farmers. A building may last for forty years, a suit of clothes may be worn four years, but a man's stomach needs replenishing in about four hours. Although the farmer may find it necessary to wear his old clothes and may allow his buildings to fall into decay, he naturally takes toll before parting with his food. The increased demand may for the moment even compensate him for his lessened crops. In the end, everyone, of course, who labors with his hands must help pay for the war, but while it lasts the farmer may feel the effects less than the man who lives in the city.

The more artificial life becomes in the cities, the more artificial the practice of agriculture becomes in the country, the greater the menace is war.





Modern Agricola goes forth to war with Mars!

BETTER ROADS WANTED.

The following is quoted from a Sonoma county farmer's letter: "We have had, according to our rain gauge, about 28 inches (Feb. 14). The trees and the grain look fine, despite the long frosty period. We had some grain that was nearly two months coming up. We must have better roads, so each farm in the outlying districts won't be a little kingdom by itself."—D. M. B., Sonoma Co.

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EDITORIALS

AGRICULTURE A CURE FOR WAR.

ALL readers will be interested in the argument by Dean Hunt on the preceding page which exalts modern farming as a cure for war. It is a unique and striking conception of the world service of enlightened, progressive and efficient agriculture. To indict war for destructiveness of agriculture and consequent infliction of woe upon the human race—especially upon those who are non-combatant—is an old and obvious citation of guilt which is of itself sufficient to banish war from human toleration. To fortify this conception with its counterpart and to demonstrate that such sufficient and advanced agriculture as the world now needs is in itself destructive of offensive war because it renders the motives and purposes of conquest utterly vain and impossible of attainment and therefore, entirely apart from all moral considerations, unworthy of the consideration of any rational and intelligent being, is an original collocation of facts and ideas which Dean Hunt presents most forcibly for the consideration of our readers. The plain lesson to be drawn from it is that not only for its material needs but for the dissemination of the highest rewards of civilization among all mankind, the interests, agencies and ends of advanced agriculture must be the world's chief concern and everything possible should be done to secure its encouragement as such. From this point of view we shall at another time have something to say about the recognition of the world service of agriculture in the creation of a league of nations.

OUR ATTITUDE TOWARD CO-OPERATION.

ON ANOTHER page of this issue Mr. Whitten describes the attitude of this journal in its desire to find out whether the Milk Producers' Association is about 100 per cent co-operative or somewhat less so and whether its operations are likely to be characterized by a corresponding percentage of advantage to the dairymen. Of course, in undertaking to find out this fundamental fact which will determine the value of the organization, we have to face two undesirable charges or suspicions in the minds of our readers. First, we may be suspected of being unfriendly to co-operation because we question the motives and interests of an organization claiming to be co-operative; second, we may be suspected of selling out to proprietary interests which may desire to discourage co-operation among milk producers.

As to our friendliness to producers' co-operation we cite our record for cordial and elaborate promotion of it ever since this journal issued its first number in 1871. The present generation of active producers can learn from its fathers and grandfathers that this claim is strictly true. Every producers' co-operative organization which is now contributing to the prosperity of California farming was born to public notice and has been nurtured to success in the columns of the Pacific Rural Press. All that we desired to know about each of them as they came forth was this: Is it honestly co-operative in principle and motive and is it being promoted by those who sincerely cherish such principles and motives and whose purposes are therefore above suspicion? We have not always found these characters in enterprises alleged to be co-operative and we have had to closely inquire into them all and to oppose some of them. In early days we had to expose many "creamery sharks" who were prancing about in the livery of co-operation and foisting upon cow-less communities "co-operative creameries"—for the sake of selling machinery at perhaps twice the real value of it. There is no specialty of our agriculture which has so many chances for misrepresentation and for the play of concealed motives and interests as dairy production. It is very complex in its nature and requirements and it has, among the men who put their time and money into its pursuit, fewer of those who have knowledge and experience of high commerce and finance and therefore fewer who can see deeply into the purposes of those who plan to draw the cowmen into profit-paying to themselves as promoters and organizers or under bondage to the interests which employ them as assistants in their investments. A few decades of observation in these lines have convinced us that to get assurance of the purity of motives and unselfishness of dairy organization promoters you have to look more closely into their personal histories in business lines and into their current business associations than you do in the case of any other line of "producers' co-operation."

WHY WE STARTED A RUCTION.

WE HAVE been anxious about the internal affairs of the Milk Producers' Association for some time—not because of anything we found out but because we could not surely find out anything. We offered the officers of the association free space in our columns in which to set forth their purposes and methods—which they feigned to be thankful for and furnished us nothing. We even went so far as to offer them, free of all cost whatever, continuous space in successive issues in which they could set forth their plans and purposes, without any editorial censorship of the matter they desired to print—reserving, of course, the risk of editorial praise or damnation in other columns of the same issue, which everything which enters this journal has to run. Again they smiled and furnished nothing for publication. Thus were we foiled in our efforts to throw the light of publicity upon what the association might have to say for itself in exposition of its methods and purposes. This manifest desire to proceed "on the quiet" puzzled us a good deal, for we find it hard to conceive of an enterprise which honestly desires to extend the advantages of co-operation to all genuine producers in its line without approaching them wherever they are in an open and above-board manner, and the way all other co-operative movements have succeeded has been to rally them from their scattered isolation by frank publication in the class journals which they esteem and trust as true to their interests.

And there has been another thing which has worried us. While we could get nothing "authoritative" from the organizers of this association we were getting too much from those who were "organized" by it or refused to be. Humboldt county milk producers, among whom co-operation has greatest age and extent in California, would have nothing to do with the organization. It seemed to us that the great Humboldt block of co-operations would make a fine cornerstone for a State-wide construction in the dairy line. We were also informed that another coast group of dairymen had refused utterly to have anything to do with the movement and from the valley districts where the movement had scored greatest achievement we received the most puzzling accounts of refusal to co-operate in production even from those who had signed up to do so and were paying penalties for infraction of contracts rather than comply with them. We found ourselves, therefore, in this kind of a journalistic mess: We could get nothing authoritative in the way of exposition of purposes and operations: we were getting too much opposition testimony to warrant expectation of the success of the movement as a general co-operation among those who were already in successful co-operation and among those who desired to be. There is only one way known to an editor to get out of such a journalistic muddle and that is by way of a public referendum to his readers. Therefore, we raised the question among them: Is the Milk Producers' Association a straight and open co-operation, open to all producers who have a right to enter and to be promoted and protected, or what is it? And this is the way the ruction began.

DENIAL OF AFFILIATION WITH A TRUST.

THE charge that the association was in any way a graft on a trust was no part of our puzzle or our problem. We never thought of the possibility of it. That was Senator Brown's alleged discovery and we printed it on his legislative declaration, wondering whether it had any relation to the confusion which we had reached by other avenues of approach. Was that the reason why the thing was being put over on the quiet, why it was presented in the way of overlordship and not as companionly co-operation and why it slid off the foundations of previously existing co-operative dairying upon which it would naturally be expected to rest? Senator Brown's contribution of a trust charge did not lessen our confusion: it only worse confounded it. President Henderson of the association denied Senator Brown's charge just as publicly as it was made and the text of his denial is given elsewhere in this issue. We accept it as a good and sufficient denial.

It is just possible that this whole idea of affiliation with a trust arose from what several readers have reported to us as "behavior befitting a trust" which led them to believe that there must be a trust magnate hidden in the fuel-bin of the association. We get no evidence of such a thing but we get more testimony of threats of what money can do to those who do not come in than one would expect from a whole-souled and genuine co-operative concern. Our readers evidently have an idea that there has been manifested a purse-proud attitude which has alarmed them. They also do not seem to be able to reconcile certain things which look more like trust-wrecking than co-operative kindliness toward milk producers, and they cannot see how certain policies can possibly pay out and be permanently successful. They report many such things to us and we are now on our part making a searching examination to determine whether they are mistaken or not. Fortunately our California producing and selling co-operations have been as a rule careful and reasonable in their business transactions, though one or two have gone wild and have manifested some incapacity and some dishonesty. It is, of course, absolutely essential that our producers' co-operations shall be purged of such things. They must not only be innocent but above suspicion.

OUR ATTITUDE TOWARD PROPRIETARY CREAMERIES.

A WELL-DISPOSED reader in the San Joaquin Valley writes this: "Your friends around here are scared that you will get credit for sharing in the slush fund which the proprietors of independent creameries are raising to fight the Milk Producers' Association with."

Yes, we presume there is a chance of incurring that suspicion—providing there is such a disposition to fight co-operation with money by the individuals and corporations who own the proprietary concerns. We do not know whether there is or not and are giving ourselves no concern about it. We are not opposing co-operation: we never have and never expect to oppose it. But we must know as well as we can whether a thing which claims to be co-operative is really co-operative in spirit in methods and in purposes. It is the duty of every organization which claims such character and standing to make it clear beyond all doubt that it is really just that. When we do not have such demonstration we shall go out and try to get it if we can. We have not charged that the Milk Producers' Association is not honestly and openly co-operative: we are trying to get proof that it is. The way to get truth is not to believe everything but to doubt anything until satisfactory demonstration is secured or satisfying faith established. That is what we want in the case of the Milk Producers' Association and we are likely to shout until we get it. As for the proprietary

interests which our correspondent fears we may get credit for lying-in with, when compared or in conflict with genuine producers' co-operation they are nothing to us. We have no patronage from them nor do any reciprocal interests whatever exist between us—except so far as any producing interest conducted in a business-like manner for the development of California may claim the consideration of a California publication. We do not desire that they use our effort to prove the truth and desirability of the Milk Producers' Association in any propaganda they may undertake and we shall refuse to sell copies of our journal to any party whom we may suspect of planning to use them in that way. This is a housecleaning affair which we are trying to make in the rural household and any outsider who tries to use the dust which is raised to blind the eyes of those who should see clearly how to co-operate to win prosperity and to protect themselves against aggression by any proprietary interests whatever will receive our condemnation. As for the interest in the slush fund which our correspondent fears may be attributed to us, we can only say in the words of Mr. Henderson, which in this case seem to be broad enough—"no proprietary interest has money enough to hire us!"

* * *

ADAMS WILL RETURN TO EDENS.

WE ARE not thinking of the rejuvenation of Palestine, though that is a very interesting theme. Our thoughts are, however, in a somewhat similar line. Recent antics of California representatives of the Adams family suggest that the traditional stunts of their distinguished ancestor still live in the blood—for they are losing paradises in a most reckless, and regaining them in a most gratifying, manner—thus assuring us that the Californian is not likely to fall into the plight of the Mesopotamian Eden. Take, for instance, the case of Prof. R. L. Adams, who did the local farm labor investigating and barn management reporting so well that the Washington Government sent for him to post up the national books in those lines and then tried to tie him down as a division chief in the same connection. He is back again at his old job in the College of Agriculture in Berkeley and is glad to get back. He holds that he came to California some years ago to get away from the East and has no idea of trying to reverse the course of empire. And there is also the case of Prof. Frank Adams, who is now on his way to France to help reconstruct the farming of western Europe by infusing the spirit and inculcating the methods of western American farming. He, too, will be back in the Californian Eden before another winter closes down on his European field of temporary activity. With Prof. Frank Adams goes also Prof. W. E. Packard, whose blood may not be so blue as that of the Adams bunch and does not need to be, for he can get away from European thistles faster than they can with simply a good circulation of gasoline. And these are not the only Californians who are taking up agricultural teaching in Europe for a season. Prof. E. B. Babcock went some weeks ago and Prof. W. T. Clarke would have gone also if the flu had not intervened and delayed his plans. It is, of course, creditable to California to have so many drawn from her staff of agricultural teachers to help in the reconstruction of suffering Europe. It will interest the throngs of our readers, who are personal friends of the men we have named, to know why they will see and hear less of them in California for a season and the assurance we are giving that their absence will be only temporary will be widely welcome.

A Better Position for You

This is your big opportunity. We need a few more red-blooded, dead-in-earnest men to take care of our renewals and present the paper to those who are not already subscribers.

It is pleasant, healthful work, and the opportunities are unlimited. Lack of experience no barrier. No investment necessary, except that you must have an automobile.

Permanent work; straight salary, with advancement. Write us a little about yourself, and we'll tell you about this opportunity that you can't afford to overlook.

QUERIES AND REPLIES

By the Editor.

Inquirer Must Give Full Name and Address.

Dry Culture of Melons.

To the Editor: In your issue of February 22 you speak of deeper rooting of cantaloupes. I am a dry farmer and I get deeper rooting in this way. I plow six-inch furrows three feet apart over the field and in the bottom of those furrows I plant cantaloupe seeds in hills three feet apart—which brings the hills three feet apart each way. As the plants grow I hoe the dirt down around them and the roots are then well down in the ground and protected. I plant corn and watermelons in the same way in the bottoms of furrows at proper distances and in the melon patch I plant corn in every other row to act as a windbreak for the melons. I find this is a good way to grow melons. —J. H. Kuhl, Modoc county.

It is surely a good way for dry culture of melons on a light soil and has been approved by the experience of many growers in the valleys as well as at Mr. Kuhl's elevation. We print it prominently because it is a good hint for dry farmers and garden makers, but more particularly because Mr. Kuhl's contribution illustrates our idea of desirable co-operation between readers and the journal they choose to patronize. It was some bother to him to hunt up pencil and paper and state his experience so briefly and clearly and it cost him more than he pays for an issue of the paper to get this suggestion to us. It would have been easier and cheaper to him not to do it, but he has the consciousness of trying to help his fellow farmers with a useful hint and such help enables us to make a better paper and that helps everybody.

Blue Gums as Plant Destroyers.

To the Editor: Are eucalyptus trees dangerous to the life and growth of fruit trees, berry vines and vegetables, and will they take all the moisture from the earth and destroy plant life? I want to plant some eucalyptus trees, but I have been given this information by a friend.—W. E. P., San Francisco.

There is a popular notion that eucalypts exhale or exude poison to other plants growing near them because such plants are apt to be dwarfed and unthrifty. We are not aware that such a thing has been demonstrated nor is such a postulate necessary. The blue gum, which is probably the eucalypt to which you refer, is a very strong grower and its roots go long distances to secure the moisture and plant food required in its business and it is quite able to rob other plants of these materials. When planted on an orchard border it will depress the growth and reduce the fruiting of one or two, or even more, rows of trees on both sides of it—if both sides are cultivated ground. Its roots will do the same thing if allowed to permeate the soil of a garden of small fruits or vegetables. The blue gum is a Hun: it has no regard for the rights of small nations of plants and it practices ruthless sub-terrane warfare against them. It is a splendid tree for waste corners or for a wood-lot, but none are worse for a garden border.

Pollinating Almonds.

To the Editor: I have 20 thrifty almond trees, six and seven years old. I have been on the place two seasons, but the trees have never set any fruit and as nearly as I can tell they are all of the same variety—all soft shells. My neighbor has 10 acres of almonds about 200 yards to the south of me. Are they too far away for the pollen to be carried to mine? Would a few stands of bees help?—J. C. S., Glenn.

Have you had no almonds at all or not what you could call a crop? It is usually about the sixth year before one gets a crop—especially if the trees have been growing very strongly—so you may get more later. There ought to be cross-pollination to some extent from trees 600 feet away—if they are of another variety—because that is no distance for bee-flight. If you have pollinating varieties within reach, more bees would increase the benefits of tramp bees, which you must have to some extent. If you have no pollinators, it does not matter how many bee hives you set up. We should plant or graft in some Drakes to make the outlook surer.

Moon-Storms.

To the Editor: Can you tell me why we have heavier storms in the light of the moon than in the dark?—R., Petaluma.

No. Are you sure that we do? If you have an idea of that sort, remember that it must not rest upon a hunch or a general impression but must be established by demonstration drawn from records of dates of moon phases and storm occurrences for many years. Those who have most carefully studied the moon and endeavored to trace our weather conditions to its influence agree that there is nothing to warrant a claim that the moon is an earthly weather-maker or that storms can be predicted on the basis of the phases of it—therefore the conclusion would be that there is no evidence that heavier storms are to be expected in the light than in the dark of the moon. The little, old dead moon has much earthly disturbance to answer for. We do not undertake to clear it from responsibility for brain-storms, for psychology is not in our line.

Sugar from Grapes and Beets.

To the Editor: Owing to a great many raisins damaged by the rains this year, a great many are being bought up, I understand, by syrup manufacturers. What are the possibilities of making sugar out of them, owing to the fact that raisins ought to test about 30 per cent against sugar beets, which usually run 18 to 20 per cent. It looks as though grape raising for sugar would beat the sugar beet all hollow.—G. H., Reedley.

Whether syrup can be profitably made from grapes in large quantities is a complex economic and commercial question which it will probably take some time to demonstrate. The question which you present is very simple and can be conclusively answered. The sugars in the grape and in the beet are different. Grape sugars cannot be crystallized and presented in the granulated form which the sugar from sugar cane and from beets naturally assumes and which is the only thing which people will buy for "sugar." Therefore, there is really no possible competition such as you suggest.

Nitrate Good But Not Enough.

To the Editor: Where can I buy nitrate of soda in small quantity, say a sack? I wish to use it on my garden, which is of heavy adobe soil. Is the nitrate best, or would you recommend some other fertilizer that would do as well and be less expensive?—T. F. Q., Davis.

You can get nitrate by the sack from any fertilizer dealers advertising in our columns. It is also usually supplied in quantities to suit by seedsmen. It is a splendid plant-pusher when used sparingly and scattered well and it acts quickly and well when used with other fertilizers. It is, however, not adequate to the mellowing and aeration of your adobe garden. For that you need free application of stable manure and lime. For immediate planting you need thorough digging in of well-rotted stable manure, and then begin next fall with working in fresh manure (which is usually easier to get) and the rains will rot it for you. After you get the soil better supplied with organic matter and loosened up, you can use nitrate or other commerical fertilizer to better advantage.

Worthless Oranges.

To the Editor: I have four fine orange trees which bear the most beautiful looking oranges, but the peel is half an inch thick. Can you tell me why and how to remedy it?—E. M. B., Los Gatos.

If they are young budded trees and therefore presumably of a variety which might be expected to be good, it is possible that you are giving them too much water and manure. If they are fine large trees and presumably eight or more years old, they are worthless seedlings and should be grafted over to a good variety unless you wish to keep them as ornamentals.

California Weather Record

The following rainfall and temperature record is furnished the Pacific Rural Press by the United States Department of Agriculture Weather Bureau at San Francisco for the week ending at 5 p. m., March 18, 1919:

Stations	Rainfall Data: Past Week	Rainfall Data: Seasonal To Date	Rainfall Data: Normal To Date	Temperature Data: Max'm	Temperature Data: Min'm
Eureka	2.02	33.56	35.79	60	40
Red Bluff	2.37	25.74	10.84	66	36
Sacramento	.04	16.97	15.79	62	38
San Francisco	1.60	25.00	18.16	61	40
San Jose	2.04	18.57	13.61	61	34
Fresno	.66	6.48	7.56	68	28
San Luis Obispo	2.06	17.70	10.35	72	34
Los Angeles	1.60	7.66	12.88	78	42
San Diego	.48	6.81	8.24	68	40
Winnemucca	.08	5.90	5.11	60	24
Reno	.07	7.77	8.25	66	24
Tonopah	...	5.04	5.98	56	30

SNOW ON GROUND.

Huntington Lake, 79 inches; Cassada, 10 inches; Yosemite, 12 inches; Squirrel Inn, 18 inches; Emigrant Gap, 36 inches; Summit, 120 inches; McCloud, 15 inches; Sierraville, 9 inches; Inskip, 86 inches.

What Variety of Cotton Should I Plant?

Written for Pacific Rural Press by Prof. W. E. Packard, University of California

A FIVE minutes' discussion on any subject with a cotton man these days drifts into an argument on cotton varieties—an argument because, in cotton as in many other things, individuals have their preferences and discussion tends to make their preferences a prejudice for which they will willingly die. This article is not intended to influence anyone's opinion, therefore, but is simply to "lay the cards on the table" and let each one take his choice.

This does not mean that the writer has no prejudice or, let us say, preference, for he has a strong inclination to favor Pima Egyptian, but in the light of the purpose of the article no such preferences will be stated.

VARIETIES AND YIELDS.

Three varieties of cotton have been raised commercially in the Imperial, San Joaquin and Sacramento valleys this year. All three varieties have proved to be well adapted to conditions. Although the average yield in many cases has been low, it does not indicate that average yields will continue to be low when the cotton raisers become familiar with the necessary cultural treatment under irrigation in California. Individual yields of better than a bale to the acre of short cotton, Durango and Egyptian show the possibilities, where the cotton was planted early, on good land, and where it was properly taken care of.

The average yield in the San Joaquin (when the fields which were manifestly "impossible" are eliminated) compare favorably with the yields in Imperial Valley and the Salt River Valley, while those two valleys stand way ahead of the south in average production. The most favored sections of the Salt River Valley went two-thirds of a bale to the acre, while Imperial averaged about half a bale. Those who think in terms of a bale to the acre may be disappointed by these averages, although needlessly so. Those who plant good seed early and give the cotton proper attention are sure to rise above the average and are apt to be in the bale-to-the-acre class.

RELATIVE VALUE OF VARIETIES.

Your correspondent submits a tabular statement of results of planting on H. F. Gerran's farm at Shafter, in Kern county. Several varieties were included in this planting in order to give a line on the future varieties to plant. A study of the figures in the table may be of value to some growers who are in doubt.

Although, as indicated above, short cotton can be raised successfully in the San Joaquin and in spite of the fact that short cotton is now being raised successfully as the main variety in Imperial, nearly all growers agree that short cotton will not remain when prices become normal, on account of the higher cost of production under irrigation in California, as compared with the rainfall sections of the south.

Durango cotton, which is a variety selected by Dr. O. F. Cook of the U. S. Department of Agriculture from cotton exhibited at the St. Louis World's Fair by the State of Durango, Mexico, has been grown commercially in Imperial Valley for years and has been grown with satisfaction this year in both the San Joaquin and Sacramento valleys. Durango classes as an inch-and-a-quarter cotton and ranks well along with the bulk of the long-staple upland cotton of Mississippi. It is an early maturing variety, originally selected for the boll weevil sections of Texas. This characteristic, of course, gives it an advantage in sections where late and early frosts are apt to occur—in sections such as the Tulare Lake bottom or in the trough of the two big valleys. The tendency of the variety to shed its bolls at the least change in moisture condition or during adverse weather conditions has led many to favor other varieties.

The Meade cotton is of excellent length, but has not the strength of the Egyptian. It is a fine white cotton, more early maturing than Egyptian and a good producer. Seed of this variety is not available for planting, however.

The unusual suitability of the Egyptian cotton for the irrigated area has led many to feel that Egyptian cotton should be planted to the exclusion of all other varieties—as has been done in the Salt River valley of Arizona. Coming as it does from the irrigated lands of Egypt, this cotton is quite at home in the San Joaquin. Egyptian cotton requires a long season and when planted late on poor land has not given good results, and these plantings teach most emphatically that early planting and good care are essential to success.

Pima cotton is the latest development in the Egyptian cotton class. The staple runs from one and three-quarters to two inches in length and is of excellent strength and quality. It is the only cotton on the market which can be used as a substitute for Sea Island cotton, which is doomed to serious set-backs on account of the boll weevil inroads on the island plantings. The Yuma variety is an earlier selection, but due to its tendency to mature later than Pima the yields have not equaled the other variety and the staple is about a quarter shorter than the Pima. When the season is long enough, as it is in Imperial Valley and in the lower end of the San Joaquin, there is no doubt about the desirability of Pima cotton. In other sections its adaptability is yet to be fully established.

ESSENTIAL TO CALIFORNIA SUCCESS.

The success of the cotton industry in California depends upon the establishment of but one variety to a community. Miscellaneous plantings are sure to lead to ultimate failure, due to admixture of seed and deterioration of staple. The experience of the growers in the Salt River valley, irrespective of varities of cotton grown, should have a strong influence upon California cotton men. The wonderful development of the Egyptian industry in Arizona is due to the selection of one variety for universal planting. Whatever variety is selected no other should be allowed in the community.

As stated in the beginning of this article, I do not expect to convince growers by what I say. Mixed plantings will occur in most communities this year. Experience, however, is a hard teacher, and the lesson will sometime be learned. The future of the industry depends primarily on the selection of a good variety and secondly on the exclusion of all others.

Plaint of a Puzzled Subscriber

To the Editor:—One of the questions most commonly asked in the San Joaquin Valley is: Which is the most profitable variety of cotton for me to grow? There are several varieties. Of Egyptian long staple, we have two dandy varieties, Pima and Yuma. Of upland long staple there are Mead and Durango. The most common variety of short staple is the Acala. As there are several varieties, there are also many advices and reasons given as to which is best to grow.

I send you a table of results reached by H. F. Gerrans of Shafter, in his experiments made last year under the supervision of the government field investigator, W. B. Camp.

All the varieties shown in the table had the same care, water, etc. The Pima was a leader in quantity, quality and in price, but the ginning must come out of the price shown in the table. It cost $15 to gin a bale of Egyptian cotton and it takes 11 hours to do it in, while a bale of Durango which by some is so strongly commended only takes about 20 minutes to gin and costs as much as $7.50 a bale to gin. If these figures are correct, as I believe they are, it looks like about $200 a day difference to the man who does the ginning, whether you raise Pima or Durango.

If this is only one side of the story, I am decidedly anxious to hear the other side. I hope your good paper can find space for this statement; also any criticism of it from any other point of view which may come in. —C. Barnum.

COTTON VARIETIES GROWN AT SHAFTER, 1918.

Variety	Computed Yield Seed Cotton per Acre: lbs.	Actual lbs. seed cotton harvested	Lbs. Seed	Lbs. Lint	Price Lint per lb.	Value of Lint	Value Seed	Area in Acres	Total value per acre
Pima	2368	630	437	201	56c	$112.56	$14.20	.266	$476.50
Yuma	2350	630	423	203	52	105.56	13.75	.268	445.18
Meade	1989	535	394	148	52	76.96	13.80	.269	374.50
Durango	2327	640	419	204	34	69.36	13.61	.275	301.70
Acala	2335	460	282	165	32	52.80	9.16	.197	314.50
Totals						$417.24	$64.52	1.27	

The above cotton was grown between two-year-old apricot trees, on a little less than two acres of land, and the actual area occupied by the cotton was 1.27 acres.



A Mexican cotton picker in a field of Egyptian cotton in the Imperial Valley.

FRUIT GROWERS OFFER PROTEST

At a large meeting of the Santa Clara County Vineyard Growers' Association a resolution was passed against the Harris bill, which permits the invasion of private houses in search of wines, etc., and another resolution was passed protesting against Senator Duncan's bill to abolish the State Board of Viticulture. Feeling ran very strong and the indignation expressed in protest was emphatic.

BE SURE YOU PLANT THE RIGHT ALFALFA

This Booklet Tells Which



There are more disappointments and partial failures caused by planting alfalfa unsuited to the soil and moisture conditions than from any other cause.

Don't Be Disappointed. You will find this booklet a real aid in explaining and illustrating which of our selected kinds of alfalfa is best suited to your particular requirements.

Write for It Now and ask for latest price list. Be sure you are right before you go ahead.

Bomberger Seed Co.

(Desk A)

725 Tenth St., Modesto, Cal.

Americans Lead in Power Farming

Written for Pacific Rural Press by R. E. Hodges

IN the beautiful country of unexcelled fertility at the base of Sutter county buttes we found De Witt Brothers accomplishing feats not uncommon in California but well suited to fire the imagination. The Sacramento Valley is subject to north winds, often of several days' duration. Woe be to the farmer whose fresh plowing lies a day or two in that wind. He will not have so arduous a job working down the clods which the wind dries out as he would in some other sections, for the soil here is silty and the clods not quite so tough as adobe. But a day's wind on fresh plowing will make it impossible to harrow into a good seedbed, and will at least double or treble the work of preparing it for a crop. A complication in this particular district is that seepage water often keeps the ground too wet to plow or work down until late in spring. Mustard often grows tall as the tractors, before it can well be turned under.

Then again, there are economic reasons why preparation for grain may be delayed until the latest weeks possible to put it in. The De Witt Brothers also grow beans and almonds in the buttes. Care of the almonds and other farm work may take the winter's spare time, while the flat is water-soaked, thus delaying preparation of grain seedbeds.

TRACTORS FOR THE RUSH WORK.

In spring the rush begins. Eight hundred acres must be planted to grain in a few days. The north wind must not get in its almost terrifying work. We use "terrifying" in memory of riding the disks over cloddy fields, but De Witt Brothers do not ride the disks. In 1916 they started to plow March 20. Mustard was taller than the Caterpillars and had to be dragged under with chains combined with rolling coulters. They had it all plowed, harrowed, part of it double-disked, all broadcasted, harrowed twice, and rolled, by April 10. They plowed only deep enough to cover the trash, because it was late and the north winds were coming. They wanted the seed to work down under, not above, the layer of weeds. If the grain could work down to the moist bottom of the furrow, it would sprout roots into a permanently moist subsoil and push up through whatever trash and soil were helping to mulch the moisture to the roots. If the trash had been turned under deeply and the grain sown over it, the plants would have suffered while getting their roots through the mulch. Never was any of the plowing left exposed more than two hours before harrowing, except the last work done before dark, and it was harrowed first in the morning.

We reached the ranch just as the three De Witt brothers were pulling their tractors into the shed at dark, two weeks ago. They had just embarked on a fifteen-day job of preparing and sowing 800 acres of barley. Four hundred and eighty acres had been plowed last October in fifteen days with a 75-horsepower tractor. This 480 had just been harrowed in one and one-half days when we called at the ranch. The 75-horsepower tractor pulled harrows 60 feet wide at a trip, the "45" pulling harrows of equal width but lighter weight. A 20-acre piece covered with mustard 16 inches tall had that day been disked by Marcus De Witt with one of the "75s" pulling three 10-foot double disks. He estimated that 80 per cent of the mustard had been killed and was debating whether to double disk the rest and omit the plowing. Plows could not be set shallow enough at this season in this soil, for reasons mentioned above. Double-disking repeated cross-wise would take no more time than plowing, and would make a fine seedbed with a firm subsoil to hold moisture. Broadcasting would be followed by another double-disking and a harrowing, which would leave the field ready for successful battle with the elements. The broadcasting is done by a common machine on a wagon pulled with some waste of power by the "45" tractor. Two broadcasters, one behind each end of a 45-foot harrow cart, have been used, seeding about 250 acres per day. The 75-horsepower tractor follows a single broadcaster, harrowing the grain in well as soon as it is sown. Last year in one case 240 acres were sown in one and one-half days this way.



The modern tractor of appropriate power, pulling in its wake multiple disks, plows, seeders, etc., prepares large seed beds quickly, saving labor, conserving moisture, and warding off worry.

FEEDING AND CURRYING THE MACHINES.

While we plied our questions by lantern light, the tractors were "fed their barley," as expressed by Mr. De Witt. They are worked about 11 hours per day and are not abandoned at dark, nor are they left far afield, as suggested by one of our critics in the discussion about starting cold engines. While the bearings were warm and the grease soft, all grease cups were filled and screwed down, perhaps to be refilled repeatedly. They were left full, ready for quick adjustment during the next day's work. Oil and perhaps some adjustments were also attended to before the men had their "barley."

"In the morning," said Mr. De Witt, "we give the machines a crank and off we are at work, with no delay. Adjustments are made by daylight, and more or less careful inspection is made at noon.

"We do not overload our tractors and the upkeep is very reasonable. We figure that we make better time with the work by giving only a reasonable load and by keeping on the move all the time, rather than to overload and be delayed frequently. We have kept a tractor going steadily for a stretch of three weeks without the radiator getting cool. The "45" pulls two 10-foot double disks. The "75" pulls three of them. The "75" pulls sixteen 12-inch moldboards 8 inches deep when that is desirable, and the "45" pulls ten such plows."

MOTOR TRUCK SPEEDS RANCH WORK.

Well, it is a stretch of several miles between the grain ranch and the home ranches of the boys. A two-ton motor truck is indispensable in carrying plows, disks, harrows, distillate, etc. The truck had only the day before our visit gone 30 miles to the ranch of one of the brothers and brought back four 4-gang twelves for the 75 tractor just coming onto the job. With horses to get these plows, a man and team would have taken an extra day while the tractor would have stood idle. The truck brings all seed to the broadcasting outfit, but it did not work well trying to operate the broadcaster on the soft ground. However, it hauls grain from the field, 40 sacks per load, and an extra 10 sacks are added when it gets on the road. One of the brothers on one trip hauled 6600 pounds of wheat and three barrels of oil.

GAS ENGINES DO ODD JOBS.

Ever since the father shipped one of the first gas tractors into Sutter county, fifteen years ago, and the boys learned to operate it, they have been known far and wide as the ones who could cure engine troubles when all other doctors failed. The implement men of Marysville often called them in when their own experts were stumped. (The De Witts did not tell us about this.) Their farm is pretty thoroughly stocked with engines and implements, some of them only "half-baked," devised or remodeled by themselves. They rigged up an orchard sprayer of their own, but on good advice relegated it in favor of one of the satisfactory commercial machines run by a 2½-horsepower engine of its own. A 6-horsepower gas engine has been put on skids to be used at various jobs on the ranch. It runs a big almond huller. It cuts up the stove wood for the ranch, making use of orchard prunings and dead trees grown on the ranch. This saves time and expense of hauling wood or coal from afar. It is connected up at will to a line-shaft to run an emery wheel, etc.

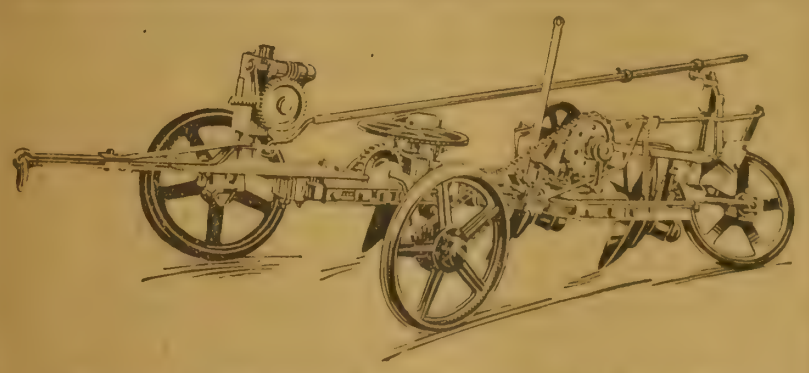
Another 2½-horsepower engine is used to operate the dry sulphuring machine, which has proved highly satisfactory in sulphuring the beans, of which they have about 160 acres. (The seedbed for these is prepared by tractor and double disks.) Sixteen rows of beans are sprayed at once for prevention of red spider—considered cheap insurance.

The dry sulphur sprayer and engine are also instrumental in saving the almonds from red spider and brown mite. It was no trouble to spray 65 acres per day of six-year trees where the bugs were "fierce." The leaves were saved and a crop obtained quite satisfactorily. Two rows of trees were sprayed at a time, with the team never stopping. On 10 acres of big old trees in which growth was too thick and low for the outfit to pass through, three lanes were broken out cross-wise of the wind through the orchard and the sulphur was blown upward in clouds to drift over the trees. Some of that sulphur was still noticeable this winter when the trees were pruned.

The De Witt brothers and thousands of others like them are splendid examples of the difference which power machinery makes not only in amount of production but in character of the man distinguishing American farmers from European peasantry. They are a splendid argument for extension of power farming and for expansion of our University Farm facilities for investigation and instruction.

IRRIGATING CORN ON PEAT.

Peat soil is peculiar in that water soaks sidewise very readily but does not rise much by capillarity. This is an advantage in maintaining a dry mulch, but it fools some folks who let it drain out by lowering the water-level in drainage ditches. Irrigation of corn is a most important practice, as observed by Manager Carson Cook of the Rindge Land and Navigation Co. of San Joaquin county.



For Orchard Work

—this is the only power lift plow that actually does the work! It goes right up close to the trees—to within eight inches, even when throwing the soil away. Your tractor isn't complete without a

Knapp Tractor Disc Plow

behind it. It has a real Power lift, too. A slight tug at the rope and up comes the plow CLEAR of the ground. No drag!

Why were so many Knapps used by tractor demonstrators at the recent demonstration? Because the operators on the tractors knew that a good tractor deserves a good plow.

Send for New Folder.

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Picked up in the Field

Insect and Fungus Control.

Two years ago the writer assisted in applications of kainit to pear trees infested with pear root louse to see if it would have any effect in controlling the insects. The experiments were conducted in the pear orchard of S. H. Wyckoff at Napa. Four trees were treated—the only four that showed up badly. On two trees 20 pounds to the tree were applied, and on two trees 10 pounds to the tree. No results have shown up either in improved foliage or control of the louse. One tree—the worst—has since died. The trees are 30 years old, and the rest of the orchard is sound and thrifty—good for another 100 years apparently. In spraying for thrips and scab, Mr. Wyckoff sprays first when the bud is breaking, with lime-sulphur; second spray with Bordeaux or lime-sulphur and arsenate of lead in cluster when petals fall, and the third time the same before calyx closes. He uses the powdered arsenate of lead, six pounds to the tank (200 gallons). Has used it for four years with good results. His orchard averages five tons No. 1 pears to the acre.

The Season and Thrips.

The past season has been one of great mortality to insects is the belief of Horticultural Commissioner W. D. Butler of Napa county, who also stated that he was satisfied that there were two crops of Brown Apricot scab last fall and winter owing to the September rains. His observations also bear out our own, that thrips are few this season—hardly any to be found. The opinion generally expressed among growers who observe these things is, that the cold wet season has held them in check or killed them. In any event the trees are vigorous and the buds very strong this year. Last year pear buds were weak and a very few thrips did more damage than two or three times the number could now, according to S. H. Wyckoff, pear grower of Napa.

When Prunes Will Bloom.

Broadly speaking, it will be the last week in March and possibly the first of April before French prunes will be in full bloom. This renders a bright outlook still brighter as we shall be safer everywhere from possible damage from frost and rain in the bloom.

Heavy frost damage takes place almost always in March and as for the rains they were never more beneficient or fell to better advantage. It's the spring rains that count. This year there is no packed ground from heavy beating downpours and the soil is in excellent condition.

The Rains and Spraying.

Apple and pear growers will have quite a job getting their early sprays applied on heavy ground if the intermittent rains continue. But it will have to be done. Though the thrips' report is favorable (let's knock wood), this season's weather is just right for the development of scab. The present outlook for apples and pears is most encouraging and more than ever it will be profitable to keep them clean.

Disking to Hold Control.

This week we found one man winding the tree-rows he was going to plow away from, with a disk. The ground was a bit too wet to plow and he was afraid that by the time he gets to plowing, those centers might get hard on him. So he is taking time by the foretop instead of the fetlock. There is no doubt that any kind of a disk will help to hold ground in shape for plowing. The time of year has now arrived when the top bakes or dries out hard very rapidly. Where 20 or 30 acres has to be plowed with only one team it pays to put in a few days with the disk just to hold the ground in shape. It need not be a heavy drag and will help to get that team's shoulders in shape by the time the steady daily grind comes.

What About Cover Crop Seed?

A man who faithfully uses cover crops in the orchards every year asked this week: "Why is there no provision made for a regular supply of seeds that are demanded for cover crops? There was no bur clover seed to be had this year at any price—nobody had saved any? Last year the supply of vetch seed was very limited and too high in price. We could get plenty of melilotus, which is not in demand in our neighborhood." If any line could be obtained in the various counties through the farm bureaus what the probable requirements of the various sections would be, provision would doubtless be made by the seedmen to meet them.

Powdered Arsenate of Lead.

We have found users of the powdered arsenate of lead to report favorably on it as efficacious in worm control and so easy to mix and to keep mixed with a good agitator. It is now customary to use the acid lead arsenate at the first spray only and neutral lead arsenate at each subsequent spray to be on the safe side. Some growers in the Santa Clara valley use the neutral only.

Spray for Walnut Aphis.

If your foliage was rusted and starved by the walnut aphis last year it will probably be in evidence again this year. Now is a good time to spray for control—use lime-sulphur winter strength till the buds burst.

THE PROFIT IN STRAWBERRIES.

C. E. Jackson, a prune grower of Cupertino, produced twelve tons of strawberries to the acre last year. This beats alfalfa even in weight. From seven and a half acres he claims to have netted $15,000 this year. For the year before last, from nine acres he gave returns as $15,000 gross or $11,000 net. Four hundred chests to the acre for the past two years! The plants are now four years old. He has a force at work on the ground now to plant 20 acres more. The grading, fluming and planting will cost him $210 an acre. Mr. Jackson has been planting out ten acres of prunes a year and now has 100 acres planted—from one year old to full bearing. His strawberries are the "Banner" variety and he is making the most of his time while there is good money in the crop. He expects to set his entire acreage to prunes.

The Stanislaus Nursery Company has purchased a ten-acre tract on the Glass road at Riverbank and will be at once made ready for almond seedlings.

The Co-operative Sales Agency of the Hood River Apple Growers (Oregon) handled $2,102,900 worth of business during the past season. A fine record.

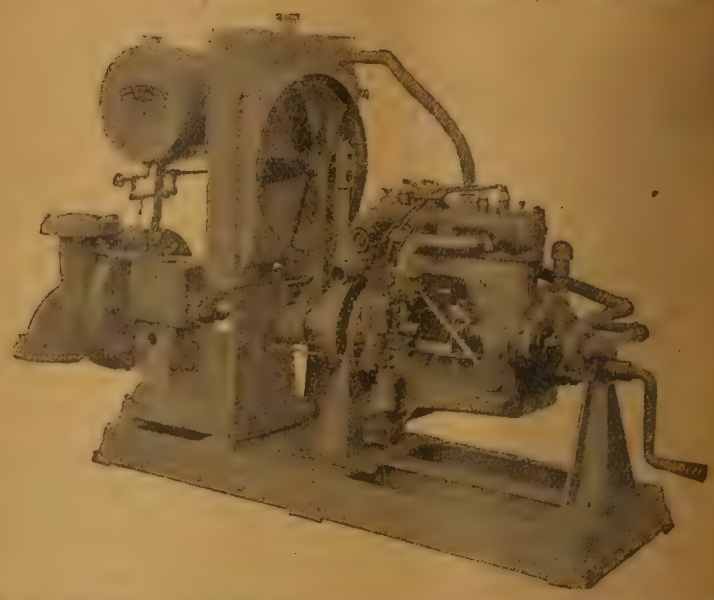
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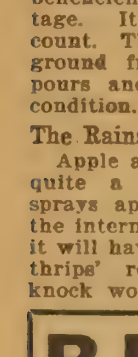
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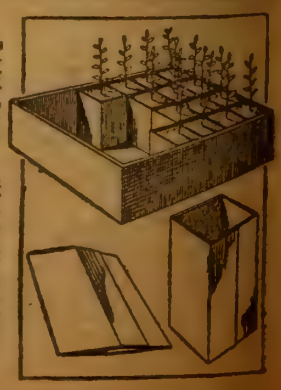
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These pots are bottomless. This allows you to plant pot and plant, never disturbing your plant nor stopping its growth in transplanting a single hour. For starting early vegetables, such as tomatoes, cabbage, egg plant, cauliflower, cucumbers, cantaloupes, and squash. Also for propagating rose cuttings, geraniums, eucalyptus, or olive cuttings. It is the most practical pot on the market today for propagating work. Write us for samples of either pots or protectors. Tell us which you are interested in

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are scientifically manufactured to meet California soil conditions and crop necessities. They are made from animal products that contain the necessary elements to feed your crops.

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PURE ANIMAL MATTER AMMONIATES

GOLD BEAR FERTILIZERS

FOR CALIFORNIA SOILS

FIG GROWERS AROUSED TO CO-OPERATION.

[Written for Pacific Rural Press.]

At the opening session of the Annual Fig Institute at Fresno, steps were taken to form the growers into a co-operative organization on the same lines as the California Associated Raisin Company, for the purpose of controlling packing and marketing their crop of figs and products. A committee of ten was elected to be the first incorporators of the new institution, who will hold office for one year. This committee was instructed to proceed at once to incorporate and endeavor to get enough fig growers signed up in the new corporation to control the complete output of figs in the State—or the majority of it.

An endeavor to get a line on possible fig prices for the coming year has led to a statement sent out by J. C. Forkner, president, to the effect that at the present time it is not in a position to name prices for figs. Statements issued by the California Fig Growers' Association should be taken simply as advice and as having no other authority. During the formative period of the new marketing association, the present board will render whatever service it can to fig growers, and a statement will be issued from time to time during the spring for this purpose. He says:

"At the present time, the fig brokers of New York City are sending out letters advising the fig buyers in different parts of the United States and Canada not to buy figs at this time, for they believe that fig importations from Smyrna will be made this year. Some fig packers in California are now offering the 1919 crop of figs for fall delivery, subject to prices at that time, no price now being made. At this time, this committee is not aware of any purchases or sales having been made at any definite or specific price. The importations of figs from Smyrna determine, to a very large extent, the price of California figs. If a large importation of figs should take place, it would no doubt have the effect of lowering the price of California figs this season. If no importations from Smyrna take place, or if but a small amount is imported, the chances are that the prices for the California figs will remain high during the season. This statement is given out so that each grower will be apprised of all the information there is to be had at this time."

HORTICULTURAL CONDITIONS IN TULARE COUNTY.

[Written for Pacific Rural Press.]

The following report has been received from Alfred Gunnaison, director of the Kings River Farm Center of the Kings River Farm Center, Tulare county: "In regard to peaches and apricots, the outlook here is very good where fall spraying was practiced. Where this spraying was neglected, there are considerable evidences of blight. Rain has been plentiful. There will be no need of irrigation for at least another month. The water has been turned into some ditches now and I think it could be had any time from now on.

"People in this section are preparing to give Jack Frost a warm reception if he should decide to show up, with Bolton heaters, tin-can smudge pots and unlimited fuel oil. Many have skimmed up crude oil along the 'Associated' pipe line, where the oil has broken out. Whether this will burn satisfactorily or not is a question, on account of the water contained in it.

"The outlook for bees in this section is very good. There has been no winter loss of bees and the plentiful rains ought to insure a good honey year. My 32 stands, as we expected, brought me in $500 last year. Vine pruning is in full swing and spring plowing has been started in vineyards and orchards. The trees are in full bloom now in this section."

The picking of seedling oranges has begun at Porterville in the Globe district. Three dollars a box f. o. b. are expected for the first shipments.

WESTERN PULVERIZERS MULCHERS and PACKERS



Farmers are realizing more and more each day the necessity of proper soil handling.

Western Pulverizers are modern machines, very economical and in a class by themselves.

You should be interested in up-to-date equipment and it will pay you to look into this machine for perfect seedbeds.

Can be used right behind plow, as they are self-cleaning.

Made in sizes to accommodate every user.

WHY OVERLOOK THIS WORTH-WHILE TOOL?

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Power—Power—Power

Fertilizer is to the tree what gasoline is to the engine. If you want small returns, feed little; if you want **BIG RETURNS**, feed liberally.

90 per cent of the non-paying groves are the **UNFERTILIZED** groves. Feed your trees into the dividend-paying class by using

HAUSERS ORGANIC FERTILIZERS

Built for California conditions.
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THE BASIS FOR ORCHARD PERFECTION CROW TREES

PRUNE TREES

FRENCH on Myro., 6 to 8, 4 to 6, and 3 to 4 ft
" on Peach 6 to 8 and 4 to 6 ft
" on Almond, 4 to 6 ft.
" on Apricot, 6 to 8 and 4 to 6 ft
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All budded and selected bearing trees

CHERRY, leading Commercial sorts, all sizes

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WM. A. CURTIS CO. - San Francisco, Cal.

Evergreen Trees for Avenue, Yard or Park

[Written for Pacific Rural Press by John J. Fox.]

Last week we published a little list of deciduous ornamental trees and shrubs that should be planted without delay. In this article we shall make mention of evergreens which will be delivered boxed, balled or potted ready to go into the place prepared for them without fear of being dried out in transit. Although these can be planted for a long time to come—even up into May some of them—yet the sooner they are planted now the better chance they will have of a good start and a thrifty first year's growth.

TREES FOR ALL SITES.

The Victorian bottle tree is useful in the yard or on the sidewalks, especially where there is a narrow parking space, as it has a deep tap root and won't interfere with the side walk by jamming it up. It has a tapering trunk and glossy deep-lobed foliage and makes a fine avenue—not less than 40 feet.

The camphor tree is a favorite for street planting. It is a sturdy grower, symmetrical in shape, has bright green leaves and thrives on poor soil.

The bay tree (Umbellularia Californica) is well known, as it grows so strongly in many of our river bottoms and along the coast, where it is known as "pepperwood." It is a very rapid grower, with deep green, glossy, oblong leaves. The leaves are aromatic and are sometimes used in sweet pickles. It gives a dense shade and needs pretty good soil and adequate moisture.

A FEW WATTLE VARIETIES.

Of the hundreds of species of acacia, we will name the silver wattle (60 feet), bright, feathery foliage and golden bloom, which is very hardy and a rapid grower; the green wattle (75 feet), feathery, dark green foliage and whitish-yellow flowers, an upright and hardy tree; the black wattle (50 feet), a still darker green; the golden wattle, with long, narrow leaves and drooping clusters of bright yellow bloom, and various others. The above make good street trees and handsome park specimens.

Beefwood (Casuarina stricta) is an Australian tree that has long needle-like leaves, like a sugar pine, and the branches are long and slender. It stands any amount of pruning and if kept clipped will form a good hedge. It grows well, even on alkali soil, if not too strong. It is good cattle browse, by the way, and one man up in Lassen county bought some to try out a few years ago, but we have not yet followed this up. These trees can be bought in "flats" by the hundred and should be tried out. We heard of one man writing from Australia who fatted out 200 head of cattle on Casuarina browse in three months' time and followed them with sheep, with like results. It is, at any rate, worth trying out where grass is sparce and only scattering pines grow, as it can be kept in bush form and browsed. This makes a good ornamental tree as a specimen or group and is said to harbor no insect pests.

The arborvitæ are all compact growers, either rounded or pyramid shaped, and are useful for yard or park, but should not be used as a street tree or an avenue, except as a contrast. The smaller varieties make good lawn or corner features. They can also be massed for hedges.

The California big tree and the California redwood may be planted anywhere as specimens. The latter is especially graceful and after it is once established is very hardy and a rapid grower—a living symbol of vigor and permanence.

The large cedars make a very stately avenue. The Indian cedar (Deodara) is one of the most beautiful in form and foliage, which is silvery green. It is also one of the most rapid growers. The cedar of Lebanon—of dark green foliage, strong growth and wide adaptability with regard to soil and conditions—and the Atlantica, a handsome upright grower of silvery green foliage, are both favorites and also make splendid park specimens. They should not be planted in avenues of less than 80 to 100 feet wide and on no account have their lower limbs trimmed off.

Nature especially provides these as a protection to the tree where it stands alone. They also complete its symmetry. The lower limbs of all the conifers should be left untouched. The Cryptomeria Japonica is a tapering tree of upright growth and fern-like upward-spreading branches. It is the leading timber tree of Japan and prefers a moist climate and location and not too much cold. There are various garden varieties of varying foliage that are most useful in smaller gardens. For park use there is a large choice of cypress, pines, firs, junipers, spruce and yews. The blue spruce is a beauty.

OF THE EVERGREEN OAKS

there is the California live oak—one of California's great natural features—the maul oak, the tan-bark oak (which we mentioned last week) and the cork oak. This latter is a very ornamental and upright growing variety and is one of our best for street, park or avenue. It thrives well and under proper tree conditions it grows right away. This tree also has an economic value, apart from its decorative and shade use, for its outer bark furnishes the cork of commerce. We import nearly $6,000,000 worth of cork every year and it is claimed that California can bring trees to the same degree of maturity in 35 years as Spanish trees attain in 60 or 75 years. Yet Spain finds it profitable to raise cork.

The feathery pepper tree and the magnolia with its large burnished leaves, fine white blooms and coral red seeds are known to us all.

YARD, CORRAL AND WOOD-LOT EUCALYPTUS.

The eucalyptus is pretty hard to beat for house shade and wood lot, especially in the interior valleys and in the south. The blue gum is a winner, as it is so hardy and grows rapidly. The wood also makes good tool handles, double-trees and inside timbers, as well as firewood. The Robusta is a smaller variety, bearing large clusters of white flowers in the fall and winter—good for beekeepers for this reason. It thrives in low ground. Two good avenue trees of smooth grain and spreading growth are the red gum and the manna gum. In the interior they outgrow any other varieties. There is a manna gum in the Reedley district twenty-odd years old that has a spread of 100 feet and is 17 feet in diameter. For cold sections the Leucoxylon rosea is desirable, either for coast or interior. Its flowers are pink to scarlet. It is a good, hardy tree and is good for avenue or wood lot.

It is the spring rains that give us the crops and a good start in our plantations. This is the most favorable season for planting we have had in several years. Every tree or



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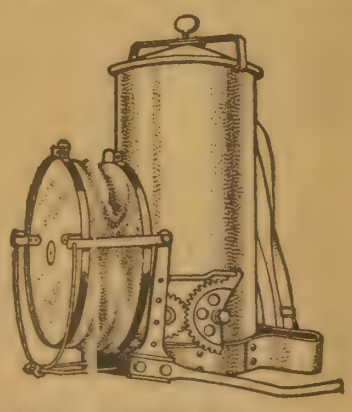
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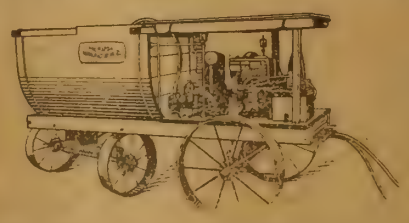


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hrub that is planted should grow if has anything like reasonable care —not only keep alive but make a rowth that will give satisfaction to he planter. The parks and school rounds now prepared for tree and hrub planting will be stirred, when he ground is in condition, after ach rain, so that it shall not bake nd lose condition.

WHEN CONDITIONS ARE RIGHT.

The ground is warming up gradu-lly and the warmth and moisture ogether create conditions which give esults, for then the young trees egin to produce new fibrous roots nd start business right away. When alled stuff is received it should be lanted as soon as possible. If the oles are not ready then, keep the oung trees or shrubs in a place ell sheltered from the wind and un and keep them damp. After hey are planted, give them unre-itting care at least for the first ear, and good luck to you!

FFECTS OF BARLEY AS A COVER-CROP.

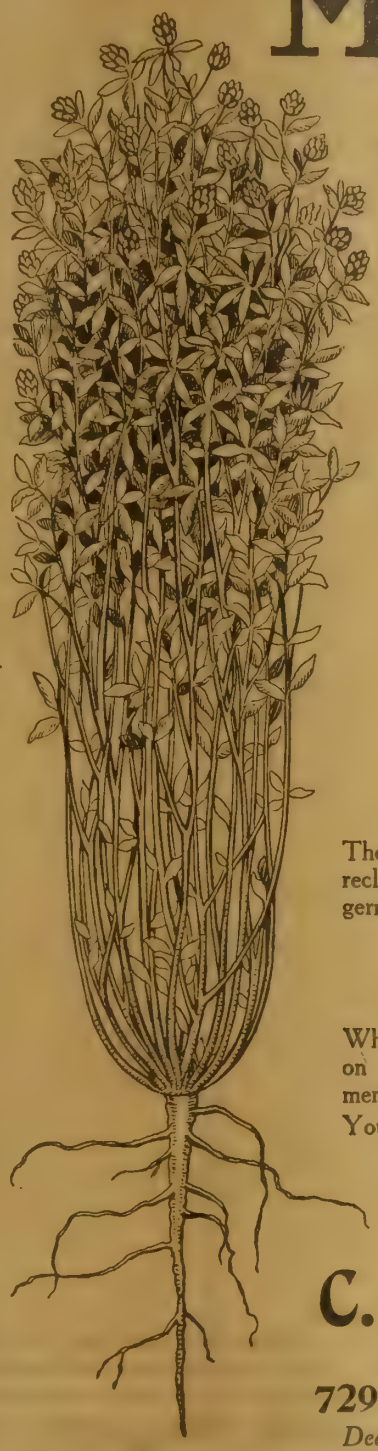
To the Editor: Before reading our article in the issue of March , on the effects of barley as a over-crop, I had decided never gain to have any barley in my over-crop in the prune orchard. It urely is easy to grow, cheap to lant and produces a heavy crop. ut I consider it too big an ab-orber of moisture just at the time f year when conservation of moist-re should begin. If not plowed un-er before the middle of March, it urely will rob the trees of moisture aster than any other crop — just hen the trees seem to need the aximum of moisture. The matter t also complicated by the general npression hereabouts that plowing hould not be done until blossoms re out on account of liability of in-reasing thrip damage.

I have plowed under two cover-rops during February, March and pril. Two years ago I let it ma-ure and hogged it down in the or-hard, and last year made hay of ome and cut some ripe to feed hogs n the pen. Either vetch, bur clo-er or peas were planted with the arley. I also had small plots of ye, bitter clover (Melilotus indica), ye and peas. Peas straight look est to me now. The hay crop was he hardest of all. It was simply mpossible to cure the hay and naintain the soil moisture. After larch the barley crop was irrigated very ten to twenty days. I noticed yellowing of the leaves, which I t first thought was due to reflected ght from the yellow straw. Inspec-ion also showed much damage to oliage from red spider the last two ears. Perhaps barley encourages ed spider in the opposite way that n inter-row of gyp corn seems to etard the red spider damage. Last ear, in early May, I saw oats nearly urnt up from lack of moisture in young orchard, still the trees ooked fine and followed up with ood growth for the season. It eems to me a cover-crop very sen-itive to a shortage of moisture will ive the trees a much better chance han barley. However, let's have ur Deciduous Experiment Station here these things can be method-cally followed up for us.—J. Owen Iansen, San Jose.

PRAYING FOR SCAB IN NEVADA COUNTY.

"We have cleaned up our com-ercial orchards of pear scab to the xtent that less than one per cent f fruit was infected last year," says . J. Norton, Horticultural Commis-loner of Nevada county, in a re-ent report. "This was effected by praying with the lime-sulphur solu-ion, 1-10, just as the fruit buds ere breaking, and again when the lossom clusters had separated. And his is the time to go gunning for he elusive little blister-mite for he as a playful habit of joy-riding ver the blossom clusters at this ime. I have found no spray that quals the lime-sulphur solution in leaning up the blister-mite. One hing we have to be thankful for— knock on wood—we have no red pider or pear thrips."

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Now is the time to plant alfalfa. We can supply you with pure strain Hairy Peruvian or Smooth Peruvian Alfalfa Seed. Don't take some other kind just because your dealer has no stock of Peruvians on hand. The seed supply of these varieties is limited—but Morse can take care of you. Write or wire today.

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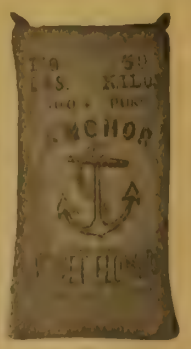
Ettersburg No. 80, 84, 89, and 121, and Eureka, Trebla, Oasis, Nor J, Fantastic and Fendaldino, the cream of 30 years of strawberry breeding. All originated by the undersigned, mostly from wild species Big, strong plants, 25 of any variety, for $1.00; 100 in one to four varieties, $3.00, delivered free by mail. Order early, as stock is limited. Descriptive catalog for the asking.

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MODESTO, CAL.

An Enterprising Lady Orchardist

[Written for Pacific Rural Press.]

After extensive wanderings over the State of California, Edith W. Pawla and her daughter, a young lady of 18, bought a ranch at Soquel a year ago, have done all the work themselves, except some of the spraying and plowing, and have made it pay. We asked Mrs. Pawla how long she had been farming and she said one year. She had been a business woman all her life and wanted to get out of doors. She has 10 acres, mostly apples, consisting of Bellflowers, Newton Pippins and Kansas Beauties, and we found her plowing the bottom land near the creek, attired in regulation "land lassie's" costume, both she and her horses showing evidence of effort. The trees had been partly sprayed with crude oil emulsion, and she was switching to lime-sulphur as the buds were near breaking.

A demonstration of long pruning had been carried out and this system she intends to follow. A hive of bees at one end of the orchard were described as unusually fierce and enterprising, but the owner intends to learn how to handle them. A cow is also kept for home use. There are three acres of rather steep land above the creek and the old swimming hole where black walnuts will be set out and later grafted to English. Mrs. Pawla said that last year she and her daughter picked all the apples themselves. They sold all the best fruit by sticking out a sign, and drivers of passing automobiles bought from one to six boxes at a time—nothing less than $1.50. It is only one mile from Capitola and lots of people pass by. She also sold a lot of garden stuff though it was only set out for home use. All her drying apples went to the cannery on contract and these brought about 12 cents dried. In addition, she made all the culls into cider and sold $75 worth of that and has about 50 gallons of vinegar on hand. We also noticed stacks of apples still boxed in the basement. A little note book and pencil dangled at the front door on which was written, "Leave your order or shout 'hello'!"

Mrs. Pawla has been reading up, getting advice from the Farm Advisor and others and then converting her lore into action. Inasmuch as many ladies are turning their attention to the land, it would appear that a business training, a good physique and a determination not to worry over trifles are pretty well bound to win. Enthusiasm well directed and kept within due bounds is one of the foundations of success.

Grafting Over Vineyards

[Written for Pacific Rural Press.]

A demonstration of vine grafting was given at the Kearney Experiment Vineyard (Fresno county) on Saturday, March 15, by Prof. Bioletti, the well-known professor of viticulture, under the auspices of the Fresno County Farm Bureau. The professor said that any vineyard of wine grapes can be changed to table or raisin grapes at a loss of only one and a half crops. There should be a half crop at the end of the second year after grafting and a full crop at the end of the third year.

The expense of grafting will vary from $20 to $30 per acre according to size of vines and wages paid. The expense is usually too great if the vines average more than four inches in diameter at six inches below ground. Vines from three to six years old graft over the best, but one year old vines are not generally worth the trouble of working over—it is cheaper to replant. The best time of grafting is from the middle of March to the middle of April, though the vines should be pruned as early as possible in preparation—cutting off all canes close to the stump. Very thick or very thin cuttings are undesirable, those from three-sixteenths to three-eighths of an inch being best.

Raisin Festival in Fresno

A great pageant and festival is to be held in Fresno on April 30 in honor of the Royal Raisin, who rules the roost over a large empire and dispenses his favors with such generosity every fall. Loyal support on the part of his subjects makes possible the condition of peace, prosperity and progress in the land where he reigns. This year Raisin Day will be a double event, for it will also represent a victory celebration in recognition of the greatest epoch of modern times. Returned soldiers from all parts of the San Joaquin Valley will take part in the grand military parade, together with the home guards, high school cadet companies and boy scouts. One of the features of the parade will be a competitive drill between high school cadet companies from all parts of the State, for which prizes are offered.

Nearly 2000 people will participate in the pageant in the afternoon. One of the features will be a sham battle, in which will be demonstrated the various modes of battle used in Europe. Aeroplanes and observation balloons will assist. This is going to be a record year—whoop it up!

A grower said recently: "I got stung yesterday. I sold out my rain-damaged prunes to a Chinaman for $30 a ton and he hadn't been gone an hour till the pure-food man came along and clapped an embargo on them." "What'll you do now?" we asked. "Feed them to the hogs, I guess," he said. "I've done it before." The only man really peeved was the Chinaman because he could not obtain delivery.

IF YOU BELIEVE IN BRAINS, FERTILIZE 'EM.

The California Prune and Apricot Growers, Inc., has the following to say of the Pacific Rural Press: "In reading somewhat carefully the last copy which came to the editorial table, the conviction was deep rooted in my sense of appreciation that any grower who saved his dollar subscription price at the sacrifice of the dead sure gain of a careful reading of its 52 numbers is just as wise as the man who had 20 good teeth pulled in order to collect a ten dollar debt from his dentist. Or the other fellow who bought a good team and then saved the price of harness by trying to use a toggle of baling wire. If your head is of no use to you in running your ranch, of course it is waste to spend anything to feed it. If nothing above your neck is worth while, just concrete its vacuum and put all replenishment under your belt. If you believe in brains, fertilize 'em.



TOP DRESSING TALKS No. 8

California soils respond promptly and generously to intelligent fertilization. This is particularly true concerning nitrogen, in which important plant food so many soils are deficient. But as is always the case some one form of nitrogen is better than others.

Director Hunt of the Berkeley Experiment Station writes:

"Whether it is Mottle Leaf in orange trees, Little Leaf in peach trees or low yields of wheat, the cause appears to be the inability of the plant to secure and assimilate a proper supply of nitrogen."

Sulphate of Ammonia is mentioned by name among the various Nitrogenous Fertilizers recommended to overcome this deficiency.

Arcadian Sulphate of Ammonia

ARCADIAN Sulphate of Ammonia is the well-known standard article that has done you good service in your mixed fertilizers for years past. Especially kiln-dried and ground to make it fine and dry. Ammonia 25¼%. Made in U. S. A. THE GREAT AMERICAN AMMONIATE.

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you have an effective, non-injurious spray. It mixes readily with water and has great spreading and penetration qualities. You can use it when the trees are in full bloom or after the blossom petals have fallen. It kills thrips in the egg or larva or adult stages. Order your supply today.

Paul R. Jones, our entomologist, is a thrips specialist, for many years with the Government. His services are free to you. Don't hesitate to write him in care of

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Horticultural Jottings

Santa Barbara plans to hold a wild flower carnival some time in June.

Damage from frost to apricots is reported in several sections of Solano and Contra Costa counties.

Col. John P. Irish will speak at Farmington on March 28 on "Farm Owners and Operators' Associations."

It is reported that $30 a ton is being offered in the Fresno district for all varieties of black wine grapes.

A bitter almond tree 55 years old and which still thrives and bears regularly is to be found near Woodland.

The prospect for the 1919 crop of oranges and lemons in Southern California was never better. The fruit is setting well.

California produces more and better honey than any State in the Union, according to Jay Smith, the Government bee expert, now in California.

A new green fruit packing plant is being constructed at Reedley, Fresno county, by E. Y. Foley Co. and will be completed ready to receive this season's fruits.

Up to March 15 no injury was reported to almonds, either from rain or frost. The setting seems to be fairly strong everywhere, though the blooming period was long drawn out.

Large shipments of Cory's Thornless Mammoth blackberries have been made by the Ekstein Nurseries at Modesto this year—the biggest blackberry plant season they have ever had.

The growers of peaches in the Santa Clara Valley are now offered $80 a ton for their crops as against $60 paid last year. No direct offer has yet been made in Stanislaus county.

A meeting by apricot growers, recently held at San Jose, was for the purpose of organizing to sell their green fruit collectively to the canners. There were about 300 growers present.

The outlook for peaches and apricots is reported to be excellent in the Denair district (Stanislaus county) this year. Apricots are being contracted to the canneries at $80 a ton, it is said.

The California Walnut Growers' Association is fighting to obtain a $10,000 appropriation from the State to be used in stamping out the codlin moth, which is now a menace to the walnut industry in some sections.

F. G. Sargent has 12 acres of Concord walnuts in the Mount Diablo district which produced 1600 pounds of nuts last year on four-year grafts. The black walnut stocks were four years old when they were top-worked.

Eighty per cent of a crop of navel oranges will be sent out from Alhambra—134 carloads had been shipped to March 15 by the Alhambra Orange Growers' Association. This year's output will double that of last year.

The Porterville people do not intend to rush their Valencia oranges onto the market, but they will be well ripened until well along in the coming month. The output from this district is expected to reach 75 cars of Valencias.

Up to the end of last week snow was packed to a depth of 68 inches at the General Grant National Park headquarters—elevation 6675 feet—an indication that the snow in the high Sierras must be of great depth. A splendid outlook for the coming season.

Another great meeting of water users and delegates was held in Fresno, March 18, for the purpose of determining important details in the formation of the Fresno Irrigation District. Users cannot engage in the Pine Flat project until they are legally organized.

Winesap apples in consuming markets have ranged steady at $4 and $4.50 a box, reaching $4.75 in Kansas City. Oranges in Northern and Eastern markets strengthened, ranging from $5.50 to $6.50 a box—grapefruit at $4 to $5.25 on Northern and Eastern markets.

Few grape growers in the Lodi district have pulled up their vines and few are signing away their grapes at $25 and $30 a ton, expecting $60 a ton by harvest time. They are willing to take chances.

The Saratoga Blossom Fete will be held at Saratoga on March 29, when Senator James D. Phelan will address the assembly. The prunes promise to be at their snowy best on that day and autos will bring their loads from all over the State to be present at this big welcome to Springtime.

A number of canning peach growers of Stanislaus county have decided to pool their peaches for this year. They have contracted to have their peach crops marketed by a committee of three to be chosen among themselves, it being understood that all buyers be given a chance to bid.

One million two hundred and ten thousand pounds of Thompson seedless raisins, 32,000 pounds of Sultanas and 30,000 pounds of Malagas were packed at Turlock last year by the California Associated Raisin Co. in spite of damage from early rains. This district is said to be well suited to Malagas and Sultanas.

Hal G. Osburn of Los Gatos had some Burbank plums nearly ripe on March 1 from last September's blossoms. Also some sugar prunes as big as cherries with blossom buds on the same limbs for the 1919 crop. He said some of the trees had enough bloom on after the September rains for a fair crop, yet were showing all the blossoms necessary for the coming year.

GRAFTING WALNUT ON PECAN.

To the Editor: I notice an inquiry recently in the Pacific Rural Press concerning the feasibility of grafting English walnuts on pecans, a question which you asked if some of the readers might have definite information on. The walnut can be grafted on the pecan as well as the black walnut, apparently. Although my observations are exceedingly limited, I am of the opinion that pecan trees top-worked to black walnuts might make a fairly satisfactory growth. The use of the pecan, however, as a root stock and nursery grafting, I am inclined to believe, would have a dwarfing effect on the resulting walnut tree.—L. D. Batchelor, Citrus Station, Riverside.

BLACKBIRDS AND INSECTS.

A. L. Rutherford, horticultural commissioner of Stanislaus county, says that in the past seven or eight years since the tules have grown up in various sections, and given them breeding places, the blackbirds have practically removed the menace of the grasshopper in the Turlock and Modesto Irrigation Districts, where the insects used to work havoc. They have also eradicated the wireworm. Probably the worst infestations of wireworm occur in Siskiyou county in places where there are no birds to speak of—where the wireworm ravages whole fields of rye.



The Time to Avoid Ignition Trouble is When You Buy Your Tractor

In the middle of the plowing season every moment lost through delays due to ignition trouble means a big money loss to you. You can avoid these costly delays by buying a K-W Magneto equipped tractor, as have thousands of other tractor owners.

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These tractor manufacturers pay more for K-W Magnetos, because they know from experience that

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Give reliable "no trouble" service—Fire any kind of fuel—Fire leaner mixtures—Insure easy starting, regardless of weather—Are protected against water, dirt and oil—Get full power out of every drop of fuel used.

In selecting a tractor look for the K-W trade mark on the magneto. It is your assurance of contipuous "no trouble" ignition.

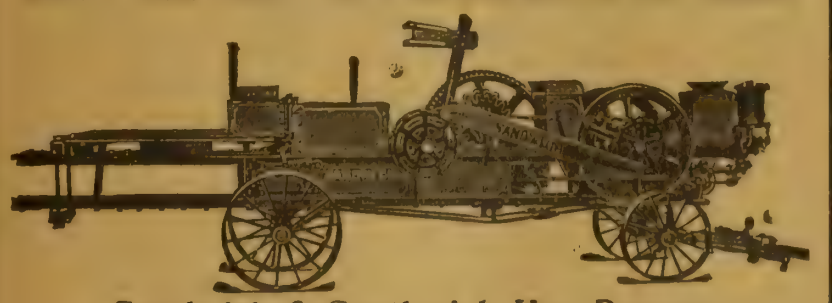
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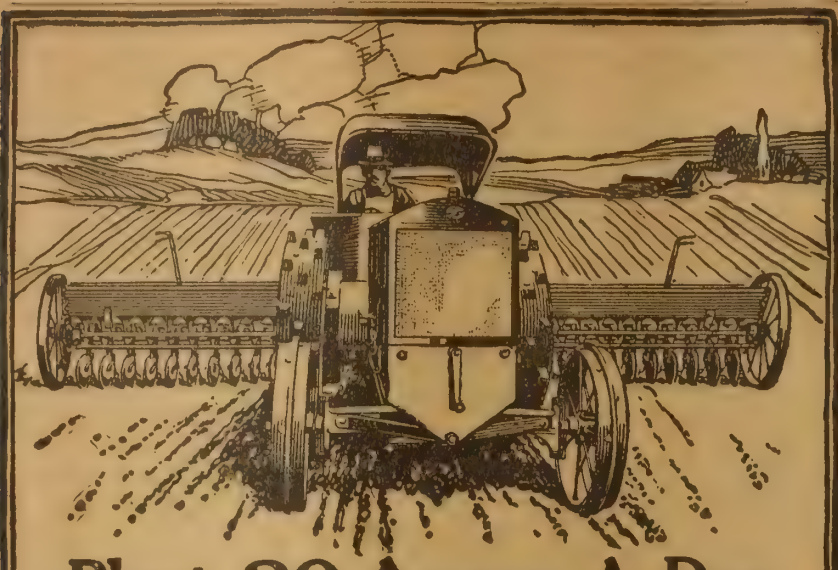
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Here and There in the Fruit Business

[Written for Pacific Rural Press.]

The California Peach Growers' Assn.

The officers and members of this association realize the importance to the dried peach industry of the ownership and control of the peach-peeling machinery and its patents. It has made possible the production and marketing of peaches which will increase the marketing of this fruit by leaps and bounds. The "Practically Peeled" peaches now turned out hold their own in appearance and flavor with any fruit grown and cured. The clear golden color is suggestive anywhere of the California sunshine and the fruit is a delicacy just as it comes from the package. The outlook for the coming season is excellent. The markets are bare of fruit, the European trade is again ours, and the trees are in a very promising thrifty condition, as is the soil that supports them. It is up to the grower now to maintain these conditions by spraying, cultivation and irrigation.

In the Santa Cruz Mountains.

An apple, peach and pear orchard in Happy Valley was the subject of a demonstration of the long method of pruning by Professor J. C. Whitten last month and this method has now been carried out through the whole orchard. The smaller growers of the Santa Cruz mountains have taken a keen interest in scientific work for which they will be well repaid in fruit, in the vigor of their trees and in time saved. More careful spraying, done at the right time, is necessary—10 per cent of wormy apples or fruit debilitated by scale and red spider often makes all the difference between profit and loss; success or failure.

How Smyrna Figs Pay.

We went into Dave Oliver's Smyrna fig orchard last fall on the north side of Bear creek in Fresno county, 12 acres about 16 years old, and asked about the crop. This orchard had produced, it was said, about twelve hundredweight of dried figs to the acre which had sold at 18 cents a pound. This yield was said to be below the average, but there's nothing the matter with it at that. The orchard is improving year by year. M. R. Fuller has twelve acres of Smyrnas on heavy clay loam, a year older, which is said to do equally well.

Date Growing in San Joaquin Valley.

W. R. Nutting, the authority on date growing in Fresno county, suggests that fruit-bearing palms be planted in the future in suitable places in the San Joaquin valley instead of ornamental palms only. They can be planted as street, border or avenue trees and will be just as decorative as the barren ones, as well as being a source of profit and providing fresh fruit. The cost of planting the fruiting palm is said to be no more than for the barren variety, and the suggestion will doubtless bear fruit.

California Canned Fruit.

The canned fruit of California in 1918 amounted to 11,370,000 cases, according to the Western Canner and Packer. The value of canned and dried fruits shipped out of the State last year was $201,475,420, or 23 per cent more than the preceding year. Many new canneries have been built or old ones enlarged during the winter in anticipation of an even larger demand, which looks promising for marketing canning fruit as well as vegetables. Present conditions are the most promising we have had for some years.

Plowing While Plowing Is Good.

The rains alternating with north winds will delay plowing in some of the heavier lands in the north and coast counties. Some parts of the Santa Clara county are well ahead with the spring work. We noticed a poor crop of melilotus and Bermuda grass being turned under in John Brynteson's orchard in the Campbell district, but the soil was in good condition. There are 20 acres of prunes, 12 of cots, and 12 of cherries in this orchard, whose owner lives in Sweden. N. E. Nelson, who runs the place, says these 35-year-old prunes average over two tons dry to the acre one year with another—not bad for an elderly orchard. E. C. Merrill, the other side of the road, was plowing under a fine heavy crop of barley (March 4) in his apricot orchard. The heaviest crops in this section were winter barley.

Hauling Produce to Market.

"All our berries and truck can be hauled direct to market by truck as soon as the highway is completed between Los Gatos and Santa Cruz," said John C. Geyer, a member of the Santa Cruz Chamber of Commerce, which is backing the farmers in the good roads movement in that county. "Besides that, we are shipping over a thousand cases of eggs a week which could all be hauled with a return load of feed." They are now anxiously awaiting action by the State Highway Committee. Santa Cruz business men also keenly realize the importance of getting the paved highway completed.

Pear Blight and Varieties.

From observations made last year, A. L. Wiskar of Loma Rica Nurseries, told the writer that Bartletts averaged ten infections to a tree, while Beurre d'Anjous adjoining and of the same age only average one case of blight to about 50 trees. Its extension was much slower also in the Anjous and invariably dried out within two feet of where it struck, while the infection in the Bartletts continued.

Money in Vines?

The other day we walked through an orchard in the Santa Clara valley, 25 acres of which was interplanted with vines — Sauvignons, Carignans and Black Malvoise. These vines brought the grower $5784 last year. The Black Malvoise will go to market this year as they are excellent table grapes as well as being good wine grapes, but we notice that the whole thing is nicely pruned.

Dry Lime-Sulphur.

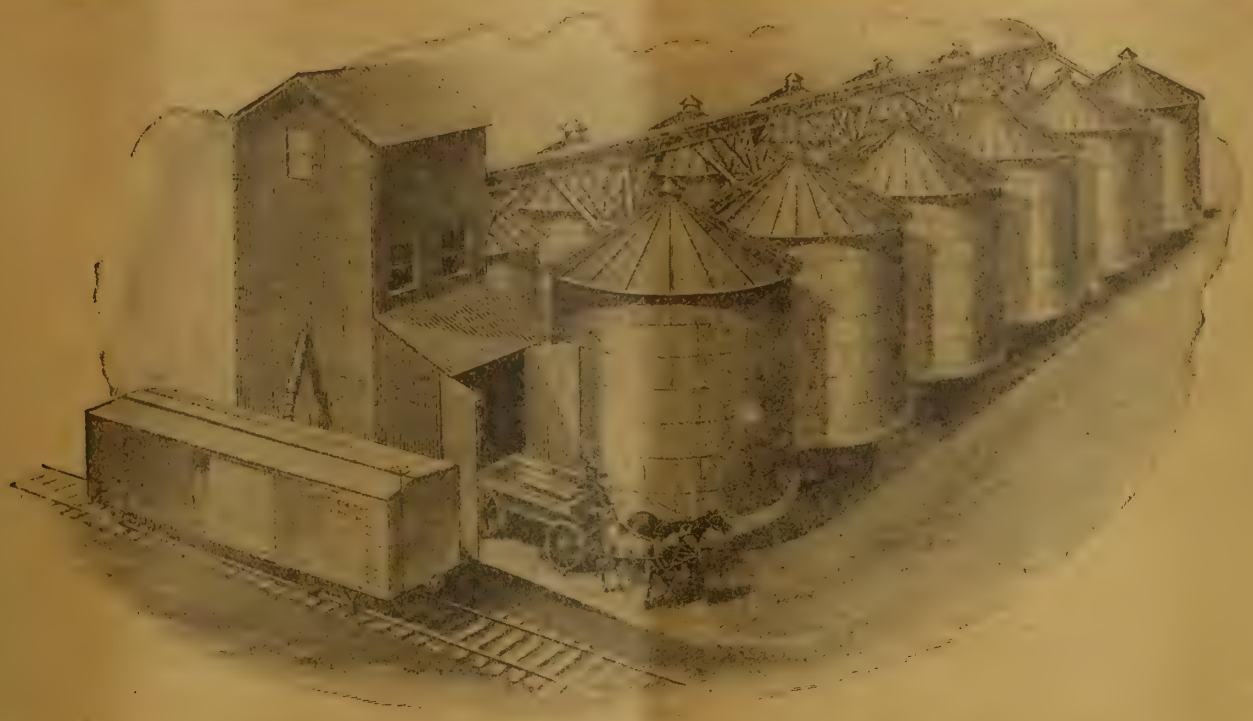
Various demonstrations in the use of dry lime-sulphur are being carried out on a commercial basis in the fruit orchards of Santa Cruz county. W. S. Bowker, in the Roach district, on the Santa Cruz road from Watsonville, has sprayed his entire orchard with dry lime-sulphur and we shall watch results here with interest.

ESTIMATE OF GRAIN ON FARMS IN CALIFORNIA AND UNITED STATES.

Prepared by the Bureau of Crop Estimates, U. S. Department of Agriculture, San Francisco, J. E. Rickards, Field Agent:

	CALIFORNIA.			UNITED STATES.		
	1919	1918	1917	1919	1918	1917
	Bushels	Bushels	Bushels			
Corn—						
On farms March 1..	506,000	360,000	164,000	883,322,000	1,292,905,000	782,303,000
Per cent of crop....	17	15	[illegible]	34.2	40.9	30.5
Wheat—						
On farms March 1..	531,000	520,000	336,000	129,311,000	111,272,000	100,650,000
Per cent of crop....	7	7	6	14.1	17.1	15.8
Oats—						
On farms March 1..	728,000	686,000	325,000	587,653,000	595,195,000	394,211,000
Per cent of crop....	13	10	[illegible]	38.2	37.5	31.5
Barley—						
On farms March 1..	6,864,000	4,698,000	2,999,000	81,784,000	43,404,000	[illegible]1,244,000
Per cent of crop....	20	12	9	31.9	20.8	18.2

It must be remembered that the amount of all grains on hand represents only what was "on the farm," and does not include stocks in public warehouses, even though the grain has been stored by the farmer.



Connecting the Grain Grower with his Market

Twelve-Bin (Twin-six) Loading Station with a Capacity of 73,068 Bushels

GROWING interest among California farmers in handling grain in bulk, the simpler, more economical way, has developed this twin-six loading station. It is constructed especially for use in sections of large grain acreage, where long hauls are necessary. The unit illustrated is planned for such a section in the Sacramento Valley. The Calco Grain Loading Station offers grain growers an economical, co-operative method of connecting grower and shipper, to their mutual advantage.

Armco Galvanized Iron Bins

Twelve Armco Galvanized Iron bins, each 22 feet 1 inch in diameter and 21 feet 5 inches in height, give this twin-six loading station a storage capacity of 73,068 bushels of bulk grain.

Handles 1000 Bushels per Hour

Grain is hauled by team or truck through the elevator house, where it is dumped into a receiving pit below grade. A conveyor system elevates the grain to the tower, where it is cleaned and weighed and then either conveyed for storage to one of the bins or spouted directly into waiting cars. Minneapolis buckets, 8 by 5, operating at a speed of 440 feet per minute, give this unit a handling capacity of 1000 bushels of bulk grain per hour, making it adequately fast to care for any possible congestion.

Erected on Concrete Base

All galvanized iron bins are erected on concrete bases, are weather, fire and vermin proof. The tower is constructed of fire-proof, rust-resisting Armco Corrugated Iron.

Cost per Bushel Capacity is Low

This 73,068-bushel capacity loading station may be erected at a cost of $0.234 per bushel storage capacity. Compared with a reinforced concrete structure—the only available type offering protection from fire, weather and vermin—this cost is exceptionally low. A concrete elevator for a similar capacity will cost nearly three times as much as this Loading Station.

Permanent Erection in 60 Days

With an ordinary working force of men, this complete structure may be erected within 60 days. This erection time includes the elevator building, concrete foundations, conveyor system, cleaning and weighing machinery and the 12 Calco Galvanized Iron Bins. From four to six months are necessary to erect a storage station of similar capacity in concrete.

Capacities to suit local conditions may be easily arranged by merely adding bins in units of two to the Calco Loading Station, or subtracting bins in units of two.

Blue prints with itemized costs for erection of the Calco Twelve-Bin (twin-six) Loading Station will be furnished engineers or co-operative grain growers' organizations, and our engineers will gladly assist in every way to adapt this unit to local conditions. Write for our circular giving costs and points of erection of this loading station. Mailed upon request.

California Corrugated Culvert Company

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417 Leroy Street

BERKELEY
406 Parker Street

CALCO GRAIN LOADING STATION

How Farming Fares at the State Capitol

Written for Pacific Rural Press by R. E. Hodges

Oranges Fit for Shipment.

Orange growers are spending hundreds of thousands of dollars to develop demand for their fruit in Eastern markets. Until recent years a few growers have been able to destroy the effect of that development by sweating green fruit to an orange color. Eastern eaters who bought this sour, beautiful California fruit did not repeat their buying when ripe oranges came onto the market, and Florida was the winner. A struggle to remedy this situation has been rather fierce for at least four years and still the end is not yet. At the present Legislature the question, "When is an orange fit to represent the California industry on the Eastern market?" has caused nearly as much disturbance as in previous sessions. At the session of 1917 it was pronounced unlawful to ship oranges which tested less than 8 to 1 or which might test less but which had become "substantially" colored on the tree. The State Horticultural Commission prepared color plates to show just what would be considered "substantially" colored. These plates have been pronounced by the U. S. Department of Agriculture Bureau of Chemistry as corresponding to what they consider 80 per cent colored. It has been found that perfectly green oranges sometimes test 8 to 1, but develop acidity later in maturity, which lowers the ratio of sugar to acid and makes them taste too sour. These green 8 to 1 oranges have been legally sweated to color and sold to the detriment of the industry, according to Tulare county people. These people, in order to prevent the abuse, are asking the present Legislature to make the law read that oranges must also be at least 25 per cent colored on the tree. Then they will in general have developed their acidity and if they test 8 to 1 will be safe to sweat for full color and ship without detriment to the industry. Tulare people seem willing to let the "substantially" colored provision stand as it is. Butte county people, however, contended for a reduction in the standard so they could sell oranges 66 2-3 per cent colored on the tree. They claim that such oranges will not injure the reputation of Southern California fruits which ripen later than those in Butte. The subject was argued in the Senate Agricultural Committee, and the new standardization bill was recommended for passage with the substantial color defined as 70 per cent.

To Protect Sheep and Dogs.

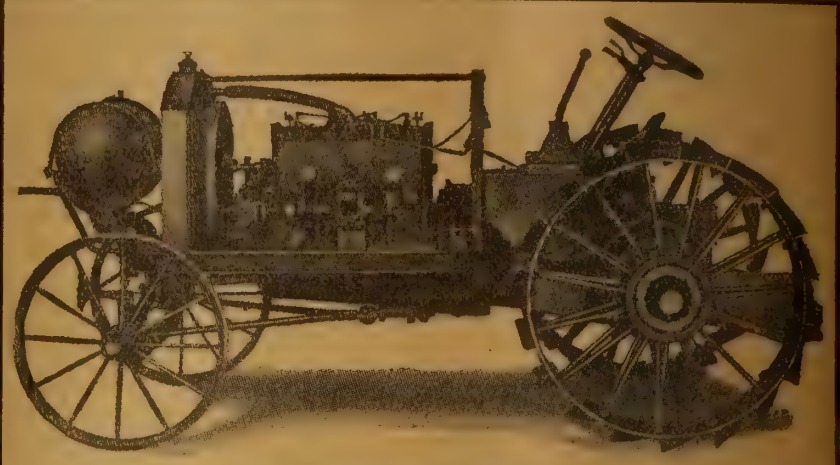
It was a live discussion of dogs and sheep in the agricultural committees, March 10, but the onlooker was impressed by about two apparent facts brought out by the opposition. Dogs are the faithful, loyal friends of humanity and should be allowed to run. The bill is so long and covers so many points that it is unwieldy. Senator Rush has always admitted that it would require some amendment. But the dog owners and Humane Society people, who seemed to be the same crowd, were surprised to hear repeated and undeniable proof that even their pedigreed dogs, if allowed to run in the country, are morally certain to kill sheep and to at least worry other livestock. They were fair enough to say that if it were a question of sheep or dog, they would stand by the sheepmen. They were forcibly confronted with the statement that if they allowed dogs to destroy the sheep industry or prevent its development they ought to eat dog awhile. However, this argument was not necessary after the actual depredations of dogs were proved to them and they all agreed that the sheep industry ought to be protected. They also maintained that dogs also ought to be protected and at 1:20 a. m. it was decided that both sides could safely leave the matter in the hands of a committee who would fix the bill so it would do both. It is conceded that incorporated towns and cities will be exempted from the proposed law. Sheepmen, however, will continue to contend for a means of identifying ownership of dogs committing depredations.

Estray Bill at Large.

Senator King's estray bill, No. 34, amending the present estray law, was turned loose on the Senate by the Agricultural Committee, March 11, with the understanding that several committee members did not understand it and therefore reserved the right to oppose it in the Senate! The bill takes out of the present law the right of anyone to take up estrays from the highway along his property. It also specifically withholds permission for anyone to take up estrays and collect costs and damages as provided by the act, even when such estrays are found upon their own property, unless that property is entirely enclosed with a fence as good as three tightly stretched barbed wires, the top one of which is at least four feet above ground and all securely fastened to good posts not more than a rod apart. Northern California stockmen have just resolved in favor of such a law and it is presumed that some of Senator King's constituency in San Bernardino and Inyo counties want it for livestock interests. But fruitmen, who for cultural reasons have abolished fences, are strongly opposed. It does very little good for anyone to telegraph or write their legislators for or against a bill unless that person is of great influence or unless the message points out valid reasons for the writer's stand. You can still have a voice in the handling of this bill by writing your Assemblyman plenty of strong letters, for the bill must pass the Assembly before it becomes law. It may be remembered that Assemblyman Kasch's estray bill was not opposed by the representatives from northern counties, provided it should be amended to exempt those counties as they are exempted from the present law.

Raised-Bottom Berry Boxes.

At the special hearing held by the Senate Agricultural Committee to consider the fruit standardization bill, berry boxes occupied most of the evening. All berry districts of the State were vociferously represented and a supplemental meeting was held later. We summarize the arguments below. They surely seem in favor of the square-cornered, raised-bottom boxes. Objections to the latter in order of their apparent importance, as the writer concludes after hearing the arguments, are: They do not "nest" for shipment to the grower. They must, therefore, be shipped flat and made up on machines at the grower's end, as the Sebastopol berry growers have been doing for six years. They deceive the public, who think they contain more berries than they do. There is more waste in making them up and distributing them to the pickers. They are not made in California. Arguments for the raised bottoms were: They are cheaper per thousand than the others. They deliver the berries in better shape after long shipments. The Sebastopol berry growers tried various containers for three years and lost as many as 20 to 40 per cent of the berries in various carloads. Then they took up the raised-bottom, square-cornered boxes and have been using them six years for shipment to the Middle West and as far as New York. The springy bottoms ease up the vibration of freight cars on their journeys of two to five days Slight bruises bring on mildew and everything must be done to avoid bruising. Middle Western people universally use this style of box and have endorsed it in highest term for their shipments from California The same is true of receivers of similar packages of berries from Sonoma county in the San Joaquin Valley. No legal difficulties have been encountered in the United States except from the California Department of Weights and Measures. They are not deceptive; for everybody knows that they have raised bottoms and they are required by law to hold the same net contents as other baskets of similar size. The United States Bureau of Markets does not consider them deceptive. There are eight other styles of berry baskets in California, none of which have proved so nearly 100 per cent satisfactory. The Central California Berry Growers' Association announces that it will gladly give up its baskets and sacrifice $75,000 worth of chests in order to standardize the boxes of the State in the interests of more economical commercial marketing. Berries to retail well must be heaped up. When heaped and one box is piled on an-



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NORMAL DRAWBAR PULL—3200 lbs.
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TOTAL WIDTH—63 inches.
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WEIGHT—4200 lbs.
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SPEED OF MOTOR—900 R. P. M.
MOTOR BEARINGS—Very large. All are bronze backed, babbitt lined.
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FUEL—Distillate, Kerosene or Gasoline.
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FUEL TANKS—One 15-gal. and one auxiliary tank of one gallon capacity.
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SPEED—Low, 1½ M. P. H. Int., 2¾ to 3 M. P. H. High, 6 M. P. H.
REAR AXLE—Full floating worm drive.
DRIVE WHEELS—Height 40 in. Face 10 in.
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BELT PULLEY—8 in. diameter, 8 in. face, 900 R. P. M.
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DRIVER'S SEAT—Situated on right of tractor; very convenient position for watching tools and work.

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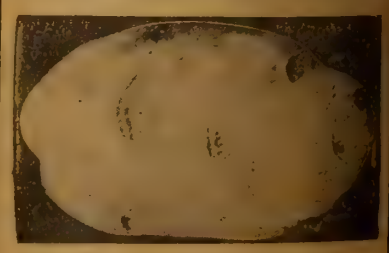
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Central California Headquarters for Reliable Seeds,

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other the berries are crushed. State Sealer of Weights and Measures Chas. G. Johnson contended for a hole in the side of each basket opposite its raised bottom. The berry growers' only objections were that it would cause greater wastage besides costing about two cents per crate more on the 125 carloads they ship out. The object of the hole is to prevent deception in regard to the raised bottom. The committee, at the urgent insistence of Senator Inman, who introduced the bill, struck out all reference to shape or make of the boxes except their cubic contents. This leaves the Sebastopol growers and the Weights and Measures Department still unreconciled. But the question of raised-bottom boxes is to be threshed out in connection with another bill before another committee.

Notes.

Senator King's bill, providing for removal of weeds along highways, was passed by the Senate and is now in the Agricultural Committee of the Assembly.

Senator Slater's bill, providing for disincorporation of drainage districts, has passed the Senate and is now in the Assembly Drainage Committee.

Senator Inman's resolution calling on the Federal Government to "restore the two-cent ad valorem tax on rice," has been adopted by the Senate and is in the Assembly Committee on Federal Relations.

Bill 513, designed to improve the standardization law, brought forth such discussion on orange maturity that it was finally agreed to accept oranges 70 per cent colored before picking as mature oranges.

The berry basket feature of the new standardization bill created such argument that all mention of the baskets was stricken from the bill except to define their proper cubical contents, leaving their shape to be settled by another committee.

The seed labeling bill was reported to the Senate, March 10, by the Agricultural Committee with favorable recommendation as amended and is now in the Finance Committee.

The bill of Senators Benson and Jones, to appropriate $150,000 for deciduous fruit experiments, will be in the Senate Finance Committee until the latter begins to act on bills about two weeks before adjournment.

Senator Benson's bill providing for a penalty for nurserymen who fail to register with the State Horticultural Commissioner has been recommended by the Agricultural Committee for passage.

Senator Jones' bills, 361 and 362, relating to appointment, duties, and salaries of county horticultural officials, have received the recommendation of the Agricultural Committee.

The feed control bill was reported to the Senate, March 10, by the Agricultural Committee with recommendation that it pass as amended.

The apple standardization bill was passed favorably by the Agricultural Committee, in spite of Senator J. C. Nealon's objection to the tax of ½c per box paid to insure standard eatable quality of fruit. Mr. Nealon contended that the consumer would have to pay this ½c per box and he objected to the principle of it. Senator Inman suggested that if the standardization prevented consumers' buying the equivalent of one box of inferior apples per carload the cost of standardization would be thereby returned to the consumers.

Assemblyman H. A. Miller's bill to appropriate $10,000 for a survey of plant diseases by the State Horticultural Commissioner, and for determination and application of control measures to dangerous diseases, has been reported favorably by the Committee on Agriculture and now reposes in the Committee on Ways and Means.

MANTECA SUGAR BEET ACREAGE

Sugar beet acreage will be decreased in territory tributary to the Manteca factory of the Spreckels Sugar Co. from about 9000 last year to about 7000 this year, according to Manager S. E. Miller. Of this, 5000 acres are already planted and mostly up, 2000 being on the company's land, while the rest is under contract. There are about 2000 acres yet to plant in the later districts, of which the delta region west of Stockton is mentioned as one of the best. The contract price is $10 per ton for beets testing 15 per cent sugar and 60c a ton added or deducted for each per cent above or below 15. The acreage in prospect will keep the factory running about two months. It would be greater had not climatic and other conditions discouraged growers of last season's crop. Plenty of seed has been obtainable, being furnished to growers at 30c per pound. This includes some from Russia intended for last year's planting, and the rest is from Colorado and Utah.

Cutting of spinach started in Central California last week. Ninety per cent of the acreage has been contracted for by canners, so shipments will be made only from the early and late cuttings. Carlot shipments continue from Los Angeles and San Diego counties, but the markets are uncertain. Some acreage may be plowed under due to small cannery demands.

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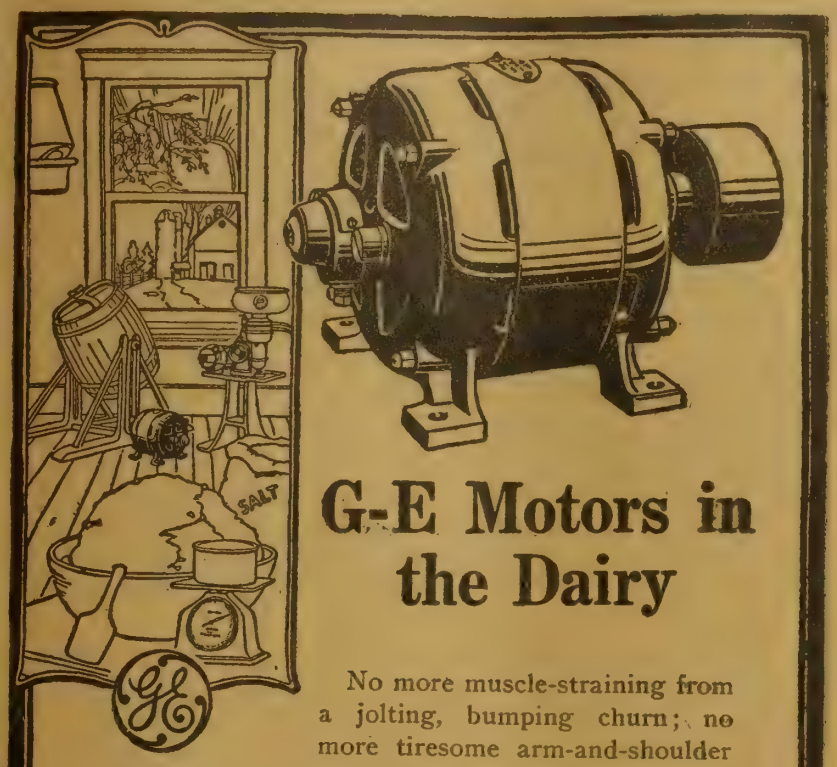


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California Vegetables, in Garden and Field

BY E. J. WICKSON

Planting season is nearly due—why not take the opportunity to study up the best way to grow and make the most out of your soil. Whether you wish to produce beans, beets, potatoes, celery, cucumbers, corn, melons, onions, tomatoes, rhubarb, squashes, turnips—or any garden or field crop—you need this book. It is a handsome volume of over 300 pages, well illustrated, bound in cloth and will be sent to your address for $2 per copy postpaid.

PACIFIC RURAL PRESS
525 Market Street, San Francisco

Agricultural Notes

The tariff on peanuts is no joke. The Imperial Valley cottonseed oil producers are trying to get an embargo on peanut oil as endangering cottonseed oil.

A home canning plant has just been started at Gardena, Los Angeles county, to utilize the large output of fruit and vegetables which that district raises every year.

Two hundred and fifteen acres have been signed up to be planted to cantaloupes at Manteca and the growers' committee expects the other 35 acres to be signed up in short order.

Experiments to determine the value of the tule lands in the Sutter Basin are to be carried out by P. J. Prein of Woodland to determine the productive value of different soils. A record will be kept.

Cantaloupes for commercial shipments are to be tried out in the San Fernando district this season and approximately 800 acres have been prepared. Contracts have been made with various growers for this acreage.

Forty acres is to be planted to cantaloupes this season at Porterville by M. A. Kuhn, in charge of the Tulare County Cantaloupe Growers' Association. Over 200 acres are expected to be set out in this section.

San Joaquin cotton growers at Fresno voted to pool and ship their 50-ton crop to Boston. The cotton will be ginned at Fresno. The cotton gin at Bakersfield is now running day and night, turning out an average of four bales a day.

It is estimated that 500,000 bags of rice will be shipped from the Marysville section and it is said that the Government contracted with the Rice Growers' Association for half of this amount to relieve food shortage in Belgium.

About half of the cauliflower crop of Central California has been shipped. The total shipment last year was 629 cars. This year's crop is approximately 75 per cent of last year's, but flowers and jackets are better. Growers are receiving 75c to 85c a crate.

Southern cotton growers in Texas are joining in a movement for general reduction of acreage for 1919, fearing cotton prices will sink near to pre-war levels. The State Agricultural Department urges the planting of grain on the acreage saved out.

The first shipment of asparagus left Imperial, February 18, and brought $19 a crate in Chicago, $1 more than last year's first shipment, which left several days later. The next shipment brought $20 a crate. The largest shipment for the season left last week and the 130 crates brought $13 for "fancy" and $8 for "choice." Carload shipments are expected as this reaches the reader. The first carload last year was a week later.

The strawberry acreage in Southern California is reduced this year. The demand for cannery stock is strong. Carlot shipments will begin about April 16. Around San Francisco carlots are being shipped now. No new acreage is planted, but the crop is expected to be as large as last year.

Cotton is moving owing to increased manufacturing activities, according to the Bureau of Commerce. During January there were 306,134 more spindles busy than the same month last year. The largest increase in exports of raw cotton was to Japan, which is buying the bulk of this commodity in California—the reason why our cotton is moving faster than that of any other State.

UNIVERSITY FARM PICNIC, APRIL 26.

The University Farm at Davis is rapidly gaining the reputation of being the ideal and logical meeting place for many of these stock sales and meetings. All buyers and exhibitors receive the help and cooperation of students' faculty, just as the visitors who come to the Farm on picnic day receive year after year. The picnic this year will be the eleventh annual event and has grown from the small social gathering of farmers to be a huge annual affair, attracting thousands each year. The interests of the people are always equally divided between education and entertainment, both being of the finest quality and absolutely non-commercial in aspect. Last year 18,000 visitors attended. The picnic this year will be held April 26 and the plans are already well under way to make it the usual success.

GRAIN LOOKS PROMISING.

Grain never looked better at this season, according to Mr. Turner. The rains have been ideal in gentleness and penetration. Probably wheat occupies five or six times as much area as last year, oats being correspondingly less, and barley being about the same as in 1918. Grain in Stanislaus irrigated districts is generally grown to be followed by beans, sorghum, etc., as a second crop. There is a strong demand for wheat and wheat flour. A steady movement of barley to New York at $2 to $2.10 f. o. b. cars here is also noted.

GOPHER TRAPPING.

Darling Brothers of Bonsall, San Diego county, recently showed their Farm Advisor that they have very little trouble if the trap is set correctly. Nine traps had been set the day before, and on visiting them eight gophers were found caught. In only one of these cases was a double set used, i. e., two traps to one gopher hole. Care is taken in setting the trap to be sure which way the gopher is working, and when this is certain one trap is sufficient.

Less Water Better for Cotton

[Written for Pacific Rural Press by R. N. Goodwin, El Centro.]

[Mr. Goodwin is manager of the Imperial Valley Long Staple Cotton Growers' Association. He writes in answer to our questions.—Ed.]

In a general way I would say that on account of the various soil conditions of this valley, various irrigation ideas should be carried out, but on the whole, I believe that twenty-five to forty per cent more water is used than would be necessary if more thought and study were given to the individual tracts to be handled. Speaking of the valley as a whole, I believe that if the Irrigation District and the mutual water companies would see to it that all canals were dredged out to their fullest carrying capacity, especially as the height of the irrigating season approaches, there would be a great deal less of a shortage every year, as many times before the shortage actually materializes, the farmers are unable to get their crops fully irrigated on account of the canals being silted up.

In regard to filling the ground by irrigating before planting the crops, I think it will be conceded by the majority of the better farmers that this is the thing to do. By plowing (or flat breaking) early in the season, listing the ridges, and thoroughly soaking the ground, the field will be in condition to carry the crop for two or three months before another irrigation is necessary. To do this, of course, it will be necessary to follow up with frequent cultivations to conserve the moisture. After listing and irrigating as above (we will say by the first to fifteenth of March), as soon as the soil is dry enough to allow the passage of teams, it should be harrowed lengthwise of the ridges, dragging a light float behind to reduce the height of the ridges, and at the same time prepare a smooth, firm bed for planting. This should be followed up by the planter set to a depth of about two inches for cotton seed. As soon as the plants are sufficiently above the ground, cultivation should commence, and follow as long as it is practicable to get a team through the rows.

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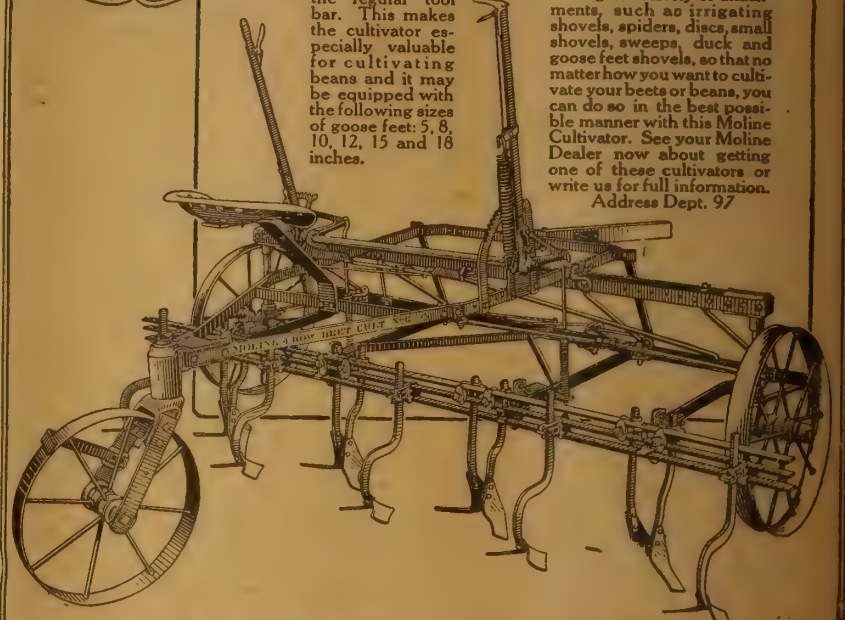
The operator controls the cultivator with his feet by pushing forward upon the foot levers which pivot the wheels and guide the tool bars in the same direction, thus providing the most efficient method for controlling a cultivator which is used to cultivate more than one or two rows at a time.

The tool bar is of sufficient length so that by the proper selection and adjustment of tools, rows may be cultivated anywhere from 16 to 48 inches apart. The tool bars are attached to the frame in a pivotal position. These connecting pivotal bars are in the line of draft and distribute the pull directly to the tool bars, thus getting the draft point as low as possible and making it as direct as possible.

For cultivating beans an extra long tool bar can be provided which is sufficiently long to enable the operator to cultivate four 30-inch rows, or any spacing between 30-inch and 24-inch; which is the capacity of the regular tool bar. This makes the cultivator especially valuable for cultivating beans and it may be equipped with the following sizes of goose feet: 5, 8, 10, 12, 15 and 18 inches.

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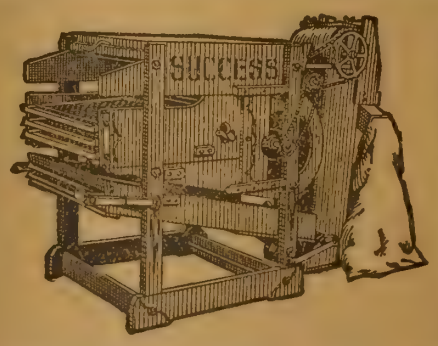


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34x4½	26.20	29.90	4.80
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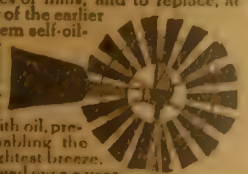
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BREAK UP THE PLOW-SOLE.

When plowing for summer-fallow, beans or corn is the best time to break up the plow-sole which underlies most of the hay and grain land of San Diego county, as claimed by the Farm Adviser.

The deplorable system that most everyone has practiced is the shallowness of the work. Continued four to five-inch plowing, together with the natural effect of the rainfall, has deposited the finer particles below the plow depth in a strata of more or less impervious soil through which water percolates very slowly, if at all. After a heavy rain the ground above this strata is supersaturated, the water not being able to travel downward rapidly enough. An east wind springs up after the rain and carries off much of the moisture, which had the plow-sole not existed would be in the lower depths of the soil.

It has often been difficult to break this plow-sole up for the reason that the ground is too soft following a heavy rain, and when it becomes dry enough the ground is too hard for ordinary teams to pull a plow through this heavy strata, unless double the power is put on the plows. This season, however, in most parts of San Diego county the rainfall has come in such a remarkable manner to get moisture into the depths of the soil and the summer-fallow or preparation for summer crops which is now in order, can more easily be done. In addition to this the greater power obtained from tractors which are becoming more plentiful should result in much better work. In buying a plow do not be afraid to get one that will plow deep. "Break up the plow-sole" should be the farmer's motto.

If you have any doubt as to whether or not you have any plow-sole in land of this character, take your shovel and especially after a rain, shove it down carefully into the soil and notice how stiff the strata is just below where you have been plowing. Examine some of the soil and you will notice that while it will drop apart, the texture is very much closer, and the moisture not as great by any means as that above.

Instead of worrying about short rainfall, use the rainfall that does come, in such a manner as to get the best results from it.

EXHAUSTING SQUIRRELS.

[Written for Pacific Rural Press by D. Muller.]

I have a very cheap way of killing squirrels. I have a Ford and use distillate in it for this purpose. We don't run them down (the squirrels) with the Ford, but attach a flexible metal pipe to the exhaust pipe and put the other end down the hole. Fill the hole well and let your engine run for four or five minutes and be sure to close all vent holes that show any sign of smoke. After doing this, pull out your hose and you got 'em. By using distillate and an automobile engine this can be done very cheaply.

[This method is not new. It has been practiced by different people for several years, but it may be usefully new to some readers.—Editor.]

JAPAN HAS A SEQUOIA!

It is reported that from the island of Formosa, near Japan, seeds of a new Sequoia have been brought to San Francisco to be planted in Golden Gate Park.

The seeds were obtained by Dr. Ernest H. Wilson, professor of botany in Harvard University, who returned after two years in the Far East.

In many respects the Formosa Sequoia resembles California's Sequoia gigantea, Dr. Wilson said. It grows to a height of 250 feet, with a girth of from 25 to 30 feet, and is to be found only in the mountains on Formosa Island.

California botanists were instrumental in having seeds of the tree brought here. They communicated with Dr. Wilson after learning of his discovery of the Sequoia on Formosa Island and induced him to bring sufficient seeds to be planted in Golden Gate Park.

The seeds were obtained by Dr. Wilson from a tree 2700 years old, which he had felled. The climate of Formosa is similar to San Francisco, and he is confident the tree will grow here.



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Field and Garden Suggestions

[Written for Pacific Rural Press.]

Quarters for Rice Labor.

While Hindus are replacing white men in the rice fields alarmingly, there is a reason for it. White men can stand heat and mosquitos while at work, but they like a resting time free of mud and mosquitos. The ranch in which J. V. Biard is interested in Glenn county was leased to half a dozen white men the past two years. These men cleared $100,000 on the 1560 acres two years ago and $75,000 last year. They realize the humanity of their workmen and have provided for their comfort. Two hundred men are fed in the "mess hall" in harvest time—clean and comfortable. It has open screened sides and a cement floor washed out every day, and the tables are kept clean. The kitchen adjoining is also kept clean in the same way, hot and cold water being provided.

The bunk house is screened and cement floored and washed out every day. The bunks are double decked steel. Ten toilets and five shower baths are provided in an adjoining room. Sewage goes to a concrete septic tank 10x12 feet. Germs were obtained from the Government to put into the septic tank to destroy solid matter, and the overflow from this tank is "clear as crystal."

Sucker the Corn on Peat Soil.

The corn crop of San Joaquin county suffers by many growths either planting too thick or allowing suckers to grow too thick, as observed by Manager Carson Cook of the Rindge Land and Navigation Co., who has seen 12 stalks in one hill and has seen many people drill their corn six inches apart. On peat soil especially growers ought to sucker their corn, for the suckers detract from the main crop and seldom bear anything worth while. Heavier sediment soil will mature good corn on a greater number of stalks, and J. M. Bigger, one of the pioneer corn growers in this region, does not find that it pays to pull the suckers off.

New Pink Bollworm Infestation.

Cotton seed smuggled across the Mexican border into Texas is blamed for recent new infestations with pink bollworm. Radical measures are being taken to clean up the pest before it shall spread. Eastern Texas is only now showing evidence of having been successful in cleaning up its infestation. While the quarantine and other measures taken promptly when the pest was found are severe on local growers, they are no worse than would come if the pest were neglected. Let us uphold our Horticultural Commission in keeping various pests out of California.

Colusa Wheat and Rice.

Wheat acreage in Colusa county has more than doubled this year over last and all of it is in fine shape. On low places grain turned somewhat yellow temporarily, but on the hills it has kept color and continued growth and has never looked better at this time of year. Most of the rice in this county is grown on land too alkaline for barley or wheat, according to Horticultural Commissioner L. R. Boedefeld. But the continued leaching and drainage may take out enough alkali to make barley possible later on, though wheat is not believed likely to ever occupy much of the rice land. The rice crop is still moving from Colusa county by the thousands of bags and a heavier acreage than ever before is planned for 1919.

Rice as a Weed Killer.

On land which is capable of growing both rice and grain, weeds need never worry the grower if other conditions are right. When watergrass makes rice unprofitable, two or three years of grain cropping kill the watergrass and most of the seeds. When tocolote, tarweeds, mustard, etc., embarrass the grain grower, a few seasons of submergence under water in growing rice kills them. One ranch noted where morning glory had pulled down wheat so it could not be harvested, was cleaned up by rice.

Penetrating Morning Glory Spray.

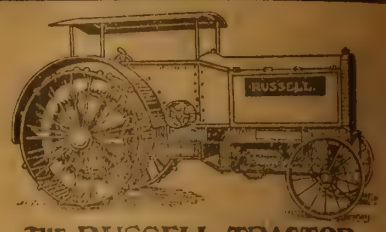
A morning glory spray which has been found working in the roots over a foot underground is reported by Prof. Geo. P. Gray of the University. Penetration of roots without soaking the ground with poisonous material is required in a satisfactory weed spray. This seems to have been found in the following formula: White arsenic, 12 pounds; caustic soda, 6 pounds; water, 3 gallons. This makes a stock solution which is to be diluted to 300 gallons for spraying.

COMBINED RICE HARVESTER AND DRIER.

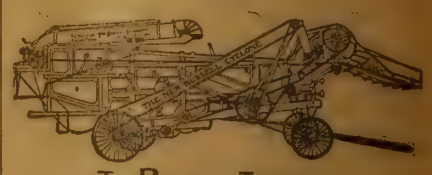
[Written for Pacific Rural Press.]

"I'm afraid to grow rice this year, although we have a world of water in Butte county. But the labor conditions make it a gamble," says P. M. Ashley. Mr. Ashley was responsible for a promising attempt to reduce the labor of rice harvesting by use of a combined harvester three years ago. He didn't harvest much, but that much convinced him of several facts. The combine had tracks eight inches wide where they should have been two feet wide. It is highly desirable and entirely feasible to have the sicklebar in front to avoid crushing rice into the mud on the first round in every check, as is wastefully done with horses generally now. For convenience and economy in driving, the machine should be self-propelled. While the work can be done much faster, with far less labor, and with very little of the mud-wading which is so disagreeable to harvest laborers, the rice when threshed in a combine without curing in the shock was so moist that seven days after it was threshed and sacked it was badly "stack-burned." Rice harvested with a combine must be artificially dried. Mr. Ashley agreed to furnish the drier if a local manufacturing company would furnish the proper sort of a harvester. War work prevented further attention to the harvester, but Mr. Ashley got the drier and set it up near Biggs. This was fortunate, for last winter it became desirable to dry over 5000 bags harvested in the ordinary way but too wet on account of the weather. The drying cost between $2 and $2.50 per ton, including emptying the sacks and resacking.

Rice is a delicate grain and if carelessly dried it cracks, preventing its sale as "head rice," which brings the most money. Mr. Ashley's dryer consists of a hot-air blast blowing through the rice for an hour as it descends through a wire-screen bin about four inches thick.



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And the Reserve tends to prolong the life of the machine, for it is usually working at its normal capacity. Continuous, undue strain is thereby avoided.

This Case 10-20 will also handle other implements usually requiring 8 to 10 horses, such as two 7-foot binders, two 20-shoe grain drills, eight sections spike-tooth harrow, 8 to 10-foot double disc harrow and other implements of like requirements. For belt work, this tractor has proven equally efficient. It drives a Case 20-inch cylinder thresher with wind stacker, feeder and grain handler. Also silo fillers, hay presses, feed mills, etc.

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PROSPECTS FOR THE TOMATO CROP.

Tomato growers are anxiously scanning the horizon for indications as to prices and demand for the coming season's crop. We have already made mention that $14 a ton was a tentative opening price. According to the Tomato Growers' Association (now incorporated in the Vegetable Growers of California), the outlook is not encouraging for a heavy planting this year. For the market is stagnant and there is no demand. Last year, in the face of Government and other requirements, a record pack of tomatoes was made. The sudden cessation of war conditions last November put a sudden crimp in the market.

Supply and demand will have to largely govern this season's conditions. What European markets are going to be open to us, what will they want, what about transportation? At present we are told the Government has from five to seven millions of cases of tomatoes on hand. In addition to this, there are enough on the market now to supply the demand for six months to come. An application has been made to the Government to endeavor to market the large surplus in Europe—even at a loss—to create and extend markets there for our tomatoes and to relieve the present congested condition. At present no encouragement is held out through this channel.

In a talk with R. B. Hull of Healdsburg and G. H. Meredith of Manteca, directors for their respective districts of the association and members of the executive commitee, they both advised cutting down acreage this year. Their association will call members together in the various tomato-growing sections as early as convenient and explain conditions to their brother growers.

Those who are willing to take a chance and launch out in a big way will at least know what they are doing and understand the precarious condition of the markets.

It is understood that a movement is on foot by some of the large corporations to stimulate planting by buying up or contracting small acreages in each district at $20 and $22 a ton. This, it is felt, is to discourage association members and later to have a raft of tomatoes with which orders can be filled at a low and unremunerative price.

SQUIRREL CAMPAIGN ON.

The squirrel and gopher killing campaign is taking State-wide and thorough effect as never before. One of the counties illustrating the way it is handled is Colusa, whose squirrel campaign is administered under Horticultural Commissioner L. R. Boedefeld. The county has been divided into four or five districts, with a competent inspector over each. Squirrels are starting to come out and breed now. The ground is moist and not cracked. Carbon bisulphide is being used by the waste-ball method, which is most convenient, cheap, and efficient. A thousand waste-balls cost $3. A gallon of bisulphide soaks 65 balls and one ball per squirrel hole is enough. Poisoned grain is not used now on account of expense and ineffectiveness. It seems that green feed counteracts the poison. One dead squirrel was found with 103 poisoned grains in its pouch. That makes squirrel killing too expensive. Gophers are being treated differently. Their holes are located with foot-push rods and pieces of poisoned root vegetables about one-half inch square and an inch long are used for bait. The pieces, being too large to carry in their pouches, the gophers stop to nibble them smaller. Then they stop forever.

The pea crop is backward in Central California and rains have washed hillsides and damaged early blooms. Carlots are expected soon from Imperial valley, with the peak crop by the end of the month. There is a larger acreage than last year. Early peas are of good quality.

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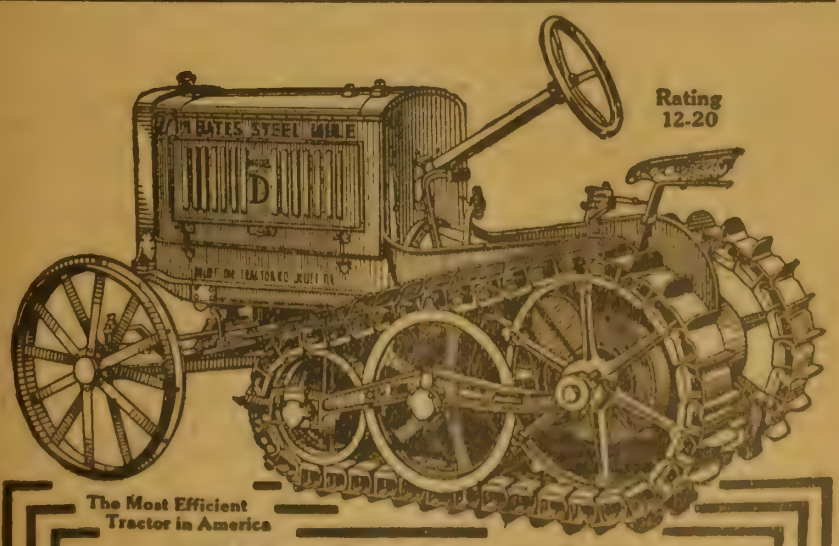
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"I use GIANT It gets them out cleaner"

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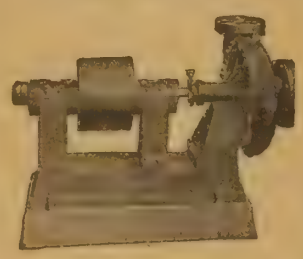
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Mechanical Power on the Farm

Users of tractors, engines, pumping plants, motor trucks, automobiles, electric motors, and other mechanical farm power are invited to make this department an exchange of their experiences and troubles.

HOW TO BUY A TRACTOR.

[Written for Pacific Rural Press.]

A tractor man wanted to sell W. C. Oakley of Santa Barbara county an 8-16 tractor. Mr. Oakley was interested, but he had to be shown. He has had many years of experience with steam engines and threshing machines, but not much with gas tractors. Be it said to the tractor's credit that after it had performed for him it was immediately adopted and paid for, although the salesman was completely stumped by the questions fired at him by the gas engine man employed by Mr. Oakley for the test. The tractor people claimed their machine would not start so much of a load as eight horses could, but it would keep going all day with a heavier load than the horses could keep going. However, it was not so much to displace horses for power as it was because horses cannot work very well in the heat of a Santa Maria Valley summer.

A salesman's promise was not enough for Mr. Oakley. He told the salesman to prove his tractor. He tried out plows and other implements with horses on fields where he proposed the tractor should prove itself. One of these was Bermuda sod several years old on rather light sand soil. The tractor man said he could pull two 12-inch moldboards, but they put on three tens. The tractor walked away with them except when it ran onto bare ground with plows still in the sod, when it had plenty of power to dig in. That was expected. Then the tractor hitched to an 8-foot double disk and carried it out over deeply plowed fresh ground. Now what would the tractor do in running over the soft, wet ridges and trenches where irrigated corn had been grown? It pulled far better than the horses it sought to displace. Would it do satisfactory belt work? It proved up to the desired accessible in case of trouble? The tractor man showed this. Were repair parts in stock not far away? They are. The machine worked fine. Would it continue equally well for a reasonable number of years? The engine man was convinced and some intelligent observation by Mr. Oakley as to the strength and flexibility of parts that would be subjected to heavy strains settled the matter. Later on, about the last of January, the tractor performed ably in double disking some barley to make a seedbed for alfalfa seed. This soft surface did not worry the tractor. Alfalfa was broadcasted and double disks set straight worked the seed in most satisfactorily. A perfect stand has come up. Mr. Oakley is enthused about his tractor.

TRACTORS HARVESTED ABANDONED RICE.

[Written for Pacific Rural Press.]

How a tractor harvested the rice crops of several men who had given them up on account of mud and wet weather makes an interesting story. One man had sold his rice fields for hog pasture; but on seeing his neighbor harvest a similar field he followed suit. Frank Kupser, on the Byron Jakes place in Yuba county, couldn't get horses to work on the soft red land which "had no bottom." A Monarch tractor salesman obtained permission to try the job. He put longer axles on his machine, bolted a 2x8 plank 28 inches long on each shoe of the track, put sleds under a rice binder and hitched an auxiliary engine to work it. He harvested the crop, finishing November 16. Four or five neighbors saw the feat and they came or sent men to the Monarch distributors, working Sunday and all night to get additional tractors rigged up and shipped out. Harvey Eich was one of them. He harvested 200 acres with his new machine after seeing the first one work. He and the other neighbors finished threshing about January 10, the crops they had thought were lost. M. Gilson hauled the bundles on sleds by tractor across the big winding levees to the thresher at a solid place on the road. This came near being a duck-footed job.

TRACTOR DEPARTMENT AT DAVIS ENDORSED.

At the February meeting of the Traction Engine and Implement Dealers' Association of Southern California the members enthusiastically endorsed the good work accomplished by Prof. Davidson of the University of California Agricultural Engineering Department at Davis and mention was made of the large appropriation, amounting to $100,000 or more, to cover the expense of the traveling tractor school as a war-time emergency. It developed that while the members of the association appreciated the good work which has been accomplished by the traveling tractor school units, it was thought a mistake in the arrangements of these units to limit them only to tractors manufactured in California. A resolution was unanimously adopted urging the members of the State Legislature, who have the matter in charge, to materially increase the annual appropriation to the department at Davis which has been so ably managed by Prof. Davidson in teaching the use of modern tractors and farm equipment.

H. L. Marsh presided, and two new members were admitted.

NEW KNIGHT-LEE TRACTOR.

A compact bunch of power is the new Knight-Lee tractor built in Oakland and about to be commercially distributed by H. E. Myers. A box to entirely enclose it would be 48 inches high, 47 inches wide, and 97 inches long, inside measurements. Its Hershell-Spillman motor develops 17 horsepower at 1100 r. p. m. and is claimed by Mr. Myers to exert a drawbar pull of 1200 pounds with a fuel consumption of one gallon of distillate per hour. It is one of the narrowest machines on the market. The clutch is a surprise in simplicity and effectiveness. The machine has Hyatt bearings throughout, has a pump cooling system, force and splash oiling, and high tension magneto ignition. All parts are dustproof, and it is claimed that there are 20 per cent fewer working parts than any other tractor on the market. The machines have been tested a year or two locally to locate weak spots. One of them will pull two 12-inch plows at the Sacramento Demonstration, May 6 to 11, and it is hoped that before this time 100 of the Knight-Lee tractors will be in the field.

CATERPILLAR MACHINERY EXHIBITS.

A bulk grain attachment for combined harvesters has been standardized for some years by the Holt Mfg. Co., but has not been much exploited. One of them will probably be shown at the Sacramento Tractor Demonstration. One of their Giant Harvesters and a California Special with automatic side-hill leveling regulation will be exhibited with their machinery running. Of course the 75 and 45-h. p. Caterpillars will be there with the Caterpillar disk and moldboard plows and disk harrows built to stand the heavy pull of tractors. The Holt Mfg. Co. recently exhibited at the Kansas City Tractor Show the first of their line shown in the East since the war began. The exhibit included a British War Department 20-ton artillery tractor with camouflage painting, a standard U. S. Army ordnance 10-ton artillery tractor, armored and camouflaged, a 6-ton special U. S. "tank," and their 75 and 45-h. p. tractors.



AFTER years of use an Avery Tractor not only retains its mechanical perfection, but its day in and day out usefulness without provoking delays or costly repairs.

An Avery operating in Tehama County was brought to California from the Middle-west over six years ago. The owner states in that period of operation he has spent less than $57 for repairs.

Avery owners get 1/3 more actual draw-bar H. P. at 1/3 first cost and 1/10 the cost of upkeep.
Write and let us give you the names of satisfied Avery owners and first-hand information on how to raise bigger crops with less help.

Avery Tractors are built in 7 sizes. There is a Size Avery Tractor to Every Size Farm.

Everybody is invited to attend the Avery Service School. It's free. It will be held as follows:

Chico, March 24th and 25th.
Sacramento, March 27th, 28th, and 29th.
Stockton, March 31st and April 1st.
San Jose, April 3rd.
Salinas, April 5th.
Fresno, April 7th and 8th.
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The Septic Tank on the Farm

[Written for Pacific Rural Press by H. J. Baade, County Agent, Napa county.]

The indifference of the public toward proper sewage disposal is not as great as we are led to believe when we see the disgusting outdoor privy at some neglected, antiquated rural school house or on the farmstead, where the operator is out of harmony with the times to the tune of forty years or more. The farm home of today should be equipped with electric lights and power, telephone, a furnace, running water, the latest plumbing fixtures and sewers. Such conditions tend to make the city man retire to the country rather than the farmer retiring to the city. Of all the conveniences mentioned above, the most important is running water and a sewage disposal plant. These make the house in the country a home; they take from the shoulder of mother the burdens we should not expect her to bear. They make it possible to keep the home surroundings neat and clean and remove the possibility of the water becoming contaminated with filtered sewage which may prove to be worse than poison when taken into the system.

CONVENIENCE VS. EXPENSE.

The expense of installing running water, sewers and a septic tank is so small that anyone desiring to install them need not hesitate. The conveniences they provide are so great that when fully realized no one will hesitate to install them.

Ask mother what it means to have



A septic tank built by George Schaffer, a pear grower in Carneros District, in Napa county, where the insanitary and dangerous cesspool is now regarded with disgust.

running water at any part of the house whenever it is wanted; ask her how she would like wash tubs connected with the sewer, so no wash water has to be carried out of the house. Consider the advantage of a bath tub that can be filled with hot or cold water just as you like by opening a faucet. Think of the value of the toilet equipment the sewer and septic tank made possible, and you forget the small cost and begin to plan on how to build. You will not want the fly-breeding outdoor privy nor will you want the cesspool.

THE UNSANITARY CESSPOOL.

The cesspool is used by a few people now. We hope this method of sewage disposal will be discontinued before long, because of the danger of contaminating the underground water supply. This being true, we will not want to install a cesspool from which liquids might percolate through the soil into the well. This is not merely a vague possibility, but the fact is that it has happened frequently, thus spreading disease, especially typhoid. The diseases often spread by careless disposition of sewage are typhoid, hookworm, tuberculosis, cholera and dysentery.

In the city, health officials demand proper sewage disposal; in the country, man does as he pleases. It is for this reason that we may judge a farmers' character by his surroundings. The California farmer's home should be a model to all others.

The septic tank as described in the accompanying illustration will completely decompose and dispose of the sewage on the farm. The effluent liquids should never be used to irrigate vegetables nor should animals be permitted to drink them. Using such liquids for irrigation has caused the spread of disease (typhoid especially) in several cities.

THE DANGER OF SEWAGE IRRIGATION.

In one instance, a European city of over 250,000 inhabitants was threatened with a cholera plague, its gardens having been irrigated with sewage. The vegetables the people ate were covered with cholera germs which came from the hospital.

The liquids may be used with perfect safety in sub-irrigating the orchard or meadow. Do not surface-irrigate your garden with them.

DIMENSIONS OF TANK.

The septic tank should be large enough to take care of 70 gallons of sewage per capita per day. In estimating the size of tank the following table will be found useful:

	Width.	Length.	Depth.
6 persons	4 ft.	9 ft.	5 ft
8 persons	4 ft.	10 ft.	5 ft.
12 persons	4 ft.	10 ft.	6 ft.
25 persons	5 ft.	14 ft.	6 ft.

The septic tank is connected with the house by a four-inch sewer pipe. The bacteria which decompose the sewage in the tank become established by a natural process. It is not necessary to add chemicals to aid them in their work. Lye and strong disinfectants should not be thrown into the sewer, since these interfere with the work of the bacteria. Storm water should not be run into the septic tank, for an excessive quantity of water would carry the sewage out of the tank before the bacterial activity would be complete.

When liquids have passed through both compartments of the tank all solid matter has been decomposed, the clear liquid then passes out into the underground distribution system, where the bacterial activity is completed, after which the liquids seep into the ground and the sewage that was has been disposed of. There is no odor about the tank or the underground distributing system.

CONSTRUCTION OF TANK.

These tanks are constructed of concrete, molded in forms built of old lumber that can usually be found on the ranch. The concrete may consist of clean gravel five parts, cement one part or of crushed rock four parts, sand two parts, cement one part. In mixing, care should be taken to have it of a mushy-wet consistency. It should be thoroughly spaded into the forms. The walls are reinforced concrete four inches thick throughout, including the top and bottom. Reinforcements are put in twelve inches apart. For this purpose heavy wires that are useless about the ranch may be used. The interior of the tank should be waterproofed when the forms have been removed by plastering with a one to three cement and sand mortar.

The tile and sewer pipe, which are four-inch, can be bought at the local hardware store. The sewer pipe leading from the house to the septic tank should have a fall of not less than one foot to one hundred feet.

CUT THIS OUT—SAVE IT

CUSHMAN ENGINES
For Pumping

Why purchase an engine for pumping only. CUSHMAN engines run smoothly, steadily, almost noiselessly. They use gasoline or distillate, with guaranteed economy. High speed, with throttle governor and perfect balance, gives smooth, continuous flow of power and insures uniform speed, so that the pump or machines gives out its fullest capacity.

Built Light==Built Right

So that explains why they are more durable than the common types weighing four or five times as much. There are no violent, irregular explosions nor the ever-changing speeds of the heavy hit-and-miss types.

Only All-Purpose Farm Engines

When pumping is over use your engine for other work. Being light, compact and with wide range of speed, it is easily and quickly adapted to any work. All sizes furnished with friction clutch pulley, Schebler carburetor, throttling governor, forced water circulation, battery or magneto ignition.

The Cushman Satisfies Every User==Satisfy Yourself

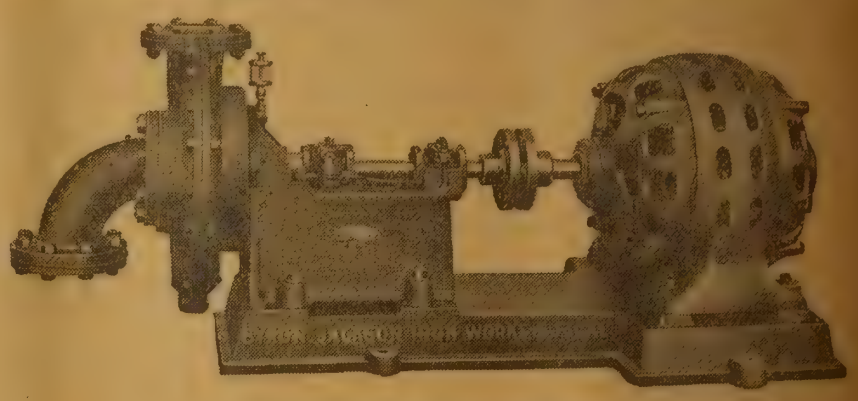
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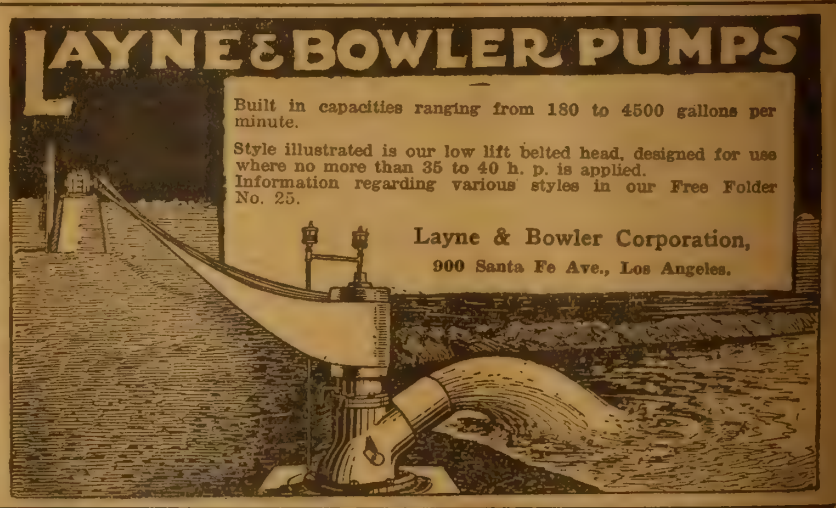
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Built in capacities ranging from 180 to 4500 gallons per minute.

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Layne & Bowler Corporation,
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Long Term *Low Rate*

All loans made on an amortization plan whereby the borrower repays the principal gradually with each interest payment.

Over three thousand satisfied borrowers in this district. It will pay you to investigate.

For information apply to the nearest National Farm Loan Association or write direct to

Federal Land Bank of Berkeley
Berkeley, Cal.

All the joints should be carefully cemented. The trap and air vent near the tank are essential, their purpose is to keep air out of the tank.

INTERIOR CONSTRUCTION:

The interior construction of the septic tank is as follows: The intake pipe should go into the tank at one end within 14 inches of the bottom of chamber No. 1. The 4-inch pipe going through the partition between chamber No. 1 and 2 is placed at an angle of 45 degrees. The outlet pipe from chamber No. 2 reaches to within 14 inches of the bottom.

When the tank is completed the manholes are sealed, and the tank is filled with water, when it is ready to receive the sewage. This tank may be built entirely underground, or it may be left partially exposed; it will work either way.

Materials required to build tank are: (1) Four yards of gravel; (2) 18 sacks of cement; (3) one4-inch trap; (4) two 4-inch elbow joints; (5) one 4-inch cross tee; (6) sewer pipe to connect house and tank 100 or more feet, porous tile for underground discharge system.

COST.

With the present cost of labor and materials a tank such as described above can be built for about $50. If the farmer does the work himself, the cash outlay will be about $25.

There are many other types of septic tanks being constructed today, but few are as simple, inexpensive and efficient as this one I have described.

Having conducted a septic tank campaign in Napa county, and having been successful in getting the farmers to install more than 1000 such tanks on the farmsteads of this county, all of which are giving splendid satisfaction, I recommend this type of septic tank to the reader.

INDIVIDUAL OPINION OF STATE SETTLEMENT OF LAND.

[Written for Pacific Rural Press.]

A disinterested but successful prune grower, who is keen on colonization, especially in view of our returning soldiers, spoke of several Federal and State settlements (not in California) in different sections, where disappointment was experienced by settlers in such irrigation districts, where land and water was sold. That in one case there was plenty of water for irrigation but the land was not good enough to justify the prices paid. Returns did not demand it and many men could not continue their payments.

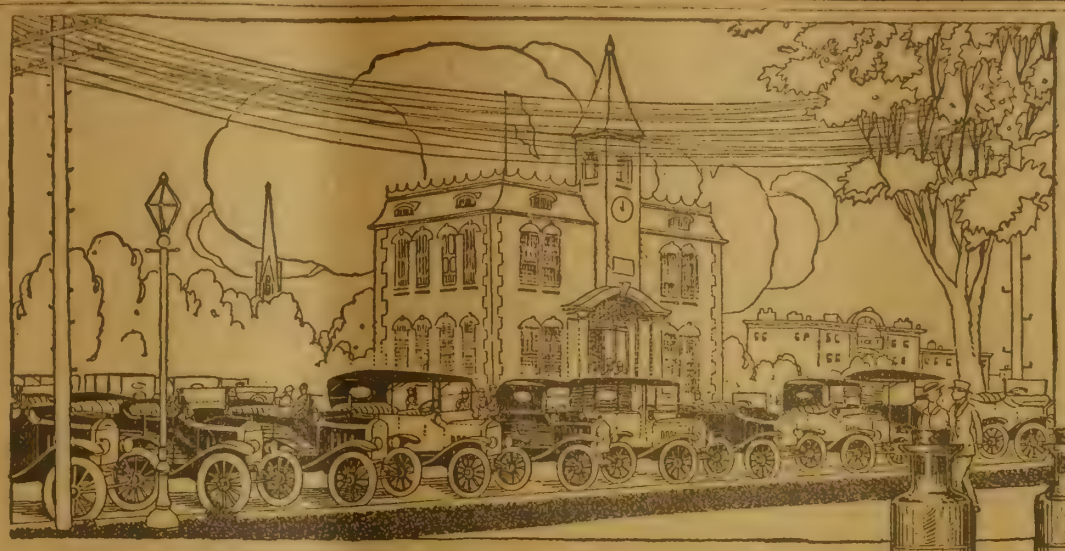
No guarantee was given as to the land. Soil mapping and analysis was not carried out or its service was perfunctory. The above prune grower expressed his admiration of what had been accomplished at Durham. Here, every settler knows what he is buying and the benefits he gains under the system. It will encourage individual effort and ownership as distinct from State socialism, into which state we seem to be drifting. And it is individual effort, pride of possession and creation, and friendly rivalry in production, that is the motive power of co-operative effort.

SMALL TRUCKS AND TRAILERS FOR FARMERS.

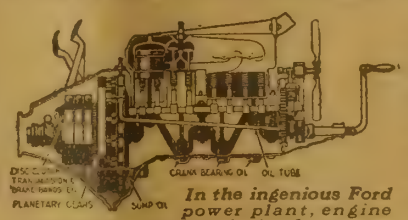
Farmers have been buying two-ton auto trucks and larger sizes where in many cases they had better buy small ones of about a ton capacity,and use trailers when they have big loads, says Manager W. G. Crisswell of the International Harvester branch in San Francisco. Heavy trucks represent heavy investment and a man won't take a light load to town on a heavy truck although it would be good business to haul the load with a light truck. It is impractical for several farmers to own a big truck jointly because it is everybody's experience that when more than one man drives a truck, each will neglect adjustments, lubrication and repairs.

To the Editor: Please tell me where I can buy a male water sheep. —B. H., Patton.

Guess what you want is a hydraulic ram. Consult our advertising columns.



New facts about lubrication
every Ford owner should know



In the ingenious Ford power plant, engine transmission gears and clutch are enclosed in one case. One oil must meet the different lubrication requirements.

IN the cities, where some companies use great numbers of Ford cars and results of their use can be easily compared, it has been proved beyond any doubt that attention to lubrication is one factor of operation which will greatly reduce the cost of running a Ford.

Scientific comparison of the costs of running various cars under similar conditions has proved that:

1. Mileage per gallon of gasoline can be increased.
2. Mileage per quart of oil can be increased.
3. Carbon deposits can be reduced to a minimum.
4. Repairs can be greatly reduced.
5. More power can be made constantly available.
6. Overheating, loose bearings, engine knocks, can all be practically eliminated.

How are these surprising results obtained? *By using an oil which resists heat.*

Ordinary oil breaks down

Ordinary oil breaks down quickly under the intense heat of the engine—200° F. to 1000° F.—forming a large proportion of its bulk in black sediment, which has *no lubricating value.*

Sediment crowds out the good oil on the metal-to-metal surfaces and prevents the oil from efficiently lubricating the fast-moving parts. Loose bearings are almost always the result of using poor oil. Engine knocks, broken connecting rods, slapping pistons are an inevitable result.

After years of experimentation Veedol engineers evolved a new method of refining by which a lubricant is produced which resists heat. This, the famous Faulkner process, is used exclusively for the production of Veedol, the scientific lubricant.

How Veedol, the scientific lubricant, reduces the formation of sediment by 86% is shown by the two bottles illustrated above.

Buy Veedol today

Your dealer has Veedol or can get it for you. If he cannot supply you, write us for the name of the nearest Veedol dealer. Enclose 10c for copy of the 100-page Veedol book, which describes internal combustion engines and their lubrication. It will save you many dollars and help you to keep your car and tractor running at minimum cost.

TIDE WATER OIL COMPANY
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Ordinary oil after use *Veedol after use*

Showing sediment formed after 500 miles of running



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"Write or visit the bank and I will explain the superior service this bank gives to out-of-town depositors."

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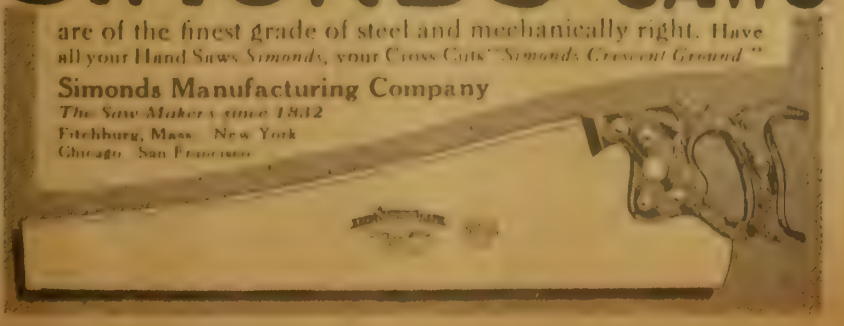
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"Originators of the Valve System of Irrigation."



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TODAY • OF WATERLOO

For new 1919 Book. Save $25 to $200 on Gasoline Engines, Manure Spreaders, Cream Separators and other Implements. Sold direct from factory. Over 300,000 satisfied customers prove value of goods and direct selling system. Close buying points. Machines guaranteed or money refunded.

Wm. Galloway Co., Box 2377 Waterloo, Iowa

Don't Waste the Barnyard Wastes

Written for Pacific Rural Press by R. H. Whitten

This is the day of conservation. On all sides we hear the cry, "Conserve, conserve, conserve!" Every farmer as a good citizen opposes a waste of our forests or of public money. But how about his own business? Is he practicing conservation? If he is neglecting to take proper care of the farm manure, he is not.

The American people are notorious as wasters, and nowhere is this more evident than in the barnyard on the average farm. It is no wonder many men do not make successful farmers. To be truly successful on the farm one must be a good business man, and no business man will allow a constant waste in his business, once he has discovered the leak.

One of the biggest leaks on many farms runs from the manure pile. The manure is dumped on an open pile day after day and possibly hauled out to the field twice a year. In the meantime every shower takes its toll of fertility. Cattle stand in a wet, filthy corral, knee-deep in fertility that ought to be incorporated in the soil. The rains carry away rich brown streams of nitrogen, potash and phosphorus that the crops are hungry for, and that other farmers are paying a good price for in the form of commercial fertilizers. Nitrogen gas steams up and floats away with dollars and dollars' worth of plant building material.

Much is said nowadays in favor of livestock farming because the least amount of fertility is sold off the farm. The farmer cannot grow profitable crops year after year without returning to the land the essential elements that enter into those crops, any more than he can continue to check from his bank account year after year without making deposits. But the mere keeping of livestock does not return these elements to the soil. The stock furnish the material to keep up the fertility in the form of manure, but just as a deposit of gold coins is worth infinitely more than one of copper, so manure properly cared for and handled is worth infinitely more than that from which rain has stolen its soluble constituents and "fire fanging" has burned out certain others.

FERTILIZING VALUE OF MANURE.

No farmer would think of dumping his money in a heap back of the barn, yet this is the way he often handles manure, which represents money. The value of the fertilizer produced by farm animals is surprising when reduced to simple terms. About 75 per cent of the fertility in the feed consumed by them is not stored in their bodies, but becomes manure — this assuming that the liquid portion is saved and that leaching and other losses are prevented.

Estimates as to the value of manure produced by different farm animals vary, but it is safe to say that ordinarily a well-fed horse produces about $25 in manure a year, a dairy cow $30, a beef cow $20, a hog $3 and a sheep $3. Commercial fertilizers are high in price, and this makes farm manure all the more valuable and the need of saving it still more urgent.

To get at the value of mixed farm manure per ton, we find that at the Ohio Experiment Station crop increases valued at $9.36 at 1918 prices were secured from each ton of yard manure used at the rate of eight tons per acre in a five-year rotation of corn, oats, wheat, clover and timothy. At Purdue University $6.14 at 1918 prices was the increased crop value from each ton in an eight-ton application on a five-year rotation of corn, oats, wheat, clover and timothy. In Utah five tons per acre increased the value of crops of corn by $7.14 at 1918 prices for each ton of manure. In West Virginia every ton of manure applied brought a return of $6.24 at 1918 prices.

LOSSES FROM IMPROPER HANDLING.

But it must be borne in mind that these results were secured with manure of full strength, and not with such as is found on the average farm where the principles of conservation are not applied and the fertilizing value of the manure used has been greatly lowered.

The most important factor influencing the value of the manure is the way in which it is collected and preserved. Experiments at the Cornell station showed that mixed manure will lose half its bulk and value when exposed for six months in the common barnyard pile. The New Jersey station reported that manure containing no bedding lost 51 per cent of the nitrogen, 51 per cent of the phosphoric acid and 61 per cent of the potash when exposed to weather conditions between February and October.

Manure exposed at the Ohio station for three months decreased in plant-food value 37.8 per cent. If six months' manure from a 1000-pound steer sustained a similar loss, it would be equivalent to reducing the selling price of the steer 39 cents per hundredweight.

How seldom do we consider the matter from this standpoint! The dairy farmer, for instance, is very likely to overlook the manure pile entirely when he figures the income from his cows. It is something even looked upon as a necessary evil that must be disposed of at an added cost and an increased amount of labor, yet the manure pile is the dairyman's "gold mine" when properly handled. Take an average 1000-pound cow producing 5000 pounds of milk per year. If her manure is exposed to weather conditions, the loss is equivalent to 26 cents per hundred pounds of milk. That is, if the fertility of the farm thus lost was replaced by fertilizers, the cost of producing milk would be increased 26 cents per hundred pounds. Conversely, if the loss was prevented, the cost of producing milk would be decreased by the same amount.

HOW LOSSES OCCUR.

These illustrations show strikingly the importance of greater care in handling and storing manure. Here in California, where animals are seldom kept in barns over night and little bedding is used, the chief losses are due to leaching and fermentation. Consequently manure that is produced in corrals, and that which is piled in heaps, suffers the greatest loss. Manure subjected to winter rains loses much of its fertilizing value through the drainage water. And because the ingredients removed are water-soluble they have a greater value for increasing the crop yield than those remaining after leaching, which must go through a process of fermentation before they can be used by crops.

Fermentation causes a heavy loss in manure that is loosely piled. Proper fermentation is desirable, as it brings about decay and decomposition, putting the fertilizing constituents into such a condition that they will at once be available for use when the manure is applied to the fields. But this takes place only when the manure is kept moist and is packed so tightly that the supply of air is very limited. In the average loosely piled manure heap air enters and "fire-fanging" results. The nitrogen is converted into ammonia gas and escapes into the air. Under such conditions probably more than half the loss of nitrogen is due to this rapid fermentation.

VALUE OF LIQUID MANURE.

It should not be forgotten that over one-half the total value of the voidings of an animal is found in the urine; also that these elements are in soluble form and immediately available for use as plant food, whereas the solids must undergo decay before such elements can be utilized. At the New Jersey station three plots were selected: one received no fertilizer, another solid manure only, the third a mixture of solid and liquid manure. The result was that the second had a 15 per cent better crop than the first, and the third had a 52 per cent better crop. This advantage held for three years.

Consequently, it is highly important that the liquid part of the excrement be saved, and as it invariably flows down the gutter behind the animals, provision should be made for catching it. This, however, is seldom done. Many dairymen who husband the solid manure with the utmost care permit a large part of the even more valuable liquid portion to escape in the sewerage system. They may feel that it costs too much to put in a concrete cistern to take the drainage from the barn and the seepage from the manure pile, but careful figuring will show that this is a wise investment and that the cistern will soon pay for itself.

A concrete floor in the dairy barn is, of course, just as necessary. A leaky barn floor should be considered just as much out of place on a dairy farm as a milk can with a hole in it.

WAYS TO STORE MANURE.

We read in Eastern publications that the best way to handle manure is to haul it directly to the field and spread it when fresh. But very few farmers are either equipped or have the time to care for the manure in this way, and out here, where we do not have summer rains, this should be done only where the soil moisture is sufficient to insure the rotting of the manure. As a rule, the California farmer will find it best to store the manure during a considerable part of the year and this can be done in two ways—in a rick or in a pit.

The losses found to occur in manure that is permitted to rot before it is applied are often due to improper handling, and if the manure is kept in a compact pile and is packed to prevent too free air circulation the loss may be reduced to a minimum. The most important consideration is to keep the pile packed, and to keep it moist. To reduce the loss from leaching, the pile should be built with nearly perpendicular sides and flat top. This sort of rick will absorb most of the rainfall and little liquid will drain away. To prevent excessive drainage, the ground under the heap may be compacted and slightly hollowed out.

COLLECTING UNDER FEEDING SHEDS.

A good way to save manure, especially in the case of hogs or beef cattle, is to have feeding sheds with concrete or earth floors. The manure is allowed to gather under the animals. If plenty of bedding is used it will absorb the liquid manure, and the trampling of the animals will keep this moist enough to prevent loss of nitrogen. At the Ohio Experiment Station it was found that the saving of manure from steers on a cement floor was $4.48 per year greater for every 1000 pounds of live weight, and that this was sufficient increase to pay the cost of installing the concrete floors during the first year.

ADVANTAGES OF CONCRETE PIT.

The concrete pit offers the ideal way of saving manure, and need not entail a great expense. One 3 feet deep, 12 feet long and 6 feet wide will enable the average farmer to properly preserve the barnyard manure until it is time to haul it to the field. It may readily be constructed with farm labor of concrete, with a thin coat of cement to prevent seepage. A roof will increase its value, as it will prevent the manure drying out so rapidly. The cost will be trifling in proportion to the saving effected, provided the manure is properly handled. It must be compacted or there will be large losses of nitrogen by fermentation.

USE A MANURE SPREADER.

Another way in which the net return from manure can be increased is through the use of a spreader. The spreader distributes the material far more evenly than can anyone by hand, and economizes man and horse labor. Any farmer who handles as much as 50 tons of manure a year can afford to buy a spreader, and it will pay for itself in one season on a farm of 15 acres.

Light, frequent, even applications of manure are far more profitable than infrequent, heavy applications. About eight tons per acre is best. If less is used, sufficient fertility is not supplied to insure bumper crops. If more is used, the fertilizing elements are liberated more rapidly than the growing crops need them.



The manure spreader is one of the most important agricultural implements today. It increases the production of the farm by bringing about an economical use of the manure.

Your Opportunity

to buy a choice granddaughter of Jessie Fobes Bessie Homestead, bred to KING KORNDYKE PONTIAC 20TH, in the Guaranty Sale, Sacramento, March 27.

We are also contributing a fine daughter of our 31-pound cow, Thelma Hartog De Kol, due in April to Prince Riverside Walker.



King Korndyke Pontiac 20th

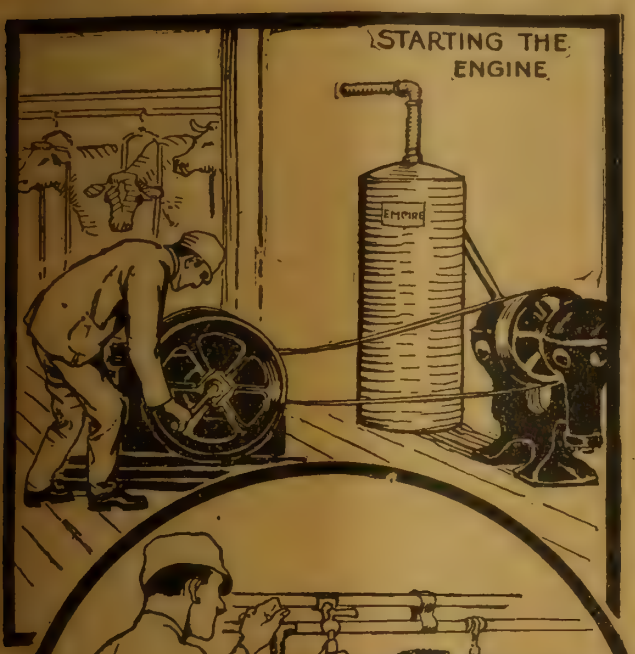
These are two of the very choicest heifers in our herd, the kind that will make money for whoever buys them.

Our Entire Herd is Tuberculin Tested.

Tulare Holstein Farm

W. J. Higdon, Owner TULARE, CAL. H. L. Redd, Herdsman

How the Empire Does Its Work



THESE illustrations show the ease and simplicity of operation of the Empire Milking Machine. *Anyone* can milk a herd with an Empire because there is so little to do—the machine does the work. You start the engine, attach the milker by hose to the pipe line, apply the teat cups to the cow and carry away the milk after the machine has done the work. The teat cups stay on perfectly, regardless of the size of the teats. No surcingles or harness is required.

Because of the new Empire Super-simple Pistonless Pulsator, the Empire's action is always uniform, no matter who does the milking. The cows like it better than hand milking. They become accustomed to its regular, gentle and soothing action and "let down" their milk freely. It is especially successful with the hard milkers and nervous cows in the herd. It increases the flow of milk and lengthens the period of lactation.

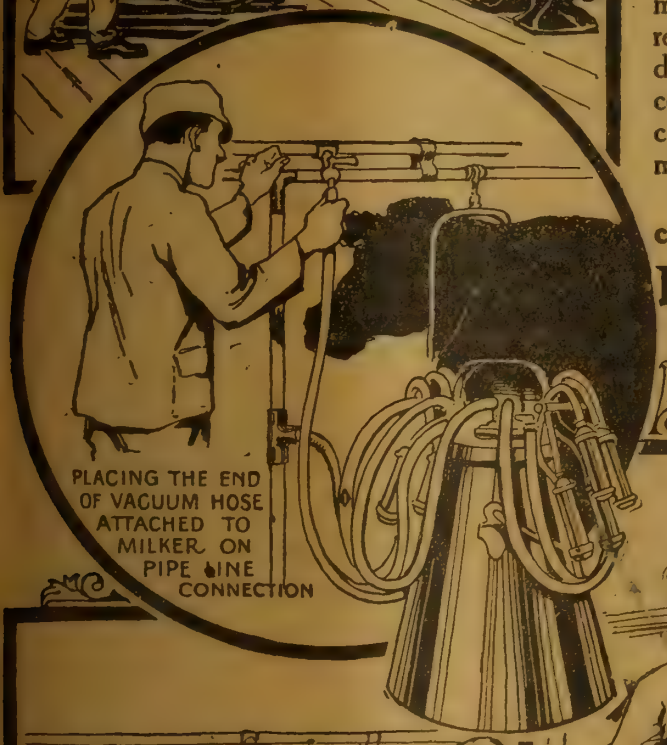
An Empire Milking Machine cuts dairy costs. With it one man can milk more cows than three men working by hand. It enables you to materially increase your herd with the help you now have or to release your help for important field work. Even your young son or daughter can do the milking as well as you. Thousands of boys and girls are successfully conducting this work on many farms.

Learn all there is to know about the Empire and what it can do in making your herd more profitable. Write for Catalog No. 45 and let us arrange with our local dealer for a demonstration.

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EMPIRE
MILKING MACHINES

Our Stand Regarding Dairymen's Ass'n.

[Written for Pacific Rural Press by R. H. Whitten.]

"Either you are laboring under a very grave misapprehension of facts or you have placed your paper at the disposal of the centralizers and trusts." Thus wrote one of our subscribers after reading our recent article about the Milk Producers' Association, entitled "Co-operation or Domination?" Perhaps others who read the article formed the same opinion, and it seems advisable to come out with a frank statement of our attitude and our reasons for giving the matter publicity.

First of all, the Rural Press is strong for co-operation. For years we have advocated it as a means of increasing the farmer's profits. We have given considerable space to co-operative movements and have taken an active part in helping to organize co-operative associations. We even went so far as to suggest the use of our paper as the mouthpiece for the federated associations, and offered to give several columns of space weekly without charge.

After the Dairymen's Association was formed, we investigated its principles and objects and set our seal of approval on it in a first-page article, in which we also paid a glowing tribute to Mr. Henderson. We are still for the kind of an association that Mr. Henderson had in mind at the time, and we are still for him personally. We have heard reports of instances where he seemed to wield the big club a little too freely, but still the balance is decidedly in his favor. We have no patience with Senator Brown, who, in his condemnable efforts to lower the prices of milk and butter, attempted to connect Mr. Henderson with Armour in a frame-up to wreck California's dairy industry. Mr. Henderson has since publicly denied the charge as follows: "Let me say that I am not in the employ of Armour. I am not associated with him and never will be. Neither Mr. Armour nor any other man has money enough to hire me. I am devoting my life to the cause of the dairy business, in the interests of a State of which I am a native."

We believe Mr. Henderson, and right in this connection we want to say that there is not money enough in the country to hire this paper either. We understand that the opponents of the association have formed a "slush fund" and we want to make this public announcement that it will do them no good to attempt to win us over to their side by offering us any of this money. We are for the best interests of the farmer first, last and always, and when we see a wrong that needs to be righted we shall fight for the farmer, no matter whom we are obliged to hit.

Furthermore, we shall not knowingly allow any article appearing in our columns to be used for any other purpose than that for which it was intended. Only last week we received an order from an independent creamery for copies of the issue above mentioned to be sent to its patrons, evidently to prejudice them against the association, but we flatly refused to fill the order. That article was intended to be favorable to the association itself, and against only certain promoting and operating methods which we believe need correcting.

We do not want to wreck the association. We want to see it continue. We want it to flourish, and by "flourish" we mean that we want to see it make dairying more profitable to the California farmer. But from numerous reports received it is evident that the association is not making much progress in this direction. Some of our informants have stated that not 25 per cent of the members are satisfied; one, after making investigations, claimed that not over 10 per cent would join again and that the remaining 90 per cent will withdraw as soon as their contracts expire.

We believe that these statements are exaggerated. Still we feel that the cases of dissatisfaction are so numerous that if these members drop out when their contracts expire many of the association creameries will not be able to continue at a profit; perhaps some will be obliged to close and the members will lose a good share of what they have invested. Consequently, it seems our duty to our many subscribers who are members of the association to see that wrong methods and abuses are corrected, so that when contracts begin to expire the different plants will have served their members so well that all will want to continue.

We are not acting on the spur of the moment. For months occasional reports have been received of underhanded organization methods and poor management, but we have remained silent. We know something of the troubles of co-operation. We know how hard it is to secure competent managers; we know of the temptations of field solicitors to stretch statements when they are securing contracts on a commission basis. But lately the reports have been so numerous that it now seems time for us to take the part of the dairymen interested and get to the bottom of things—find out whether or not these reports are true, and what progress the association is really making in the way of greater returns to the dairymen.

In doing this we are endeavoring to be absolutely fair and impartial. Instead of merely going into the camps of the enemies to collect evidence against the association, we are going right to association managers and members and are getting as much data as possible favorable to the association, hoping that this will greatly overbalance the evidence against it. Furthermore, we have the co-operation of our good friend, Col. Harris Weinstock, State Market Director. His office is in the same building as ours, and we have frequent interviews with him. All reports derogatory to the association are being referred to him, and he is rendering us a valuable service in securing data to prove the truth or falsity of these reports—inside information which we could not otherwise get.

We would like the co-operation of our readers also. If you are a member and are satisfied, tell us in what way you have been benefited. If you are dissatisfied, tell us why. Don't simply knock. Give us reasons, and back them up with facts and figures.

We feel that the public is entitled to know the truth regarding the so-called "raw deal" in connection with the purchase of the Keyes Creamery, and we are sorry that the association has not seen fit to answer the charges made against it. It was stated under oath that Mr. Chas. Geer, a director of the Milk Producers' Association of Central California, asked for the assistance of the directors and patrons of the Keyes Creamery, stating that his association was purely a marketing organization and did not intend to buy creameries or manufacture butter, and assuring the local creamery that enough cream would be furnished it to run the plant at full capacity. Then, after the patrons were signed up, the Modesto plant was purchased; these Keyes patrons were required to deliver their cream to the Modesto creamery, and as a result the Keyes creamery was obliged to sell its plant for $16,000 when it was worth $25,000.

Reports of similar misrepresentations have come to us from Hughson, where the recent action of the association is termed "the Bolshevik method of trying to tear down what others have built up."

In the Imperial Valley we understand that the plant of the California Central Creameries at El Centro, which the association officials have acknowledged to be one of the finest in the State, was offered to the association in 1918 at the exact cost of erecting in 1915, when labor and materials were much lower than in 1918. But the association bought what was termed a "small, out-of-date, run-down plant, which will require a huge outlay to bring it up to the efficiency of the other plant."

GREAT HOLSTEIN SALE

We are consigning to the Guaranty Sale, Sacramento, March 27.

RECORD SIX YEARS

Butter:
7 days, 31.91 lbs.
30 " 123.55 lbs.
Milk:
7 days, 468 lbs.
30 " 2180.6 lbs.



RECORD SEVEN YEARS

Butter:
7 days, 37.61 lbs.
Milk:
7 days, 538.2 lbs.

BOWEDA 159706

Due to freshen April 13th. To service of King Segis Alcartra Prilly.

Twice Grand Champion California State Fair. She is a candidate for a 40-pound record. In great shape for the test.

Our consignment to Guaranty Sale, Sacramento, March 27, 1919, consists of

THE HIGHEST RECORD BULL EVER SOLD ON THE PACIFIC COAST

THE HIGHEST RECORD COW EVER SOLD IN PUBLIC SALE ON PACIFIC COAST

No. 1. **BOWEDA:** Butter, 7 days, 37.61 lbs. from 538.2 lbs. milk. Due to freshen April 13, 1919.

No. 2. **KING ABBEKERK JOHANNA SEGIS:** Bull, born January 11, 1918; dam, Adirondac Wietske Dairy Maid; record, butter, 7 days, 41.01 lbs; milk, 7 days, 831 lbs; butter, 30 days, 153.3 lbs; milk, 3584 lbs. Sire, King Segis Alcartra Abbekerk, a 30-lb. son of King Segis Pontiac Alcartra, the $50,000.00 bull.

No. 3. **SARAH TOPSY DE KOL, No. 215769:** Record, 32.4 lbs. butter from 701.1 lbs. milk in 7 days.

No. 4. **JESSE FOBES BURKE, No. 167097.** Record, 31.66 lbs. butter from 615.6 lbs. milk, 7 days. Due to freshen June 22d; to service of King Segis Alcartra Prilly

No. 5. **BELLE FASKIE HENGERVELD DE KOL 2d, No. 231930:** Record, 23.81 lbs. butter in 7 days from 623.4 lbs. milk; capable of much better record; Grand Champion California State Fair 1918; dam of 24.86-lb. junior two-year-old now on test.

BRIDGFORD COMPANY

KNIGHTSEN CALIFORNIA

A GREAT HERD BULL

GUARANTY SALE, March 27, '19



His Sire's Dam
AAGGIE ACME OF RIVERSIDE 2D

Butter, 7 days	35.38
Butter, 30 days	142.32
Butter, 365 days	1331.78

World's Strictly Official Record.
Highest daughter of King Mead of Riverside.



His Dam
LADY HISKE WALKER

Butter, 7 days	34.25
Butter, 30 days	123.53
365 days (2 yrs.)	654.58

State Record when made.
Second highest daughter of Prince Gelsche Walker.

Do you want a bull on which you can stake the future of your herd? If so, consider this one well.

REMEMBER--

THAT HIS TYPE—his breeding and the records back of him are about as near right as you will ever find in one animal.

THAT THE AVERAGE RECORD of his three nearest dams is higher than any other bull in the sale, as is also the average of his seven nearest dams

THAT THIS IS THE ONLY YEARLY RECORD BULL in the sale and that it is going to be to your advantage to own a yearly record sire. That his dam is due for a large yearly record at next calving.

THAT HIS DAM AND SIRE'S DAM are by two of the greatest proven sires of the Holstein breed, each having sired a world record daughter.

THAT HIS SIRE is heading two of California's largest herds and is destined to high rank among Western sires.

THAT HIS DAM is three-quarter sister to the 36-pound junior three-year old, Miss Valley Mead De Kol Walker, the highest yearly record living, in her class, and dam of the $6,500.00 bull, King Korndyke Pontiac 20th, and that you can not go wrong in selecting a sire bred in these popular lines, and especially when backed by such outstanding type and production.

THAT WE ARE ALSO CONSIGNING three beautiful daughters of Prince Gelsche Walker, two of which are from 31 and 32-pound dams, and a 32-pound junior four-year-old granddaughter of Hengerveld De Kol, that has milked over 100 pounds a day with second calf. Best of all, they are bred to the highest yearly record bull in the world, **SIR AAGGIE MEAD DE KOL.**

A. W. MORRIS & SONS, CORP.

WOODLAND, CAL.

This is not in line with the policy of the association, stated to the writer last year, of using existing facilities instead of duplicating present plants.

We have photographs of statements issued by the Modesto plant, showing that butterfat is accepted from non-members as well as members, and that non-members receive exactly the same price as members. Why, then, should a dairyman pay $5 per cow for the privilege of becoming a member? One of the association officials explains that a member participates in the profits, but perhaps he is not aware himself that his association is incorporated as a non-profit concern. Also it is reported that an association solicitor told dairymen near Woodland that "creameries which handled association milk could hardly be expected to handle milk from dairymen who did not belong to the association."

A report of apparent poor management comes from Caruthers, where there seems to be much dissatisfaction among members. It is stated that some time ago the association advised the Caruthers cheese factory to store their cheese for a higher price and offered to furnish the necessary capital, while at that time the Food Administration had a ruling that all cheese and butter put in storage must be sold at the price ruling at the time it was put in. Can it be that those who are directing the sale of the dairy products of their members, and hope to direct the marketing of the State's entire production, do not even keep posted on the laws governing their products?

It is reported that misrepresentations were made to Yolo county farmers, and they were promised that State dairy inspectors would be more lenient with them if they were members of the association.

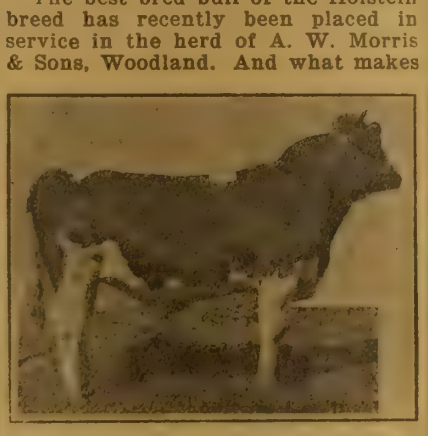
It is reported that in the North Sacramento Valley the association refused to grade milk, thus removing the incentive for dairymen to produce a superior product and receive a premium for it.

It is claimed that at hardly a single plant is the association returning as much to the dairymen as are the independent creameries. In some cases the gross returns are very good, but there are heavy deductions for operating expenses, etc. One case is reported where the deduction amounted to 21 per cent. Can it be called successful management when it costs anything like this to operate the business?

Perhaps we have been misinformed. Perhaps we don't know all of the circumstances. One reason for publishing these accusations is to let our readers, and the association officials as well, know what investigations we are making, in hopes that they can give us additional information which will put a different light on some of the situations. We await their letters, and we want to give assurance that anything favorable to the association will be published just as willingly as will statements against it.

WONDERFUL BACKING FOR MORRIS HERD SIRE.

The best bred bull of the Holstein breed has recently been placed in service in the herd of A. W. Morris & Sons, Woodland. And what makes this announcement all the more interesting is the fact that the bull is strictly a product of the Morris herd, every animal in the first two generations back of him having been bred by his owners, and every one of his fourteen nearest ancestors having been owned and developed in the herd.



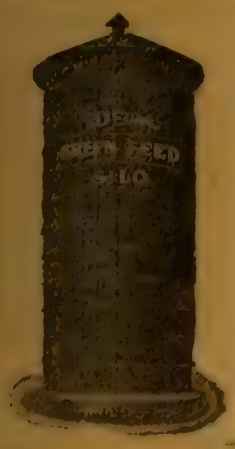
Sir Aaggie Mead De Kol, the royally bred young bull recently placed in service in the Morris herd.

Since the Morris Corporation began breeding Holsteins it has been their desire to have a herd sire with an average of 1000 pounds of butter for his seven nearest dams, and their ambition has been fully realized in Sir Aaggie Mead De Kol. He was the first bull in the world to have this distinction, his seven dams, including his own dam as a two-year-old, averaged 1093.99 pounds, which is soon to be increased to over 1100 pounds by his great granddam, Aaggie Acme of Riverside. In addition to this, his seven nearest dams average 31.14 pounds butter in seven days, including the three-year-old record of his dam.

The dam of this young bull is by a son of Riverside Sadie De Kol Burke, out of a daughter of Aralia De Kol. His sire is also by a son of Aralia De Kol, combining in a very close manner the blood of these two great foundation cows. His two granddams are the two highest record daughters of King Mead of Riverside, each having strictly official yearly records above 1200 pounds. His sire's dam holds the world's strictly official yearly record of 1331.78 pounds and held the world's two-year butter record of 2426.87 until recently exceeded by Tilly Alcartra.

The three nearest dams of this young sire have each shown an average test of considerably better than 4 per cent for the year. His ancestors as well as that of his seven dams would be difficult to improve upon. And it would be difficult to put him in a herd in which he could have better opportunities to make a reputation for himself than the famous Morris herd.

IDEAL Green Feed SILOS



PUT up a silo this spring, but first know all about the IDEAL, with its

Leak-proof refrigerator doors, steel spline stave joints, special designed hoops, straight pull lugs, leak-proof foundation joint, expert workmanship and selected materials.

REDWOOD or DOUGLAS FIR

25 years' experience backs the IDEAL

Our catalogue describes it in detail. State your requirements and get our prices, terms, etc.

DE LAVAL Dairy Supply Co.
61 Beale St.
SAN FRANCISCO

DISPERSAL SALE

E. R. PUTZ HOLSTEIN HERD

WEDNESDAY, APRIL 2nd, 1919
LATON, CALIFORNIA

Here is one of the big opportunities of the present sale season, a complete dispersal of a successful dairy herd.

45 REGISTERED HOLSTEIN COWS, HEIFERS AND BULLS

While no official testing has been done in the herd, the blood lines are of substantial quality, and many great bargains will undoubtedly develop from this sale. For instance, there are 24 GREAT-GRANDDAUGHTERS OF PONTIAC KORNDYKE in the herd, ranging from calves up to 2-year-olds, and some of these young things are about as safe an investment as it is possible to find.

Practically all of the cows are young, and have been selected and retained in this herd because they are profitable dairy cows.

Local dairymen have found this herd a popular source of supply for bulls, and there has never been a surplus of bulls of breeding age on hand. At sale time there will be a few choice youngsters to offer.

45 HIGH GRADE HOLSTEIN HEIFERS AND COWS

These are all sired by registered bulls and are the kind of milkers that Mr. Putz has found profitable. They are well marked, mostly young, and a good clean lot straight through.

IF YOU WANT A SERVICE BULL

look the herd sire PRINCE LUNDE KORNDYKE 2ND over carefully. He is a grandson of the mighty PONTIAC KORNDYKE, and the dairymen who are fortunate enough to have a grandson of that great sire at the head of their herds are mighty few and far between. He is a FIRST-CLASS INDIVIDUAL.

Every animal, both purebred and grade, is tuberculin tested and sold subject to retest by the buyer.

Note.—Mr. Putz's farm is 9 miles north of Hanford on the paved county highway; 3½ miles east of Laton; 10 miles west of Kingsburg.

Catalogue free on request.

Management

California Breeders Sales and Pedigree Company

C. L. HUGHES, Sales Manager, Sacramento, Cal.
Auctioneer—COL. BEN A. RHOADES, Los Angeles.

PRODUCING HOLSTEINS

AT PUBLIC AUCTION

THURSDAY, APRIL 3rd, 1919

Packwood Farm, Owned by W. F. Mitchell, Visalia, Calif.

60 REGISTERED HOLSTEIN COWS, HEIFERS and BULLS

This sale will include every female of milking age in Mr. Mitchell's herd, which is one of the longest established and most favorably known in the lower San Joaquin Valley, along with some choice bred heifers and some good young bulls.

14 COWS AND HEIFERS WITH OFFICIAL RECORDS UP TO OVER 31 POUNDS BUTTER IN 7 DAYS WILL BE IN THIS SALE

We doubt if there is a single one of these that is not capable of increasing her record, for it has been comparatively recent that official testing was taken up at Packwood Farm.

39 COWS and HEIFERS BRED TO PRINCE HISKE WALKER

the great young herd sire at Packwood Farm. His get are of uniformly good type and his young daughters show great promise of developing into big producers and beautiful individuals.

PRINCE HISKE WALKER WILL BE SOLD

This splendid young sire is only just past 4 years old, and it is practically certain that he will have at least 60 living daughters before he is 5, an opportunity that few Pacific Coast sires have had. He is sired by the famous Prince Gelsche Walker out of Hiske of Riverside, and is thus full brother to the 34-lb. junior 4-year-old Lady Hiske Walker. This bull would not be sold under any circumstances were it not for the fact that Mr. Mitchell is retaining only his young daughters in the herd as his future breeding females.

AND KEEP YOUR EYE ON THIS ONE

She is a beautiful daughter of Spring Farm King Pontiac 6th, whose daughters have made some wonderful records during the past year, and she carries just about as much world's record blood as any heifer ever sold in the West.

Every animal positively guaranteed to be a breeder; every animal over six months of age tuberculin tested and sold subject to retest by the buyer.

CATALOG FREE ON REQUEST.

MANAGEMENT

California Breeders Sales and Pedigree Company

C. L. Hughes, Sales Manager, Sacramento, Cal.
Auctioneer—Col. Ben A. Rhoades, Los Angeles.

REGISTERED HOLSTEINS

Breeding Herd offers several bulls and bull calves of 31 lb. breeding. Females offered for foundation stock. Tuberculin tested.

M. M. Holdridge, San Jose, Cal
R. D. "A," Box 437.
Two miles out North First Street

California Breeders have sold more than $350,000.00 worth of registered cattle at our sales under the most stringent requirements laid down by any sales organization in America. Satisfied buyers have been the rule in all our sales.

CALIFORNIA BREEDERS SALES & PEDIGREE CO.
C. L. HUGHES, Sales Manager, Sacramento, Cal.

Livestock and Dairy Notes

Livestock breeders all over the State are invited to send on postal cards, notes regarding their sales, State and County Fair intentions, new stock, etc.

The Dairy.

Edgemoor Farm, Santee, has sold for $3,000 a son of Itchen May King to head one of the leading Eastern herds of Guernseys.

A. A. Jenkins, Tulare, recently sold a yearling Jersey bull, a grandson of Ruth Grimm 2nd, to C. L. Hargraves, Woodlake.

J. P. Phillips, Fresno, has recently purchased a bunch of registered Holstein heifers rich in Ormsby blood, several being in calf to a son of Duchess Skylark Ormsby. The herd is headed by a son of Sir Pietertje Ormsby Mercedes.

Toyon Farms Association reports that Stanislaus Princess Pontiac, a three-year-old, recently made 25.4 pounds butter in 7 days; May Lillian Segis, a junior three-year-old, made 24.36 pounds, and Finderne Jondine Pontiac made 22.8 pounds as a two-year-old.

F. S. Borror & Son of Tipton have recently purchased the Holstein herd of S. C. McComber, which, in addition to what they already had, gives them a good start for a purebred herd. They now have 32 registered animals, all tuberculin tested, six of which have official records. As yet they have not done any special feeding for records, but expect to soon.

Bridgford Company, Knightsen, has sold a son of a 31-pound son of King Pontiac Segis Korndyke to S. C. Dyer, Dos Palos, who has just started a herd of purebred Holsteins. The bull is out of Tora Pontiac of Vina, with a two-year-old record of 24.86 pounds butter. She is a granddaughter of King of the Pontiacs and was reserve grand champion at the State Fair in 1918.

Alexander & Kellogg of Inisfail Farm, Suisun, have sold to George Need of Galt a Milking Shorthorn bull out of a cow with a record of 9745 pounds milk and 319 pounds fat in 236 days. Mr. Need says he is the best young bull he ever saw. Other sales include bulls to Mr. Grupe of Stockton, Mr. Soule of Edgewood, Mr. Nelson of Camptonville and Mr. Hilborn of Suisun.

The Merced County Jersey Breeders held a meeting Wednesday, March 12, at the ranch of Davis Larson, Stevinson. Ways and means of Jersey advertising were discussed. Mr. Voorhies of the University Farm, Davis, was present and addressed the breeders. Mr. Larson was elected president of the association, E. W. Doane of Merced secretary and E. E. Greenough of Merced treasurer.

Thos. Harrison of the Santa Rosa Stock Farm, Santa Rosa, has purchased ten Milking Shorthorn cows from William Bond, Newark, nearly all being descendants of the famous Robert Ashburner stock. Mr. Harrison will breed these females to his two great herd bulls, Foothills Pioneer by Gen. Clay, and North Star, a bull bred by the late James J. Hill and sired by Imported Brandsby Coming Star.

Greenhill Caroline, in the dairy Shorthorn herd at Inisfail Farm, Suisun, owned by Alexander & Kellogg, has produced 11,656.1 pounds milk and 429.5 pounds fat in a little over 10 months. Her bull calf, Viscount Charles, was sold to Cox Bros., Los Banos. He weighed 900 pounds when one year old. His dam freshened again January 15 and from January 19 to March 1 gave 2149.4 pounds milk and 85 pounds fat and is still milking 50 pounds per day.

Palo Alto Stock Farm, Palo Alto, reports the following recent sales of registered Holstein bulls: Palo King Korndyke to C. A. Call, Fort Ross; Palo Segis Vale to Capital Dairy, Sacramento; Palo Pride Segis to Mr. Gibson, Modesto; Palo King Canary to Mr. Dixon, Hughson; Bresto's Lad to Mr. Clifford, Modesto; Palo Segis Mercedes to Helen Decker, Modesto; Palo Valdessa Soldene to S. J. Silva, Oakland; Palo Farolico to J. M. Gomez, Ceres; Palo Segis Burke to H. J. Kimmell, Modesto; Palo Baron Aaggie to S. L. Hanscom, Modesto; and Prince Piebe Walker to Nickerson & Arnes, Modesto.

The Lewis Company, San Jose, reports the following sales of registered Holsteins: To Burroughs Brothers, who are operating a certified dairy near Santa Clara, Prince

Livestock Sale Dates

March 27—Guaranty consignment sale, Sacramento. Holsteins.

April 2—E. R. Putz, Laton. Holsteins.

April 3—Walter F. Mitchell, Visalia. Holsteins.

April 8—California Shorthorn Breeders' Association, Davis. Shorthorns.

April 9—Pacific Coast Hereford Breeders' Association, Davis. Herefords.

April 10—American Polled Hereford Breeders' Association, Sacramento. Polled Herefords.

LIVESTOCK MEETINGS.

April 8 and 9—California Cattlemen's Association. Convention and barbecue luncheon at Davis.

April 10—California Swine Breeders' Association. Annual meeting at Davis.

Edgemoor Farm Guernseys



Imported Itchen May King, 25174

PRETTY PRODUCTIVE PROFITABLE

Noted for the highest natural colored dairy products, the best flavored milk, the most economical production of cream and butter.

A Few Animals of Either Sex For Sale

SANTEE, CALIF.

W. H. DUPEE
Pres.

Important!

JERSEY milk contains the vital elements, in the highest degree, essential to maintain human health and physical vigor. Jerseys produce it at the least cost for feed. Dairymen and farmers also realize today that they must have a business profit—Jerseys insure it. The facts about Jerseys are a revelation—more important now than ever in the history of farming. Write to Breeders for pedigrees and prices and let us send you a Jersey Book that is an eye-opener.

The American Jersey Cattle Club
388 West 23rd Street
New York City

JEREY

N. H. LOCKE CO.
LOCKEFORD, CAL.
Choice young bulls of King's Valet Blood, backed by Records.
Call at the ranch and make selection.

VENADERA HERD REG. JERSEYS
Herd headed by Altama Interest, Grand Champion 1918 State Fair. Awarded two other championships and 10 firsts, including Aged Herd Breeders' Young Herd, and get of sire. Young bulls for sale from dams and granddams in Register of Merit.
GUY H. MILLER, Modesto, Cal.

LEONARD FARM JERSEYS
Bulls for sale from Register of Merit cows. Write for information.
W. J. HACKETT, CERES, CAL.

T. B. PURVINE & SONS
PETALUMA, CALIFORNIA.
Breeders of
Registered JERSEYS
Young bull calves for sale. Fine individuals with Register of Merit backing.

RANCHO SANTA MARGUERITA, D. F. Conant, Prop., Modesto, Cal.
Register of MERIT JERSEYS A limited number

FOR LARGE AND ECONOMICAL PRODUCTION
Get one of my young Jersey bulls from a high producing dam. They are rich in the blood of Gertie of Glynllyn and Lady Letty Lambert. Occasionally one old enough for service.
A. A. JENKINS, TULARE, CAL.

Bull Calf
Dam: 430 lbs. fat in 9 mo. 16 days on alfalfa alone, carrying calf entire time.
Grand Dam: 690 lbs. fat in one year.
Sunshine Farm E. E. GREENOUGH Merced, Calif.

MONTELENA HERD
OF LARGE
YORKSHIRES



LAKE PARK KING 25211
Grand Champion Boar—California State Fair, 1917.

Due to the ever increasing popularity of the breed, Yorkshire breeders are almost entirely sold out, and it would behoove the prospective purchaser to place his order soon. We are only able to offer at the present time a very exceptional lot of fall pigs, some sired by "Lake Park King," others by "Montelena Prince 2d." They are out of such sows as "Deer Creek Nena 8th," present Grand Champion sow of the State, who has averaged a fraction over 17 pigs per litter for nine consecutive litters; "Riverina Nena 9th," one of her best daughters, and "Lake Park Lady Frost 291st, the top sow at the Thomas H. Caufield sale last year.

We solicit your correspondence.

A. L. TUBBS CO.
CALISTOGA CALIFORNIA



AUCTIONS
Sell your stock or implements at public auction. I can get big prices for you. Have cried successful sales in all parts of the State. Customers always satisfied. Write for terms and dates.
ORD L. LEACHMAN,
1004 Fifth St., Sacramento

RHOADES & RHOADES
EXPERT LIVESTOCK AUCTIONEERS
Purebred Stock Sales a Specialty
Sales Conducted in All Parts of California
Ben A. Rhoades, Auctioneer
1801-3-5 So. Main St. Los Angeles, Cal.

REAOAKS SPECIAL
Registered Big Type Poland-Chinas
Bred Sows and Gilts, 25c. per lb.
F. O. B. Gilroy.
W. J. HANNA, GILROY, CAL.

TAMWORTHS
(The Bacon Hog)
Largest Herd in the State
DUROC-JERSEYS
Mature Stock and Weanlings of both sexes. Sure to please.
SWINELAND FARM,
W. O. Pearson, Prop. Woodland, Cal.

Shear the Modern Way
You wouldn't allow 15% of any crop to go unharvested. So why stick to old-time methods of sheep and goat shearing? Shear the modern way, with a Stewart Machine. Gets more wool easier and more quickly. There are hand operated machines and larger ones. Price of Stewart No. 9 only $14. Send $2—pay balance on arrival. Write for catalog.
CHICAGO FLEXIBLE SHAFT COMPANY
Dept. B 103, 12th St. & Central Ave., Chicago, Ill.

Creamelle Skylark Ormsby, a good son of Sir Skylark Ormsby Hengerveld; to Chas. Monighetti, formerly of San Luis Obispo, now of Santa Clara county, Toyon Holland Valdessa and five heifers; to Warne & Sons of Holtville, Toyon Perfection Valdessa; to F. W. Wehner of San Jose, ten heifers.

Adirondac Wietske Dairy Maid, whose yearling bull, King Abbekerk Johanna Segis, is to be sold at the Guaranty Sale, has been on test 52 days and is now milking about 125 pounds per day and making over 4 pounds fat per day. She will have for her 60-day record over 7000 pounds milk and over 300 pounds butter. From present indications she will have about 1000 pounds more milk and 10 pounds more butter for her 60-day record than the present world's record milk cow for the same period.

W. J. Higdon, Tulare Holstein Farm, reports that Leda Hengerveld De Kol Korndyke, a six-year-old daughter of Korndyke Queens De Kol Prince, made 30.87 pounds butter from 648 pounds milk in 7 days, and is now on monthly test, milking from 105 pounds to 109.5 pounds per day. The heifer Blanar Segis made 21.72 pounds butter from 394.6 pounds milk as a junior two-year-old, with an average of 4.40 per cent fat. She is a daughter of Segis De Kol Pontiac Burke and out of Blanar, who has a 7-day record of 29.50 pounds butter.

Beef Cattle.

Simon Newman Company of Newman recently sold two ten-months Hereford bulls, Morning Brae and Liberty Knight, for $1,000 to D. A. Zanone of Humboldt county.

The Annual Review of 1918 public sales of Aberdeen-Angus cattle shows that 4102 head averaged $385. The bulls averaged $250 and the females $440. The top brought $1,519.

Edgar Kirk of Exeter, a well-known young cattleman of that locality, reports the feed good on his range. Mr. Kirk recently purchased a young registered Polled Angus bull from C. N. Langton, Visalia.

At the annual Aberdeen-Angus spring sale and show of young stock at Perth, Scotland, February 5, three bulls brought over $10,000 and 280 bulls averaged $560 as compared with an average of $325 last year.

At the Hereford Roundup, held in Kansas City, March 3 to 6, 560 head of Herefords brought an average of $398, the bulls averaging $370 and the females $420. The top bull brought $7,000 and the top female $2,975.

C. N. Langton, Diamond L Ranch, Visalia, has a good start with registered Polled Angus cattle. He has several cows purchased in eastern Oregon and his bull, Inkerman 2nd is from the Aberleur herd of Bishop This bull's calves show up very well both in the purebreds and crosses.

A meeting of the California Cattlemen's Association has already been announced to be held at Davis, April 8 and 9, in connection with the annual sales of Herefords and Shorthorns. It is now announced that both the Hereford and Shorthorn associations will hold their annual meetings at the University Farm, Davis, at the same time. New officers of the Hereford Association will be elected.

H. M. Barngrover, Santa Clara, has recently brought 25 head of short yearling Hereford heifers and bulls from his ranch in Plumas county and has them at F. O. Bohnett's ranch near Campbell. The young animals are typical Whitefacers, but are range raised and therefore not in high condition. Howeyer, they are strong, vigorous stuff and with the feed they are now receiving will soon be in fine shape.

W. J. Bemmerly of Woodland, who recently went East to attend the Hereford Roundup at Kansas City, has brought back what Yolo county judges say is the best carload of Hereford bulls ever received in California. The lot comprises long yearlings and two-year-olds purchased from Velie, Vanatta, Funkhouser, Bartlett, Kuhlmann, Mack, Mulvane and other noted breeders of the Middle West. These bulls may be seen at Mr. Bemmerly's ranch at Woodland.

Swine and Swinemen.

Allen Thompson, Tulare, has recently sold a bred Duroc sow to Clark P. Skidmore and a service boar to E. H. Dresser, both of Tulare.

Harvey Berglund, Dixon, has sold a young Duroc boar to F. M. Johnson of Napa to be used as a junior herd sire. The boar is rich in Orion blood.

J. A. Barker, Duroc breeder of Dixon, has had over 100 pigs farrowed since the first of the month. Litters are large and the pigs are growing rapidly.

Up to March 1 the California Farm Bureau Marketing Association had sold $575,000 worth of hogs. The association now includes the counties of Kings, Tulare, Fresno, Kern and Madera and it is expected that

(Continued on Following Page)



REGISTERED DUROC-JERSEYS

Every point the buyer demands for a profit-making hog is found intensified in the Duroc. We can supply you with weanling pigs, either sex, and gilts from 7 to 10 months. Our herd boar has the blood of Ohio Chief Defender, Crimson Wonder, Jack's Friend, Joe Orion, Etc.

THE GARDINER RANCH,

ROUTE 4, BOX 735 SACRAMENTO, CAL.

OAK KNOLL FARM

LAKEPORT CALIFORNIA

We have sold all our young boars and are now booking orders for March delivery. Highlander, the $1,000 Grand Champion Boar, heads our herd of

CHESTER WHITES

SAN FRANCISCO OFFICE, 601 BALBOA BLDG.

HAUSER'S DIGESTER TANKAGE

Gives Greatest VALUE for LEAST MONEY. IT MAKES THEM FAT.

HAUSER PACKING CO. LOS ANGELES

Universal

natural milker

Alternates, Like Milking With Hands



"You have, in my judgment, the best machine on the market."
Sunnyside Stock Farm
Evans Mills, N. Y.
Per G. P. Ashbocker

Permanent Dairy Profits In Days and Dollars

The Universal Natural Milker enables thousands of farmers to add hours to the day for other duties and put extra profits in the bank.

Why not you?

Two times a day, every day, Universal is on the job saving time.

Cows like its gentle alternating action and the farmer gets more milk as the direct result *that means more profits.*

Almost any child can operate it.

Its alternating action milks two teats at a time, while gently massaging the other two as they refill.

The Universal rubber lined teat cup fits any cow and is easily cleaned and kept sanitary.

At a very small first cost this permanent saving begins.

Its installation is simple, and once put to work is good for many years.

This voluntary letter from G. P. Ashbocker, about expresses the general experience of thousands of farmers.

Send for our catalogue.

The Universal Milking Machine Company, 1201 Mound Street, Columbus, Ohio

California Hydraulic Engineering & Supply Co. 68 Fremont St. San Francisco

Distributors for California, Arizona and Nevada of UNIVERSAL MILKING MACHINE

Some Good Territory for Live Dealers. Write for Our Agency Proposition

LIVESTOCK AND DAIRY NOTES.

(Continued from preceding page)

Merced and Stanislaus counties will join soon. A similar marketing association is being talked of in Glenn county.

F. W. Kiesel, Sacramento, reports that three Duroc-Jersey sows sired by Fruit's Orion farrowed during one week and had litters of 16, 15 and 14 respectively. That is about as well as six average sows generally do.

A. B. Humphrey, Escalon, sold his Berkshire boar, Majestic King 6th, to go in the carload of Berkshires purchased for Sycamore Farms, Douglassville, Pa. This boar was grand champion at the California State Fair in 1917.

At the Farm Bureau auction sale, held at Visalia, March 12, the top carload of 72 hogs, averaging 233 pounds, brought $17. The lowest price was $16.15, paid for a lot of lightweight hogs averaging 172 pounds. Some prices!

Young & Clark, the Poland-China breeders of Lodi, have purchased a pair of yearling gilts from C. H. Porter, Eagle Grove, Ia. They are litter sisters, sired by Big Korver. One is mated to Golden Gate King, the other to Long Big Bone Jr.

John M. Bernstein and C. A. Vaughan of Hanford, who are in the Corn Belt making purchases of Poland-Chinas for themselves and others, recently shipped out five splendid animals—two for H. D. McCune, one for C. G. DeRaad and two for Mr. Vaughan. Two will be received later by W. L. Haag, one of which will be bred to Liberator. Sows bred to this great young boar averaged $800 at a recent sale.

P. E. Mitchell, Atwater, continues to sell Poland-Chinas at a lively clip. Sales since January 1 include: Crocker, Huffman Land and Water Co., Merced, 2 service boars and 3 young boars; J. Adam Moser, Atwater, boar pig; M. B. Houck, Winton, sow pig; L. J. Mitchell, Madera, sow and boar pig; J. Bolsinger, Atwater, boar pig; J. B. Mayes, Merced, service boar. Mr. Mitchell reports that his sows are looking fine and he is expecting a dandy lot of spring pigs.

A. Buckland & Son, the progressive Poland-China breeders of Fresno, report that their ad in the Rural Press swamped them with orders and practically cleaned them out of everything except a few weanling boars. Recent sales include a gilt and boar to Nels Peterson, Delano; July boar to W. I. Hull, Raisin City; a gilt to W. A. Howard, Merced; 4 gilts to D. F. Taylor, Mendota; gilt to Glenn Wilton, Fowler; boar to C. C. Galloway, Fowler; boar to W. H. Jackson, Herndon; gilt to A. N. Shiesley, Livingston; gilt and sow to A. Swensen, Livingston; gilt to A. C. McCling, Bowles; sow to Fred Bennetts, Monmouth; gilt to W. H. Hallock, Sanger; boar to Mr. Giles, Sanger; boar to M. P. Holland, Malaga.

Livestock Miscellaneous.

Dr. Verdo B. Gregory, who has a large stock farm at Oakdale, is serving as purchaser of livestock for South American concerns. He is specializing on Latin American countries.

M. H. Tichenor & Son report the recent shipment of two Holstein-Friesian bulls, two Shorthorn bulls and two Hereford bulls to South America. The Holsteins were from their own herd, the Shorthorns from the Ormondale herd and the Herefords from the D. O. Lively herd.

What was officially characterized as an "epoch-making event" in the livestock industry was recently announced in Chicago. It is an organization of livestock men and packers, with the Government represented, designed to eliminate differences between packers and livestock producers as fast as they occur.

LAST CALL FOR GUARANTY SALE

An offering that will quicken the enthusiasm of every breeder of black and whites is announced for the Guaranty Sale, to be held at the State Fair grounds, Sacramento, March 27. Eight of the cows have records of from 30 to 37 pounds of butter in seven days; 30 of the cows and bulls are from cows with records of from 30 to 41 pounds; 40 are by 30- to 40-pound sires.

The Bridgford Company consignment of five head includes Boweda, the highest record cow ever sold in public sale on the Coast, with a record of 37.61 pounds, and almost ready to freshen to the service of King Segis Alcartra Prilly; King Abbekerk Johanna Segis, the highest record bull ever sold on the Coast, being by King Segis Alcartra Prilly and out of the 41.01-pound Pacific Coast champion, Adirondac Weitske Dairy Maid; also a 32-pound and a 31-pound cow, and Belle Faskie Hengerveld De Kol 2nd, the grand champion at the 1918 State Fair.

A. W. Morris & Sons are consigning four of the finest females that ever went out from their herd, and a grand young bull out of a 34-pound junior four-year-old. The cows will include three daughters of the great Prince Gelsche Walker and the remarkable cow, King Hengerveld Henriette, who recently made 32.24 pounds as a junior four-year-old.

W. F. Mitchell will sell the cow, Black Patti, now on test, with a record of 343.76 pounds butter in 100 days.

F. J. Kiesel will consign a daughter of King Morco Alcartra, the son of Tilly Alcartra, and a daughter of Admiral Walker Prilly.

R. F. Guerin will offer daughters of Sir Veeman Korndyke Pontiac bred to King Sadie Vale Idyl Segis, son of the 35-pound four-year-old, K. P. Idyl Segis.

W. J. Higdon will interest discriminating buyers with a choice granddaughter of Jessie Fobes Bessie Homestead, bred to his $6,500 bull, King Korndyke Pontiac 20th; also a fine daughter of the 31-pound cow, Thelma Hartog De Kol, due in April to Prince Riverside Walker.

Leading breeders of the entire Pacific Coast are consigning, others being Albert E. Smith, Sumas, Wash.; Carnation Stock Farm, Seattle; Alex. Whaley, Tulare; Gotshall & Magruder, Ripon; Toyon Farms, Los Altos; McAlister & Son, Chino; Hollywood Farm, Hollywood, Wash.; A. J. Stalder, Riverside.

POLLED HEREFORDS TO INVADE CALIFORNIA.

Polled Herefords will make their bow before a California audience on April 10, when an offering of 25 head will be sold at the State Fair grounds, Sacramento.

This will be a quality sale. It is in the hands of B. O. Gammon, secretary of the American Polled Hereford Breeders' Association, who has prevailed upon about twenty of the leading breeders of the Corn Belt to consign their choicest animals in



ADIRONDAC WIETSKE DAIRY MAID—41.01 lbs. butter, 831.7 lbs. milk in 7 days; 158.34 lbs. butter, 3584.2 lbs. milk 30 days. Her son, highest record bull ever sold in the West, consigned by Bridgford Company.



SIR AAGGIE WALKER—By Sir Aaggie De Kol Acme and out of the 34-lb. junior 4-year-old, Lady Hiske Walker. His three nearest dams average 32.11 lbs. butter in 7 days; five of his seven nearest dams average 929.81 lbs. butter in one year. Consigned by A. W. Morris & Sons.

THE GUARANTY SALE

"THE HOLSTEIN CLASSIC"

THURSDAY, MARCH 27, 1919

STATE FAIR GROUNDS, SACRAMENTO, CAL.

65—OUTSTANDING INDIVIDUALS—65

THE HIGHEST RECORD COW
THE HIGHEST RECORD BULL
THE HIGHEST RECORD HEIFER

ever sold in a Western sale ring will all be in this sale, and they are only three of sixty-five individual stars.

Eight Cows and Heifers With Records from 30 to 37 Pounds

every one of which made her highest record at last freshening, proving conclusively that they are comers, and there is not an old cow in the lot.

Nearly 50% of the total offerings have 30 to 41-pound dams; over 60% of the total offering have 30 to 40-pound sires; percentages that are unique in the history of Holstein sales.

IF YOU WANT A REAL HERD SIRE you are almost certain to find one to your liking in this sale. Six splendid young bulls will be sold, every one of them out of a 30 to 41-pound dam; every one of them by a 30 to 37-pound sire.

REMEMBER THAT EVERY ANIMAL SOLD IS POSITIVELY GUARANTEED TO BE A BREEDER; EVERY ANIMAL OVER SIX MONTHS OF AGE TUBERCULIN TESTED AND SOLD SUBJECT TO 60-DAY RETEST BY THE BUYER.

CONTRIBUTORS TO SALE:

CARNATION STOCK FARM, Seattle, Wash.
ALBERT E. SMITH, Sumas, Wash.
BRIDGFORD COMPANY, Knightsen, Cal.
W. J. HIGDON, Tulare, Cal.
R. F. GUERIN, Visalia, Cal.
TOYON FARM, Los Altos, Cal.
FRED W. KIESEL, Sacramento.
HOLLYWOOD FARM, Hollywood, Wash.
A. W. MORRIS & SONS, Woodland, Cal.
McALISTER & SON, Chino, Cal.
ALEX WHALEY, Tulare, Cal.
W. F. MITCHELL, Visalia, Cal.
GOTSHALL & MAGRUDER, Ripon, Cal.
A. J. STALDER, Riverside, Cal.

Management

CALIFORNIA BREEDERS' SALES AND PEDIGREE COMPANY

C. L. Hughes, Sales Manager, Sacramento, Calif.

Auctioneers—Col. Ben A. Rhoades, Los Angeles; Col. Harry Cranke, Nezperce, Idaho.



KING KORNDYKE PONTIAC 20TH—The $6500.00 son of the 36-lb. 3-year-old, Miss Valley Mead De Kol Walker. Females bred to him consigned by W. J. Higdon.



SIR AAGGIE DE KOL ACME 2ND—Five of his seven nearest dams average over 1105 lbs. butter in one year, second highest in world. Females bred to him consigned by Alex Whaley.

order to make this "breed promotion" sale a big success, and to place some of the best animals of the breed on California ranches.

Furthermore, to help young breeders to get the right start, John Latham, dean of Hereford judges, will be on hand to give the benefit of his knowledge and experience. His services will be free to buyers.

The time is short, and to be sure of getting catalogs in time to study them in advance we suggest that readers write to this office for copies instead of sending back East. A supply is on the way to us and we shall be glad to mail copies to all interested and to answer inquiries about the sale.

SWINE BREEDERS' ANNUAL MEETING.

[Written for Pacific Rural Press by Frank B. Anderson, Director.]

What promises to be the most important meeting of the California Swine Breeders' Association will be held at the University Farm, Davis, April 10, at 10 a. m., when an open discussion will be had by the pork producers of the State on problems confronting their business and the best means of extending the activities of the organization.

President C. B. Cunningham addressed the State Convention of Farm Advisors at Davis this week on a plan of having this organization work in conjunction with the various farm bureaus throughout the State by adding to each bureau a unit of the hogmen's organization. This will overcome a big problem in organization work and permit the speedy unification of the pork interests of California.

A marked increase in memberships has been noted during the past year, but President Cunningham and those associated with him hope to make still greater strides under a little different plan of organization.

A number of noted hog authorities will be on the program and the session will be well worth the time of swinemen to attend. Prof. J. I. Thomson will have the results of some experiments on the uses of the various protein supplements available for the benefit of pork growers, and, as usual, the University Farm's welcome will be extended the members of the association. The meeting should be attended by several hundred or more hogmen, owing to the important bearing it will have on the swine industry of California.

DUROC RECORDS SMASHED.

One thousand one hundred dollars was paid for the sow Lucy Orion and $1,000 for the boar Orion Model, Jr., at the Garden City Sanitarium sale, San Jose, last Tuesday, both prices being State records for public swine sales. Both animals were purchased by A. L. Emery, San Juan, who took home several other good ones. R. N. Jennings, San Jose, paid $500 for a corking good sow and H. C. Davey, San Jose, bid off another dandy at $400.20. Rosedale Ranch Co., Sacramento, bought seven head, mostly gilts. The average for 24 head was $226.46. Much of the success was due to the able manner in which Col. Ord L. Leachman cried the sale.

LIVESTOCK DIRECTORY.

Rate in this directory 3c per word each issue

SWINE.

Berkshires.

GRAPEWILD FARMS BERKSHIRES — A few spring boars and fall pigs by Big Leader, Grapewild Farm Leader and Majestic King.
A. B. Humphrey, Prop., Escalon, Cal.

BERKSHIRES bred at Imperial Stock Farm are the kind that satisfy. Write us or call and be convinced. E. J. Merrill & Son, Morgan Hill, Cal.

BERKSHIRES IN PERRIS — They make money for me. Write for catalogue and prices. F. L. Hall, Perris, Cal.

BERKSHIRES—Sired by Star Leader, the $1500 boar. Kounias Registered Stock Farm, Modesto.

BERKSHIRES by Ringleader 20th, greatest son of Grand Leader 2nd. Geo. M. York, Modesto.

FOR REAL GOOD BERKSHIRES write Frank B. Anderson, B. 724W, Sacramento, Cal.

CARRUTHERS FARMS BERKSHIRES — Choicest immune. Live Oak, Cal.

REGISTERED BERKSHIRES—Write R. D. Hume, Dos Palos, Cal.

BERKSHIRES—Fair Oaks Ranch, Willits, California.

CASTLEVIEW

GIANT TYPE BERKSHIRES

We are booking orders for spring pigs from Grand Champion Sows and sired by Mayfield Rookwood, sire of Champion Barrow, at 1919 Western Berkshire Congress.

CASTLEVIEW RANCH, SANTA ROSA.

ANCHORAGE FARM.

MONEY-MAKING BERKSHIRES—The prolific, easy-feeding kind that make the highest priced pork from the lowest priced feed. They will increase your profits. Prices reasonable; satisfaction guaranteed. Write for free booklet, describing our worlds reserve champion, STAR LEADER. We are now making a special offering of bred sows and gilts.
Anchorage Farm, Orland, Cal.

$25.00—$35.00—$50.00
BARON DUKE 201ST
Omaha Grand National Champion
BOAR PIGS: 3, 5, and 6 months old, from 650-pound prize-winning sows. We will sell nothing that we wouldnt use ourselves.
SANDERCOCK LAND CO.,
906 K St., Sacramento.
In charge of Natomas Land sales.

CROLEY'S BALANCED HOG FEED—The cheapest feed to fatten hogs. Write Geo. H. Croley Co., Inc., Livestock Supplies, 8th and Townsend streets, San Francisco.

Poland-Chinas.

SOW BARGAINS—We are offering some exceptionally nice tried sows, bred and open gilts, at attractive prices. They are all sired by the undefeated and world's grand champion Superba and out of big type sows, which cost me $200 and over. Investigate before buying elsewhere. Rough's Greenfields, Arlington Station, Riverside, Cal.

ELDERSLY FARM—We are offering some excellent tops from our fall and spring pigs at attractive prices, sired by one of America's best-bred boars, Big Black Bone Wonder, with grand championship breeding on both sides. He is a real 1000-lb. boar. J. H. Ware, Live Oak, Cal.

NOW BOOKING ORDERS for spring pigs, either sex, from my prize-winning, large type Poland-China hogs. Also will book a few orders for bred gilts, February and March farrow, and a few good, serviceable, aged boars. Hale I. Marsh, Modesto, Cal.

THE BEST IN THE WEST — California Gerstdale and President's Equal are my herd sires. Fall and spring boars now ready to move—each one a corker. Dr. J. A. Crawshaw, Hanford, Cal.

HARTSOOK BIG TYPE POLANDS—A fine lot of young boars. Both bred and open gilts for sale. Toggenburg goats and Holstein bulls ready for service. Fred Hartsook, Lankershim, Cal.

BARGAINS IN POLAND-CHINA SOWS—All immune. Good mothers and prolific. Registered stock. Also boars. Write for details. N. C. Hansen, Coachella, Cal.

BOOKING ORDERS for spring pigs, sired by "Bob Big Bone" 281289, litter brother of the Junior Champion at Sacramento, 1918. P. E. Mitchell, Atwater, Cal.

WEANLING PIGS, both sexes, Gerstdale Jones and Caldwell's Big Bob blood lines. Booking orders for spring. Forest View Ranch, Paradise, Cal.

OXBONE HERD offers March boars for sale from King's Big Bone Leader, grand champion at State Fair, 1918. Write F. E. Fay, Tipton, Cal.

BEST POLAND-CHINA BLOOD from hog belt. Immuned September pigs. Line bred Big Bob March pigs. R. W. Jickling, Elmira.

WACKEEN HERD POLAND-CHINAS—Big type herd boar, the $700 Grand Champion of California. Les McCracken, Prop., Ripon, Cal.

40 SOWS and daughters of Big Bone Bob and I B A Wonder sows for sale. Price right. N. K. Horan, Lockeford, Cal.

POLAND-CHINA GILTS — Four months, $25.00. Registered and crated. Edward A. Hall, Rt. 1, Box 39, Watsonville, Cal.

BIG TYPE POLAND-CHINAS—Stock from the best herds of the Middle West. N. Hauck, Alton, Humboldt county, Cal.

WANTED — Thoroughbred Poland China sows or gilts due to farrow in April. Address, Bert Pomeroy, Oakdale, Cal.

20 HEAD of Big Bone Bob, Grand Model and I B A Wonder Stock for sale. J. W. Wakefield, Acampo, Cal.

LAKE SIDE STOCK FARM—Large smooth and big boned Poland-Chinas. Geo. V. Beckman & Sons, Lodi, Cal.

REGISTERED POLAND-CHINA SWINE—Prize winners. Finest stock in the State. M. Powell, Hanford, Cal.

POLAND-CHINAS—Quality and bone our hobby. Fall boars for sale. H. D. McCue, Lemoore, Cal.

BIG BONED POLAND-CHINAS—From Eastern prize-winners. D. H. Forney, Route 6, Fresno.

POLAND-CHINA PIGS WITH RIBBONS—Prices right. Johnnie Greene, Winters, Cal.

POLAND-CHINA PIGS — [illegible] Tevis Bitt, and Rose Island. R. M. Hoyer, Turlock.

POLAND-CHINAS—A few [illegible] boars for sale. R. F. Guerin, Visalia, Cal.

REDOAKS RANCH, herd of registered Poland-Chinas. W. J. Hoover, Gilroy.

BIG-BONED POLAND-CHINAS—Stock for sale. E. S. Myers, Riverdale, Cal.

POLAND-CHINAS. Young stock for sale. H. E. McMahan, Lemoore, Cal.

Chester Whites.

BILLIKEN CHESTER WHITES — [illegible] ing boar for sale [illegible] book orders now for spring pigs. C. P. Bingham, Mills, Cal.

PUREBRED CHESTER WHITES — August boars. Prices moderate. Cedarhurst Ranches, Route 2, Sacramento.

Duroc-Jerseys.

DUROC-JERSEYS AT IRELAND—Weaned pigs from December and January litters for sale now at $25.00. Either boars or gilts. A limited number available. Mail orders filled in order of priority. Ranch at Owensmouth. City office, 1219 Brockman Building, Los Angeles.

WE WON MORE MONEY on Durocs at the State Fair than any other exhibitor. Why not buy some of this winning stock? June Acres Stock Farm, Davis, Cal.

DUROC-JERSEYS — Burke's Good Enuff, Golden Model, King's Colonel and Pathfinder blood. Derryfield Farm, National Bank Building, Sacramento.

DUROC WEANLINGS for the farmer. Easy feeders; 200 lbs. at seven months. W. W. Everett, River Bend Farm, St. Helena, Cal.

A FEW CHOICE BRED GILTS, spring boars and gilts of the best blood lines. H. P. Slocum & Sons, Willows.

BOUDIER DUROCS all sold out, excepting some sow pigs weighing 100 lbs. apiece. H. E. Boudier, Napa.

HEAVY-BONED DUROCS — A few service boars for sale. Ormondale Co., Route 1, Redwood City, Cal.

DUROCS—Defender, Clinton B, and Golden Model strain; the big type. Allen Thompson, Tulare.

REGISTERED DUROCS — All from prize-winning stock. W. P. Harkey, Gridley, Cal.

DUROC-JERSEYS—October pigs, $15.00 to $25.00. Jack London Ranch, Glen Ellen.

REGISTERED DUROC-JERSEY GILTS for sale. D. Fricot, Angels Camp, Cal.

REGISTERED DUROCS—Stock for sale. W. J. Fulgham & Sons, Visalia, Cal.

YORKSHIRES.

LLOYTON HERD REGISTERED YORKSHIRES—Bred gilts and pigs from eight weeks up. Lloyd & Tointon, Llano Road, Santa Rosa, Cal.

Hampshires.

REGISTERED HAMPSHIRES—Fine quality. Two open gilts. Now booking orders for weanling pigs for April. Our 28-months-old herd boar being related to our young sows, will sacrifice at 15c. lb. Tom M. Bodger, Gardena, Cal.

MY HAMPSHIRES are money makers. Stock for sale. Buy now. L. A. Denker, Saugus, Cal.

HAMPSHIRE SWINE — Young stock for sale. Ira Hart, Dos Palos, Cal.

Miscellaneous.

O. I. C. BREEDERS' NOTICE—I will sell Ohio Boy, two-year-old imported boar; none better. Also boar pigs ready for spring breeding (sire Ohio Boy, dam Toddler's Beauty, imported). Write for full information. Jas. Little, Wasco, Cal.

LARGE YORKSHIRES—The ideal hog for the progressive farmer. Young stock for sale. A. L. Tubbs Co., Calistoga, Cal.

MULE-FOOT HOGS — Large type. H. T. Bailey, P. O. Box 37, Lodi, California. "The Blue Gums."

DAIRY CATTLE.

Holsteins.

WE OFFER FOR SALE a herd of 9 Holsteins, 4 registered and 5 high-grade animals, for $1350. The herd consists of 5 cows in milk, 3 heifers and a young registered bull. None are less than 15/16 purebred, in good condition and free from disease. Two cows are bred to Picture Boy Gelsche Walker, 2 to Prince Juliana Gelsche Walker, while the registered cow is in calf to a fine son of King Mead of Riverside. Two heifers are sired by Prince Juliana Gelsche Walker. One heifer and the bull are sired by Sir Segis Pontiac Mead. Rarely is such a foundation herd offered at so reasonable a price. L. N. Irwin, Davis, Cal.

A PRICE ON EVERY ANIMAL.
Herd free from tuberculosis. All sales subject to sixty days' retest. Sons of **Finderne Soldene Valdessa**, whose dam is not only a world record cow in seven-day division, but has two sisters holding world's records for yearly production.
Toyon Farms Association.
679 Mills Building. San Francisco.

HIGH-CLASS HOLSTEINS—I have for sale some sons of Sir Veeman Korndyke Pontiac from A. R. O. dams. Write for particulars or come see them. R. F. Guerin, Visalia, Cal.

SUNNYBROOK RANCH, WILLITS, CAL.—Young registered Holstein bulls. Also 12 head grade Holstein heifers and cows, mostly marked and well bred.

FANCY GRADE HOLSTEIN COWS and heifers from herd testing 100 per cent. Animals qualified for certified dairies. The Lewis Company, San Jose.

PALO ALTO STOCK FARM, Palo Alto, breeders of registered Holsteins. Heifers and service bulls. Reasonable prices.

CREAMCUP HERD — Registered Holsteins, Pontiac bull calves. M. Holdridge, Rt. A, Box 237, San Jose, Cal.

REGISTERED HOLSTEIN BULLS with world's record backing. Kounias' Registered Stock Farm, Modesto.

BREEDERS OF REGISTERED HOLSTEIN cattle and Berkshire pigs. Whittier State School, Whittier, Cal.

F. H. STENZEL, SAN LORENZO, CAL. — Breeder of Registered Holsteins. High test producers.

REGISTERED HOLSTEINS—A. W. Morris & Sons, Corp., Importers and Breeders, Woodland, Cal.

REGISTERED HOLSTEINS — Best blood lines of the breed. R. I. Hennes, Modesto, Cal.

GOTSHALL & MAGRUDER — Breeders of registered Holstein-Friesians, Ripon, Cal.

CHOICE HOLSTEIN [illegible] for sale. Six females. Maricopa Dairy, Maricopa, Cal.

BREEDERS OF REGISTERED HOLSTEIN cattle. McAlister & [illegible], Chino, Cal.

HOLSTEIN BULLS and bull calves from A. R. O. cows. C. A. Miller, Ripon.

REGISTERED HOLSTEIN CATTLE—E. E. Freeman, Route P, Modesto, Cal.

SPRINGBROOK DE KOL BLOOD. High [illegible] Byron, Cal.

EL DORADO HERD OF HOLSTEINS — Alex Winn, [illegible], Cal.

Jerseys.

SUNSHINE FARM JERSEYS — Tuberculin tested. Production counts. E. E. Greenough, Merced.

YOUNG BULLS from Register of Merit cows. W. G. Gurnett, Orland, Cal.

Guernseys.

GRAPEWILD FARMS GUERNSEYS.
A 21-months-old bull out of dam with record of 615 pounds in A. A. class, and a few young bulls up to 1 year of age.
A. B. Humphrey, Escalon, Cal.

HIDDEN VALLEY FARM offers for sale 2 young Guernsey bulls, ready for service, out of high record advanced register dams. A. J. Welch, proprietor, Redwood City.

EDGEMOOR FARM GUERNSEYS — First in the show ring and in official records. Few animals of either sex for sale. Edgemoor Farm, Santee, Cal.

FOR SALE—Young registered Guernsey bull at a pick-up price if taken quick. Address Lock Box X, Menlo Park, Cal.

PALO ALTO STOCK FARM, Palo Alto—Breeders of registered Guernseys; both sexes; prices reasonable.

Ayrshires.

NORABEL FARM AYRSHIRES—Purebred young stock for sale at reasonable prices. Le Baron Estate Company, Valley Ford, Cal.

ELKHORN FARM AYRSHIRES — Choice young bulls at reasonable prices. J. H. Meyer, 440 Montgomery St., San Francisco, Cal.

AYRSHIRES — Registered; all ages. E. B. McFarland, 412 Claus Spreckles Building, San Francisco.

MILKING SHORTHORNS.

BREEDERS OF REGISTERED SHORTHORNS—Milk strain; choice young stock for sale. John Lynch Ranch, Box 321, Petaluma.

INNISFAIL DAIRY SHORTHORNS—Registered young bulls for sale. Alexander & Kellogg, Suisun, Cal.

BEEF CATTLE.

AM A SPECIALIST in registered beef cattle and familiar with the best herds in the country. If you need Shorthorns or Herefords, make use of my experience, save money and be satisfied. R. M. Dunlap, Hotel Land, Sacramento.

RANCHO SAN JULIAN SHORTHORNS—Purebred range bulls, unregistered, for sale. Estate Thos. B. Dibblee, Santa Barbara or Lompoc, Cal. John Troup, Supt.

ALAMO HERD REGISTERED HEREFORDS (founded by Governor Sparks). Herd and range bulls. Reasonable prices. W. D. Duke, Likely, Modoc county, Cal.

REGISTERED YEARLING SHORTHORN BULLS — Heavy-boned, thick-meated, Scotch and Scotch-topped breeding. Ormondale Co., Route 1, Redwood City, Cal.

REGISTERED MILK AND BEEF SHORTHORNS, bulls and heifers for sale; catalogue free. Thomas Harrison, Santa Rosa Stock Farm, Santa Rosa, Cal.

HEREFORDS—Sierra Vista Herd, Minturn, California. Over one hundred registered animals. Fairfax and Repeater bulls head the herd. On highway.

THE NEVADA HEREFORD RANCH, Jno. H. Cazier & Son Co., props., Wells, Nevada. Registered Hereford cattle. Breeding stock for sale.

REGISTERED SHORTHORNS—A few choice young bulls, grandsons of Fair Knight. Prices reasonable. Fair Oaks Ranch, Willits, Cal.

JACK LONDON RANCH—Breeders of prize-winning beef Shorthorns. Glenn Ellen, Cal. Eliza Shepard, Supt.

HOPLAND STOCK FARM—Registered Shorthorns. Prices on application. Hopland, Cal.

REGISTERED HEREFORDS—H. H. Gable, Diamond G Ranch, Esparto, Cal.

SIMON NEWMAN CO., breeders of Registered Herefords, Newman, Cal.

GEORGE CALLAHAN, Breeder of registered Herefords, Milton, Cal.

GEORGE WATTERSON—Breeder Registered Herefords, Bishop, Cal.

HEREFORDS—Mission Hereford Farm, Mission, San Jose, Cal.

SHORTHORNS — Carruthers Farms, Live Oak, Cal.

SHEEP AND GOATS.

F. A. MECHAM ESTATE, Petaluma, Cal.—Breeders and importers of Shropshire, Rambouillets and American Merinos, both sexes. Also Red Polled cattle. Take electric car at Petaluma or Santa Rosa for Live Oak Ranch.

SHROPSHIRES FOR SALE—Ewe lambs and matured bucks from Iowa. Non-related. C. J. L. Stonebraker, Route A, Chico, Cal.

DORSETS AND ROMNEYS — Dorset ram lambs for sale. John E. Marble, South Pasadena, Cal.

BISHOP BROS., SAN RAMON, CAL. — Breeders and importers of Shropshires.

KAUPKE BROS., WOODLAND, CAL. — Breeders importers of Hampshire sheep.

CHAS. KIMBLE—Breeder and importer of Rambouillets, Hanford, Cal.

CALLA GROVE FARM, MANTECA, CAL.—Breeders and importers of Hampshire sheep.

HORSES.

FOR SALE Reg. purebred Jack, [illegible] Jennet, 10 brood mares, running stallion, 4 saddle horses, 1 work horse, 20 young mules, 1 to 5 years. Ripgrow on lot or will parce. F. G. Warner, El Dorado Ranch, Placerville, Cal.

MISCELLANEOUS.

BUTTE CITY RANCH—Shorthorns, Shropshires, Berkshires and Shetland ponies. Write for prices and descriptions before buying. Butte City Ranch, Box P, Butte City, Glenn county, Cal. W. T. Dwyer and W. S. Gulick, Jr., owners.

FOR SALE 100 head stock cattle, young cows and heifers, registered Hereford bulls, yearlings and weanling calves. Will use car or all to move them on my registered Hereford herd, near Gridley, Butte County.

CROLEY'S BALANCED DAIRY FEED — The cheap milk producer, and Croley's Calf Meal are best California calf meals. Geo. H. Croley Co., Inc., Eighth and Townsend streets, San Francisco, Cal.

WANTED 10 dairy cows. Give price to suit production, butter fat test and date last freshening and description to first letter. Address, H. C. Gomes, R. F. D. 1-0, Concord, Cal.

REGISTERED HOLSTEINS and Purebred Jerseys. Marigrove Stock Ranch, Tulare, Cal.

Rubbing Elbows with Other Breeders

[Written for Pacific Rural Press by Thos. F. McConnell.]

BREEDING UP PAYS ON COMMERCIAL RANCH.

The Post-Card Ranch, Corcoran, give much credit to the farm bureau auction sale methods of disposing of their market hogs. They have sold about seven carloads of fat hogs altogether during the past year and therefore have some transactions on which to base judgment.

This ranch consists of an even section of land, all irrigated and no waste land. It is part of the old Tulare Lake bottom, but is far from the present water area and is fully protected by levees. Besides the market hogs grown, they are milking four strings of purebred and high-grade Holstein cows. The herd is tuberculin tested, and culling out the "boarders" has been going on for the past two years under a cow testing association system. Mr. Cooper says that some of the nicest looking cows were found unprofitable and sent to the beef herd. No grain is fed to the cows; alfalfa pasture and hay make the sole feed ration.

A new hog house 250 feet long is a recent addition and is used chiefly for farrowing sows and sows with young pigs. The building is light, dry and airy, well suited to its purpose. For the market hogs ground barley is supplied in self-feeders, in addition to alfalfa pasture.

While some purebred Holsteins and Durocs are registered, no effort is made to sell them as such and the ranch may be said to be devoted to selling butterfat and market hogs.

MACOMBER PLANS FOR BIG SEASON.

J. K. Macomber of Tipton, supervisor for the southern end of Tulare county, is a great advocate of the farm bureau co-operative auction sales method of disposing of the farmers' market hogs. Thirty-two carloads were handled during the month of February in Tulare county alone, bringing almost $100,000 to the farmers, and the combined sales of Tulare, Kern and Kings counties brought over $158,000, with an average of almost $15.50 per hundred weight.

Mr. McComber says that the farm bureaus in Tulare county are working on methods for conservation of soil water, fertilization of soils and improvement in poultry raising. He also says that more and better purebred livestock is always advocated and that there is much room for improvement and increase along these lines.

Purebred Poland-Chinas are Mr. McComber's hobby, but just at present he is all sold out. Next fall he expects to be in the game right, as he has 25 brood sows to farrow this spring and he wants to develop the pigs himself and sell them as high-class breeders.

ABOUT ALL ONE FAMILY CAN DO.

H. M. Mansperger is an Ohio carpenter who is sure he is on the right track. He and his two sons have 430 acres five miles southwest of Tipton. Last year was their first year and with everything to do—well to bore, house and barn to build—they raised 1100 sacks of milo maize. They are not satisfied with prices offered for it and hope to have hogs enough in the future to consume at least part of the grain they can provide.

At the recent Hanford sale of Poland-Chinas, Mr. Mansperger purchased three bred gilts from the Lendorris Ranch consignment and had hoped to buy more, only the long prices obtained rather discouraged him for the present. He hopes in the near future to increase his herd to 25 purebred sows.

A combination of alfalfa, milo maize, barley and a little Indian corn, with purebred hogs enough to consume all that can be raised on 430 acres of irrigated land, is some proposition, and if properly carried out will certainly lead to wealth galore. Mr. Mansperger and sons have a wonderful prospect before them from the agricultural and livestock viewpoint.

REGISTERED HOGS FOR MARKET.

Sometimes, in travels up and down the land, one comes upon individuals with ideals that seem too good to be true. In the ordinary way, a person commencing with livestock begins with grades and scrubs and hoping sometime to have something better. J. T. Boyd of Tipton aims to have everything registered in the hog line, but does not expect to raise anything but market hogs. He will make them so uniform that they will always top the market.

Mr. Boyd has five excellent registered brood sows as a starter, and if everything continues as planned it won't be long before he will have his first carload. Three of the sows have farrowed and it looks as though they would raise 23 dandy pigs. One sow, Cleopatra, an Eastern bred individual, seems to be just the type anyone would want for the line of swine raising Mr. Boyd has outlined for himself. Good size, plenty of bone, well up on her feet, blocky, low-down type, with plenty of quality that will produce pigs easy to feed and hard to beat in any class.

The high cost of exhibiting and advertising his stock deters Mr. Boyd from raising anything but market hogs at present. However, from the way he has started out it looks as though he would not have much trouble in disposing of all he can raise for breeding purposes.

Mrs. Boyd also has her start in Mammoth Bronze turkeys that are certainly very fine, but at present they aim to keep all their increase in both hogs and turkeys for breeding purposes.

STURGEON'S SPLENDID STOCK.

R. C. Sturgeon of Tulare expects to have 16 of his 23 Holstein cows on the A. R. O. list before long and an inspection of his herd would lead one to believe that even a larger number might be on the official list.

Furthermore, judging from the individuality and breeding of his herd bulls, Segis Pontiac Abbekerk, we may expect the offspring to continue to get into the coveted A. R. O. list about as soon as old enough. This bull is a strong, lusty fellow, of excellent conformation, with a 37.05-pound dam and sired by Segis Pontiac De Kol Burke.

The Durocs at Mr. Sturgeon's ranch are coming along in fine shape. He intends to select 10 of the best gilts from a bunch of 18 for the bred sow sale at Tulare next July, and at the rate they are coming they will be pretty near the top when the sale is finished.

Model Belle 3rd, with a litter of 10, is a whole swine show in her-



Calf Scours

Save every Calf. High meat and milk prices make control of Calf Scours more necessary than ever before.

Scouring calves indicate a germ infection that is likely to run through your entire herd with serious losses. The loss of one calf is bad enough, but nothing compared to your loss when the infection spreads, as it will unless checked. Then your year's work in building up your herd is wasted and your profits lost.

B-K, the powerful germicide and disinfectant will promptly stop scours and finally banish it from the premises. B-K contains no poison, acid nor oil. When used internally it destroys germs, heals inflamed membranes, relieves irritation, restores healthy action. B-K may be given freely in milk and drinking water.

The B-K plan is simple and practical. It is giving wonderful results. Send for "evidence"

FREE BULLETINS: Send for our valuable bulletin No. 136, "Calf Scours," also information on other farm uses and our "Trial Offer." If your dealer does not have B-K, send us his name.

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CHEAPER THAN A WHIP AND BETTER FOR YOUR HORSES

A horse with bruised, galled and chafed neck or shoulders can't earn his feed. Whipping only increases his suffering. You can prevent such injuries for less than the price of a good whip. Equip your faithful animal with Tapatco—The pad made with our

NEW PATENTED HOOK ATTACHMENT
(Found Only on Pads Made by Us.)

Consists of wire staple with felt washer. It gives hook a firmer hold and prevents pulling off, even though fabric is weakened by long usage. Life of pad is thus materially lengthened. This is the greatest improvement since we invented the hook.

STUFFED COLLAR PADS
Filled with our Special Composite Stuffing

are better than other kinds. They are soft, springy, absorbent and serve as a guarantee against bruised, galled and chafed shoulders. Ask your dealer for Tapatco Booklet.

THIRTY-SEVEN YEARS MAKING PADS
Look for the Felt Washer
SOLD BY DEALERS EVERYWHERE



The American Pad & Textile Company, Greenfield, Ohio
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Pat. in U.S. Dec. 1, 1914 Pat. in Can. Apr. 6, 1915



Veramont Stock Farm
Taylorsville, Cal.
HEREFORDS
The practical, beef-producing kind, raised under range conditions. See herd of young Bulls and Heifers at SANTA CLARA, CAL.
COWS FOR SALE.
H. M. BARNGROVER, Santa Clara, Cal.

CARRUTHERS FARMS
LIVE OAK, CALIFORNIA
Shorthorns and Berkshires
HOME OF THE CHAMPIONS
Ten splendid young Bulls for sale, also several heifers. We have on hand the best lot of young Berkshires we ever raised. Come and see them. Prices reasonable.

HILLCREST STOCK FARM
(T. S. GLIDE)
SHORTHORN CATTLE
Shropshire & French Merino Rams DAVIS, CALIFORNIA

BRIGHTON FARM SHORTHORNS
One three-year-old bull bred by H. R. Clay.
Two outstanding yearling bulls sired by Sir Type, a son of Cumberlands Type.
A few yearling heifers of same breeding.
Also registered Berkshires of both sexes of best breeding.
H. L. & E. H. MURPHY Perkins, Sacramento Co., Cal.

ORMONDALE SHORTHORNS
Are all heavy boned, and of Scotch and Scotch-topped breeding.
Suited for either the range grower or breeder.
EVERY ANIMAL POSITIVELY GUARANTEED.
Whether you buy or not, visit our ranch, 7 miles from Palo Alto on Woodside Road. We welcome inspection. Prices and pedigrees on application.
SHORTHORN CATTLE
DUROC-JERSEY SWINE
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The home of MISS RIALTO 2ND, NEVER defeated Grand Champion. Over 900 breeding cows, representing choicest blood lines. Great Bulls in service. Look up our records at the BIG livestock shows.
THE HEREFORD CORP. OF WYOMING, Box 876, Cheyenne, Wyo.
Wm. Cox, Herdsman. Raymond S. Husted, Vice-Pres., Gen. Mgr.

Red Polled Cattle
15 head fine, purebred bulls and 10 heifers. 8 to 12 months of age. For further information address:
F. A. MECHAM ESTATE,
Petaluma, Cal.



Calf Profits
Are you getting them? Calf profits mean more to you now than ever before.
Blatchford's Calf Meal
has been known since the year 1800 as the complete milk substitute. Costs less than half as much as milk—prevents scouring—promotes early maturity. Sold by dealers or direct from the makers.
Write for New Data See actual figures showing you how to increase your calf profits.
COULSON CO. - - - Petaluma, Cal.

Horse Sickness
When unclipped horses get overheated on warm spring days their long, sweaty coats of hair clog the pores and prevent them from throwing off perspiration. This often causes colds, pneumonia, asthma and similar troubles. They dry off quickly, keep well and do better work when clipped with a Stewart No. 1 Machine—$9.75. Send $2—pay balance on arrival. Write for catalog.
CHICAGO FLEXIBLE SHAFT COMPANY
Dept. A 103, 12th St. & Central Ave., Chicago, Ill.

self. No one, after seeing such a bunch of pigs as she has, could ever be satisfied to continue raising common scrub stuff.

Mr. Sturgeon is one of the leading young stock men of the Tulare section and one of the prime movers in the Tulare County Livestock Association, which is erecting the new sales pavilion at Tulare. He is also secretary of the Tulare County Duroc-Jersey Breeders' Association, which is making Tulare county famous as a center for this breed of swine.

BEANS VS. BARLEY FOR HOGS.

Because so many beans were damaged by the fall rains and because the bottom fell out of the market, we have received many inquiries regarding the use of beans as a feed for hogs; also the comparative feeding value of beans and barley.

Some of the hog raisers in the bean producing sections have been trying to feed the damaged beans to their stock, but generally with indifferent success. W. M. Way of Modesto says that he prefers almost any bean to the Lady Washington. H. I. Marsh of the same place gets fairly good results by cooking the beans and adding molasses at the rate of one gallon to a sack of beans. This not only makes the beans more palatable to the hogs, but tends to balance the ration. He feeds a mixture made up of two parts cooked beans, one part ground barley, one part ground milo.

We believe that the unsatisfactory results from feeding beans can be attributed partly to the fact that they are substituted for barley, while these two feeds are dissimilar and neither can take the place of the other. Barley is low in protein but high in carbohydrates, while beans are comparatively high in protein and low in carbohydrates. Consequently, one makes up what the other lacks and fed together they balance well. During an experiment at one of the agricultural colleges back east, pigs fed equal parts of beans and corn made an average gain of 1.5 pounds daily and required 406 pounds of feed for 100 pounds of gain; while another lot fed beans alone made gains of only 1.1 pounds and required 421 pounds for 100 pounds of gain. Of course, very little corn is used in this State, but barley can be substituted and used with beans with practically the same results. Furthermore, when beans were fed alone, or formed almost the entire ration, they produced a soft pork which lacked in dressing-out qualities. Better results were obtained from the beans when they were cooked in salted water.

Anybody can milk cows, but it takes brains to milk the right sized profit out of them. The more the study the greater the success in dairying.

CHOICE WESTERN HEREFORDS
AT PUBLIC AUCTION



Pacific Coast Hereford Breeders' Second Sale
1 P. M., Wednesday, April 9, 1919
University Farm, Davis, Calif.

This offering of high-class registered Herefords is made by members of the Pacific Coast Hereford Cattle Breeders' Association, who know the needs of the Western breeder and cattleman and have consigned to this sale the sort of cattle to meet those needs.

84 Registered Hereford Cows, Heifers and Bulls
56 Females---28 Bulls
Tuberculin tested and guaranteed to be breeders

The offering includes a very desirable selection of young cows, some with calf at foot; and an extra fine selection of bred and unbred heifers. The bred females are in calf to the great sires heading the several herds, and without question this sale affords the best opportunity yet offered in California to secure foundation females of high type and breeding, bred to correspondingly great bulls.
BULLS OF HERD HEADING QUALITY are in this offering, and owners of registered herds should by all means come and see for themselves how good a bull it is possible to buy at public auction right here at home.

BULLS FOR RANGE SERVICE will be offered in choice selection. The consigning breeders can sell every one of these bulls profitably right at home, so keen is the demand, but for the convenience of the cattlemen who will gather at this sale, and for the advancement of the breed, they will make this choice offering at public auction.

CONSIGNORS—J. H. Cazier & Sons Co., Wells, Nev.; J. A. Bunting, Mission San Jose, Cal.; H. M. Barngrover, Santa Clara, Cal.; University Farm, Davis, Cal.; W. D. Duke, Likely, Cal.; W. J. Bemmerly, Woodland, Cal.; Chas. Rule, Duncan's Mills, Cal.

Catalog of sale free on request. Please mention PACIFIC RURAL PRESS.

Sale under auspices of

Pacific Coast Hereford Cattle Breeders' Association

W. R. Madden, Sec., Dixon, Cal., H. H. Gable, Pres., Esparto, Cal.

Auctioneer—
COL. FRED REPPERT, Decatur, Ind.

Management—
CALIFORNIA BREEDERS' SALES AND PEDIGREE CO.,
C. L. Hughes, Sales Manager, Sacramento, Cal.

Second Spring Sale of Shorthorns

Under Auspices of California Shorthorn Breeders' Association

At University Farm, Davis, Calif., on

TUESDAY, APRIL 8, 1919, at 1:30 P. M.



50 Head of Shorthorns, comprising 25 head Cows and Heifers and 25 Bulls selected from the following leading herds in the State: Hillcrest Stock Farm, T. S. Glide of Davis; Roselawn Stock Farms, H. M. Elberg, Woodland; Pacheco Cattle Co., Hollister; T. T. Miller, Hollister; Jack London Ranch, Glen Ellen (Mrs. Eliza Shepard, Manager); Ormondale Ranch, Redwood City (Jas. MacDonnell, Manager); D. & H. J. Baughman, Oakdale; Chas. A. Trosi, Vinton. An opportunity is afforded of securing foundation and breeding stock of exceptional quality. For catalogue apply to

California Shorthorn Breeders' Association
320 SHARON BUILDING, SAN FRANCISCO, CALIF.

Auctioneer FRED REPPERT, of Decatur, Indiana

Poultry and Rabbits for Profit

Conducted by R. H. Whitten, Livestock Editor.

BREEDING FOR HEAVY LAYERS.

(Concluded.)

Brilliancy in the plumage is a good indication of constitutional vigor. Feathers of the fowl of low vitality grow slowly, and are likely to be dull and ruffled as compared to the close-fitting, smooth, fully developed, bright plumage of the vigorous fowl. But this applies only at the beginning of the season. A hen that has laid heavily all through a season has had very little feed to spare for feathers, and they get ragged and faded, while her sister who has only laid about two eggs a week presents a tidy and unruffled appearance, for she has put her time and food into feathers and fat.

Activity is a necessary characteristic. To manufacture lots of eggs, and at the same time keep up her own vitality, a hen must eat lots of food, and the big eater will be found to be the bird that gets off the roost first in the morning; the hen with such an insatiable appetite that she is scratching and singing all day long, stopping only long enough to lay her daily egg. She goes to roost last at night with her crop stuffed full.

The late molting hen is almost certain to be a vigorous, heavy producer, and if eggs from hens that lay longest in the fall are used for hatching for several years, the winter egg habit will be bred into the flock.

In a flock of yellow legged birds the comparative shades of yellowness of the shanks, beak, earlobes and skin around the vent in different fowls indicate the relative productive abilities. This yellow color is due to a pigment, and hens that lay the most eggs draw more of this yellow pigment than do hens laying few eggs. Consequently, late in the season these parts in a heavy laying hen will be pale, while in a poor layer they will remain yellow.

The hen that is very seldom broody is a valuable breeder, for by selecting eggs for hatching from non-broody hens you can breed out broodiness to a great extent. How can you know which hens become broody often? Why, if you use numbered leg bands, record the number every time a hen wants to set. If not, then get some celluloid bands and put one on each time. After awhile, if a certain Biddy is found wearing too many bracelets take her out of the breeding pen and keep her for hatching and brooding. That is the only occupation at which she will pay for her board.



The male should be both gallant and aggressive —thoroughly masculine in every respect.

SELECT THE MALE WITH CARE.

So far I have said nothing about the male bird, but he deserves careful consideration, for the male is certainly half the flock—more I believe. If a hen in a pen of ten females has a certain fault, it cannot appear in more than one out of every ten chicks, but if the male has the fault it may appear in every chick. Consequently, even more care should be exercised in selecting the male than in choosing the females.

In general, the requirements for the females apply to the male as well, except that he should be masculine in every section and feature. He should have an erect head and a very strong eye; well-developed earlobes and wattles; a short, strong beak; heavy thighs, set well apart; well developed spurs.

He should be both gallant and aggressive. His galantry will be shown in his generosity to his hens, by calling them and giving them the choicest bits of food; his aggressiveness in flying at an intruder or enemy. As a rule, the best fighter proves the best breeder. Such a bird usually crows a great deal. He should have a deep voice, and give a loud, clear crow.

In considering females we found that it was important to select those having thin, pliable pelvic bones, set well apart; great space between the pelvic bones and the back end of the breast bone, and a large pliable abdomen. The same analysis should be applied to the male's anatomy, but not to the same degree, for the male never has the spread of pelvic bones or the abdominal capacity of a hen of the same size.

It has been proved that a hen transmits her heavy laying qualities through her sons rather than through her daughters. In other words, a pullet inherits her egg laying ability from her sire's dam rather than from her own dam. Consequently, it is necessary not only to pick out good producing females for a pen, but to mate them to a male from a heavy laying hen. The heavy producing females are necessary to give us properly bred males for breeders in the next generation; the male from a high record hen is necessary to give us heavy laying pullets in the next generation.

LIGHT ON EGG TESTING.

If you run an incubator and have electric lights, you can save four-fifths of the work of testing the eggs, says W. H. Macy, the well-known poultryman of Oakland, by using a common electric light bulb inserted into a cone made of light cardboard or heavy opaque paper, having one pure white surface. Take a sheet 12x16 inches and make the cone with the white surface in, having the small opening ⅞ inch in diameter and the large end 5 inches.

Have the room dark and pass the cone with the lighted bulb inside over the eggs as they lay in the incubator tray, pressing the cone down over the large end of each egg. The concentrated light will prove so strong that it will show very clearly the condition inside of the egg.

Mr. Macy hatches several thousand chicks every spring and finds this paper cone tester a great time saver.

REMEDY FOR CANKER MOUTH.

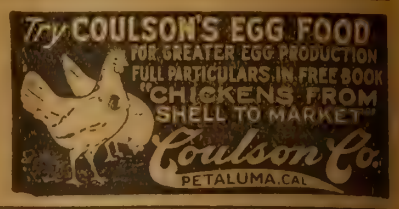
To the Editor: I have some chickens that have a cankered mouth and their eyes run. What should I do?—W. B. R., Lockeford.

Mix up a light pink solution of permanganate of potash and dip each bird's head in it, holding the head in as long as can safely be done without strangling the bird. Do this once a day until the trouble is overcome. If there is a cheesy gathering in the throat, remove it with a sharp stick or metal instrument first. Be sure that the houses in which the birds roost are free from drafts and dampness.

Speeding Up Spring Work

The poultry department of the farm must not be forgotten. When pruning or culling time comes, spraying the orchard is no more important than spraying the hen-house or dusting or greasing the hens and chicks.

Early hatching is one of the prime essentials for success, but it is only the beginning. If you want strong, vigorous, well-matured pullets to do the laying for you next fall, you must not only see that the chicks hatch out at the proper time, but keep them growing, and prune and cull vigorously. The success of the future depends on the work of today.



Chickens Sick or Not Laying?
Most poor layers are "OUT OF CONDITION" or have Colds, Roup, Bowel trouble, Sore head, Chicken pox, etc. GERMOZONE is the best remedy for all these disorders. At dealers or postpaid 75c, with 5 book Poultry Library. GEO. H. LEE CO., Dept. 423 OMAHA, NEB.



Garden Time is Coming

Now is the time to study your garden conditions and prepare for flowers later.

California Garden Flowers

By E. J. Wickson.

A book of over 250 pages, handsomely illustrated, bound in cloth, written to meet California conditions, will help you plan your yard most effectively. For sale at all book stores at $1.50 per copy, or by the

Pacific Rural Press
Publishers
525 MARKET ST., SAN FRANCISCO

Make Poultry Pay

One of our subscribers was completely disgusted with poultry raising. Every morning forty of his hens would brag about what they were going to do, but at night he would find that only about eight had laid. The rest had simply lied.

So he bought a copy of our poultry book and in less than two weeks his hens had quit lying and gone to laying. They were shelling out enough extra eggs to pay for the book in less than two days.

California Poultry Practice Tells How

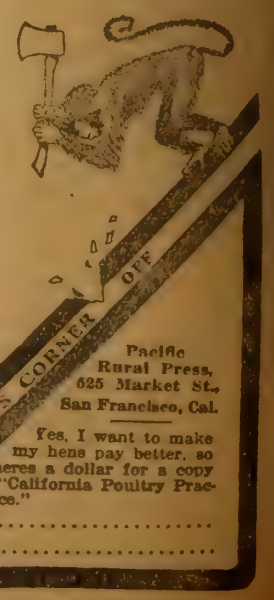
This great book will do as much for you. It was written by a Californian for Californians. The author, Mrs. Susan Swaysgood, after years of successful experience, has succeeded in showing the farmer how to make poultry raising more profitable. She knows what to tell and how to tell it. She deals out hard-headed poultry sense and still has every paragraph full of snap and sparkle.

The book deals with actual conditions—not theories—and covers every phase of the industry. It gives advice about location, buildings, equipment, choice of breeds, best way to begin, how to select stock, etc. There are valuable instructions for incubating, brooding, culling, feeding, breeding for heavy laying, showing, treating diseases, marketing products, etc. You will find everything necessary to insure your success.

Now Is the Time to Start

Never was there a better time to take up poultry raising in earnest. The nation's supply of meat animals is not keeping pace with the increase in population, and the people must turn to poultry raisers for nitrogenous foods. Eggs will be the cheapest concentrates, and table fowls the cheapest meat.

A golden market awaits all poultry products here on the coast, where we don't even produce enough to supply the local demand. As a government expert puts it: "The Pacific Coast offers a wider and more inviting field for future development in poultry raising than any other section of the United States."



Costs Only a Dollar

But play safe. Start right by getting this book and following the methods which have already proved successful. It will cost you only a dollar; you would not sell it for ten.

Send Coupon Today

SIMPLE RATION THAT DOUBLES EGG PRODUCTION.

That laying hens will increase their production if fed a properly proportioned ration has been demonstrated in Missouri this winter. And the ration costs no more than some of the carelessly compounded rations many farm flocks receive. Here is the ration expressed in quantities sufficient to feed 100 hens one day:

Scratch feed: 10 lbs. shelled corn or kafir, and 5 lbs. threshed oats or barley. Feed in deep litter morning and evening.

Dry mash: 3 lbs. bran or 3 lbs. cornmeal, 3 lbs. shorts or 3 lbs. ground oats, and 1½ lbs. beef scrap or 1 lb. tankage. Three gallons of milk may be substituted for the beef scrap or tankage. Keep this mash before the birds at all times.

In addition to this food, supply green feed in some form, plenty of fresh water and grit and shell.

The use of the foregoing ration has been advocated by the Extension Service of the University of Missouri College of Agriculture. Ten communities have reported results for the last thirty days which shows a percentage increase of 173. This means that all communities reporting are receiving a double return in number of eggs laid, and one community reports that the yield has been increased seven-fold. This is conclusive evidence that the ration is practical, and that a laying hen, well fed, will respond to good feed.

POULTRY POINTERS.

Be sure that the male at the head of your flock is a purebred, and that his mother was a heavy layer.

The results of the next twelve weeks will mean success or failure for the entire year. Close attention will pay big dividends.

Your incubator won't think for itself. Use your head and watch the hatch for needed moisture or for signs that the moisture is too great.

Don't spend too much time complaining because the price of wheat is so high. Barley contains more bone and muscle food than wheat does anyway.

Don't give a male too many females. Better to buy a few extra males than watch an incubator for 21 days and then find the germs all weak and the chicks unable to get out of their shells.

Early to hatch; early to lay. The early chicks develop rapidly into provident pullets that replace the industrious hens when the molting season arrives, and produce in plenty when eggs are scarce and high in price.

Don't feed the baby chicks for 48 hours after they are hatched. Feed little and often and thus avoid bowel troubles. If you are raising just a few, it is less trouble to purchase prepared chick feeds than to buy the finely cracked grains and mix them.

Sprinkle the droppings generously with air-slaked lime to which has been added a handful of flowers of sulphur. This will kill odors and make cleaning necessary less often—once a week being sufficient. Gypsum also is a good absorbent and makes a valuable fertilizer when mixed with the droppings.

Watch the droppings. They are a sure indication of the condition of your fowls. When they are round and solid, of a dark brown color tipped with white, all is well. But if they are watery and yellow or greenish, the hens need attention at once. Usually a mild purgative will start the liver into activity and correct the derangement of the bowels.

SELECTING EGGS FOR HATCHING.

Set only good-sized eggs, uniform in size; only good-shaped eggs, uniform in shape; only good-colored eggs, uniform in color.

All this you can do with a little care in selection, and it is well worth while. Eggs of good size, color and shape, and uniform, sell at higher prices than small eggs, varying in color, and of all shapes, and the better the eggs used for hatching are in these respects, the better will be the eggs laid by the pullets from these eggs.

Eggs weighing less than two ounces should not be used for hatching. The large-sized egg hatches a larger chick. This large chick grows faster than the smaller one. It will be marketable as a broiler sooner; it will mature younger; it will begin laying earlier; the income will be received sooner; the chick will prove more profitable.

This applies to all breeds. The comparisons are made between large and small chicks of the same breed. Careful selection of eggs for hatching pays. Don't neglect it.

CHICKEN CHAT.

Egg shipments from Petaluma amounted to 16,045,644 dozen during 1918, which is a new mark, and over twice what they totaled in 1910.

Prof. T. E. Quisenberry, one of America's leading poultry authorities, says that the next five years will be the best that poultrymen have ever experienced. Are you prepared to reap your share of the harvest?

Our advertisers report the heaviest demand ever. If you are thinking of buying eggs, chicks or breeders this spring, better get busy and order at once. Otherwise you'll receive the disappointing reply "all sold out."

The ban on Chinese eggs has been lifted, and Petaluma poultrymen are asking that they be classed as cold storage eggs. About the only ruling now enforced is that the words "Chinese eggs" must be printed on the outside of the case, but dealers keep the cases out of sight and sell the eggs as fresh. Any egg that has been in storage over 30 days is a "storage egg" under California laws. This surely ought to apply to the Chink eggs.

A decision in favor of the Poultry Producers of California has just been rendered in a test case brought to force J. L. Nilsson of Sacramento to pay $1384 damages and to turn over all of his eggs to the co-operative association. The importance of the decision rests in the fact that 100 other producers who also signed the agreement and who, it is stated, have not since lived up to it, will be affected. Damages were awarded at the rate of five cents a dozen for the eggs.

$177,806 SAVED BY SELLING SLACKER HENS.

A saving of $177,806 worth of grain was effected by the culling out of slacker hens in 45 counties of Missouri as the result of a poultry-culling campaign conducted by the U. S. Department of Agriculture and State College of Agriculture. The demonstrations were attended by 17,145 persons. A total of 7383 flocks were culled, representing 744,446 hens examined, which resulted in the elimination of 282,698 low-producing hens that otherwise would have been permitted to remain on the farms as consumers of grain. The estimated saving probably is too low, as it was assumed that each culled hen would have paid for her keep after February 1, which is probably not the case.

Poultry Breeders' Directory

BABY CHICKS—We specialize this season on money-making White Leghorns—hatching from stock with high records that are unimpeachable. Also Brown Leghorns, Anconas, Minorcas, Rocks, Reds, Orpingtons, and White Wyandottes. Especially interesting circular with price list ready January 1st. B. W. Archibald, Soquel, Santa Cruz Co., Cal.

S. C. WHITE LEGHORN CHICKS—Any quantity, from A 1 Hoganized and trapnested stock, winners of 1st, 2nd and special for pullet and 1st cockerel at Pacific Coast Land Show. Booked up for March delivery orders taken for April 18th. A. O. & P. M. Forster, 2018 Otis St., Berkeley, Cal.

SANTA CLARA VALLEY HATCHERY has the chicks for you from six different standard breeds, all bred for egg yielders. Can furnish references from my old customers if desired. Lincoln Ave., San Jose, Cal.

OUR FINE FEMALES—Can supply you with eggs at 30c each and up that will hatch just what you want in general purpose fowls. Write for mating list. O. B. Hunt, White Rock Fancier, Berkeley, Cal.

RHODE ISLAND REDS—Best all purpose bird. Oakland show. First cock, second cockerel, fifth pullet on four entries. Hatching eggs. Prices for asking. John L. Reed, Route C, Box 36-B, San Jose, Cal.

GIANT BRONZE TURKEYS—Gold Nugget Strain. Prove their superiority by winning Gold Special Sweepstakes for best turkeys at the following great shows: Arizona State Fair, 1916; Texas State Fair, 1917; California State Fair, 1917-1918; Los Angeles Show, 1917-1918; Pacific Coast Land and Industrial Exposition, Oakland, 1918. An unequaled record. Large turkeys can be raised at practically the same cost as small ones. Toms for sale that will increase size and improve any flock. I am the originator of the Gold Nugget Strain. J. Will Blackman, 607 East Third St., Los Angeles, Cal.

SULLIVAN'S FAMOUS BUFF ORPINGTONS—Want the best? Write Sullivans, Specialists. Oldest flock on Pacific Coast. Line bred for 20 years. Said by Walter Hogan, originator of "Hogan System," best layers of this variety he ever handled. Have won thousands gold and silver special prizes, cups and ribbons—more than all competitors combined, on the Pacific Coast. Eggs, $3.00, $5.00 per 15; $12.00 and $15.00 per 100. Breeding stock. Write for prices. Mr. & Mrs. W. S. Sullivan, 100 Market Road, Agnew, Santa Clara Co., Cal. Telephone S J 5205, R. 5.

MY THIRTY PULLETS AT FOUR—Sixth month (January) cleared $31.00. Why? Bred 20 years to lay 200-290 eggs yearly. White, Brown, Buff Leghorns; Anconas; Reds; Barred, White Rocks; Minorcas; Orpingtons; Ducks; Turkeys; Geese. Clearing customers $5.00. Valuable circular with proof—free. Chicks two-thirds booked to May, reasonable yet most weeks still open for hundreds. Increasing our hatcheries as demanded (70,000). Many repeat orders monthly, yearly. Breeders. Pullets. J. Beeson, Pasadena, Cal.

WHITE LEGHORNS are the most profitable breed of poultry. If you are in the business for profit, you will eventually have them. Early broilers; early layers; early profits; we sell only White Leghorn Baby Chix from heavy laying Hoganized hens. Safe delivery of full count live chix guaranteed. Prices per 100: February, $15; March, $14; April, $12.50. The Pioneer Hatchery, 408 Sixth street, Petaluma, Cal.

SINGLE COMB BROWN LEGHORNS—The large, modern, heavy-laying type that won high honors for us at the National Egg-Laying Contest. No better layers, none others so hardy. For 20 years our strain has won highest prizes at New York, Boston, Chicago, San Francisco, etc. Absolutely the finest Brown Leghorns in America. Eggs, $3 and $5 per 15; $15 per 100. Williams Bros., Fullerton, Cal.

BARRED PLYMOUTH ROCKS—Champion prize winners and wonderful layers. Choice cockerels, hens and pullets for sale. Hatching eggs from twelve grand matings. I have made a specialty of Barred Rocks for over twenty years. That's why I win at all leading shows. "Nothing Better In Poultry" than Vodden's Barred Rocks. Catalog free. Chas. H. Vodden, Box 396, Los Gatos, Cal.

BABY CHICKS, HATCHING EGGS, BREEDING MALES—Barred Rocks, Anconas, R. I. Red, Black Minorcas, White Minorcas, White Orpingtons, Black Orpingtons, Light Brahmas, Buff Leghorns, Brown Leghorn and MacFarlane White Leghorns. Also Duck, Geese, Turkey eggs. Circular and price list free. Poultrymen's Co-operative Hatchery, D. E. Doke, Mgr., 732 So. Spring, Los Angeles.

GOLDCROFT BUFF ORPINGTONS fulfill every standard and utility requirement. Won San Jose show first, second, third, pullet and cockerel. Eggs, $5.00 and $3.00 from winning pens; $2.00 from general flock; $12.00 per hundred. Stock for sale. Samuel Abrams, Los Altos, Cal.

SUPER QUALITY WHITE LEGHORN CHICKS, hatched right in Jubilee machines from best strains of foundation stock. Our customers come back each season; we can refer you to them. Write at once before we are all sold out. Newton Poultry Farm, Los Gatos, Cal.

BABY CHICKS EVERY WEEK—Order early and get the date you want. White and Brown Leghorns, Rhode Island Reds, Barred Rocks, Anconas. Also hatching eggs. Safe delivery guaranteed. Write for circular. Stubbe Poultry Ranch and Hatchery, Palo Alto.

FINEST HATCHERY IN THE WORLD—CHICKS, White Leghorns, Rhode Island Settings—1000's—hatched right in our $60,000 brick and concrete hatchery from our Hoganized heavy layers. Stock, eggs. Pebbleside Poultry Farm, Sunnyvale, California.

BOOK YOUR ORDER NOW for S. C. White Leghorn baby chicks from hens from a trapnested strain of 192 to 297 eggs. My hens are noted for their exceptionally large eggs. Price, $15 per hundred chicks. Mrs. L. A. Benoit, Rt. C., Box 183, Modesto, Cal.

RHODE ISLAND REDS—Rose and single comb Rhode Island Red hatching eggs from 220-egg record layers. Cockerels, rose and single comb. Pens. Improve your color, type, and egg capacity. Write for mating list. Wm. Larm, 3915 39th Ave., Fruitvale, Cal.

BUFF ORPINGTONS—Prize winning stock imported from England. Simon Hunter's famous laying strain. Eggs for hatching, $3 and $5 per setting of 15, guaranteed. Cockerels, $5 and up. Mrs. C. D. Spaulding, 2600 Diamond St., San Francisco.

ATKINSON'S PEERLESS ANCONAS lay more and eat less than other breeds. 50 big husky cockerels $5 and up. 200 pullets, trios and pens for sale. Hatching eggs. Catalogue free. J. W. Atkinson, Box B, 130 Willard street, San Jose, Cal.

HATCHING EGGS—White Leghorns, Light Brown Leghorns, Dark Brown Leghorns, White Rocks, $2.50 per 15; $10.00 per 100. All bred to highest possible standard of beauty and utility. Mahajo Farm, P. O. Box 507, Sacramento, Calif.

SPRING CHIX—Rhode Island Reds, Barred Rocks, Brown and White Leghorns, from Hoganized stock, bred to lay. Satisfaction and safe delivery guaranteed. Tobener Poultry Ranch, Washington Ave., San Jose, Cal.

S. C. RHODE ISLAND REDS EXCLUSIVELY—"Pacific Coast Aristocrats." Hoganized flock. Booking orders for day-old chix and hatching eggs. Order early. Rosedale Poultry Farm, Motor A, Box 200A, Ceres, Cal.

THE BEST HATCHING EGGS—Columbian and White Wyandottes, Rhode Island Reds, Anconas, Buff and White Leghorns. Fifty $2.00. Exhibition $5.00 per 15. Circular free. George Armock, Palo Alto, Cal.

FOR SALE—We have a pen of six five and better fingered White Leghorn hens and a four fingered cock all beauties. A chance to breed a three hundred-egg hen. Will consider offers. C. B. Atterbury, Turlock, Cal.

RHODE ISLAND RED EGGS for hatching. Mrs. Richard Holdridge, P. O. Box 282, Dixon, Cal.

HATCHING EGGS FROM OUR HEAVY-LAYING, prize-winning, single comb Rhode Island Reds. Seven superb matings. The best pays. Place your order now. Mating list free. Ward's Poultry Farm, S. C. R. I. Red specialists, South Lincoln Ave., San Jose, Cal.

BABY CHICKS—Hoganized White Leghorns, utility Rhode Island Reds, Barred Blymouth Rocks, Anconas, and Blue Andalusians. Free circular. McDonald Poultry Ranch, King Road, San Jose, Cal.

BABY CHIX R. I. REDS
My specialty. Bred for eggs, size, color. Hens on free range means strong chix. 16c each; 15c in 1000 lots. Denton Poultry Yards, Box 360, Campbell, Cal.

RAISE CHICKENS, rabbits and pigeons on half acres with city conveniences. Market at the door. Profits by intensive cultivation will surprise you. Write for information. F. R. Caldwell, Broadmoor, San Leandro.

BABY CHICKS—Hatched from our S. C. White Leghorns, a result of many years' careful selection and breeding. San Jose Poultry Yards, Fifteenth and Margaret streets, San Jose, Cal.

BABY CHICKS—Hatched from our own stock in our own hatchery. Hens are of S. C. White Leghorn utility stock, bred for commercial laying. H. A. George, Route 2, Box 20, Petaluma.

BABY CHICKS—from Hoganized breeders, 180 egg type and up. White Orpingtons and Sicilian Buttercups. Order early for future delivery. M. S. Woodhams, San Mateo, Cal.

THOROUGHBRED R. I. REDS—Thompson strain heavy layers. Hatching eggs, specially selected, $2.00 per 15. 80 per cent fertility. Mrs. C. M. Hagood, Rt. 1, 504A, San Jose.

MODEL POULTRY FARM—White Leghorn specialists. Our fifteenth year. Baby chix and hatching eggs for sale. Our prices are right. W. C. Smith, Prop., Corning, Cal.

SELECTED—S. C. Leghorn and Barred Rock eggs for hatching. Hens typed to lay 200 to 260 eggs per year each, $6.00 per 100; $1.50 for 15. Jay Maxwell, Madera, Cal.

BARRED PLYMOUTH ROCK EGGS for sale. Good range flock headed by cockerels from 260 to 290-egg stock. $1.50 per setting. Mrs. J. A. Vassar, Laytonville, Cal.

WHITE WYANDOTTES—Eggs for hatching from our heavy laying prize-winning stock. Baby chix. Choice breeding cockerels. R. W. Stawetski, Route B, San Jose, Cal.

FOR SALE—Bourbon Red turkeys and eggs for hatching, $5.00 per setting of 13 eggs. Book your orders early. Albert E. Balmer, Alhambra Valley, Martinez, Cal.

EGG BRED—Buff, Brown, White Leghorns, Golden Campines, Dark Cornish. Winners wherever shown. Send for circular. Percy Ward, 3142 Ward St., Fruitvale.

ANCONAS—Sheppard strain direct. Hatching eggs, $4.50 per 50; $2.00 per 15, plus postage. White Leghorn, $6.00 per hundred. A. S. Wilkinson, Winton, Cal.

DUCKS—Mammoth Pekins and White Runner eggs, 15c. each. Poultry of all kinds. Write us your wants. Wood Poultry Yards, 632 North 3rd St., San Jose.

EASTMAN'S "BRED-TO-LAY" Hoganized and trapnested Barred Plymouth Rocks. Baby chicks. Eggs; cockerels. Fairmead Poultry Farm, Fairmead, Cal.

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SAVE THE BABY CHICKS—Write today for our valuable booklet, "Making Every Chick a Chicken." Mailed Free. Box 593, Modesto, Cal.

BABY CHICKS (White Leghorns) shipped on approval before remitting. No weak ones charged for. Schellville Hatchery, Schellville, Cal.

BABY CHICKS—We have the large heavy-laying S. C. White Leghorns, severely culled last year. Send for prices. Tupman Poultry Farm, Ceres, Cal.

HATCHING EGGS—Barred Rocks, White Leghorns, and R. I. Reds, $5.00 per hundred, $1.25 per 15. J. A. Brannin, Corning, Cal.

CHICKENS, DUCKS, GEESE, GUINEAS, Pea Fowl, Pigeons. Wm. A. French, 545 W. Park St., Stockton, Cal. Stamps.

A FEW PAIRS AND TRIOS of prize-winning Partridge Cochin Bantams for sale. Susan Swaysgood, Pomona, Calif.

BUFF ORPINGTONS, BUFF DUCKS, BOURBON RED TURKEYS—The Ferris Ranch, Rt. 2, Box 144D, Pomona, Cal.

FOR THE BEST laying strain of White Plymouth Rocks and Rhode Island Reds, write W. H. Carpenter, Oakley, Cal.

BLACK MINORCA EGGS—$1.50 per 15. Special mating, $2.00. Edward A. Hall, Rt. 1, Box 39, Watsonville, Cal.

BRONZE TURKEY EGGS—Limited number for delivery in April. No more stock. Albert M. Hart, Clements, Cal.

PUREBRED S. C. B. MINORCA EGGS, $2.00. Special matings, $3.00 per 15. Mrs. J. W. Moore, Exeter, Cal.

PIT GAME CHICKENS that are game. Also eggs for hatching. Frank McMann, 689 32nd St., Oakland, Cal.

FOR SALE—40 egg metal incubator, used twice. $3.50. R. F. D. 1, Box 314, Santa Rosa, Cal.

LIGHT BRAHMA EGGS—13 $2.00. Stock for sale. J. Dolan, 146 Wyandotte St., Stockton, Cal.

RABBITS.

MONEY IN RABBITS—We are now paying $6 per pair for all you can raise. Send stamp for particulars. H. E. Gibson Co., Arcadia, California.

PURE, PEDIGREED STRAINS—Belgian hares breeding age, $2.00. Not scrubs. Prepaid express, 50c. extra. Brown Berry Ranch, Capitola, Cal.

RABBIT CULTURE AND STANDARD—Official standard description of the various breeds, 75 cents. Caldwell, Broadmoor, San Leandro.

SAN FONG RABBITS—1 to 16 lb. Steel and Gray Flemish Giants. Prize winners at San Jose and San Francisco. Sanborn Young, Los Gatos.

NEW ZEALAND REDS—First-class utility breeding stock and young for sale. F. R. Caldwell, Broadmoor, San Leandro.

DR. B. HEARN, VETERINARIAN—Breeder New Zealand and Flemish Giant Rabbits. R. R. 2, Porterville, Cal.

WHITE MICE for laboratory purposes, $3.00 dozen. Also Guinea pigs. Neidhardt, 6 Hull St., San Jose.

THE HOME CIRCLE

"Say, Bill---"

Well, Bill, it's sort of quiet since the kaiser cut and run,
Although our job's not finished, why, the toughest part is done;
And today I got to wonderin', just concernin' me and you,
Of how it's goin' to be with us, and what we're goin' to do.

For we've heard the shells a-whinin' and a-ploppin' overhead,
And we've seen the pale moon shinin' on the tangle heaps of dead;
We have seen the rockets soarin' and we've heard the cannon roarin',
And we've felt the sting of fightin' when our eyes was seein' red.

For the time is soon a-comin' when together you and me
Will be packin' on a troopship for our trip across the sea;
And first thing before we know it, we'll be walkin' up the street
We swung along, seems no time since, with restless, eager feet.

And you'll go to sellin' sugar in your dinky little store,
And you'll swear the eggs is fresh laid, as you've very often swore;
And I'll shine the same old trousers on the same old office seat,
As I pound the same old clicker that I always used to beat.

We who've smelled the smoke of battle, and have tingled to the thrill
Of the joyous love of conquest and the maddened lust to kill—
We'll go back and maybe marry, now the battle flags is furled,
Settle down and raise a family—Hell, Bill, this is sure some world!

—Harry N. Crookston in New York Herald.

How Rain and Wind and Snow Helped

"How cold it is!" said Tiny Hare, as he sat near the edge of the wood one day.

"Good-night, Tiny Hare," called many of the insects that had sung night and day all the Long Warm Time.

"Where are you going?" asked Tiny Hare.

"To bed," said the little creatures. "We shall sleep in the earth or under the bark till the Long Warm Time comes again. We have to go to bed first, because we are the wee ones."

Next day the bats flew past, and many little furry animals of the wood ran by Tiny Hare as he played in the field.

"Where are you going?" called Tiny Hare; and they cried, "We are going into caves and hollow trees to take the long nap."

"Oh, dear!" sighed Tiny Hare, "nobody will be left."

Next day dear, wee, baby Tiny Hare, hiding in the bushes, saw the bears making their beds and the beavers in the streams plastering their mud houses.

"What are you doing?" cried Tiny Hare.

"We are making the beds for our long sleep," they said drowsily, and soon wood and field grew very quiet.

"Oh, dear, dear, dear," cried Tiny Hare, "how lonely it is!" and he ran to his home of sticks and leaves in the briar patch.

"I'm cold and sleepy," said Tiny Hare.

"Eat your supper, and lie by me all the dark, dark Dark," said kind Mamma Hare.

"No; you will wake me when the light time comes. I wish to sleep all the Long Cold Time."

"Who ever heard of such a thing for a hare?" said Mamma Hare.

"I wish to," said Tiny Hare. "I wish to sleep in a tree."

"A hare cannot climb a tree. Come, eat your supper and sleep in my warm fur," said Mamma Hare.

"No," said Tiny Hare, "I wish to sleep weeks and weeks, and I will find a tree that I can climb," and that dear, wee, naughty, baby Tiny Hare ran away into the woods all alone.

He tried to climb a tree, but he could not. He looked and looked for a tree with a hollow near the ground, but he did not find one. By and by the Dark came. How cold it was!

"I'll sleep here," said Tiny Hare, and he ran into a snug hole in the ground.

"Good! I wish a rabbit for tea," said the old weasel who lived there, and he put out his sharp claws.

How Tiny Hare did run! How afraid he was! The dark, dark Dark had come, and he could not see his paw before his face; but he ran and he ran, till the old weasel lost him in the bushes.

"Here's my bed at last!" cried Tiny Hare, as he came to a hole under a rock. The Moon was rising, and oh, she was sad for baby hare!

"I'll help him," said the Moon, and she shone brightly into the hole. There lay a snake with bright eyes.

"Oh, oh, oh!" cried Tiny Hare in fear, and he ran away through the woods.

By and by he found a tree trunk that slanted from the ground. Tiny Hare ran up the long trunk, and jumped into a snug round nest lined with the warmest, softest fur and milkweed silk.

"This is my bed. It must be," he said, and snuggled down to sleep.

Home came the flying squirrel whose bed it was.

"Well!" said he, "get out of my bed at once."

"This is my bed," said Tiny Hare.

Then the flying squirrel became so angry that he flew from tree to tree, scolding all the time.

"I wish to sleep in this furry bed all the Long Cold Time," said Tiny Hare, sitting up.

"Well, you can't," said Flying Squirrel. "Hurry now, and fly down to the ground."

"I can't fly," said Tiny Hare.

"If you can't fly, you have no business in a tree," said Flying Squirrel; and he pushed and he pulled Tiny Hare out of that snug nest, till he stood on the branches high above the earth. How Tiny Hare did feel!

"Now learn to fly," said Flying Squirrel, and he pushed dear, wee, baby Tiny Hare, who couldn't fly at all, right off the tree!

Wind in the tree-tops heard it all.

"I'll help him," said kind Wind, and he blew so quickly and so hard that Tiny Hare sailed down like a ball of fluff, and wasn't hurt at all.

Then — what do you suppose? Along ran Fox. He saw Tiny Hare.

"Aha!" barked he.

How Tiny Hare did run and run through the bushes, and after him ran Fox, laughing!

"Let him run," he said, "I shall catch him at last."

Snow lay up in the clouds that Wind had blown over the Moon.

"I will help him," said Snow, and she fell in big flakes that lay white on the ground, and sly Fox lost the trail of Tiny Hare in the bushes.

How tired Tiny Hare felt when he knew that he was safe!

"I wish to be in my home," he said, and he crept oh, so slowly, to his home, where Mamma Hare and Papa Hare were fast asleep.

He crept into Mamma Hare's soft fur.

"I will be good!" he said, and she bit his ear for love. Soon how safe and warm he felt, and he slept and he slept and he slept all through the long, cold Dark.—Anne Shutze in the Mayflower.

JAM FROM DRIED FRUIT.

Editor Home Circle: Discovering that the supplies in my jam closet were running low and having three children to use jam for sandwiches, I tried an experiment that was so successful I want to let other mothers know of it. I put to soak over night a large pan of dried apricots and in the morning put them through the meat grinder. Then I put them on to cook and proceeded just as you would with fresh fruit, even to the adding of the shredded pineapple when ready to seal. I would not say it was exactly like the fresh apricot jam in flavor, but it was very good, so good, in fact, that I am willing to serve it to my friends as well as to my family.—Mrs. J. E. P., Watsonville.

More Light Than 20 Oil Lanterns

AT LAST—the light of lights! A lantern that lights with common matches just like the old style oil lantern, but makes and burns its own gas from common gasoline, giving a brilliant, steady, white light of 300 candle power.

MOST BRILLIANT LIGHT MADE

Brighter than the brightest electric bulb. More light than 20 oil lanterns. Cheapest and best light made. Costs less than one-third of a cent per hour. Safer than the safest oil lantern. The



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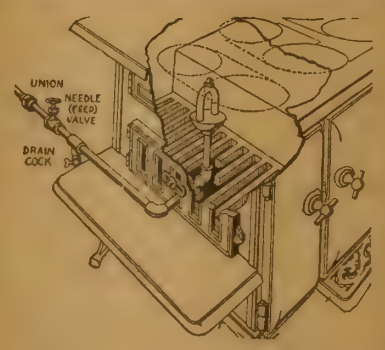
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It cooks **perfectly**—heats **uniformly**—home, shop, office, factory, brooder house, etc. A man or boy can place it without charge or changing stove. Thousands in use. **No time limit to our guarantee.** Ask for Circular "B".

THE BURNER IS $5.00 — PREPAID ANYWHERE

COMPLETE ONE-BURNER INSTALLATION—$9.85

PREMIER BURNER CO., 246 SO. SPRING STREET LOS ANGELES, CAL.

DAINTY SANDWICHES.

For afternoon entertainments or children's parties a dainty sandwich is much enjoyed, and they are really not so hard to prepare. The bread must be sliced thin and the crusts removed and should be at least a day old. The butter should be beaten until creamy.

Use a cooky cutter for cutting round sandwiches and sharp scissors for cutting and trimming other shapes. For rolled sandwiches, use very fresh bread and wrap in a damp towel and cover again with a dry one. Let stand for an hour, and slice very thin, trimming to a size half again as long as wide. Spread with the creamy butter and any desired filling and roll just as you would a jelly roll. Fasten with a toothpick until the shape is fixed.

Open-faced sandwiches are very attractive, but are more difficult to handle when eating. These have only the lower slice of bread and the filling is piled up on it. If the filling is solid, one may negotiate them quite comfortably, but if there is a tendency to slip, the only safe way to do is to put the whole sandwich in the mouth at once. As these are often no larger than a dollar, that is not a difficult feat.

Chopped ham combined with other ingredients makes very good sandwiches. It may be creamed with chicken or mixed with chopped hard-boiled eggs and prepared mustard or may be used alone with a chopped pickle.

Cream cheese, well seasoned with red pepper and salt, with thick cream to make the right consistency and a finely shredded green pepper added, makes a good filling.

BEEF LOAF WITH RICE.

One pound round steak ground, 1 minced onion, 1 cupful water, 2 cupfuls cold boiled rice, 1 cupful stewed tomatoes, 1 green pepper, minced, 1 teaspoonful cornstarch, ½ tablespoonful margarine, ¼ teaspoon celery salt, salt and pepper.

Mix together the beef, onion, water, chopped green pepper, 1½ teaspoon salt, ¼ teaspoon pepper. Bake 15 minutes in a loaf pan. Then spread the rice over the top and dot with bits of margarine. Bake ¾ of an hour longer. Turn out on a platter and surround with a sauce made by cooking the tomatoes with ¼ teaspoon celery salt, ⅛ teaspoon pepper and ¼ teaspoon salt. Thicken with the cornstarch mixed in a little water. Celery seed may be used in place of the celery salt, if desired.

FASHION NOTES.

Leather coats for motoring, walking or sport wear are the newest wrap. These are lined with suede cloth, have the sleeves strapped for wrist adjustment and a buckled belt and come in varying lengths.

Negligees of heavy crepe de chine or silk poplin or taffeta are wonderfully attractive. Some of them are lace and flower trimmed, but others have no trimming but ruching of the same material or tassels to finish the angel sleeves.

Bead bags in many designs and infinite colorings gorgeously accent the color of one's costume either harmoniously or by contrast.

Velveteen in black and various shades is to be popular for sports jackets.

Lace and net dresses are exceedingly good style—the lace from 18 to 40 inches wide is shown from $1.85 a yard up. In ready-made, there are both simple and elaborate styles.

Georgette crepe in either plain color or flowered makes lovely spring dresses.

Knitted scarfs of fine silk or mercerized thread with a colored band for trimming are seen with plain tailor suits.

Handkerchiefs with colored borders or with colored embroidery are one of the new fancies.

Crepe de chine underwear is shown at about the price of ordinary lingerie—it makes a big saving in laundry work, for it can be rubbed out by hand so easily.

House dresses of striped percale of a standard make, with revers and color of white organdie, may be purchased for less than $3.

Many of the large stores maintain a personal shopping service for the convenience of out-of-town patrons. Experienced shoppers will choose with extreme care the merchandise ordered and in some instances all delivery charges are prepaid.

FIRE PREVENTION WARNINGS.

Housekeepers should be interested in knowing what the Fire Prevention Bureau considers as necessary safeguards against loss by fire.

Premises should not have piles of rubbish lying around.

Chimneys should be cleaned every year and stovepipes carefully looked after.

Care should be taken not to overheat the stove nor have the wood box too near to the stove.

Closets, basements and attics should be kept clear of rubbish.

Matches should be kept out of the reach of small children.

Gasoline should never be used in a closed room or near an open flame.

PIGS IN BLANKETS.

Pigs in Blankets are a great favorite as a luncheon or supper dish. Cut thin slices of bacon in halves, wrap each oyster, previously fried, with a piece of bacon, fastening the ends together with a wooden toothpick, lay on a towel to get perfectly dry, brown very quickly in a hot frying pan and put two "pigs" on each square of hot toast. There will be a delicious thin gravy in the pan; pour a little on each piece of toast. Garnish with parsley and serve immediately.

WASHING WOODWORK.

You can save time when washing woodwork by using a piece of tin about twelve inches long to protect the wall from the wet cloth. Move it along the wall above the board while you work. If you use card board, it must be renewed often, while the tin lasts indefinitely.

Grape growers cannot claim deduction from their net income because prohibition has destroyed their industry unless they can show they have abandoned their vineyards as such or dragged them out, according to a ruling by the Internal Revenue Department.



"Only a Step" to Town!

Yes, that's all it is, if you have an Iver Johnson Bicycle. No longer compelled to miss business opportunities, or forced to transact your business through some friend who is going to town, or by letter, or even over the telephone.

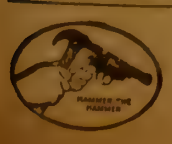
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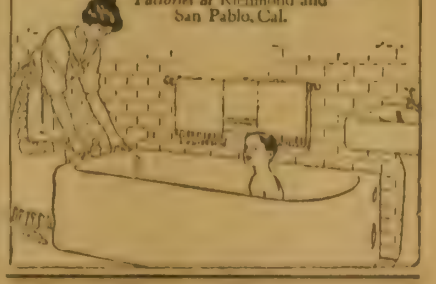
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Market Comment

Wanted—Buyers for Beans!

Beans—I wish somebody would find a market for them! This is the plea of individual growers, of bankers whose loans to growers are unpaid, of tractor distributors who could sell tractors if the beans were sold, and of the leading bean dealers. Whether the growers have been irreparably injured by advice to hold their beans when they could have sold them, as contended by Henry G. Turner, Sr., of The Grange Co., will depend on whether movement at fair prices shall come as prophesied by G. A. Turner of the California Bean Growers' Association. A. B. Shoemake, another large dealer, pessimistically told a large grower that he might take beans as a gift, but he wouldn't pay a cent a pound for them. The recent small movement at good prices may make him wish he had more of them, however. One grower remarks that he would like to get 5½c for his pinks and reds, which he could have sold at 6c or 8c awhile back.

Orange Market Strong.

The California navel orange market is strong both East and West, and prices are higher on the more desirable sizes, which range from $4 to $4.25 f. o. b. The new crop of Valencias is moving in a small way, and the quantity of navels and miscellaneous varieties of oranges yet to go are considerable. Shippers think it prudent to hold back the new Valencia crop until the market is relieved of the navels and other varieties of oranges that seasonably precede them.

Prune Price Juggling.

The California Prune and Apricot Growers, Inc., say in a published article, summarizing the present conditions: "Each day brings reports of larger price offers. Price juggling reminds one of the old wildcat gambling in the Chicago wheat pit. Any grower puts himself in the class of suckers who sells before June." Yet there will always be men willing to bet on their alertness in locating the shell that covers the pea.

Ban on Rice Importations Lifted.

California millers state that stocks of rice on hand are low and will be practically cleaned up before the new crop is ready to harvest. The Foreign Trade Department of the San Francisco Chamber of Commerce has been notified that on and after March 17, 1919, all rectrictions shall have been removed by the War Trade Board on the importation of rice from the Orient.

Demand for Dried Fruits.

It seems there is no lessening in the demand for dried fruits for export. Price quotations are nominal, as the price varies with each transaction, and is determined by the immediate urgency of the buyer's necessities and the readiness of the dealer to part with his goods. The outlook in every way for California's now maturing crop could not be bettered.

Berry Prices Booming.

There is a large demand for berries in the Sebastopol district. Several canners are in the field offering high prices—$125 per ton for loganberries and $95 for blackberries being the highest offer to date for canning stock. Additional acreage is being planted, although many fields will go unplanted owing to a scarcity of plants.

To Limit Packers' Profits.

With the first advancing price of hogs in the East, the Food Administration intimates that action will probably be taken to put some restrictions on packers' profits on pork and pork products. This it is proposed to do under the food license system, said to be still in force.

Tomato Contracts on $14 Basis.

Existing contracts between members of the California Tomato Growers' Association and the canneries are on the $14 per ton basis. No new contracts are, however, being taken at this price.

THE MARKET REPORTS

Figures Given Are Independent and Reliable.
Prices Quoted as Paid to Producers.

SAN FRANCISCO

San Francisco, March 19, 1919.

WHEAT.

It is announced that the U. S. Food Administration Grain Corporation will begin to sell its surplus wheat holdings on March 15 in an effort to prevent an increase of flour prices. It is stated that the millers have been offering from 10c to 15c a bushel above the Government price and the Government will now use its surplus to stabilize flour prices. This will have no effect on the price of wheat.

The following prices were announced by the Federal Grain Corporation last year and are still in effect. They are figured f. o. b. San Francisco, Los Angeles, Seattle, Tacoma and Portland and guarantee the grower a minimum of $2 f. o. b. shipping point:

Per bushel—	
No. 1 hard	$2.20
No. 2	2.17
No. 3	2.13
No. 1 soft	2.18
No. 2	2.15
No. 3	2.11
Club or Sonora, No. 1	2.16
do, No. 2	2.13
do, No. 3	2.09
Recleaned for seed, per ctl.—	
California Bluestem	$4.15@4.25
Early Baart	4.15@4.25

BARLEY.

The barley market is showing increased life every week, and even the local exchange has been stirred by the shipments being made abroad. Speculation has been resumed and May option has sold from $2.15 to $2.22½. While the shipping of barley has relieved the market some, dealers say that a comparatively small amount of last year's crop now on hand is of the shipping variety and that when this is exhausted a large quantity of lower grade barley may be left on the producers' hands.

Choice feed, per ctl	$2.05@2.10

OATS.

The season for seed oats is over and prices quoted on this description are nominal. Red feed is quiet, with very little demand, and quoted prices would undoubtedly be shaded if a considerable quantity were offered.

Red feed, per ctl	$2.05@2.17½
Red for seed	2.50@2.70
Black for seed	Nominal
Recleaned Red or Black for seed	$3.00@3.10

CORN.

Corn continues quiet and weak. About the only demand comes for corn for poultry, and the prospects of this increasing at this season do not seem encouraging.

California	$2.25@2.35
Egyptian, choice	2.60@2.80
Milo	$2.40@2.60

HAY.

Receipts of hay this week were 1055 tons, compared with 1365 last week. The reduction in receipts was caused by the rains, which have been quite general all over the State. Reports of growing crops are favorable, although there is some complaint of too much water in low lying lands. There has been little local demand during the past week, and notwithstanding the short receipts the prices throughout the list sagged. Export this week has been very light, probably through lack of carrying facilities.

No. 1 wheat, per ton	$19.00@21.00
No. 2 wheat, per ton	15.00@18.00
Choice tame oat, per ton	20.00@22.50
Wild oat, per ton	15.00@17.00
Barley hay, per ton	15.00@17.00
Alfalfa, per ton	15.00@18.00
Stock hay, per ton	13.00@16.00
Barley straw, per bale	.50@ .80

FEEDSTUFFS.

The market is quiet and weaker this week. Rolled barley sold at $46 to $48, rolled oats $48 to $50, cracked corn $58 to $60, and cocoanut meal $43 to $45. Alfalfa meal was unchanged at $32 to $34.

POTATOES, ONIONS, ETC.

Potatoes are showing more strength and selling somewhat higher. While onions are lower owing to the let-up in Eastern shipments, the price is much higher than a short time ago and the market is stronger. On the street it is believed that both vegetables are in a strong position and that they will not sell at much lower prices than the present. Sweet potatoes made a decided advance to above $4 for the best this week. Garlic fell away from the highest prices of last week, but is still strong and some dealers are holding selected stock as high as 75c. By the first of April the market will probably be flooded with green vegetables and lower prices are anticipated.

String beans	10@14c
Peas	11@13c
Lima beans	None
Carrots, per sack	$1.75@2.00
Asparagus	15@20c
Rhubarb, San Jose, per box	$2.25@2.75
do, Strawberry, per lb	10c
Cucumbers, hothouse, box of 30	3.00@3.50
English, per dozen	$2.50@2.75
Eggplant, per lb	None
Lettuce, per crate	$3.00@3.25
Celery, crate	Nominal
Spinach, crate	$1.00@1.50
Tomatoes, Southern, per crate	None
do, Mexican	$2.00@2.50
Sprouts, per lb	6@8c
Potatoes—	
Rivers	$1.85@2.15
Oregon	1.75@2.15
Washington	1.90@2.10
Idaho	1.90@2.15
Sweets, per sack	4.00@4.25
Onions, Warehouse Stock—	
Yellows	None
Australian Browns	$3.50@3.65
Green River	$1.25
Green Alameda	$1.75@2.00
Garlic	40@50c

BEANS.

The announcement that three steamers have been procured to handle the bean and rice crop promises some relief to the bean holders. G. A. Turner, president of the California Bean Growers' Association, seems to be optimistic over the outlook. Garbanzos are scarce and the price was raised somewhat, while higher quotations on the southern limas are made because the southern growers of limas have just formed an association, which they hope will result in advancing the price of their product. One of the first results has been an increase of 25c in price.

Bayos, per ctl	$6.25@6.40
Blackeyes	3.25@3.40
Cranberry beans	5.75@5.90
Limas (south, recleaned)	6.75
Pinks	4.90@5.00
Mexican Reds	5.75@6.00
Tepary beans	2.50@2.75
Garbanzos	10.25@10.75
Large whites	5.40@5.60
Small whites	6.50@6.60

POULTRY.

Several cars of Eastern stock arriving this week lowered prices on some descriptions of poultry. Small broilers were especially weak, as the demand at present is for the larger stock, while the receipts have been mostly the lighter stock. Hens and Belgian hares both showed weakness during the week, although a little selected stock brought as high a price as received last week. The bulk of the sales, however, were at a lower figure.

Turkeys, live, young spring, lb	34@36c
do, old	30@34c
do, dressed	40@42c
Broilers, 1½ to 2 lbs	55@60c
do, 1¼ lbs	54@58c
do, ¾ to 1¼ lbs	48@50c
Fryers	45@50c
Hens, extra, per lb., colored	36@38c
do, Leghorn	38c
Smooth young roosters, per lb. (3 lbs. and over)	42c
Old roosters, colored, per lb	23@24c
Geese, young, per lb	38@40c
do, old, per lb	38c
Squabs, per lb	65c
Ducks	38@40c
do, old	38c
Belgian hares	17@20c
Jack rabbits	$3.00@3.50

BUTTER.

Prices on butter this week continued to show the upward trend. The local market reflected the strength of the Eastern markets, all of which were stronger under the influence of short receipts and heavy export demand. Considerable butter has been shipped from California to the Eastern markets during the week. With butter in New York at about 68c, figuring a net of about 6c for shipment charges, there has been a handsome margin of profit in sight if the Eastern market does not break before the California stock arrives. This shipment of butter is said to have proceeded from the points of manufacture as well as from San Francisco, and it appears that some of the California creameries are reaching out for the highest market instead of shipping to this point for quicker returns. The consumption demand continues good, considering the price. This is true in the East as well as here.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extra	52½	52½	53	53½	57	58
Prime first			Nominal			
Firsts			Nominal			

EGGS.

Eggs are being shipped out of the State, both locally and from the points of production. Most of these shipments are going to the North, although some have been made East. Few eggs are going into storage at this point, and at present prices it hardly seems safe to store eggs. However, if the demand at present prices keeps up there is going to be a serious shortage of eggs next winter. Both extras and pullets were strong at the close. Quotations are exchange prices less commissions:

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	36½	37	37½	39	39½	39½
Extra 1sts	Nom.	—	—	—	—	—
Firsts			Nominal			
Extra pullets	34½	35	36	37½	38	37½

CHEESE.

Cheese was lower earlier in the week, but moved up to last week's price at the close in the case of California fancy flats and Oregon triplets. Oregon Y. A. fancy showed an advance of 2c at the close. The advance in cheese prices is said to be wholly sympathetic with the advance in butter prices, as the cheese makers have to pay more for cream in competition with the butter makers.

Following are exchange quotations less the usual commission, except in the case of Monterey, which is street quotations:

Fancy California flats, per lb	28½c
Firsts	Nominal
Oregon triplets, fancy	34½c
Oregon Y. A. fancy	39c
Monterey cheese	22½@25c

FRESH FRUITS.

The fresh fruit market was livened somewhat by the arrival of strawberries on several days. These sold at $3.25 to $3.50 per crate. While strawberries will doubtless continue to come in, the berry market can hardly be said to have opened yet.

California apples	$2.50@3.75
Northwest apples	3.00@4.00
Winter pears	2.00@3.50
Persimmons	None

CITRUS FRUIT.

Oranges and grapefruit are showing an upward tendency. Oranges sold 25c higher, while grapefruit was marked up 50c. There was no change in the prices of lemons.

Oranges, navels	$3.50@5.00
Mandarins	3.00@3.50
Tangerines	3.00@3.50
Lemons, fancy	4.00@4.50
do, choice	3.50@4.00
do, standard	3.00@3.50
Lemonettes	2.00@3.00
Grapefruit	2.50@3.50

HONEY.

The honey market continues unchanged, with the local dealers predicting lower prices.

DRIED FRUITS.

There were no developments in dried fruits this week. Buyers are said to be out making contracts where they can at prices in advance of last year's quotations, but the growers in large numbers do not seem inclined to sign up for so far in advance of delivery.

LOS ANGELES

Los Angeles, March 18, 1919.

BUTTER.

Receipts keep up well and the demand is good. A slight decline in prices is reported since a week ago, owing to an increase in production.

We quote:

California extra creamery	58c
do, prime first	54c
do, first	53c

EGGS.

A steady market with a good demand. Consumption holding up well during the past week. Monday there was a sharp advance in prices caused by heavy buying in outside sections. All offerings were taken.

We quote:

Fresh ranch, extras	42c
do, case count	40c
do, pullets	38c

POULTRY.

Steady market with good demand. The past week local receipts were light. A number of cars were brought in from the East, making up the shortage.

Broilers, 1 to 1¼ lbs	42c
Broilers, 1½ to 1¾ lbs	50c
Fryers, 2 to 3 lbs	42c
Roasters (soft bone), 3 lbs. and up	34c
Stags and old roosters, per lb	18c
Hens	32@33c
Turkeys	36@39c
Ducks	34@35c
Geese	28c

VEGETABLES.

The tone of this market during the past week held more firm, with fair offerings. Potatoes advanced. Peas showed slight decline. Cabbage advanced sharply. Sweet potatoes showed steady improvement with fair demand. Cauliflower unchanged and sales fair. Celery and onions steady.

We quote from growers:

Peas, per lb	5@10c
Potatoes—	
Northern Burbank, per cwt	$2.25@2.50
Idaho Russets, per cwt	1.80@1.85
Sweet potatoes, per cwt	2.50@3.25
Garlic, per lb	50c
Onions—	
Australian Brown, per cwt	$3.75@4.00
White Globe, per cwt	8.00
Cabbage, per 100 lbs	1.50@1.75
Celery, local, per crate	4.00@7.00
Celery, northern, per crate	8.00@9.00
Cauliflower, standard crate	1.50@1.75
Hubbard squash, per cwt	.2 00
Banana squash, per cwt	1.50
Pumpkins, per cwt	.75
Rhubarb, per 30-lb. box	2.25

FRUITS.

There is a slight increase in prices in the deciduous fruit market from a week ago. Supply is fairly good, but is being steadily reduced. Tone of the market is firm and demand good for all choice stock.

We quote from growers:

Apples—	
King Davids, Northwest pack	$3.00@3.25
Black Twigs, Northwest pack	3.00@3.25
Baldwins, Northwest pack	3.00
White Pearmains, 4-tier	2.25@2.50
Yellow Newtown Pippins, 4-tier	3.00@3.25
Bellefleur, 4-tier	2.15@2.35
Bellefleur, 4½-tier	2.00@2.25
do, 3½-tier	2.00@2.25
Winesap, loose, per lb	6½@7c
Roman beauties, Northwestern, per peck	3.00@3.25

HAY.

Receipts were good the past week, but buyers very backward. Only a fair demand for choice alfalfa.

We quote f. o. b. Los Angeles:

Barley hay, per ton	$21.00@24.00
Oat hay, per ton	25.00@28.00
Alfalfa, northern, per ton	20.00@21.00
Alfalfa, local, per ton	21.00@23.00
Straw, per ton	9.00@10.00

BEANS.

There was a little more activity in this market again the past week. Also a decline noticed. The feeling is that prices have reached bottom. Quite a number of orders were filed during the past week at quotations, both Eastern and local.

We quote from growers:

Limas, per cwt	$6.00
Large white, per cwt	5.50
Small white	5.50
Pink, per cwt	5.00
Blackeyes, per cwt	3.00
Tepary, per cwt	3.00

Special Livestock Market Report

San Francisco, March 19, 1919.

CATTLE—Beef cattle are coming in slowly, but in sufficient numbers to meet the demand of killers. Most of the choice steers are drawn from the feed lots in Nevada. Some good bunches of cattle are expected from the northern part of the State early in April. Good fat stuff is in demand.

Steers—
No. 1, weighing 1000@1200 lbs...12¾@13c
do, weighing 1200@1400 lbs...13@13¼c
do, second quality .....11½@12c
do, thin .....9@10c

Cows and heifers—
No. 1 .....9@10c
do, second quality .....8@9c
do, common to thin .....6@7c

Bulls and stags—
Good .....6½@7½c
Fair .....5½@6½c
Thin .....4½@5½c

Calves—
Lightweight .....11½@12c
Medium .....10½@11c
Heavy .....8@10c

SHEEP—The sheep market is unchanged, light supply about squaring with light consumption. Indications point to a larger supply in the near future. Shippers are asking $9 to $10 for milk ewes, which some dealers say is too high for profitable handling.

Lambs .....15@15½c
Yearlings .....12½@13c
Wethers .....12@12½c
Ewes .....9@10c

HOGS—Hogs are coming in pretty freely and in somewhat better condition. The market is strong in sympathy with the Eastern situation and the acute European demand for pork products. Higher price may be expected.

Barrows—
Hard, grain-fed, 100 to 150.....17c
do, 150 to 250.....17½c
do, 250 to 300.....17c
do, 300 to 400.....16½c

Los Angeles, March 18, 1919.

CATTLE—The market here remains the same as a week ago. A few steers are being offered, but the market for them is weak. Cows are scarce, steady and in demand.

Per cwt, f. o. b. Los Angeles:
Fed steers, 1000@1100 lbs.....$11.00@13.00
Fine cows and heifers..... 9.50@10.50
Good cows and heifers..... 8.00@9.00
Canners ..... 6.00@ 6.50

HOGS—This market shows an advance in prices since a week ago. Offerings, however, are light.

Per cwt., f. o. b. Los Angeles:
Heavy, avr'ging 275@350 lbs...$14.50@16.00
Mixed, avr'ging 225@275 lbs.. 15.50@16.50
Light ..... 16.50@17.00
Rough docked 20 lbs., piggy sows 40 per cent.

SHEEP—The quotations in this market are unchanged. Fat wethers and lambs both in good demand. Prices hold firm.

Per cwt. f. o. b. Los Angeles:
Prime wethers .....$9.50@10.50
Prime ewes ..... 8.50@9.50
Yearlings .....10.00@11.00
Lambs .....14.00@15.00

Portland, March 18, 1919.

CATTLE—Steady to lower; receipts, 105. Steers, best, $13@14; good to choice, $11.50@12.50; medium to good, $10@11; fair to good, $9@10; common to fair, $8@9; cows and heifers, choice, $10.50@12; good to choice, $9@10; medium to good, $7@8; fair to medium, $5@6; canners, $3.50@4.50; bulls, $6@8.50; calves, $9.50@13.50; stockers and feeders, $7@10.

HOGS—Higher; receipts, 65. Prime mixed, $18.10@18.35; medium mixed, $17.75@18; rough heavies, $16@17; pigs, $15@16; bulk of sales, $18.25.

SHEEP—Steady; no receipts. Prime lambs, $15.50@16.50; fair to medium, $13.50@14.50; yearlings, $11@12; wethers, $9@10; ewes, $6.50@10.50.

EASTERN.

Chicago, March 17, 1919.

HOGS—Receipts, 42,000; market firm, fully steady with Saturday's average, but more active than early, and averaging mostly steady with Saturday's general trade. Bulk of sales, $19.10@19.35; heavy weight, $19.30@19.55; medium weight, $19.15@19.35; light weight, $18.60@19.20; light light, $17.25@18.50; sows, $17.25@18.75; pigs, $16.50@17.50.

CATTLE—Receipts, 18,000; good and choice beef steers and butcher stock, 15c to 25c higher; others and feeders steady; calves, 50c lower. Heavy beef steers, $12@20.35; light beef steers, $10@18.75; butcher cows and heifers, $7.40@15.50; canners and cutters, $6@9.75; veal calves, $12@17.50; stocker and feeder steers, $8.25@15.

SHEEP—Receipts, 18,000; market very uneven; good choice fat classes mostly 15c to 25c higher; estimated tomorrow, 11,000. Lambs, 84 pounds or less, $18.75@20.40; 85 pounds or better, $18.25@20.40; culls and common, $6@11.25.

WEEKLY BUTTER AVERAGES.

Cents per pound for Extras.

Week ending	San Francisco 1918	San Francisco 1919	Los Angeles 1918	Los Angeles 1919
Jan. 2	50.40	66.10	50.16	63.16
" 9	51.08	61.50	50.00	64.00
" 16	52.33	61.70	50.50	64.16
" 23	52.50	55.83	52.00	62.16
" 30	53.60	44.91	51.83	49.00
Feb. 6	50.80	43.58	49.66	47.33
" 13	52.00	46.80	48.00	47.60
" 20	51.41	51.58	48.00	53.16
" 27	51.30	53.90	49.33	55.00
March 6	50.66	56.16	50.00	59.00
" 13	51.16	55.58	49.50	58.00
" 20	47.83	54.41	47.00	56.00
" 27	46.36	....	43.30	....
April 3	43.16	....	42.16	....
" 10	39.25	....	39.50	....
" 17	39.00	....	36.83	....
" 24	40.50	....	38.16	....
May 1	40.83	....	39.00	....
" 8	40.66	....	39.00	....
" 15	40.46	....	39.00	....
" 22	44.33	....	41.00	....
" 29	42.30	....	39.00	....
June 5	42.50	....	41.58	....
" 12	44.32	....	40.58	....
" 19	46.66	....	41.75	....
" 26	47.32	....	43.00	....
July 3	48.08	....	46.00	....
" 10	48.90	....	47.50	....
" 17	50.83	....	48.66	....
" 24	52.66	....	45.16	....
" 31	52.16	....	51.00	....
August 7	52.16	....	50.83	....
" 14	51.66	....	49.00	....
" 21	52.25	....	49.58	....
" 28	52.50	....	50.00	....
Sept. 4	53.00	....	50.50	....
" 11	54.00	....	50.33	....
" 18	52.80	....	51.67	....
" 25	61.33	....	56.17	....
October 2	64.75	....	58.00	....
" 9	64.50	....	59.33	....
" 16	62.50	....	60.00	....
" 23	61.75	....	60.00	....
" 30	59.50	....	59.50	....
Nov. 6	59.00	....	58.83	....
" 13	60.00	....	57.00	....
" 20	61.00	....	57.25	....
" 27	61.50	....	58.75	....
Dec. 4	62.50	....	60.00	....
" 11	63.00	....	60.16	....
" 18	63.50	....	61.01	....
" 26	64.66	....	62.16	....

WEEKLY EGG AVERAGES.

Cents per dozen for Extras.

Week Ending	San Francisco 1918	San Francisco 1919	Los Angeles 1918	Los Angeles 1919
Jan. 2	52.80	75.60	48.16	69.50
" 9	60.91	69.91	50.66	66.66
" 16	65.66	58.70	55.00	62.41
" 23	65.66	52.58	58.00	54.66
" 30	61.25	48.75	54.00	52.33
Feb. 6	58.50	42.00	51.66	43.00
" 13	44.40	40.90	44.83	37.80
" 20	44.75	36.41	40.83	39.33
" 27	42.40	37.40	39.58	33.60
March 6	38.93	37.58	35.00	37.00
" 13	37.91	37.16	38.00	37.00
" 20	40.66	38.16	39.63	42.00
" 27	39.56	....	40.00	....
April 3	38.91	....	38.33	....
" 10	37.58	....	36.33	....
" 17	39.16	....	36.83	....
" 24	40.50	....	39.66	....
May 1	41.66	....	39.33	....
" 8	40.08	....	37.00	....
" 15	39.16	....	38.83	....
" 22	40.50	....	39.00	....
" 29	38.66	....	37.41	....
June 5	40.80	....	38.83	....
" 12	41.00	....	33.75	....
" 19	43.33	....	33.00	....
" 26	44.32	....	39.08	....
July 3	44.91	....	41.75	....
" 10	48.30	....	45.00	....
" 17	47.66	....	45.50	....
" 24	47.91	....	45.16	....
" 31	48.83	....	46.56	....
August 7	49.50	....	46.58	....
" 14	52.08	....	48.00	....
" 21	56.33	....	50.17	....
" 28	59.20	....	53.00	....
Sept. 4	62.40	....	56.33	....
" 11	63.70	....	58.67	....
" 18	61.30	....	59.00	....
" 25	60.17	....	58.67	....
October 2	65.42	....	59.75	....
" 9	65.08	....	60.00	....
" 16	71.30	....	62.66	....
" 23	78.88	....	70.33	....
" 30	86.41	....	79.33	....
Nov. 6	87.00	....	78.00	....
" 13	86.00	....	78.00	....
" 20	77.25	....	72.00	....
" 27	79.80	....	72.33	....
Dec. 4	82.00	....	73.83	....
" 11	82.08	....	74.33	....
" 18	79.65	....	72.33	....
" 26	82.00	....	71.66	....

Livestock Prices vs. Cost of Production

To the Editor: Your livestock editor got the best of me in your last issue, in which he proved the fallacy of my claim that the prices of what we sell have not gone up in proportion to what we have to buy. But still I claim that the farmer has not been given a square deal because even though he has received more for his products, his net profit has not been increased. What has your livestock editor to say about this?—A Subscriber.

This time we agree with you fully, brother. As you are a live-stock farmer your chief expenditures are not the amounts spent for food, clothing, etc., but those paid for feed and labor. Even if you raise all your own feed and have a large enough family so that it is not necessary to hire outside help, it is no more than right that in figuring your profits you should charge up the market value of the feed consumed and the labor contributed. And when you do this you will find your profits dwindling into insignificance, for it is true that the selling prices of livestock and live-stock products have not increased in proportion to the cost of production. Either you should receive more for your products, or the cost of feed and labor should be reduced. Anyway, you are entitled to a better profit; in fact, you must get it or you can't be expected to keep up the good work. And you can depend upon us to do everything in our power to stabilize every branch of the livestock industry, so that you will be assured of a satisfactory profit.—Livestock Editor.

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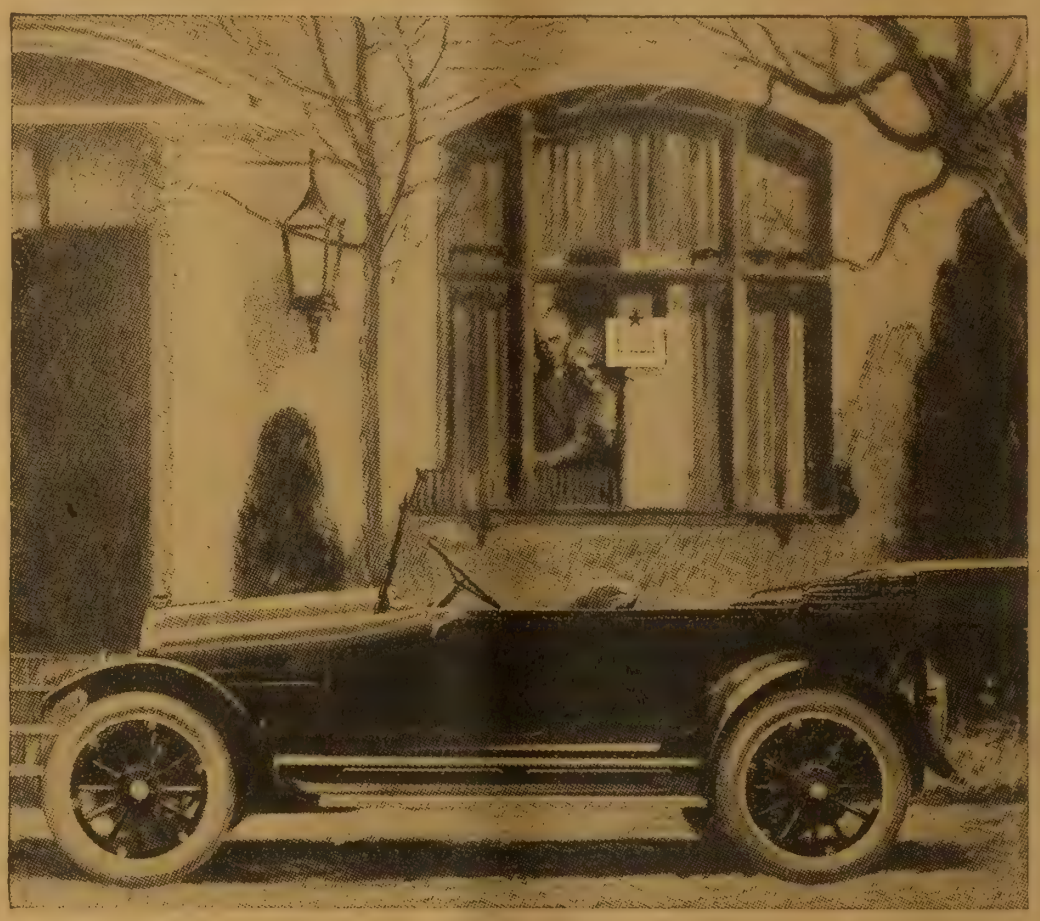
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Vol. XCVII—No. 13 Forty-ninth Year

THE PACIFIC RURAL PRESS

SAN FRANCISCO MARCH 29, 1919 LOS ANGELES

California a Beef Cattle Paradise

Written for Pacific Rural Press by R. H. Whitten

"CALIFORNIA will become a beef cattle paradise during the next decade, because of its luxuriant forage and long season of open grazing," said O. V. Battles, the prominent Aberdeen-Angus breeder of Yakima, Wash., at the last International Livestock Show. A pretty strong statement to come from a breeder who is located in another State, yet one who is familiar with conditions here can hardly form a different opinion.

There is a story about a father who was proudly showing new-born twins to a friend. "Well, the good Lord certainly smiled upon you, didn't he?" said the visitor, endeavoring to make an appropriate remark. "I should say he did," replied the father. "Why, he laughed out loud."

Similarly, Mother Nature has more than smiled upon the beef cattle men of this State; she has laughed out loud. She has furnished an area of approximately 100,000,000 acres, 70,000,000 acres of which is range land. She has provided rich range feed. She has endowed us with a climate in which the cattle can remain out of doors all the year, and can graze the greater part of the year.

In fact, the old lady has been too good to us. She has done so much for us that we have gotten into the habit of depending upon her to grow and fatten our cattle for us, and when once in awhile she flits with her rain clouds to some other section and gives us the "go by" we are right up against it. We have nothing to feed our stock during dry years, when pastures are short, and we either sell half-finished stuff at a loss or buy high-priced feeds which take all the profit.

That was the experience of cattlemen in this State last year, but as hard as the drought was on them it proved a blessing in disguise. It set them to thinking and it taught them many valuable lessons. It proved to them that beef cattle can profitably be raised on high-priced irrigated lands, at least in connection with ranges; it opened their eyes to the advantage of having silos and raising silage crops; it convinced them that it is cheaper to breed for weight than to feed for it.

Ordinarily it is estimated that from 10 to 25 acres of range are needed per head, and the ranges are stocked accordingly. Consequently, during dry years, there is not enough feed and the animals suffer. From 20 to 40 acres of irrigated crop land should be provided for every 1000 acres of range land—that is for every 50 to 70 head of cattle carried. This will put the business on a sound basis and remove the element of risk.



In California stock can graze almost every month in the year. Photograph taken in February, when most cattle raising states are snow-bound.

Silage Lowers Feeding Costs.

Silage crops should be grown, for the silo has been proved the cattleman's best partner, and silage the cheapest feed that can be raised. At the Iowa experiment station two lots of steers were fed—one having a ration which included both alfalfa and corn silage, the other with the silage omitted. Reducing the results to an acre basis, it was found that 670 pounds of beef were produced per acre with the alfalfa-silage ration, and only 438 pounds with the alfalfa ration—a difference of 232 pounds in favor of including silage. The net gain per acre was $39.44.

Furthermore, when alfalfa and silage are fed it is not necessary to include grain. At the Nebraska station steers fed alfalfa and silage made gains costing $4.10 per 100 pounds, but the cost was increased to $5.44 when three pounds of grain per day were added. This was when feeds were lower in price, but the proportionate costs would be the same today.

We have just heard of a case where steers made an average gain of 2.43 pounds per day on a ration of alfalfa hay, corn silage, barley straw and cottonseed meal. This is a gain that is seldom exceeded by steers on a grain ration, and of course the gains were made at a minimum cost. This use of cottonseed meal with straws and other roughage means a tremendous saving in the cost of production.

We might go a step further and show that beef cattle, particularly baby beeves, can be raised with profit on high-priced cultivated lands without range, but perhaps the time is hardly ripe. However, it must be taken into consideration that on account of the cutting up of the big ranges the grazing area is becoming smaller, and if we could not feed the 1,701,000 beef cattle in the State last year, more intensive methods must be employed if we are to raise enough cattle to feed our own people and meet the foreign demand which will come to our doors.

As stated by D. J. Stollery, secretary of the California Cattlemen's Association, "Nature liberally endows our native grasses with the sustaining and enriching elements which make for beef and mutton, and while it is more or less impracticable at present to make our rolling hills yield the bountiful crops which the valleys do we can at least take steps to handle them in a more business-like way. Frequently we pasture our ranges year in and year out, with no thought of rotation, and consequently little possibility of replenishment—the grasses growing up consistently from root, but little from seed."

Alternate grazing as a relief for continuous grazing has long been recommended by experts, but little practiced by cattlemen. It involves a division of pastures so that each portion of the field may be given alternate periods of rest during the grazing season, as grass makes a maximum yield if allowed definite periods of uninterrupted growth. However, while such a method is practicable in some sections it is not in others, on account of the extra expense and labor.

Limited gradual cultivation of ranges has proved of great benefit wherever practiced. This will be more generally done, as will the practice of raising irrigated crops to supplement the range feed and provide insurance against drought years.

Steers Marketed from Grass.

In preparing for this issue we sent out several hundred questionnaires to cattlemen to get information regarding feeding and other methods, and we were surprised at the number who stated that they did not feed any other harvested crops than hay. "They rustle for themselves," "hay and grass," "volunteer hay and pasture," was the way 74 per cent of the replied read. Aside from the purebred men, very few stated that they fed silage or grain. Nearly all wrote that they turned their market stock right off the range. However, it was encouraging to notice that a large number said they were planning on erecting silos and raising silage crops; also root crops and barley.

Better Market Seems Certain.

Probably one reason why grain and other crops have not been raised more extensively for beef cattle is that no premium has been paid for grain-finished beef over grass stuff—there has not been a heavy enough demand for heavy beef and the higher priced cuts. But conditions are bound to change. We shall soon have adequate shipping facilities by water, and with them an opportunity to supply other markets which require prime beef. Consequently, we should raise more crops, not only to tide us over in dry years but to produce the kind of beef that an increased trade will demand. In Argentina intensive methods have enabled them to support and fatten one animal on every 2½ acres where 5 acres were formerly required, and if we are to successfully compete with them we must improve our methods along similar lines.

There is no danger of the cattle business being overdone here for years to come—if ever. Right now we have 12 cattle and 15 people per square mile, while Iowa has 79 cattle and 40 people per square mile. In order to equal Iowa's proportion we would have to more than double the number in the State at present. But we are not even holding our own. On January 1, 1918, we had 1,701,000 head, and on January 1, 1919, the number had shrunk to 1,650,000. Of course, conditions were unusual last year, and on account of the drought many cattle were shipped out-

(Concluded on Page 512)

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EDITORIALS

OUR AGRICULTURE AND THE WORLD'S.

IS THERE any difference? Is there really such a thing as American agriculture, as distinguished from that of the rest of the world in spirit, in point of view, in political and social standing, in independence and individualism of actual producers themselves and in their relation to the development of the character and the attainment of the destiny of American citizenship? These are questions which that large fraction of the population of the United States which comes into direct touch with the land should carefully consider—right now, while there is in session a world tribunal which has declared its intention to take the first steps toward ultimately merging into one nation all the peoples of the earth. It has been widely conceded that American agriculture has a characteristic dash and daring in initiative and in achievement; a notable and original speed and thoroughness in the application of scientific research and mechanical invention to the improvement of method and the increase of efficiency in production. All the nations flatter us either by sending expert observers to see what we are doing and how we are doing it or by engaging our technical teachers to go to their countries to give theoretical instruction and to make practical demonstration of American ways. Can they secure by such processes of imitation all that there is in American agriculture which distinguishes it from the agriculture of older nations, or are our admiring friends only eagerly gathering the out-blossoming of our American agriculture, forgetful of the fact that blossoms only bring fruit when the roots sustain them? Possibly, of course, there may be development of fruit when one goes a little deeper into the needs of transfer and grafts potentiality upon a push which is capable of sustaining it and in that way an American example may be well worth the seeking and may be helpful and stimulative of improved industry everywhere. But it seems reasonable to believe that American ways in farming work and in farming life can only reach full fruition and proceed in their usual course of change and improvement when they are sustained and impelled by the spirit which conceives and forces them forward continually to keep pace with the progress of the sciences upon which they rest and of the mechanical agencies which they employ. And this spirit, impulsive and propulsive in the development of American ways which the other nations concede and seek for, is agriculture's share of the all-pervading national spirit which has made our country great. To the possession of this spirit American children are born of parents who themselves possessed it either by birth or by loyal adoption and devotion.

AMERICAN AGRICULTURE MORE THAN METHODS.

AMERICAN agriculture is therefore not only of methods, but of the spirit and life of men and women. We need not try to analyze or to illustrate this claim: every reader who feels the spirit and lives the life can do it for himself. When he feels the impulse to conceive of an objective of his own in farming life toward which he will educate himself to know and do the best he can; toward which he will strive to accumulate money and materials, inspired by the consciousness that he is not an underling but the "architect of his own fortune," with the right to build as he can without encroachment upon the same right in others, he may be assured that he possesses the spirit and purpose which have made American farming great, as they have also made great everything else which is American. This spirit of fairness and this purpose of opportunity to every man to do the best he can for himself without oppressing or overlording others, have shaped our institutions and our laws, have erected our educational system, have actuated our distinctive literature, have uplifted our high standard of living—have in all these and other ways endowed this country with a citizenship and with acquired resources upon which the world in its extremity called not in vain. And of course the basic force in this achievement was American agriculture—the industry which made all others possible, not merely by enabling all people in other activities to eat and live but by yielding surplus wealth for public expenditures, by producing materials for world trade, by consuming the products of all manufacturers or by enabling those in all other professions and vocations to partake in their consumption. But in this fundamental service to American greatness and its qualification for the world service which Americans have rendered it does not become American farmers to be proud and, to their credit be it said, they are not proud. They are prevalently a devout people and they thank God fervently for His two great gifts: first the great breadth and natural resources of the country He gave them to develop; second, the conception of manhood which He revealed to the founders of the republic, viz.: individual independence, equality of privilege and opportunity, the right of each to possess and to utilize the property which he created by his labor or honesty acquired by exchange of the fruits of labor. These are the things which have made American farming the greatest of the world. They have been and are the incentive and stimulus to the improvements of methods and agencies which are essential and yet only incidental. Imitation of American methods and agencies, therefore, does not constitute possession of American agriculture because it does not involve or include the possession of the principles which underlie its creation and development.

A DUTY TO CONSERVE AMERICANISM.

AS THERE have been embodied in American agriculture for nearly a hundred and fifty years these fundamental principles of individual point of view, manhood right and opportunity and personal reward and punishment for industrial success or failure, it is rational to hold that they must be conserved if American agriculture is to continue to be the light of the agricultural world, as the peoples of other lands seem now disposed to concede it to be. Of course, we are not claiming that American agriculture is more fit to be conserved than are other things which are American: but these other things are apart from the narrow line we are pursuing. American agriculture must then be conserved in the purity of the principles upon which it has been developed, both for the sake of its own farther advancement and for the sake of its value in the reconstruction of the world which has suffered too long from the submergence of the rights and opportunities of the individual man beneath the burden of discrimination, special privilege, economic oppression and military service imposed by ambitions of overlords and their parasitic retainers. It looks now as though they had been set free and their reconstruction must follow, but we are not claiming that they can be placed at once upon a social order which we have been a century and a half in developing for ourselves. Discussion of that point belongs to the sociologists and professional statesmen. They may very likely find demonstrations and examples in American development—unless they are of the ultra-philosophic kind of people who insist upon drawing Utopian dreams from beneath uncut and matted tresses. We are quite of the opinion, however, that the safest and sanest thing in the world today, and a thing upon which the most reasonable progressive ideas can be formed, is the experience of the American peop We believe also that to serve the world as example of development on the basis of concre facts, American experience must be guarded fr intrusion of foreign theories of social and indu trial order, which either have no basis in concre experience or are projected upon the basis of d order. The American social order has shown itse during the last decade especially, to be progr sive, expansive, humanistic and, above all p haps, capable of increasing devotion to the righ of the individual man—wholly apart from a acquisition of privilege or property. And yet th are full of the purpose which burned in the so of our forefathers—to promote the American ci zen in the architecture of his own fortune. Whi then, we have in this country such an endowme of spirit and purpose and while we have a soci order which not only admits but welcomes broad development of both in our national attitude a behavior, it is our national duty to conserve the and to protect them against the destructive po ers of misrule and disorder which are abroad the world.

OUR PLACE IN THE WORLD.

THERE seems to be growing apprehension le by over-devotion to helping other nations may lose the national points of view and po icies which have made our country great—lest helping we may lose our power to help—lest gaining the whole world we may lose our nation soul. This question is now in a maze of politic personalities and selfish purposes, not only in th country but in the world at large. We grant th glory of the conception of the world at-one-me and of perpetual peace upon that everlasting pri ciple. What there is for and against it in cu rent discussion and transaction concerns us no all journals of broader scope are full of suc things. Let it be granted that a League of Natio will be created, will our greatest service to th world be changed thereby? Our judgment is tha our greatest service will continue to be that whic it has been in the recent past—the maintenanc of American ideals of the individuality of the cit zen and the independence of the nation. We b lieve that these things must be secured by pro tecting the purity and patriotism of our citizen ship, the profitability of our industries and th advancement of the American standards of living thinking and working in every part of our nationa domain. We must admit to this country onl those who can help us to the fuller realization o these ideals: we must protect our producers, both proprietary and laboring, against competition wit products from lower requirements of manhood an conditions of living. We must enter into no com pact with other nations which brings upon us an obligation to lower our standards of lofty, progres sive and self-determinative Americanism. If w are to remain an example to the world we mus protect ourselves from the evil which is in th world!

THE BASIS OF A LEAGUE.

HAVING thus outlined ways in which Ameri can agriculture can help in the installatio of a sovereignty of peace in the world with out losing its own, it remains only to make a concrete suggestion of a basis upon which effor and organization can immediately begin. Al though the records of the intrusion of materialistic symbolry during a great flight of idealism are con tradictory, because the "golden calf" was ground to powder as an abomination while the "fatted calf" was pedestaled as an acme of parental affec tion and forgiveness, we still have a suspicion that if one could lead a stall-fed steer, in the pink of its perfection in ancestry and condition, down the highway of the nations, there would be a scramble of the loftiest idealists to catch a satisfying sight of it. Because the hunger of the nations at the moment is not for more idealism but for more and better beef. For this reason, and because the allaying of the yearning of the flesh is antecedent to the exaltation of the spirit, we are giving this issue largely to the problem of beef as preliminary to the struggle for enduring international harmony and essential to its successful issue. And as we think over the factors in the beef problem the more it seems not only preliminary to but actually representative of the factors in the proposed League of Nations, as the making of it is

eported to us in the current dispatches. For no ne regards it as a brotherhood of man—except erhaps those who talk equality of right and act eviltry of wrong such as the world has never een before. The League of Nations seems to be scheme to protect groups of men against each ther—with the greatest honors and the greatest esponsibilities apportioned to those groups which re greatest in the world. And it is in this way hat our perfectly finished steer becomes represen- ative of the league as it moves along. There are he Sir Loins for the title-loving British; Tender- oins for the plain Americans; Porterhouse for the rench; Rib-roasts for the Italians; Rounds for the apanese; Flanks for the Poles; Brisket for the lavs; Rumps and Neck for the neutrals; Shanks nd Shins for the German allies; Horns and Tail or the Russian and all other Bolsheviki. In this ay shall they all be fed according to their several hares in world saving and their efforts at world vrecking and a workable league be realized.

And so and in order that all the nations of the arth shall henceforth live together in peace per- etual, we are setting forth in this issue how nore and better cattle can be grown in California nd how more land, capital and individual enter- rise can be profitably employed in the greater levelopment of our favoring resources for beef roduction!

QUERIES AND REPLIES

By the Editor.

Inquirer Must Give Full Name and Address.

Dramatic Aspects of Black Scale.

To the Editor: I am sending olive cuttings, howing some trouble that has been increasing or several years. The man pruning recently omplained of his eyes and face smarting from the scale dust," and called my attention to little ushions on the limbs, which he claimed were nests" from which the insect had fled. We saw while examining the branches a very plump and very red Lady-bug which he said was "our friend" unting the "scale's" young for food. Will you indly tell us how to cure this trouble and pre- ent disaster to the orange trees near?—F. M. C., Ceres.

Your pruner is a wise man. The "cushions" are the nests from which young "black scale" have or will escape—according to the age of the nests. The nests are the hardened skins of the mother scale which she fills with eggs before going hence. She has not fled. You are looking at the mummy of her. The dust comes not from the scales direct but from the smut fungus which grows upon the exudations of the scales. Your man is also right about the lady bird, but it can neither eat as fast nor multiply its kind as fast as the scale can. Prune your olive trees thoroughly now and spray as soon as you can with distillate-caustic-soda emulsion or with crude oil emulsion—about half as much crude oil as is used for winter spraying of deciduous trees. The same scale will take to your citrus trees as you apprehend.

Plowing Almond Orchard.

To the Editor: This spring I plowed my al- mond orchard eight inches deep and am wonder- ing if my neighbor will have equal success holding moisture this summer by plowing four inches deep. Besides his grass and weeds are quite high and are not turned under as my eight inch plowing did it. No doubt my neighbor wishes to retain cover-crop while I believe in almond crop, or did I plow too deep and waste my distillate?—Subscriber, Arbuckle.

Actually of course you are saving moisture and he is losing it. Whether the trees need all you are saving and do not need what he is losing, they themselves will have to tell you next sum- mer and afterwards also, for if they do come through with as good a crop next summer they will have less to get through the fall and make good buds for the next crop. Watch the trees and see who laughs last.

Pushing Melons.

To the Editor: What is a proper fertilizer and way of applying to ground which is to be planted to watermelons, cantaloups, etc.? Also, what is a stimulant to make quick growth of melons? Would the gypsum which we use on our alfalfa answer the same purpose?—Planter, Gridley.

Gypsum is something of a pusher for other plants as well as legumes, perhaps because of the sulphur it contains. But to add nitrogen, which is the great plant pusher, you need some- thing else. Barnyard manure worked into the soil now to give it a chance to disintegrate be- fore the melons are planted, will supply nitrogen. If this is not available or if your soil is already quite rich and you only desire a stimulant, nitrate of soda is generally used. You can broadcast 200 pounds to the acre or apply that amount in the hills if you wish, but be very careful to mix it well with the soil, for bunching it too much will kill the plants.

Pollenizing Morello Cherries.

To the Editor: I have six large Morello cherry trees about 25 years old that do not bear well, although they are covered with bloom each year. There were more cherries than usual last year. I kept some branches of bloom from a neighbor's trees in fruit jars in the trees. What kind of cherries would be best to graft on and is it too late to graft this year? About how many grafts to the tree? They are large trees.—L. F. G., Paso Robles.

So few Morellos are grown in California that we have had no observation on their behavior under cross-pollination. Perhaps some reader will advise us. Your recourse to bringing in branches of bloom is practicable and is even advocated as a commercial practice by a cherry grower in the State of Washington. Possibly introducing a hive of bees would help your trees to bear. Watch the blossoms this year and see if there are plenty of bees on them; if not, they may settle your problem. The Black Tartarian takes well on the Morello; the Royal Ann does not. Cut back three or four of the branches to a foot or so above the forks and put scions in each, removing the others after the grafts start. It is not too late to graft, but you should be rather quick about it.

Listing or Planting Corn.

To the Editor: I want to put in about 50 acres of corn and would like to know which is the best way to plant it. Do you think listing is better than using a planter? I will not irrigate it.—F. F., Escondido.

The best way to plant corn is undoubtedly a careful planting on land well winter-plowed and harrowed or disked for weed killing until plant- ing time. Listing is a cheaper way which works well enough on light soils, so that about half the corn in the drier states in the corn belt is put in that way. It is, however, largely de- pendent on some summer rains for a crop. You will get more corn by better planting, followed by thorough cultivation, and the chances are that you will get more margin above the greater cost of doing it that way.

Cheap Poison for Bermuda.

To the Editor: Is there any chemical that will kill Bermuda grass along the ditch bank and the roadside? It makes no difference if the chemical kills the land, so long as it kills the Bermuda so that it will not spread into the vineyard.—H. L. B., Sanger.

Common salt will do it and you can use rock salt or stock salt—whatever you can get at the least price, in form convenient for scattering. Apply sparingly and repeat until the grass gives up. In this way you will incur the least danger of overloading moving water and killing some- thing you wish to live.

What Is "Spanish Onion"?

To the Editor: Who has the seed or sets of a genuine Spanish onion? I saw a man two years ago selling them in Redlands. They were the largest onions I ever saw and perfectly shaped. He said he had sent to Spain for seed. I cannot find such a variety listed by our seedsmen.—J. D. L., Visalia.

The term "Spanish onion" is applied to a group of large onions and it is not the particular name of any single variety. One of this group of Spanish onions is Ailsa Craig, which is known as the largest onion grown in the State. If you use that name the seedsmen can fill your order.

Lice on Rhubarb.

To the Editor: Kindly tell me the name of the insect on the leaf I enclose and what will destroy it, as it is killing rhubarb plants in my garden. I have tried sulphur but that doesn't kill them.—M. E. H., Napa.

It is a black aphis and can be killed by spray- ing the plant with soap suds, one-quarter pound soap to one gallon of water. You have to use a sprayer to hit all parts of the leaves where the insects are. Repeat the spray as often as the insects reappear.

Good Positions Still Open

Now that Uncle Sam's boys are returning from battle- front and camp, positions are harder to get and salaries are lower. But there is one line of work which offers just as good opportunities as ever, and that is in our circulation department.

We need a few more red-blooded men to present the paper to those who are not already subscribers, and to take care of our renewals. Lack of experience is no barrier, but an automobile is necessary.

Straight salary; permanent work with advancement. Tell us about yourself and ask for our proposition. It will interest you if you are a live wire.

Plowing During Blooming.

To the Editor: I am told that it is not good to plow the ground when the plums are blooming, as the fruit will not set well or will drop. I always had my ground plowed before, but this year it is too wet.—J. F. P., Lincoln.

There is a good deal of plowing done during the blossoming here and there year after year and speculation as to the effects is freely indulged in, but we are not aware that careful comparative tests have been made. We would much rather get the land in shape before blooming just as you have usually done, but we are quite sure that you can hitch up and go to plowing as soon as the soil works aright, without apprehension, be- cause you can be sure of two things: first, it is more important to plow when the soil is right than when the tree is right; second, if you plow too late or not at all, the trees will suffer all sum- mer and the fruit you do get will be poor and small.

Manuring Young Fig Trees.

To the Editor: Would you consider it injuri- ous to fig trees set out this year to fertilize with stable manure; if not, how much should be used to each tree?—T. H. R., Fresno.

If the soil is any good they surely do not need manuring. With good soil, enough moisture and good cultivation a young tree ought to strike out fast enough without manure. Such manure can hardly be called injurious, and if you have nothing better to do with it, spread a disk four feet in diameter and two or three inches thick around each tree, working it into the soil later.

Bark-Slitting for Sour Sap.

To the Editor: Is it any benefit to the apple, prune and cherry trees to split the bark in the spring? Will it prevent sour sap?—M. D., Se- bastopol.

Our judgment is that it is sometimes desirable to slit the bark of a "bark bound" tree just as it may be to split a man's collar when he has a fit, but to slit the bark to prevent sour sap is as injurious and unreasonable as it is to slit a cow's tail for "hollow horn," and a man who will do one will be likely to do the other.

Whitewash and Sunburn.

To the Editor: When is the proper time to whitewash peach trees that are sunburned?—W. J., Fowler.

The time to whitewash is before the trees are sunburned—usually as soon as planted, because the sun may get in its work before the foliage appears. Old trees should be kept whitewashed all the time unless well shaded by the top growth. Whitewash will not cure sunburn, though it may keep you from getting more of it.

California Weather Record

The following rainfall and temperature record is fur- nished the Pacific Rural Press by the United States De- partment of Agriculture Weather Bureau at San Francisco for the week ending at 5 p. m., March 25, 1919.

Stations	Rainfall Data: Past Week	Seasonal To Date	Normal To Date	Temperature Data: Max'm	Min'm
Red Bluff	.01	25.78	20.66	74	42
Eureka		33.56	37.95	56	38
Sacramento	.01	16.98	16.39	64	44
San Francisco	.11	25.11	19.02	67	45
San Jose	.12	18.69	14.17	66	42
Fresno	.06	6.54	7.99	68	38
San Luis Obispo	.50	17.76	17.38	66	38
Los Angeles	.50	8.18	13.48	64	44
San Diego	1.27	8.08	8.59	62	44
Winnemucca	.10	6.00	5.65	64	24
Reno	.38	8.15	8.55	64	30
Tonopah	.88	4.32	6.33	52	26

SNOW ON GROUND MARCH 24.

Huntington Lake, 69 inches; Cascada Dam, Squirrel Inn, 11 inches; Portola, 7 inches; McCloud, patches; Summit, 132 inches; Sierraville, 4 inches; Inskip, 72 inches; Yosemite, 2 inches.

By Their Grades Ye Shall Know Them

Written for Pacific Rural Press by R. H. Whitten

A BOARD fence divided two lots of yearling steers. They had been sired by bulls of the same breed and class; they had received similar feed and treatment, and equal opportunities for development and fleshing. Yet one lot averaged 965 pounds and the other only 850 pounds. And a buyer offered to pay $17 for the first lot but only $14 for the second.

Why this difference in weight and market value? Simply because the $14 lot carried one cross of Shorthorn blood on common cows picked up at the Kansas City stockyards; the $17 lot carried two crosses of this same blood. The average valuation on the first lot was $119; on the second lot $164—a difference of $45 per head.

This is not given as an argument in favor of Shorthorns, but as proof that good bulls furnish a simple and certain route to market-topping steers. It is one of several interesting experiments conducted at Sni-a-Bar Farm, near Kansas City, owned by the late W. R. Nelson, and shows that good breeding is just as necessary as good feeding in the making of beef. No amount of good feeding will result in prime beef which commands the high dollar unless there is good breeding as a foundation. Not only the increased weight is assured, but the increased quality, which commands the higher price per pound, has its origin in the use of the purebred sire.

Mr. Nelson believed that by five successive crosses of pure blood the effect of inferior ancestry would be largely lost. Three such crosses have already been made and the comparisons were interesting to visitors who attended a demonstration at the farm a few months ago.

The result of the first cross showed calves which were a great improvement over their mothers. They had wider and straighter backs, deeper ribs, better hindquarters, more high-priced meat and less cheap meat. The difference in market value of steers attributable to the one cross was placed at $25 per head.

The second cross by purebred bulls was represented by a pen of coming three-year-old heifers with calves at their sides. These heifers were almost as big as their mothers, although they had two years yet to grow. They were closer to the ground, had broader backs and more refined heads, and were decidedly superior to calves of the first cross. Their calves, representing the third cross, showed an even greater improvement and very closely resembled purebreds in type and breed characteristics. And consequently in money-making, market-topping qualities.

BREEDING-UP INCREASES QUALITY.

That good breeding makes possible not only early maturity and economical production, but also a higher quality of meat and a greater proportion of the most valuable cuts, is shown in the case of two steers—one a scrub and the other a Hereford grade. Both were three years old and they were raised and finished off with the same feed and care. The scrub weighed 800 pounds and dressed out 50.2 per cent. The Hereford grade weighed 1420 pounds and dressed out 61.8 per cent. The carcass of the latter yielded a higher proportion of valuable cuts, especially those of the loin and rib. The meat was more valuable per pound because it was thicker, more attractive in color, possessed a smaller proportion of bone to lean meat, was marbled with fat which increased its tenderness, and was protected by a thick layer of fat covering.

The forequarters of a steer contain the cheapest cuts. The scrub in this demonstration had 53.41 per cent of his weight in these parts; the Hereford only 50.22 per cent. The rib in the Hereford was worth 8 cents more per pound than that in the scrub, and it contained a larger proportion of the weight of the carcass. In the hindquarters, the loin of the Hereford was valued at 24 cents per pound, and consisted of 21.18 per cent of the carcass, worth $44.64. The scrub's loin was valued at only 11 cents per pound, or 45 per cent less than that of the Hereford. It consisted of only 17.31 per cent of the carcass, and was valued at only $7.81.

These steers sold at a time when prices were low. The Hereford brought $124.06; the scrub only $34.13. The difference was not due to the mere fact that the Hereford weighed considerably more than the scrub, but was chiefly because in every case the Hereford's carcass was proportionately heavier for the most desirable cuts, and the value of such cuts was proportionately higher than the cheaper cuts as compared with the scrub steer.

BREEDING INCREASES PRODUCTION.

Most of the beef cattle in California are raised on the ranges. The carrying capacity of the ranges has about reached its limit. We cannot increase the acreage, and consequently the number of cattle that can be carried on the ranges, but we can produce more beef per acre by making the steers bigger and heavier through the use of purebred bulls, and so can increase our profits in the same ratio.



A purebred sire like this at the head of a grade herd will make 3 pounds of tender steak grow where 2 pounds of tough muscle grew before.

We do not know the average weight of all range three-year-olds in this State, but in Wyoming it runs from 1040 to 1075 pounds. Last year one of the big cattlemen of that State who uses purebred bulls marketed his two-year-olds at 1040 pounds, or at approximately the same weight as the average of the three-year-olds from the same locality.

The other day two ranchers shipped their steers to the same market. Both used the same amount of Government forest range and paid the same grazing fee; also fed similar roughage during the winter. But one had used purebred bulls to produce his steers, while the other had not. Those of the former averaged 200 pounds more in weight, brought $2 per hundred more, and netted their owner exactly $40 per head more than the scrubs netted their owner.

They say money talks, and that extra $40 per head ought to do some pretty convincing talking for improved stock. Keeping a scrub bull is like winking at a girl in the dark—it never gets you anywhere. If the herd bull is inferior to the cows, the calves will average inferior to their mothers. If the bull is better than the cows, the calves will average better than their mothers. By whatever percentage the herd bull is better than or inferior to the cows, by that much will the calves be better than or inferior to their mothers.

SWAT THE SCRUB.

It seems as though it ought not to be necessary to advise against the use of scrub bulls nowadays, for, as Dr. Mohler of the Bureau of Animal Industry says, "Scrub livestock is no longer fit for perpetuation in the United States. A scrub is wasteful of feed, and wasteful of its owner's labor. The scrub has served its purpose as a connecting link between the old, obsolete methods of farming and new, progressive methods, but our aim from now on should be to make the scrub extinct—to make it the 'missing link' so far as livestock is concerned."

The principal factor in this change must be the herd bull, for while calves have numerous mothers of various types the herd bull is the father of all the calves and his type is permanently stamped on every one of them. Consequently, the cattleman who expects to make progress and profit under new production costs should decide upon a type, and then purchase a bull of that type that is an outstanding individual, and sired by a high-class bull. No big success has ever been made by a breeder who did not use outstanding herd bulls, and the better the bulls the more rapid the success—other things being equal.

Be sure that every bull you buy is registered. Even if you never intend to have registered females, even if you only want a bull for range use—don't accept one without papers. Animals "just as good as registered" or "purebred but not registered," may be just as represented, but they will not breed as well as registered stock, for prepotency has not been established in their blood lines. Outstanding sires have always been great by inheritance. A registration paper is not of itself a guarantee that the bull will prove a good breeder, but the lack of one is pretty good assurance that the bull will not be a good breeder. A poor farmer cannot afford not to use a registered bull; a rich one should have judgment enough to use one without being told.

HOW MUCH FOR THE HERD SIRE?

How much should you pay for a herd header? That depends upon whether or not you have registered females, how big your pile is, and how much profit you want to make. If you have registered females, you can afford to pay from $500 to $1,000 if your herd is small or you are a beginner; from $1,000 to $2,000 if you have a larger herd or an established reputation.

Let's see what the difference in results would be from a $500 bull and one costing $1,000. If you have a herd sufficiently large to produce 100 calves during the service life of a bull, each $100 invested in him will add $1 to the service fee; that is, you would pay $5 for each calf sired by a $500 bull and $10 for each one sired by a $1,000 bull. It is then only necessary to get $5 more per head for the calves from the latter, while ordinarily the very fact that you paid $1,000 for the bull would enable you to sell his calves for at least $50 more each than you could get for those from the $500 bull.

Perhaps you simply want a bull to use on grade cows to raise steers for market. If so, you can well afford to pay up to $500, for a bull at this price will add 250 pounds to the weight of each steer. At present prices this means better than $25 worth of extra beef, or $750 in a herd of 30. So, taking this as an average-sized herd, the bull will pay for himself from one crop of calves and hand you back the neat little sum of $250 for good measure. And he will continue to work for you for several years after he has paid for himself.

Perhaps, however, you won't have to pay quite so much as this. On the questionnaires which we sent out to get data for this issue we asked what the right price should be for a young bull of serviceable age to be used in a grade herd. The answers varied from $200 to $500, with an average of $330. In other words, that is the average price which the average California breeder expects to get for the average young service bull good enough to head a grade herd. The average price quoted for bred heifers was a little higher—$366. This, of course, was for average animals suitable for the average beginner to buy, and not for outstanding individuals such as it is always wise to buy if your pocketbook permits.

START A REGISTERED HERD.

While you are at it, why not buy about three registered heifers or cows to go with the new bull? You'll be surprised how rapidly the herd will grow; also how your profits will increase. If you keep the female increase, you will have, in four or five years, a valuable herd that will have cost practically nothing but its keep. The bulls which come along from year to year will sell for more money than grades, and the heifers will take the place of the grades you have been raising. By selling off these grades as the registered heifers come on, you will soon have a herd made up entirely of purebreds.

You may find purebred stock harder to buy than any other kind, but it is easier to sell. The demand for registered bulls for the range is increasing rapidly, but the supply here in California is not increasing rapidly enough. Hundreds are brought in from the East every year, yet the buyers would greatly prefer to purchase home-bred bulls which are already acclimated. The demand for stock is heavy and will continue so for years, and the registered beef cattle business of this State could be increased many fold without being overdone. "Prospects very bright," "demand better than ever," "demand far exceeds supply," "all sold out"—that's the way the replies read on the questionnaires in answer to our question about the demand for stock and the future prospects.

California is destined to become one of the great purebred centers of the United States—a fountain head to which breeders from the East, from the North and from abroad will come for registered stock. Are you going to help supply the demand and share in the profits?

VON HEIM HOLSTEINS SELL HIGH

An average of $669 was made on 67 head of registered Holsteins, March 17, at the sale of the herd owned by J. von Herberg, Kent, Wash. The bull Finderne Mutual Fayne Valdessa topped the sale, going to a Canadian buyer at $9,100. The world record cow, Daisy Dewdrop, brought $3,000.

Palo Alto Stock Farm, Palo Alto, secured three head: Countess Romula Korndyke, a 32-pound cow, at $800; Johanna De Kol of Rushcourt, the former two-year-old world record milk cow, at $710, and the heifer calf, von Heim Mechthilde Valdessa, at $200.

The sale was well advertised and drew a large crowd in spite the inclement weather. The buyers were well pleased with the offerings and bid liberally.

He Found What He Needed

Written by Frank D. Tomson

I WAS just closing my desk preparatory to leaving the office when the door was opened and an out-of-town business man of my acquaintance entered.

"I came in to have a little chat with you," he said abruptly. "In a way I am rather at sea."

I remarked, as I motioned him to a chair, "I didn't suppose that a man of your business ability and decision was ever at sea."

"Well, sir, I'll tell you. I've been in business a long time and I have made a lot of money—made it honestly. I began in a small way and stayed on the job early and late, and now I have a big business, well organized and an income vastly larger than I ever assumed I would possess. But after all I don't feel satisfied, that is, I don't get much real enjoyment out of it all. The fact is I was born on a farm and was a young man before I left it, and somehow I have never felt really at home since I have been in business. I like to do business all right. I enjoy making money and spending it in useful channels. I have many acquaintances among successful people whose friendship I appreciate, but somehow there's something lacking. I used to have a different feeling when I was at home on the farm, but I suppose that was because I was younger then. It's been a good many years since I have been back to the old farm, for my people are no longer there. I have heard you express yourself a number of times, and always in what seemed to me to be a happy vein, in regard to the people whom you meet and associate with in the livestock world. So, I just thought I would drop in and talk with you a little."

"Will you be busy tomorrow?" I asked.

"No, not particularly."

"Then I will drive by your hotel in the morning and pick you up, and we'll spend a day that you'll not forget."

He was waiting for me the next morning and we motored out of the city along the valley, up over the hills where a commanding view of the country never fails to excite interest. Then we turned into a lane overhung with spreading trees. We drew up at a farm home of a man who had for some years been engaged in improving a herd of cattle. We learned that the owner was away, having driven to the city to meet a party. Being assured that we were welcome to drive out in the pastures we did so and found a part of the herd along the shaded stream that traversed the farm.

"By George, this is beautiful! Say, this is great! This man must be making money," were expressions that my friend gave at intervals as we crossed the pasture, along by the meadow, and in view of the cornfield.

"Yes, he's making money, but that isn't all. This man is enjoying life."

Leaving the car we walked among the herd. One after another the individuals claimed his attention.

BRINGS BACK FOND MEMORIES.

"Why, say, we used to have a roan cow a good deal like this one. I remember she was a big milker and we all thought of her as one of the family. And we had a red one much like this one here. I don't suppose she was as fine, but she was a good one. We showed her once at the county fair and won a prize. I was about fourteen years old then and my father let me hold her while she was being judged. I don't suppose there was as happy a boy in the county that day as I was when the judge tied a blue ribbon on Cherry's halter — we called her Cherry. I remember my mother waved her handkerchief to me from up in the grandstand when the ribbon was tied. Isn't it singular how these little things get hold on a fellow and stay with him? I've made many a business deal which netted me thousands of dollars, yet it didn't cause half the happiness that winning that little prize did."

He went from one animal to another, looking them over, commenting on the different ones, noting the richness of their coats, the smoothness of their conformation and the grace of their lines. "Why, say, I didn't know there were any such cattle as these in this country. Look at those calves. Isn't that little roan youngster a dandy? He's as square as a box and holds his head up as though he owned the earth. I remember at home one winter when I was a boy I trained two calves as oxen. One day something frightened them and they ran off, upsetting the wagon and tearing things up generally. I can remember yet how my father laughed about it. Say, this is a beautiful place, isn't it? Aren't those fine trees? Makes a fine place for cattle, doesn't it?"

As we were leisurely going about among the cattle and enjoying the scene the owner of the farm, in company with another gentleman, approached and greeted us. The owner explained that his guest had to make a certain train and if we would excuse them they would attend to a little business and hurry back to the city, as the time was short. They left us and looked quickly through the herd, finally separating two of the heifers. After a rather close examination they seemed to have reached a conclusion, and the visitor drew out his check book and filled out a check. As they approached their car they came our way to bid us good-bye, the owner remarking, "Mr. Brown here has just beat me out of two of my good heifers." Brown retorted, "I got the heifers all right, but I didn't exactly beat him out of them, and as evidence of that I ask you to show them the check I just gave you."

FINE STOCK BRINGS HIGH PRICES.

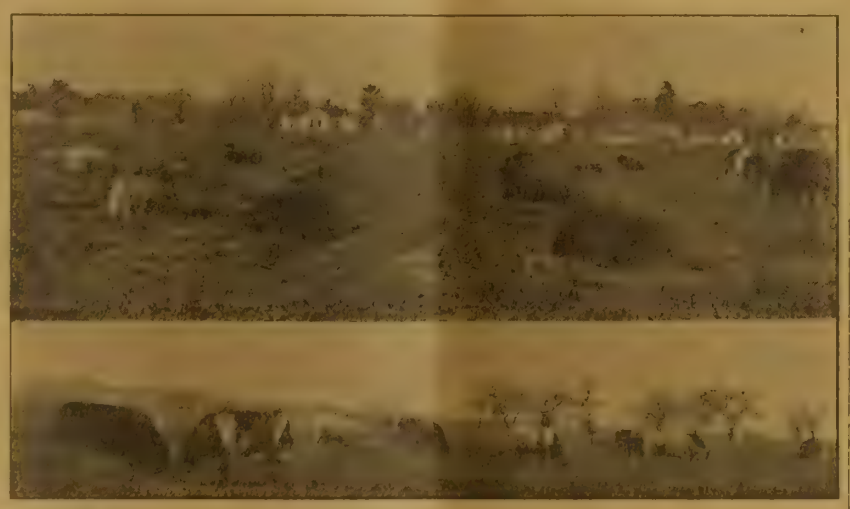
The farmer produced the check and as he handed it over he said, "Well, he darned near beat me out of them anyhow." My business friend studied the check carefully, then returned it with the remark, "You do Mr. Brown a great injustice." "Injustice, nothing," returned the farmer, "look at what he got, those two roan ones over there. I've a good notion to back out on him now."

The men, laughing, entered their car and drove away and my business friend watched them till they disappeared among the trees. "Do you suppose that check was just for those two heifers?" he asked with an expression of doubt. I assured him that it was. "Why, I never heard of such prices as that for cattle—$2,400 for two heifers? Why, when we sold Cherry, the best cow we had, before I left the farm, she only brought $56 and we thought that was a big price." Then he went again among the herd and studied these two heifers minutely. After a little he said, "Do you mean to tell me that this farmer here is able to sell his cattle for any such prices as these two sold for?" I happened to know about how his sales had been running and quoted some of the prices. "Why, this man has got a real business," was his emphatic comment.

We drove into the other pastures and paddocks and his interest seemed to increase with each group we looked over. There was a rich carpet of grass and the gentle sloping pastures, the wooded areas, and the fields seemed to hold my friend's attention. Then he remarked, "By George, if I had only become a farmer when I came out to this country what it would have meant to me."

COMBINES PLEASURE AND PROFIT.

"Has it occurred to you," I asked, that you might still become a farmer and have your farm stocked with cattle like these?" He seemed rather surprised at the question, remarking that his entire business life had been spent in other lines and he would scarcely feel capable to undertake such a venture at this time of life. I suggested that with a man of his business instinct it could be done, and done profitably,



Because of its numerous opportunities for both pleasure and profit, the raising of beef cattle is attracting the attention of many prominent business men who find "something lacking" in their city life and have a hankering to get closer to nature.

as well as furnishing the very thing which he acknowledged he so much desired.

As we drove along the river road toward the city my business friend rode in silence for a considerable distance. Then he spoke in a serious though decisive vein, "I have reached a conclusion. If I can obtain a farm within easy reach of the city where I live I will start a small herd of Shorthorns. I say small herd, for I can see that lacking in experience I would have no business attempting to run a large one. Making things pay has become an established practice with me and so whatever I do in the Shorthorn business must show profit or progress consistent with the investment and care. If I can do this it is the very thing I've wanted all of these years—and didn't know it. It all comes back to me now—those days of happiness on the farm when I was only a kid. All I want to do now is to feel again that sense of freedom and contact with nature that I used to feel, but wasn't aware of its source. As I say, this venture will be on a business basis, but believe me I can see right now that I am going to be happy."

HIS AMBITION REALIZED.

Two years later I received a characteristic letter from my business friend. It read:

"I believe I am the happiest man in this country today. We have all moved to the farm. We put it to a vote at the dinner table one evening a few weeks ago and the entire family voted to make the change. I had no idea that the farm would get such a hold on the family. My son spent the entire summer here looking after everything that needed looking after, and that was a lot. He boarded with the men and picked up all the information about farming and herd management that he could from them. Now he has changed his plans about college, having decided to take a course in animal husbandry instead of engineering. Maybe you think I wasn't glad to hear it.

"Mother and the girls spent a good many days out here, too. They are close readers of livestock papers. We have a little show contest in the evenings about twice a week. The boys brush up the calves we are fitting and include one or two of the others and then we all try our hand at placing them. Up to date the women folks have had rather the best of it and of course are a bit proud of their 'expertness.'

"I only wish I had begun years ago in this line. Then I would have stood for something in the calling instead of being only a beginner. But perhaps I wasn't proud the other day when one of your good breeders, Bradford, drove in and, after looking the herd over, offered me $800 apiece for two yearling heifers that I bought with their dams at the Newland sale last fall. The two cows with these calves cost me $1,950. Pretty good deal, wasn't it? He also offered $700 for the two-year-old heifer that had been stunted a little before we bought her. She was pretty thin at the time, but as she came from what seemed to be a good line of ancestry we took a chance on her at $400. She is growing out nicely and we have hopes of her being a splendid breeder. Naturally I am banking pretty strong on my judgment now. Do you know of any show where a good judge is needed? I thanked Bradford for the offers which I have no doubt is all the heifers are worth, but we need them in the herd, so declined to sell them. Bradford assured me before he got away that I had made every move right so far. That was real music to me.

"By the way, Smith of the First National and Sawyer, the manufacturer, drive out to the farm frequently and are figuring on two farms near us and will then buy a few Shorthorns. The more they see of our herd and learn of the business the more enthusiastic they become. Guess I'll soon be the veteran breeder of this section.

"We have thirty head of Shorthorns now, just half of them dropped on the farm, and we begin to feel that we are in a small way at least a part of the most interesting calling in which men can engage. We are continually being impressed by the large number of refined, educated and well-to-do people who are identified with the beef cattle business. You know we are going to show a few of our calves and would like to have you see them before they start for the fair. In the meantime remember that I am just about the happiest man there is. I have found what I was looking for."

SILOS ARE MONEY MAKERS.

California farmers need to buck up on silo building. Back east Wisconsin leads with 55,992; New York has 55,000, Michigan 33,000, Illinois 30,000, Indiana 27,000, Pennsylvania 26,825, and Ohio 25,000. Out here on the coast, Washington leads with 2,925; Oregon has 1,834, and California comes in a poor third with only 1,081. Don't our farmers realize the money-making value of silos, or are the silo salesmen asleep at the switch?

There is no branch of agriculture that takes as little fertility from the soil and at the same time returns as good profit for the farmer as dairy farming. Wherever the farm products have been turned into butter for a number of years there has been a steady increase in the crop producing capacity of the soil.

A New Forage Plant---Napier Fodder

Written for Pacific Rural Press by Dr. P. B. Kennedy, Forage Plant Investigator, University of California

The problem of feed for stock has become a very acute one in California for several years past. Thousands of cows are said to have been given up by daitymen because of the high price of feed. We are all aware of what takes place on the ranges in our State during dry years when feed is scarce. The remedy, at least in part, is the growing of high yielding forage crops on cultivated land to give the range a chance to recuperate without reducing the number of stock carried. We are confident that in certain sections at least, Napier fodder will supply a very great need.

OUR acquaintance with elephant grass (or Napier Fodder) dates back to 1912, after reading an excellent account of it in its wild state in Africa by Dr. O. Stapf, of the Royal Botanic Gardens of Kew, England. We immediately got into correspondence with the writer in an endeavor to procure seed. He was unable to supply any, and the parties to whom he referred us had none for distribution. Meanwhile the United States Department of Agriculture secured some plants in 1913 from South Africa. These were multiplied by cuttings and root divisions in sufficient quantities to permit of its distribution to their field stations for trial and later to various farmers and others co-operating with the Department.

During this same period the grass had also been introduced into Australia from Africa and seed sent to the United States. It is very probable, however, that the packages of seed sent from Australia were from African-grown seed and simply redistributed to the United States. We have now growing, plants which were raised from seed originating in the Belgian Congo, from seed from Rhodesia, and from Australia. We mention these facts because of the confusion that has arisen as to the origin of the California plants and the various claims made in regard to their introduction into the State. It is very probable that the first plants grown in the State were at the United States Department of Agriculture trial grounds at Chico.

There are two distinct types of elephant grass, a fine-stemmed, narrow-leafed type, and one with coarse stems and broader leaves. The seed received from the Belgian Congo produced for us plants with fine stems and narrow leaves, while the seed from Rhodesia produced plants with coarse stems and broad leaves.

SOMETHING OF ITS HISTORY.

As a wild plant this grass is recorded in the botanical literature of Africa at least as early as 1864, but only in comparatively recent years has its forage value been recognized. A missionary by the name of Menyharth collected plants in Rhodesia during the years 1890 to 1894 and placed a note in connection with his specimen of elephant grass that it was good fodder for cattle. This statement, however, was not published until 1905. It is recorded as being seen occasionally in a "state of cultivation" by the natives as early as 1898. The natives used the tall mature canes for fences and partitions for their dwellings and the leaves as a "muti" or "mushonga," which means something to make other crops grow, or as we would understand it, an organic fertilizer. This discovery of the natives is corroborated by Dr. Zeller, who from the results of his analysis considered the rotting grass as well as its ash a very valuable manure. Diestel in 1907 and Pilger in 1908 are authorities for the statement that it is one of the best African fodder grasses.

The real credit for the introduction of the grass to commercial agriculture must be given to E. G. Kenny, the Native Commissioner at Gutu, and Col. Napier of Springs, Bulawayo, who about 1908 called the attention of the Agricultural Department of Rhodesia to the great possibilities of the grass as a fodder plant. Col. Napier furnished the roots which the Department distributed to its co-operative experimenters in the season of 1909-10. For this reason it would seem singularly appropriate to name the grass Napier Fodder after Col. Napier.

ITS DISTRIBUTION AND HABITAT.

From Dr. Stapf's article previously mentioned we gather the information that the grass occurs wild over a very large territory, including more than the southern half of the African continent. It grows in greatest luxuriance along the rivers and marsh lands, where it attains a height of 23 feet. From these areas it frequently extends into the open places in the brush and forest where much drier conditions prevail. In such localities it grows about 6 feet high.

As one would expect with any plant having such a wide distribution and growing under such a variety of conditions of soil and climate, both coastal and interior, numerous forms and varieties occur in a wild state. Many of these variations have been considered and described as new species leading to much confusion and very many names in the literature.

For the present and until a detailed study has been made of the grass in its native habitat we will follow the eminent authority, Dr. Stapf, and call it Pennisetum purpureum, regarding all other botanical names as synonyms.

THE PLANT DESCRIBED.

Napier Fodder is a perennial grass growing from 6 to 20 feet high, with fibrous roots like corn or sorghum, from which arise at the crown numerous stools, the number depending upon the age of the plant. A single cutting or joint, rooting as readily as a geranium, may produce as many as 40, 60 or 80 stems from the crown in a single season. The leaves are abundant, smooth and tapering, reminding one of corn or sorghum, and from 20 to 30 inches long and 1 to 2 inches wide. The margin or edge of the leaf is more or less rough. This is the only feature of the grass that we have so far discovered that might be considered unfavorable, yet no injurious results are recorded.

The flowers are borne at the ends of the long canes and consist of narrow bristly yellowish-white plumes or spikes 6 to 12 inches long. Up to the present writing the grass has not produced fertile seed in California, and reports from Africa indicate that it is a shy seeder even in its native country.

A patch of Napier Fodder has a very pleasing appearance in the middle of the hot summer with its dense bright green leaves obscuring the ground and hiding from view a person standing in it at a distance of six feet.



Napier Fodder in proper growth to cut for hay.

METHODS OF PROPAGATION.

Napier grass does not readily grow from seed. We have sown it out of doors in both spring and fall, as is customary with other new grasses under trial, without results. By careful culture in a flat or box or in the greenhouse, plants may be raised from seed. Only under the most congenial soils and climate such as exist in parts of Southern California during the summer months would one be apt to succeed in raising plants from seed in the open fields. The tiny, delicate-looking plants grow very rapidly and in the course of a few weeks have as many as nine stools if supplied with warm soil and weather and plenty of moisture. When established the plants need very little attention and will continue to grow rapidly in a soil that would be considered deficient in moisture for most plants.

A second method of propagation is by cuttings or joints, which consist of the mature canes of the previous season's growth. These can are cut into lengths of about 18 24 inches and placed in a furro and covered with 3 or 4 inches soil. Roots and leaf shoots soo develop from the nodes or joint Owing to the tremendous growt made by these plants laterally a single season, for permanent plan ings the distance between the row should be six feet with the plan three feet apart in the rows. gardens or small areas 3x3 woul permit of cultivation with a han hoe only.

If planted 3x6 feet, 2,420 joint or root divisions would be require to plant an acre, or double thi number if planted 3x3 feet. Th success of this method will depen largely upon the condition of th canes when planted. The buds whic will be found at the nodes or joint should not have sprouted and al lowed to wither, and the canes mus not have been frozen. For thi reason in most localities in Cali fornia it will be necessary to protec the canes from freezing weather b burying them in moist but not we soil. Care should be taken to pro tect the pit from soaking rains an causing the canes to rot. One mus always keep in mind that Napie grass is a warm weather plant, an that the time for planting is th same as for corn, sorghum or suda grass. It differs from these, how ever, in that it may be planted an time during the summer and fall i moisture is available. Too early spring planting or too late plantings are not recommended.

A third and by far the most satis factory method is by division of the roots. A mature clump of the pre vious season may be divided into 3 or more pieces, each one being con sidered a plant and transplanted a the same distance as the joints above mentioned.

A fourth method which requires more skill and attention is by the offshoots as they appear from the crown in summer. These break off readily at the base and include a solid portion which when placed in the soil under good moisture conditions will immediately root and produce new plants. C. W. Piper of the United States Department of Agriculture is authority for the statement that one South African farmer produced over 7000 plants from three plants in a single year by using slips and root divisions. Similar instances are known in Southern California where they have a very long growing season, although no actual counts have been made.

GROWTH AND PRODUCTION.

No forage plant that we know of, including alfalfa, corn, sorghum or sudan grass, will grow as rapidly or produce such enormous yields of excellent forage as Napier Fodder. Well-established plants raised from cuttings the previous season were cut off to the level of the ground with a hoe (by mistake) on May 22, 1918. This was severe treatment, yet we saw this same planting on July 18, a few days less than two months, and it was a dense leafy thicket averaging 7 feet in height. A person standing in the grass six feet distant was completely hidden from view.

We endeavored to make an estimate of what the yield per acre might be by weighing a small amount; and, allowing for three cuttings in a season, a conservative estimate would be 60 tons of green fodder per acre. A. E. Breakwell, Government Agrostologist for New South Wales, reports yields at the rate of 16 tons of green fodder per acre from a single cutting. The experiments were conducted at the Grafton Experiment Farm and were young plants placed six feet apart. At the Wollingbar Experiment Farm he reports that it yielded at the rate of 25 tons per acre of green fodder and that they were able to obtain

(Concluded on page 483)

Rubbing Elbows with Other Breeders

[Written for Pacific Rural Press by Thos. F. McConnell.]

MODEL PLANT AT TOYON FARMS.

A recent visit to the Toyon Farms ssociation dairy ranch near Los atos, where only tuberculin tested olstein-Friesians are kept, was a evelation in modern dairying equip- ent. The manager, Mr. McDon- ld, stated that $20,000 worth of uipment had been added since last ne. Everything from milking ma- hine to handling the manure is of e very latest and best of its kind id method.

The ranch is equipped to produce rtified milk and every precaution ossible to human ingenuity is taken have and keep the milk pure. To egin with, every animal is tuber- ulin tested and so far has been und absolutely free from tubercu- sis, and if the herd passes the test vice more with no reactors it will ecome a Federal accredited herd, nd the first one in California. The alves are fed only pasteurized milk nd being from healthy cows makes em doubly sure of being kept free om disease.

The feed barn for the general iry herd is separate from the milk- g barn and is composed of open, omy sheds surrounding hay stor- ge and racks, all under one roof. rain and corn silage are fed in the ilking barn. Both the feed barn nd milking barn are disinfected and hitewashed regularly and as often s necessary. All droppings from e milking barn are washed out to a large main sewer, which leads an enormous cesspool, which is umped out every three months and e contents mixed with the irriga- on water. A recent installation is milking machine, which so far is ell liked.

The milk house is separate from e barns and is so arranged that e milkers do not enter this de- artment at all, but the milk is oured into an outside vat, from hich it passes down through a clar- ier and over a brine cooler, which kept at a low temperature by arti- cial refrigeration. In every way nown to man the milk is kept as erm free as possible and at a tem- erature point that will prevent the crease of bacterial content. After se, all milk utensils are thoroughly ashed and sterilized, then placed a sun room, which is enclosed in lass, by which all flies and dust re kept out and the purifying sun- ght allowed to enter. A complete frigeration and ice plant of suit- ble size is one of the necessary uxiliary parts of the equipment.

The calf barn is close to but sep- rate from the milking and feed rns and is also arranged so that ere is free access for air and sun- ght, and this barn floor can also e flushed into the main sewer and esspool when necessary. Automatic atering devices are found wherever ecessary throughout all yards and rns.

For the period between calfhood nd maturity there is another barn st being constructed, entirely sep- rate and at some distance from all e rest. In this, too, construction lows for plenty of fresh air and nlight and cleanliness.

Cows under test are kept in barns parate from the milking herd and any times are milked by Mr. Mc- onald himself. Roomy box stalls, dividual automatic watering de- ices, sunlight, fresh air and plenty f feed and the best of hay are pro- ided.

Anyone acquainted at all with olsteins cannot help but notice the niformity, good size and withal ex- llent quality of the herd. One of he matrons that seems worthy of pecial mention is Ferndale Coun- ss De Kol, a granddaughter of aul De Kol. This cow made a even-day record of 26.6 pounds but- r just as she turned thirteen years ld and gives every promise of pro- ucing 1000 pounds of butter in 365 ays in her thirteenth year. She lso made a 30-pound record twice nce passing the ten-year mark. he is a strong, vigorous animal, ith plenty of refinement, and does ot show age except some gray hairs ommencing to show in the black. Mr. McDonald thinks she is safely in calf again.

Recent A. R. O. tests at Toyon Farms are as follows: Finderne Butter Girl Centerville, a junior three-year-old, 25.286 pounds butter, 420 pounds milk; Menlo Pontiac Tulista, a junior three-year-old, 22.623 pounds butter, 449.6 pounds milk; Finderne Susan Korndyke, 20.248 pounds butter, 459.9 pounds milk. Ormsby Segis Marie produced 3150.5 pounds milk during January and 2802 pounds during February.

Recent sales are as follows: Young bulls to Dr. Pohlin of San Luis Obispo, M. Soares & Company of Milpitas, M. D. Azvedo of Santa Clara, Azvedo Bros. of Newman, Burroughs Bros. of San Jose, and Frank P. Alvernay of San Jose.

PALO ALTO STOCK PLEASES SOUTH AFRICANS.

Three gentlemen from South Africa visited the Palo Alto Stock Farm at Palo Alto recently and spent two days inspecting the stock and equipment of this well-known establishment. They expressed themselves as delighted with what they saw and priced several Holsteins sired by the senior herd bull and out of yearly record cows.

These gentlemen say that American-bred Holsteins are higher in production, but not quite so uniform in type, as the Dutch importations. This information is based on two shipments received in South Africa from the United States as against many that have been received from Holland. These men began at Vancouver, Wash., and are visiting all of the prominent herds of dairy cattle on the Pacific Coast.

Charles Meister of the Capital Dairy, Sacramento, recently visited the Palo Alto Stock Farm and purchased two Holstein-Friesian bulls. Previous to this, Mr. Meister has always purchased his bulls in the East.

Other sales of Holstein bulls are: One sired by King Pontiac Segis Korndyke to Dr. Silva, Oakland; one bull to Mr. Gibson of Modesto, who is starting a registered herd of Holsteins; this one also sired by the senior herd sire.

ELLIOTT ENTERS POLAND-CHINA RANKS.

A recent addition to the Poland-China breeders at Tulare is A. J. Elliott, who is gradually building up a new herd whenever he finds a good one. Two recent additions are a young herd boar, President Bob, from John M. Bernstein's herd, and a sow from the McCune consignment at the Hanford Poland-China sale. Mr. Elliott has a particularly good location for raising hogs and as he is dairying and can feed the by-products it seems as though he is destined to produce a lot of good ones, if what he has already selected is any criterion on which to base an estimate.

PIE MELONS FOR HOGS.

I am feeding black eye beans and pie melons to my hogs and one sow has lost her litter. Can this be due to the feed?—F. K. P., Atwater.

[Answered by Livestock Editor.]

W. Bernstein of Hanford says that it would be worth hundreds of dollars to swine breeders if they knew that citrons (pie melons) fed to pregnant sows will cause abortion and dead pigs. He turned eight sows into a citron field and all farrowed dead pigs. A neighbor whose sows broke into a pie melon field had seventy pigs farrowed, but was only able to raise five of them.

Wise, indeed, is the farmer who sells his crops to his own livestock. Wiser still if he sells as much as possible through a silo.



THE SHORTHORN—THE GREAT IMPROVER—BEAUTY—UTILITY.

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A Few Suggestions on Ornamental Shrubs

[Written for Pacific Rural Press by John J. Fox.]

For the next month or two people will be planting ornamental shrubs, adding to what they have or arranging new plantations. The late rains have delayed the preparation of new locations as well as the movement of shrubbery, though we have been grateful for all that has fallen hitherto. It has filled up the wells and springs to a degree that has insured us a measure of safety for the coming year. The following few suggestions may be useful to those who contemplate planting out shrubs.

FOR HEDGES OR MASSED SHRUBBERY.

The pineapple guava (Feijoa sellowiana) is a beautiful shrub, very hardy, is ornamental in flower and bears fruit (in not too cold sections) about two and a half inches long, of fine flavor. This shrub is fine in masses or forms a good hedge. The boxwoods (Buxus) form good hedges and borders. They were in vogue in all gardens (Italian and old English) fifty years ago and are again coming into prominence for their vigorous, dense massed foliage of tiny leaves. In Holland and many old-fashioned country places the larger ones have been trimmed into the forms of vases, castles, animals and birds. They are sometimes used as a stiff little finale on porch piers, trimmed into a globe, cylinder, pyramid or cube. They can be had trained or untrained.

yellow and the clustered berries blue black with a bloom on them. They make fine covert plants among the larger trees.

The burning bush is a thick, glossy leafed, thorny shrub that bears white flowers followed by masses of crimson berries, which last a long time in winter. It withstands the coldest weather. The daphnes are handsome small shrubs; the white flowering with its dark, shining foliage is valuable as a winter bloomer, when it sheds its fragrance quite a long distance. The English laurels, both green and variegated, are very stately and decorative shrubs and are very hardy. The character of their growth is easily governed by pruning and grouping and they are sometimes put in tubs for large indoor decoration. The Japanese nadina domestica makes a beautiful, delicate shrub for porch or narrow border. It stools like a bamboo, has wonderful autumn colored, delicate foliage, varying on the same plant from light green to rich copper or red. It bears a spike of white flowers followed by scarlet berries.

CLIMBERS ANR TRAILING PLANTS.

The Ampelopsis Veitchii is one of those beautiful deciduous climbers that make the homes in Berkeley, Los Angeles and European cities so beautiful. They are self-trained, adhering to the walls with their fine little fingers, covering every inch with an overlapping screen of bright green leaves, which become a glowing scarlet and purple in the fall. After the leaves drop, a delicate tracery of stems adds to the appearance of the walls.



Roses and flowering shrubs enshrined with trees help the home-lover to love home. The character as well as the aspirations of children and men are affected by the beauty of their surroundings.

The broom makes a glowing bank of golden bloom in spring, with delicate green foliage. The little flowers are followed by pods of black seeds, which pop around in the fall and distribute a number where they are not wanted. The English variety (Planta genesto) was the badge of the Plantagenets, who wore a sprig of it in their caps in good King Hal's days. Another very effective hedges is the gorse, furze or whin, which carries an amazing blaze of color (yellow) and is prickly enough to discourage the passage of the small boy. We noticed that some enterprising Scotchman planted a hedge of it in Mendocino county between Fort Bragg and Mendocino and it is evidently getting away from him and will become a nuisance if not kept within bounds.

The evergreen oleaster is highly ornamental as a shrub and thrives well in ordinary soil. Stands the heat of the interior valleys and likes it. It makes a good hedge, as does the Laurestinus, called London Pride because it is one of London's favorite shrubs in the suburbs.

The evergreen privet is another favorite. It can be kept squarely clipped and always looks nice.

INDIVIDUAL OR MASSED SPECIMENS.

The different varieties of Berberis are always a satisfaction and our own native variety, known as the Oregon grape, is a beauty. It has shining prickly leaves that might easily be distinguished for English holly. The flowers are a bright

Other good climbers are English ivy for northern aspects, damp places, hedges or to cover unsightly stumps. Bougainvillea for the coast counties is a showy climber—well known in the Los Angeles section. Clematis, trumpet vine, jasmine, honeysuckle, passion vine, jasmine, wisteria varieties are all too well known to merit description. The wire vine (Muehlenbeckia complexa) is admired by everyone who sees it on buildings or fences. It is a very rapid climber, with tiny rounded leaves, which form a solid wall when properly trimmed and is evergreen. The small, thick flowers are a waxy white and it does especially well on the coast. On a neat skeleton frame this plant soon forms a very nice arbor that is always shady and attractive, especially if set off with bamboos or other graceful contrast.

The above suggestions comprise a few plants and shrubs that are bound to please. The climbers will be taken out of their pots or cans and planted as soon as the ground is in condition and will keep right on growing without check. Plants that come in tin cans may be released if necessary by cutting the can down so as to disturb the roots as little as possible.



IT has been stated by various authorities that one of the most important factors in crop production, in California, is nitrogen.

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APIARY DEPARTMENT
CHICO, CALIFORNIA, U. S. A.

Frost Fighting for Almonds

[Written for Pacific Rural Press by Prof. C. A. Stebbins.]

No doubt the readers of the Rural ress, particularly the almond grow- rs, would be interested in the in- rmation embodied in the enclosed tter to me from Prof. R. H. Tay- r of the University. The almond rowers in and about Chico sent a eautiful black fog over that part the Sacramento Valley during a cent rather heavy frost.

From my experience in the last ur years, I have come to the con- lusion that it is a waste of time, nergy and money to smudge in the lossom almonds of the following arieties: Nonpareil, Texas Prolific nd Drakes. The last two years, owever, I have lost my Peerless ariety in the blossom. During a ecent frost I smudged the Peerless nly and believe that I saved them. he other varieties were not hurt.

NFLUENCE OF COVER CROPS ON FROST OCCURRENCE

The following is the letter of R. . Taylor, assistant professor of po- nology at the University, to which llusion is made above:

The matter of temperature di- ectly over a cover-crop is more or ess of a mooted question, much epending on the relative importance f conflicting factors. If the air is uite dry, the evaporation from the over-crop might actually reduce the emperature of the air immediately bove it, and generally does. This s especially true during the summer ime and has been very definitely orne out by work done by Prof. . E. Coit with cover-crops among citrus trees. Under such conditions we could undoubtedly say that the temperature would be lower rather than higher than it would be over other portions.

On the other hand, during the early morning in winter, when there is a possibility of frost occurring, it is entirely possible that the temperature might not go as low where the cover-crop is as where the ground is bare. This would be especially true if the increased evaporation from the cover-crop would bring the humidity of the atmosphere up to a point where the dew-point would be reached at a temperature above freezing. Under such conditions the precipitation of the excessive moisture out of the air at the critical temperature would cause the liberation of a considerable amount of latent heat which would, of course, prevent any further drop or at least any considerable further drop over the cover-crop. Over bare land, however, the evaporation might not be sufficient to raise the dew-point above freezing, in which case the temperature would drop more or less, depending upon the degree of cold as well as on how far the temperature would have to drop before the dew-point were reached, which might be at any point below freezing.

In other words, briefly stated, at temperatures above the dew-point or critical temperature, the temperature over the cover-crop would be lower than over bare land, while at temperature below the dew-point it would be higher than over bare land.

Cross-Pollination of Cherries

[Written for Pacific Rural Press.]

Why do Royal Anns give such oor returns on this hill and why lo they do well over by the house? vas the question asked by the Noble Brothers at Soquel, Santa Cruz coun- y, and which they had solved them- elves. They have about 30 acres etween them in apples and cherries nd their experience with the fruit as been long extended, for their ather settled here in 1857, so they elong to the place.

AN OBJECT LESSON.

In a large part of the orchard lack Tartarian and other black herries bear pretty regularly and ell, but the Royals are uncertain ld light. But down by the old omestead are some old Royals with mixture of Governor Woods over 0 years old that bear well and reg- larly. The owners thought it was difference in the variety and rafted some of their poor-bearing oyal Anns with wood taken from he house trees—but without re- ults. It has therefore been made lain that the cross-pollination with he old Governor Woods trees is re- ponsible for the heavy crops by the ouse—which bears out the pub- shed results of experiments carried ut by Dr. Howard in the northern ections and should prove of value o others setting out cherries in this ection. The Nobles will set still ore cherries next winter. There re a few old trees left that were lanted in 1857 and some 38 years ld that are sound trees today. We oticed one tree near the new pump- ng plant which was irrigated in ugust and the following year the herries were very much increased n size while the tree yielded about alf a ton of fruit. They have a ochester pump with a capacity of 000 gallons an hour and a 5-horse- ower motor, but it has not been sed much yet, being a late invest- ment.

AKE NO CHANCES WITH CODLING MOTH.

We walked through the apple or- hard and noticed that the trees vere well pruned and clean, but vere rather surprised that they did ot systematically spray at the ac- epted times for the codling moth. t is only a question of time till the ercentage of wormy apples will cap- ure the profit if this is allowed to un too long. The varieties of ap- les are Bellflowers, Newtown Pip- pins, Virginia Greenings and Red Worcester Pearmain, the trees being planted at 20 feet on the square.

We were much interested in the original old adobe house now used as a storehouse, with its three-foot-thick walls, the flooring fastened with large wooden pegs and the joints of the hewn plates fastened with rawhide thongs still in place. This ancient adobe was said to be venerable when the family moved there in 1857!

"FIGS IS FIGS."

Independent buyers are boosting the prices on figs to unheard-of prices —20c a pound for Calimyrnas, 15c for White Adriatics and 12½c for Black Missions—for the 1919 crop. And this before the trees are showing what they are going to do. In adversity the farmers are pretty good at hanging together because it is a matter of life or death for them to do so. It is prosperous conditions and high prices that tempt men to sell on the outside and thus weaken their organizations. Some have gone on the rocks from this cause in the past. This is a year when fig growers should stand together and support their own organization under any circumstances and consolidate the position they have so recently won.

Almond growers around Chico kept their orchard heaters going for a few frosty nights. No damage to crop is noticeable from frost and none is reported from Paso Robles.



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" on Peach, 6 to 8 and 4 to 6 ft.
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Why Early Irrigation Should Be Practiced

Written for Pacific Rural Press

Last year we mentioned some orchards which had suffered very little from June drop, with the belief that the immunity was due to early irrigation. Science has taught us, and is still proclaiming the fact that the vigor of the tree depends upon an adequate supply of moisture, mineral nutrients and carbohydrates, and on maintaining equality of these three so far as is possible. Not that these three compounds only are concerned, but that they are the three leading factors of growth, vigor and fruitfulness. And of these three what we all want to learn about is the application and conservation of moisture in the soil throughout the year to the best possible advantage.

GOVERNED BY CONDITIONS.

Every thinking man is trying to learn by his own experience, by that of his neighbor's and by what science has to offer how to accomplish this. And every man of experience knows that the control of his own water system—if in an irrigated section—offers the chief solution of his problems. He knows, according to the season, when he would like to apply his water—if only he could get it. You can't grow fruit by date, but have to be governed by conditions to some extent. Sometimes the water is not turned into the ditch when you would like to irrigate—sometimes it isn't your turn at a convenient time, or till long after you would like. Perhaps you have been sick at the time appointed and missed it or you have to water at night. Maybe you are on the next "lift" or at the end of the ditch and the power is not on. Anyway farmers are now definitely of opinion that they want to own and control the water which influences their crops and their fate.

This is probably the chief reason for so many projected co-operative irrigation systems, especially under the Weight irrigation act. It explains why more and more people every year are installing their own pumping plants and irrigation systems. The money invested in them is bringing back returns that could not be achieved in any other way.

WHY THE DIFFERENCE IN VALUES?

Well, look at the peach trees round Modesto and the Riverbank, where trees were irrigated last fall, and at trees of the same age on similar ground in situations where the water was gone by the middle of June. Apart from the size and vigor of the trees look at the tonnage and quality of the crops. Is not the average often represented by the difference between three-quarters of a ton to the acre of dried fruit and a ton and a half or more? Take alfalfa again—those men whose last irrigation comes at the end of June or early in July are about two crops shy of the man who can irrigate at will till the end of the year. And in that extra profit is a fundamental difference in the value of the land if sold. If you have a supplementary pumping plant that can be used after the ditches cease to run, a plant that can be counted on, your bank will take that into due consideration in negotiating a loan. It is a permanent tried asset apart from the system.

TREES GET TOO DRY IN SPRING—WHY?

One of the reasons why our trees get too dry in spring is because the cover crops or weeds are allowed to use up the moisture by maturing them. Another reason is a poor method of handling the mulch at spring plowing and a third because water is not applied early enough. When the writer was appraising some citrus properties last spring he noticed several groves early in May that looked very "seedy" and asked his guide why the trees were permitted to shout for water that way. One reply was that the owner was a bit dilatory. Another had had difficulty in getting a team. But the harm was already done. The trees were already preparing to shed some of their fruit to relieve conditions. Too many excuses become monotonous. Year by year the orchards—both citrus and deciduous—demand a definite supply of moisture. If they need irrigation the sooner those needs are prepared for permanently the sooner will the trees become profitable. In irrigated sections every man must judge of his own conditions and the season to conserve his moisture. There are of course sections of wet land where conditions are bettered by getting rid of superfluous moisture through the cover crop. But not many.

THRIPS.

We find a good many men advocating the late retention of cover crops so as to let the thrips browse on them instead of entering the prune or pear blossom. Even if this were proven to the satisfaction of everyone the vigor of the tree comes first and must receive the first consideration. More and more growers are recognizing this fact.

The early irrigation is the one that counts with deciduous fruits, also after the fruit is off so long as it is not early enough to promote late fall growth on late varieties. The deciduous fruit trees that were watered the earliest last year were the best color throughout and not only lost less fruit at the June and July drop but also kept their foliage better. There is no doubt that an irrigation even in our unirrigated sections is beneficial to the trees and profitable in added quality and tonnage at harvest time. The rapidly increasing number of pumping plants installed the past few years seem to bear this out. Growers do not put in these expensive systems and face the added work and outlay for fun. As one grower put it, "I believe that for every $50 I put in I got $100 back."

Engines, pumps and motors have been improved so much of late years that many of the bugbears of irrigation have been removed. And service men are being more and more employed among leading men in all machinery lines. We have plenty of moisture in Northern California this year. Let us make the most of it while prices are good.



Early irrigation restores moisture lost in the overgrowth, helps the setting of fruit or vines and reduces premature dropping of fruit. It carries the tree or vine well along during the period of length growth, when evaporation through the leaves is more rapid than when the foliage is matured.

PROGRESS OF VIRDEN PACKING PROJECT.

[Written for Pacific Rural Press.]

Keenly interesting to every stockman and fruit and vegetable producer in California and the West is the announcement made by the Virden Packing Company of Sacramento that it is now organized with a capital stock of $5,000,000 and that it will erect in West Sacramento a packing plant and stockyards to cost $42,500,000.

Charles E. Virden, general manager of the California Fruit Distributors, is president of the company. He conceived the idea that a market must be created for California producers and the big packing plant will be the tangible result of that idea.

J. H. Glide, a well-known stockman of this State, is vice-president of the new company. C. M. Hartley, banker and stockman of Vacaville, is treasurer, and Frank F. Atkinson, formerly Assistant District Attorney of Sacramento county, is secretary.

In its statement to the State Corporation Department, the Virden Packing Company outlines its purpose. It states that the necessity of a packing plant in California for meats, fruits and vegetables, with a capacity and capital sufficient to meet demands, is patent. It recited that the producers and consumers have been paying the freight to and from Eastern markets too long.

Because California always will have the raw products, and because there will always be a demand for the finished product, the company asserts that the packing house business is as permanent as appetite on the one hand and thrift on the other.

Charles E. Virden has the following to say relative to his new project. "The co-operation of the producers is desired. If you are interested in California, we want you to know what the Virden Packing Company, which includes stockyards, is doing, in order that you may co-operate with us as fully as possible. There is an absolute necessity that something be done, not only to create but to protect the market for the crops and livestock of the State. The only practical way to take care of the present production and make use of our lands is to provide means of marketing the products at a profit. Markets are the most vital consideration of our State. This is a community problem. The financial strength of California is fully capable of taking care of it in a community matter. The packing business is permanent and profitable."

While a definite date cannot be given for the beginning of actual construction work, it will be within a few months. The plans are now being drawn. As an example of the policy of the new organization, Nicholas Madsen, formerly manager of the Frederick J. Kiesel ranch at Boise, Idaho, has been engaged to conduct an educational department. It is his purpose to instruct the farmers to intelligently conduct their ranches. Other departments will be added as rapidly as the organization can put them in. The Virden Packing Company has offices in the Capital National Bank Building, Sacramento.

Horticultural Jottings

The Gold Ridge Orchard Company sold more than 100 tons of berries last year.

It is anticipated that quite a tonnage of black grapes will be dried this year to ship east for domestic wine making.

A large acreage north of Orosi (Tulare county) will be planted to figs and Thompson and Sultana vines this season.

Pruning of vines continues in Napa and Sonoma counties with the exception of a few old vineyards whose day is past.

The Imperial Valley strawberry crop is late, the first shipment having gone out March 12. Strawberry acreage is a trifle heavier than last year.

Orange county citrus crop brought over $10,000,000 to growers last year, according to the annual report of the Orange County Fruit Exchange.

Buyers have been buying up figs in the Orosi district (Tulare county) at 15 cents, though some had contracted earlier in the season for 12½ cents.

The first week in April Imperial Valley growers will be "right busy" on their strawberry crop. The first shipments to arrive have brought high prices.

O. E. Bremner, horticultural commissioner of Sonoma county, says the prospect for fruit (March 21) is the best ever. One hundred per cent on everything.

The 164-acre orchard belonging to the Losse family near Sunnyvale, has just been sold for $175,000 and is regarded as an excellent investment at over $1000 an acre.

All f. o. b. prices for oranges have been advanced 15 cents a box by the California Fruit Growers' Exchange, making the shipping point price on fancy grades $4.65 a box.

Black Mission Figs were commanding twelve and a half cents a pound wholesale this week. Calimyra figs have gone to 20 cents and splits to 10 cents for the 1919 crop.

Orchardists are still busy setting out young trees. With nice warm weather they should start growing directly they are planted with the abundant moisture everywhere present.

The Roeding Fig and Olive Company has bought the 1919 crop of figs at Kearney Park at 15 cents. The crop is estimated at 80 to 100 tons. This from 2400 trees would bring $30,000.

Many eastern jobbers are refusing to buy prunes from outside packers, it is reported, unless guaranteed equal to the "Sunsweet Brand", of the California Prune and Apricot Growers' Association.

Visalia users of electricity vigorously opposed the application of the Mt. Whitney Power & Electric Company for permission to increase its present 10 per cent surcharge to 15 per cent. Hanford and Porterville consumers entered a spirited protest, it is reported.

Several hundred boxes of frosted oranges have been turned back from the San Francisco market by the

horticultural commissioner and State food inspector. They can be sent to marmalade factories.

We noticed about 20 different spray outfits at work in Napa and Sonoma counties last week—several of them brand new machines. The alternate north wind and rain has made matters rather difficult.

The color test on oranges is approved by Porterville growers. The fruit to be sweated must pass the 8-1 test and at the same time show 25 per cent characteristic orange color; 70 per cent colored at packing.

Blooming on almonds strung out over a long period this year, but conditions are good (March 22) and a good setting is promising. The second sulphur spray is now due and it should be applied without delay.

It is expected that the date of the Fruit Growers' convention at Riverside will be changed. The Pacific slope branch of the American Association of Economic Entomologists will form one of the constituent bodies.

Jay Smith, field agent in bee culture for the U. S. Department of Agriculture, spent a week in Fresno county with the bee men. A meeting was held in the city hall and talks given in the field at farm bureau centers.

Black wine grapes are reported from Fresno to have jumped to 7 cents a pound dried—to be shipped for wine making. If the demand increases we shall probably see a lot of dehydraters installed in the northern counties.

The first opened bloom on French prunes appeared at Healdsburg on March 21. The season is most promising. From present appearances it will be the first week in April before the trees are in full bloom in these two counties.

It is estimated that Antelope Valley will produce well over 100 carloads of pears this year. "There never was a finer prospect perhaps for a fruit crop in Stanislaus county than now at the present time," comes a report today (March 25).

Independent berry buyers are contracting for blacks at $95 a ton in the Gold Ridge section, according to F. B. Bill, manager of the Sebastopol Berry Growers. This is for cannery stock. One hundred and twenty-five dollars are bid for Logans.

Very little thrips' injury is showing on pears (March 22) but the insects are beginning to show up in considerable numbers in some of the pear sections. Lime-sulphur is being used with Black Leaf 40° so as to catch the first spores of scab as well.

W. S. Clayton, a banker of San Jose, was recalling the other day a pool that he engineered some years ago, when prune growers interested raised their price from 1¾ cents base to 2½ cents! That was the time one-third of the people were pulling out their trees, one-third talking about it, and one-third hanging around the real estate offices waiting for a "sucker" from the East to buy them out.

At Forestville and Graton, Sonoma county, comparatively little plowing had been done up to the 22nd of March and spraying had also been delayed because of the frequent rains. Many spray outfits are busy whenever they can get in the ground. George Nelson, between Watsonville and Graton, sprayed two weeks ago (about March 7th) and had about six of his 20 acres of apples plowed—where he had berries interplanted. The fine Duvall apple orchard of 33 acres, the other side of the road, was also in fine shape and plowing in progress. Every team that can stand up is at it now.

A New Forage Plant for Summer Growth

(Continued from page 478)

a growth of 12 feet in four months from cuttings.

The University of Florida informs me by letter that on some of their best muck lands in the southern part of the State, where the growing seasons are long, even 60 tons per acre may be exceeded.

When left uncut throughout the season in parts of Southern California, we have seen it 17 to 21 feet high, but this is a useless waste from a hay or soiling standpoint, as the canes become too mature and somewhat woody, are much less palatable, and the sum total of forage greatly lessened. When cut at from 3 to 7 feet high, depending upon the locality, it will make soft, pliable and sweet-smelling hay. New growth starts up again at once from the base and in two months with good soil and under irrigation another cutting may be obtained.

One can readily judge from the above that the yield obtainable is entirely dependent upon the length of the growing season, the character of the soil and the moisture conditions. It seems to have a preference for sandy loams, but will grow on any type of soil.

Then comes the problem of its alkali tolerance, a very important feature from a California standpoint. We have no information whatever on this subject, nor can we even make a guess. Get a little and try it out on alkali soils and we will be glad to get your report.

Will it grow on lands not suitable to alfalfa on account of the high water table? It probably will as it occurs wild in South Africa along watercourses and marshy depressions. As to whether it will grow in the water or under the water we cannot say.

WINTER-HARDINESS.

As to its winter hardiness, we are still without definite knowledge. Last winter in Los Angeles the grass was not even frosted, while this winter the leaves were all frozen and the young canes injured. The roots and the mature canes were quite hardy. In South Africa reports tell us that the roots withstood a temperature of approximately 10 degrees F.

Roland McKee, Assistant Agrostologist of the United States Department of Agriculture, who has conducted investigations with the grass at Chico, states that "it has lived through the winter (there) without protection—that is the roots. The tops kill back to the crowns." The minimum winter temperatures at Chico are: 1913, 13 degrees F.; 1914, 26 degrees F.; 1915, 22 degrees F.; 1916, 18 degrees F.; 1917, 18 degrees F.; 1918, 25 degrees F.; January, 1919, 19 degrees F.

At Berkeley we have had unusual continuous cold weather this winter, yet the roots are not injured, although the greater part of the top growth is frozen.

The indications are that well established roots will withstand the winters in such localities as the Santa Clara Valley south to Santa Barbara, Los Angeles, San Diego and Imperial, and the milder regions of the Sacramento and San Joaquin valleys. In South Africa it is reported as surviving at an elevation of 5000 feet, but this is no criterion for us to judge by in California. The very late spring and early fall freezes in our mountains at high elevations would greatly lessen the growing season and in most localities the winter temperatures are very low. This factor of climatic limitations can only be determined by experiments covering a period of years.

FEEDING VALUE.

The test of the pudding is in the eating, and so it will be with Napier Fodder. The supply has been so limited up to the present time in the United States that no extensive feeding tests have been made. Everyone has been anxious to let the canes grow for increase purposes as rapidly as possible.

We have, however, many communications from farmers in California who have fed it in a small way to horses, cattle, sheep, goats, swine, rabbits, and even chickens. They are all enthusiastic about its palatability. Some even go so far as to say that cattle will pick it out of alfalfa when the two fodders have been purposely mixed and fed as hay. One party made it into silage in a barrel, and when opening it during the winter found it sweet and good. He says, "The hogs devoured it ravenously."

The following analysis taken from the literature will indicate its comparative feeding value, as indicated by percentages of contents named:

Ingredients.	Napier Fodder	Green Corn Fodder	Corn Silage	Timothy	Alfalfa
Water	60.99	79.3	79.1	61.6	71.8
Ether Extract. (Fats)	.55	.5	.8	1.2	1.0
Protein	3.20	1.8	1.7	3.1	4.8
Carbohydrates	17.52	12.2	11.0	20.2	12.3
Fiber	14.55	5.0	6.0	11.8	7.4
Ash	3.10	1.2	1.4	2.1	2.7
No. of Analyses	3	126	99	56	23

The analysis of Napier Fodder are somewhat unsatisfactory, as the material for one was a partially dried mature stalk and another from material that had not been cut since planting and probably too coarse. The large amount of fibre as compared with other fodder is apparent. Material selected for analyses at the optimum condition for hay would, we feel sure, very much reduce the per cent of fibre. The amount of protein is as good if not better than most grasses, although not equal to alfalfa.

Two of the analyses of Napier Fodder are by Blackshaw in Rhodesia and one by Guthrie in New South Wales. The figures represent an average of the three analyses. The moisture contents were 55.33 per cent, 61.81 per cent and 65.84 per cent respectively. The analyses of the other fodders is taken from "The Feeding of Animals," by Jordan.

Citric acid is the main product of the Exchange By-products Company at Corona, according to M. May, manager. But it is now venturing into the manufacture of oils, flavoring extracts, etc. In two years the company has returned $65,000 to shippers from cull lemons. It now has on hand 70,000 pounds of citrate of lime, worth 60 cents a pound.

The canteloupe crop is doing fairly well in the southern section, according to R. G. Risser. But it is estimated to be two weeks later than usual. With warm weather for the next two months this time may be made up. There is perhaps more poor land planted than usual and a heavy yield is not expected. In the Brawley district growers are starting to uncover canteloupes.



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Now is the time to spray for the rosy apple aphis or the green aphis, just as the leaf buds are opening, especially on the young trees that had them so badly last year. Use black leaf 40° one pint, fish oil soap 8 pounds to 200 gallons of water. On the older trees use black leaf 40° one pint and ten gallons of commercial lime-sulphur to the 200 gallon tank as a preventive of scab as well.

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PURE ANIMAL MATTER AMMONIATES

GOLD BEAR

FERTILIZERS

FOR CALIFORNIA SOILS

Here and There in the Fruit Business

[Written for Pacific Rural Press.]

Modesto Money Makers.

Last month we went into the orchards of Dr. W. C. Evans of Modesto, accompanied by A. L. Rutherford, Horticultural Commissioner, who told us that this was one of the best peach orchards in the county. It comprises some 90 acres of Tuscan and Phillips clings, Muirs and Lovells. With the exception of the Phillips, which were lighter, the orchard averaged ten tons to the acre last year. The Tuscans and Phillips trees are ten years old. Some of the trees are from four years up, and there is in addition fourteen acres of Phillips one year old. This place—across the river from Modesto—is on the best peach land and is irrigated late with a subsidiary pumping plant, which always sends the trees into winter conditions in excellent shape. They are well pruned and sprayed, and no expense is spared in any operation to produce the best results in quality and tonnage. The initial bloom does not promise to be quite so heavy as last year, but enough bearing wood has been left to produce all that the trees ought to carry and opening prices are stimulating to the best possible effort.

Robe Prunes for Colusa.

When L. R. Boedefeld's article on prune growing in Colusa county appeared in the Pacific Rural Press three or four years ago, he mentioned Robe de Sargents as a promising variety. Six acres of these in his own orchard are now ten years old, and they inspire greater enthusiasm now than at that time. Though 20 feet apart, they touched across the rows at eight years old. A salient feature is that when French prunes are falling like hail after the initial setting, the Robes do not fall. The crop can be forecasted as soon as the setting is apparent. Valuable also in this district, which is normally ten to fourteen days later than Santa Clara, and therefore in more danger of rain, the Robes ripen four to seven days earlier than the French. They do not seem to dry quite so heavy as the French and they have a more acid taste, which gives character to their flavor.

Pollinating Imperial Prunes.

L. Woodard of Campbell has ten acres of young Imperial prunes six years old into which he is intending to graft a limited number of sugar prunes for cross-pollination. Oscar Jensen of Napa had a large block of Imperials that was originally a very shy bearer till it was top-worked in alternate double rows with sugars. Since which time it has borne pretty regularly, as it is in a district fairly free from any frost. Mr. Woodard has 60 acres in fruit and will train his young prune trees on the new university method as recently expounded. But of his apricot trees that are in full bearing he says: "We know what to do with them. We have to cut to obtain quality and use our judgment according to the season."

Pollinating Demonstration.

Carol Rodgers of Watsonville will carry out pollinating demonstrations with bees in his apple orchard this year, on Bellflowers and Newtown Pippins. In these experiments one tree of each variety will be entirely screened in with a colony of bees and another tree will have the bees entirely screened out. This work is to be carried out in co-operation with the Division of Pomology of the University of California and exact results recorded.

California Lends Valuable Man.

The Federal Horticultural Board is so well pleased with the findings of George Compere, whom they borrowed from California for three months to establish a horticultural quarantine station at New Orleans on San Francisco's system, that they want him to stay on awhile longer. His services have been of such value in the short time he has been there that they request his retention for another month. Florida and the southeast coast have learned to realize the importance of policing their productive industries — the citrus canker having already cost her many millions since its importation. Passengers coming into California from the Orient are not only compelled to make a declaration, but their personal baggage is searched to see that it contains no forbidden fruit, seeds, plants or cuttings.

Organization and Foothold.

How many of us made any real effort to market our stuff to the best advantage up to recently? We waited till buyers came around to buy rather than trying to sell or to know anything about the consuming market of our wares. The average man is like the differential on an automobile—he quickly adjusts himself to conditions, but he works best along the line of least resistance. Stall him on one side and he merrily turns his attention to keeping the other wheel going anyway. But it doesn't get him anywhere until unity and leadership restores the balance of his efforts by getting both wheels on the ground and giving him "foothold."

Solid Sums for Seedless.

Two million five hundred thousand dollars was paid last week to growers by the California Associated Raisin Company at Fresno as a second payment on Sultana and Thompson seedless raisins. The total exceeded last year's second payment by about half a million dollars, the increase being regarded as due to increased acreage coming into bearing. The payment was made at the rate of $50 a ton, about 5000 growers receiving checks. The third and final payment will be made in the fall. The first payment was at the rate of $70 a ton.

School Children and Fruit Harvest.

A meeting was held Saturday, March 22 at San Jose to discuss ways and means for handling the school children who wish employment during the fruit harvest season. The experience gained last year will be helpful in arranging a better distribution of help. The aid of the children in harvesting is appreciated by farmers who do not expect too much and it is appreciated by the school children, who can earn enough money to add pleasure in two ways to their vacation.

Colusa Fruit in Fine Condition.

Colusa county fruit trees were greatly benefited by the fall rains which injured some of the crops. About three inches of rain moistened the ground about 14 inches deep and supplied feeder roots with moisture until the trees normally went dormant. The buds meanwhile had developed to a plump, vigorous condition, which augurs well for the coming crop. Tree planting has just been finished, having been delayed on account of weather and soil conditions.

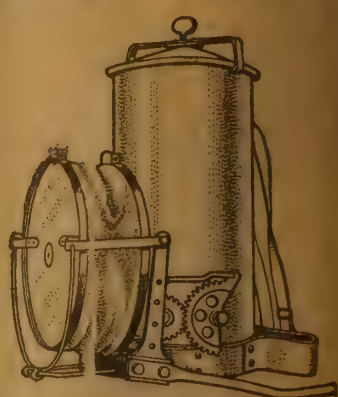
Cheap Effective Crop Census.

The number of fruit trees, grape vines, and acres of field crops have never been known with any accuracy in Colusa county, but Horticultural Commissioner L. R. Boedefeld has a system now that should work in every county. Since his squirrel inspectors must visit every ranch, they are provided with pocket sized pads of blanks which may be filled in with accurate information on the points mentioned, with the loss of about a minute.

The Almond Growers' Exchange.

This exchange has recently issued a "book of letters" containing over 60 pages, in which are set forth letters from wholesalers, importers and brokers commending the superior quality of the almonds received from the exchange—a testimonial of what growers can accomplish by united action. It is an attractive booklet.

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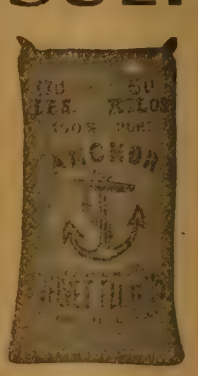
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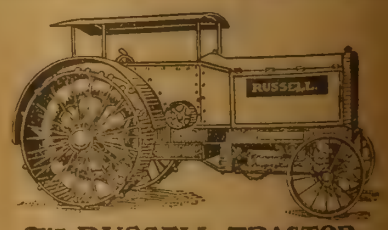
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SAN JOSE, CAL.

LOOK OUT FOR CATERPILLARS.

[Written for Pacific Rural Press.]

Tussock moth caterpillars as well as tent caterpillars were very destructive in certain sections last spring. Where the egg masses have not been gone over during the winter it will be necessary to look out for them as the trees begin to show life and foliage in the spring. As soon as the colonies or tents appear they should be burnt off with a good big torch on the end of a pole. Never mind about the twigs they are on—burn them well and quickly before they can drop. After the drst tent or colony appears, the orchard should be gone over carefully, row by row, and repeated later. Last year many orchards were almost defoliated by the tent caterpillars, which were not taken in hand in time. E. C. Spear of St. Helena had a bad infestation in his orchard last year and in his absence last spring they got large and did their deadly work before he was aware of them. They collected in masses on the limbs and trunk for four or five days and he went for them here. We noticed similar conditions in various other orchards, where a great deal of damage was done. He has sprayed them at this stage with a mixture of coal oil, creolin and crude carbolic acid and perceived no harm to the tree.

SPRING CANKERWORM.

These little fellows, known to us as "loopers," or measuring worms, have to be guarded against, too, at this time. Everybody knows this little green or brown worm, which is very slender and is about an inch long. Well, the little grub lives in a cocoon or case in the ground. The female has to crawl up the tree early in the spring to lay her eggs, as she has no wings to fly up with. For this reason (to quote from E. O. Essig's book on "Injurious and Beneficial Insects in California") "bands of adhesive paper or cotton around the trunks of the trees have proven effective, while one of tree tanglefoot about two inches wide has been very satisfactory. Any of these devices will cause the females to lay their eggs below the bands and the young can be killed with a soap wash. The bands should be in place about the first of March. If any of the spring or fall cankerworm appear on the young foliage, spray the tree with two pounds of arsenate of lead to 50 gallons of water just before the blossoms open and again one week later. Fruit trees attacked are apple, apricot, cherry, pear, plum and prune.

F. H. Gerdau of Watsonville said he tried zinc arsenate for the tent caterpillar one year, but couldn't get them. He shakes off what he can and then uses tree tanglefoot to prevent their crawling up the trunk.

RESULTS OF EXPERIMENTS WITH PEARS.

[Written for Pacific Rural Press.]

We made the following notes the last time we visited the University Farm at Davis: The average set of Bartlett pears is from 2 to 3 per cent of the bloom under normal conditions. Cross these Bartletts with Beurre d'Anjou. Bosc or Winter Nelis and a very marked increase in the setting results—often up to 13 to 16 per cent of the bloom. Though in many of our Bartlett pear growing sections no cross-pollinating is practised, it has been proved that a heavier yield can be obtained by crossing. At 3000 feet elevation the Bartlett must be pollinated by the cross. One setting in 25 blooms has been attained by this means, but perhaps 1-8 would be nearer an average. Bees are a great aid in pollinating and they may be used to the best advantage at about one colony to the acre.

TO UTILIZE WINE GRAPES.

At a meeting of Mendocino county grape growers, held in Ukiah in February, A. M. Minetti of the winery firm of Tribuno Garrish, told the assembly that his firm was considering the establishment of another industry for utilizing the wine grapes of this section. That to insure its success it would be necessary to secure the co-operation of the wine growers in signing up to deliver their grapes to his firm for ten years in return for which he could offer them $14.20 per ton during that period for their grapes.

What his firm proposes to manufacture, he would not say, but said that the necessary machinery would have to be imported from Europe at a cost of from $60,000 to $80,000.

No matter what he has got up his sleeve, it has given the growers something to think and talk about, in view of conditions that threaten to engulf their industry. Half a loaf is better than no bread.

APRICOTS ON MYROBALAN.

Will you please tell me if apricots can be grafted successfully on Myrobalan plum root?—G. A. T., Santa Rosa.

Yes. If you have ground that is too wet or heavy for its own root, plant on Myro.

It is thought that in New York the bill allowing individuals to manufacture 200 gallons of wine for their own use will go through. If it does, a vast market will be open for California wine grapes.

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How Farming Fares at State Capitol

Written for Pacific Rural Press by Our Sacramento Correspondent

Appropriation for Feed Bill.

Since the Feed Control bill carries no appropriation, it has a good chance for passage; but the resources of the Food and Drugs Laboratory are so much needed for other purposes that it will have very limited power in enforcing the Feed Control bill if the latter should pass. However, Senator Rigdon has introduced S. B. 652, which would give the laboratory $5,000 additional, which Professor Lee expects to use for this purpose. It has been recommended by the Committee on Public Health and Quarantine and referred to the Committee on Finance. The feed bill itself, No. 93, has been passed by the Senate with amendments and is now in the Assembly Livstock and Dairies Committee, of which Mr. Cummings is chairman. Mr. Cummings introduced the same bill in the Assembly.

Argument Against Dog Bill.

To Senator McDonald: For the inventor of that damm bill 641 (Senator Rush's dog bill) eternity is not long enough nor hell hot enough for all the torture and torment I wish him while in this life. I piously hope he will be blasted in all his undertakings. If I could pry his eyes out and fill his ears with hot lead, Elysium would have no one so happy as I. I am afraid the poor bugger's life will not be worth much when he starts out to kill people's friends. I for one will leave my trademark on him. I wonder what will be the next thing some blasted fool will agitate for. Now, mind you, vote against that most ingenious bill 641 and I will ever pray that you may find your recompense here and hereafter.—N. McG., Daly City, San Mateo county, Cal.

Pure Seed Labeling on the Way.

Senator Rigdon's bill, 70, to require labeling of seed in lots of ten pounds or more to tell its purity and germinating power, is recommended with amendments by the Committee on Agriculture and now awaits consideration by the Finance Committee. Assemblyman Cummings introduced the same bill as No. 482, but amended it in committee in several respects, including a great reduction in the minimum weight of packages required to be labeled. His bill has been recommended by the Assembly Committee on Agriculture and referred to the Ways and Means Committee. Our readers may well urge the committee members to support it strongly, as it only requires labeling so the buyer may know what he is getting.

Dirt at the Price of Hay.

The honest-hay bill, introduced by Assemblyman Eden, is still in the Agricultural Committee, no attempt having been made to get it out. There will be no further chance until next Monday afternoon, but only a little opposition has developed. Assemblyman L. J. Rose would like a full expression of what his Alameda county constituents want, and Assemblyman W. A. Doran would like to know what his constituents think. If you want reasonably clean hay, the way to get it is to write fully to the legislators on whom you have most influence. The Agricultural Committee was named in our issue of February 22. The present bill has omitted the features which made the one of 1917 objectionable

State Commission Market.

Senator Brown's bill, 639, to establish State commission markets and repeal the present law under which the State Market Commissioner is acting, is still in the Agricultural Committee. Assemblyman Baker's bill, 46, designed only to behead the present commission, will have been discussed at a public joint hearing of the Agricultural Committees March 27. Assemblyman Eksward's bill, which is a duplicate of Senator Brown's bill, is in the Assembly Committee on Agriculture.

Univ. Farm Power Investigations.

A favorable recommendation was given, March 24, by the Agricultural Committee to Assemblyman Gebhart's bill, 722, appropriating $25,000 for equipment of the Agricultural Engineering Division of University Farm for experimental work. This was the third meeting at which it had been considered. It is now before the Assembly Ways and Means Committee. Write to those on whom you will have the most influence. Their names are in this issue.

State Farm Agent.

Assemblyman Polsley's bill, 596, to provide a State Farm Agent, was introduced in blank, but Mr. Polsley has presented the rest of the bill to the Agricultural Committee, which has turned it over to the Ways and Means Committee. The bill would make disinterested information available to settlers and would further encourage private settlement in a way that would enable settlers to succeed.

What Is a Good Egg?

Senator Anderson's bill, 704, describing minutely what is a good egg, has been passed out of the Agricultural Committee and referred to the Committee on Public Health and Quarantine. Assemblyman McColgan's bill, 1018, requires inspection, candling, grading, and labeling of eggs, is still in the Committee on Agriculture. This is similar to Senator Anderson's bill, but not so detailed.

Los Angeles Exposition Deficit.

Assembly bill 215, introduced by Mr. Fleming, to appropriate whatever is necessary up to $75,000 to pay off the deficit which resulted from the Los Angeles Exposition last fall, is in the Ways and Means Committee. Flu and other unavoidable forces were the cause of the deficit. Mr. Fleming's bill, 413, appropriating $53,000 for support of the Los Angeles Exposition, is in the Ways and Means Committee.

State Survey for Flood Storage.

The Senate has passed Senator Dennett's bill, 427, which would appropriate money left over from various State Engineering Department appropriations and others for the purpose of surveying and construction of storage reservoirs for flood waters and for wholesale distribution of the water. This bill is now in the Assembly Committee on Irrigation.

Land for State Fair.

Senator Rush's bill, 642, to appropriate $10,160 to buy the corner of land needed for the State Fair, has been recommended by the Agricultural Committee and the Senate Finance Committee must now consider it.

Walnut Codling Moth.

Assemblyman Miller's bill, 645, appropriating $10,000 to determine and apply control measures for walnut codling moth has been recommended by the Agricultural Committee to the Ways and Means Committee.

Weeds on Roads a Nuisance.

A crying need has been felt for an effective way of preventing distribution of weed seeds from roadsides. Senator L. M. King introduced bill 35, declaring them a public nuisance, and providing what looks like an effective way to keep them down. The Senate has passed this bill and it is up for passage in the Assembly.

State Plant Disease Survey.

Ten thousand dollars would be appropriated for a survey of the State by the State Horticultural Commissioner to determine the distribution of dangerous plant diseases and to apply control measures, as provided in Assembly bill 646, introduced by Mr. Miller. It is now in the Ways and Means Committee.

Coast University Experiment Station.

Assemblyman Greene's bill, 924, to appropriate $75,000 with which to buy land and water rights for a University Experiment Station close to the line between San Luis Obispo and Monterey counties has been recommended with amendments and sent to the Ways and Means Committee.

Kasch Estray Bill.

Nothing has been done with Assemblyman Kasch's estray bill, 22, raising the charges allowed for taking care of estrays to a penal degree. It is in the Assembly Committee on Livestock and Dairies, to which it was originally referred. Its object is not to penalize stockmen, but to prevent estrays.

Potato Seed Inspection.

Senator Slater's bill, 709, to appropriate $10,000 for inspection and certification of seed potatoes during the next two years, has been recommended by the Agricultural Committee and rests with the Finance Committee, which will need the general support of potato growers before it can recommend it.

Riverside University Farm.

Assemblyman Kline's bill, 38, to appropriate $150,000 to buy 300 acres of land and water rights in Riverside county as a University Farm, and to put up buildings on it, has been recommended by the Agricultural Committee and referred to the Committee on Ways and Means.

Cannery-Tomato Inspection.

Assemblyman Morris' bill, 949, providing a heavy license fee for sanitary tomato canneries, no license for insanitary canneries, and rejection of tomatoes which are too bad when received at the establishments, is still in the Agricultural Committee.

Water Companies Public Utilities.

"All corporations furnishing water" and all mutual water companies would be made subject to the jurisdiction of the Railroad Commission if Senator Duncan's bill, 649, is passed. It is now in the Senate Committee on Irrigation.

For Beneficial Insects.

Senator King's bill, No. 75, to appropriate $6,000 for a search for insects to control mealy bugs, is awaiting action by the Finance Committee after recommendation by the Agricultural Committee.

Rice Water-Grass.

The Finance Committee has Senator Inman's bill, 625, intended to provide $50,000 for search of measures to combat rice weeds, especially water-grass.

Deciduous Fruit Investigations.

Senate bill 319, introduced by Senators Benson and Jones, to ap-

What is a Purebred Bull?

Senator Rigdon's proposal to consider a bull purebred if he is "bred in a herd of one of the recognized beef breeds the ancestral sires of which must have been registered bulls of the same breed for at least three generations," has been otherwise left blank to date and is still in the Committee on Agriculture. The probable intention is to prevent use of scrub bulls on the ranges by calling bulls "purebred" if their sires have been registered for three generations.

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propriate $150,000 for deciduous fruit investigations, will come up in the Senate Finance Committee not long hence.

Nursery Tree Disinfection.

The Agricultural Committee has recommended Senator Jones bill, 490, to provide $15,000 for experimental work in fumigating nursery trees, and it now rests with the Finance Committee.

Fruit and Vegetable Standardization.

The fruit and vegetable standardization bill, 513, introduced by Senator Inman, has been amended and OK'd by the Agricultural Committee, and the question is whether it will get the money.

Citrus Experiment Expansion.

Assembly bill 285, by Mr. Kline, appropriating $90,000 to buy 300 acres for the Citrus Experiment Station at Riverside, is still in the Committee on Agriculture.

Sabotage.

Senator Kehoe's bill, 15, defining sabotage and prescribing punishment therefor, has passed the Senate and is now before the Assembly Committee on Judiciary.

Thou Shalt Not Spray.

Senator McDonald's bill, No. 370, prohibiting the use of poisonous materials in spraying, still reposes in the Committee on Public Health and Quarantine.

Arsenical Sulphur Banned.

Senator Crowley's bill, 701, to prevent use of sulphur containing arsenic for the bleaching of fruit intended to be dried, has passed the Senate and is in Assembly committee.

Agricultural Statistics.

Senate bill 430, introduced by Senator Harris, to provide $10,000 a year for collection of agricultural statistics, has been approved by the Agricultural Committee and now awaits action by the Committee on Finance.

Emergency Pest Eradication.

Senator Jones' bill, 363, designed to appropriate $50,000 for use in emergencies when new plant insects or diseases, animals, or weeds, are found in the State or portions of it, is still in the Finance Committee.

Frost Insurance Dropped.

For lack of a suitable system of assessment of various degrees of frost hazard in various localities, the Senate frost insurance bill, 687, is to be allowed to die in committee.

Oleo Bill Still Slumbers.

Assemblyman Prendergast's bill, 14, monkeying with the oleo law, has not been passed out by the Committee on Manufactures, to which it was originally referred.

Weeds on Railroads.

Assemblyman Rose's bill, requiring railroad rights of way to be kept free of grass and weeds which might become a fire menace when dry, still remains in the Committee on Public Utilities.

Farm Owners and Operators' Association

The Santa Clara unit of the Farm Owners and Operators' Association was organized at San Jose on March 22. Only a few hours were required to establish the unit, as the farmers knew what they wanted and wasted no time on "red herring" trails. Albert Lindley, chairman of the State organization, accompanied by J. M. Bigger and J. P. Irish Jr., came over from Stockton to assist in the organization and to explain the constitution and administration of the association.

Mr. Lindley emphasized the necessity for compact organization to provide centralization for all classes of agriculture, a fusion of all classes of farmers in one organization based on citizenship and property rights. He pointed out that all industries, invested or occupational, are organized and the several units federated. The farmer alone has no compact organization to defend and promote his interests.

The association being an amalgamation of all classes of agriculture, interferes with no special organization but strengthens each by uniting them under a federation. Organized and controlled exclusively by practical farmers, it will have within itself sufficient strength to carry forward its work independent of any other organization.

The sentiment of the meeting favored immediate organization. Five directors at large were selected, as follows: S. E. Johnson, Cupertino; A. R. McClay, Evergreen; J. V. McCurdy, Santa Clara; J. J. McDonald, Milpitas; and Chas. E. Warren, Cupertino. The twenty district trustees are apportioned to ten districts of the county. As soon as the membership of 100 is certified, the charter will be issued and the chairman of this unit will become a member of the State Organization Committee.

This is the first unit formally organized outside of San Joaquin and Monterey will probably be the next county to complete its unit and receive a charter.

Estray Bill Made Adaptable

Senator King does not believe his estray bill, No. 34, would have the effect we have been suggesting; but to make it more agreeable to fruit growers and small farmers, he has worked out an amendment intended to leave the present estray law as it is, but to give each supervisorial district a right to come under its provisions or not. Choice would be made at a special or general election. The occasion for Bill 34 as it was introduced and as objected to by fruit growers was a controversy between homesteaders and cattlemen on the desert side of the mountains in San Bernardino county. With development of water, the homesteaders' green crops and slight fences proved an insurmountable temptation to the desert cattle. Owners of the latter charged that frequently the homesteaders made more by taking up such "estrays" under the law than they would have made from a year's crops. At a big meeting of cattlemen and homesteaders in San Bernardino last winter, the bill which Senator King since introduced was worked out for the purpose of making sure that the homesteaders should put up fences that would turn cattle reasonably. The bill was not intended to work a hardship on fruit growers and small farmers, as shown by its author's recent amendment.

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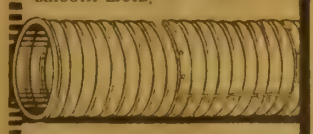
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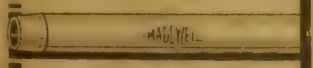
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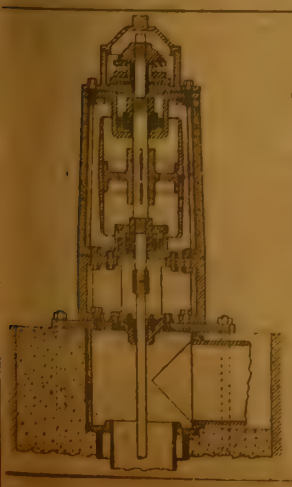
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Field and Garden Suggestions

[Written for Pacific Rural Press.]

Planting Asparagus Seed for Roots.

The asparagus grower who has more acreage than any other in the State, Alex. Brown of Sacramento and San Joaquin counties, has bought over 400,000 roots in a year, for planting. But he says it is cheaper to grow them. Figure one acre of seedlings to grow enough roots for 100 acres in the field. Mammoth White and White Colossal are going out of favor in the Delta, where Palmetto is the chief variety. Figure on about 50 pounds of seed per acre of seedbed. Prepare the land fine and deep as for beans in the open field, so it can be planted when warmed up in April or May. Plant with a seeder or sow by hand in alternate furrows made by a hand plow. Let alternate furrows cover the seed about two inches deep. This spreads them out and makes bigger roots than planting by machine. Harrow after the seeder and keep weeds down through the summer. The roots will be ready to transplant to fields in November or December, when they are to be plowed out and planted again as soon as possible or stored as much as two or three months when desirable.

Sudan Seed Crop After Barley.

A Sudan-grass seed crop following barley gave 84 bags of recleaned seed weighing 9485 pounds from about seven acres for A. L. Mossmayer of Yolo county. The barley stubble was burned, irrigated, randalled, and harrowed early in July. The seed was drilled at the rate of about 15 pounds per acre. It had to be drilled to get it where the soil would remain moist. It was harrowed and rolled afterward. The grass was irrigated when about a foot tall and again at about three feet. The last irrigation was too much, because the grass made too rank a growth, which kept green too late for seed. It was mowed close to the ground in October and cured in loose shocks like hay. Being so late maturing, it received a little rain. It was eight feet tall and many of the stems nearly an inch in diameter. For hay it would have been cut in bloom when about four feet tall. The Sudan was threshed in an ordinary machine with special concaves and screens, and the straw, six or seven tons per acre, was sold to a local horseman.

State Colony Financially Successful.

Land for the Durham project of the State Land Settlement Board was bought partly on d[illegible]d payments, according to Chairman Elwood Mead of the board, becau[illegible] cost two or three times as m[illegible]ney as was made available t[illegible]ard by the State. Payments to former owners are to be mad[illegible]annually from payments made to the board by the settlers semi-annu[illegible]n the first period of six mo[illegible]r of the semi-annual paymen[illegible] made. So fast are the settlers [illegible]up. But the board is not e[illegible]ing settlers to make pay[illegible]l-vance, but to further [illegible]ir farms with the money. [illegible]ada Legislature has just p[illegible]-million dollar appropriati[illegible] similar land settlement pro[illegible]

Potato Fertilizing Paid.

Seventy or eighty sacks [illegible]ota-toes per acre is the general [illegible]on the Rindge tract in the delta [illegible]an Joaquin county, as stated by H. L. Pabst of Rindge & Pabst. Fertilizer experimental plots last seas[illegible] yielded close to 200 sacks per acre [illegible]one tract produced 300 sacks.

Delta Barley and Wheat.

Delta barley is about the same acreage this season in San Joaquin county as usual, according to a large grower. Wheat is not much grown on account of rust. It also falls down on [illegible] pure peat soils and then r[illegible]s worse.

Growing a Crop of [illegible]eed

[Written for Pacific Rural P[illegible]

Sugar-beet seed growing is practically a four-year baby in the United States; but common beet seed have been successfully grown here much longer. As California is the chief producer of field vegetable seeds, the traveler will at this season see great checkered fields of beet leaves several inches tall. Quite a few of these are not so far from Sacramento and one in particular is that of D. H. Powell in Yolo county. Mr. Powell would tell you that there are beets and beets. He wouldn't tell you what is his contract price with the Eastern seedsmen to whom he sells, but he says that common beet seed are generally grown for 15 to 17 cents per pound. Beets lose uniformity of shape and type within a few generations if not properly selected. Likewise a strain may be developed by selection that can be depended on to give a uniform crop of properly shaped "bulbs." That is what Mr. Powell has done. He would describe the commercial beet for the canners as one that has a smooth globular form with a rat tail tap root not appreciably enlarged where it joins the bulb. This involves least waste in canning and commands the highest price. One grower of five acres last year had high hopes for a comfortable check from the canners, but his crop could not be used at all on account of its rough shape and lack of uniformity.

Beet seed production begins the year before. Mr. Powell planted seed in July, 1918, from his selected rows grown in 1917. The soil had been moistened properly and prepared. The late planting was to prevent the "bulbs" getting great size. Small ones do as well and make as much seed as larger ones, the desired size not varying more than an inch from 2½ inches in diameter.

Not all is smooth sailing in the production [illegible] Last year being a dry [illegible] gave out, and Mr. Powell [illegible] of seedlings yielded onl[illegible]00 pounds of bulbs per ac[illegible]arily it takes only one acre [illegible]bs to plant about 15 acre[illegible]

The s[illegible]d shortly after the S[illegible]t [illegible] last fall, about 12 [illegible]nch[illegible]per than necessary, as 9 [illegible]s good.

The bulbs we[illegible] I[illegible]mber and about seven[illegible]e trans-planted at once[illegible]cres ad-joining were plan[illegible]lbs that had lain out in [illegible] and wet several days. The field is now at least two weeks behind the first one. Altogether, there are about 28 acres of beets on this project besides 22 of carrots and onions.

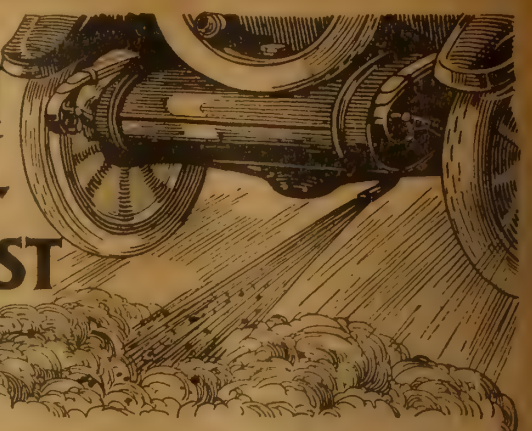
The transplanting is mostly done with pointed hand hoes, placing the bulbs three feet apart in rows three feet apart. They are set just deep enough to cover with dirt. A man does well to transplant one-half acre per day.

As the bulbs grow they "lift themselves out of the ground," so cultivation must throw dirt toward them. Irrigation is highly desirable to give plump seed; but it must not be applied too late in the season.

At harvest, the beets are pulled and laid in winrows. An engine and cutter is rigged on a sled to haul across the field. Beets are carried from the winrows to this cutter from both directions and the seed-bearing stocks are cut off. Threshing machines are sometimes used, but Mr. Powell says they injure many seed, so he threshes with a roller and fans the light stuff out from the seed. About 1500 pounds of seed per acre is considered a good crop.

It is estimated that in the South, 50 carloads of oil per night were consumed by citrus growers in frost fighting for several nights. The number of orchard heaters was estimated at 500,000. The cost of orchard heating for one night at the Rancho Lespe, according to the Ventura Post, was $1000, or 500 barrels of oil at $1.50, and $250 for labor.

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California Vegetables, in Garden and Field

BY E. J. WICKSON

Planting season is nearly due—why not take the opportunity to study up the best way to grow and make the most out of your soil? Whether you wish to produce beans, beets, potatoes, celery, cucumbers, corn, melons, onions, tomatoes, rhubarb, squashes, turnips—or any garden or field crop—you need this book. It is a handsome volume of over 300 pages, well illustrated, bound in cloth, and will be sent to your address for $2 per copy postpaid.

PACIFIC RURAL PRESS
525 Market Street, San Francisco

SPERRY ESTABLISHES EXPERIMENTAL FARM.

[Written for Pacific Rural Press.]

That it may make extensive and systematic experiments to determine the feeding values of various balanced rations for stock and poultry, the Sperry Flour Company has purchased 50 acres of sandy loam land three miles west of Escalon, in San Joaquin county, on the Tidewater Southern Railway. The property is about 20 miles southeast of Stockton on the projected Manteca-Escalon highway and on what is already one of the principal county roads.

While the farm is under lease, arrangements have been made to carry out certain improvements without delay. Hog-tight fences are being built, the substantial dwelling house renovated and extended, and altogether preparations are being made for what will eventually be a model farming property. In planning the barn, poultry houses, milk house and other buildings, the factors of service and economy of operation will be the chief aim. There are many shade trees on the land which will be invaluable for stock and poultry raising. The soil is a sandy loam, deep and well drained, and the property is served by the South San Joaquin Irrigation District. Twenty-five acres are already in alfalfa.

This tract was selected by George R. McLeod, head of the company's agricultural department, after a careful survey of available sites. He proposes to carry on farming operations so that at the end of three years the company will be in a position to present to the farmers of the State facts and figures on such problems as the amount of feed required to make a pound of pork or beef and the cost of feeding a certain number of hens with maximum efficiency.

While the agricultural department of the Sperry Flour Company was not organized until last summer, the company began its field experimental work in San Joaquin county four years ago, and at this time is operating two good-sized ranches in the neighborhood of Stockton, as well as a quarter section of land near Chico.

TURLOCK CROP CONDITIONS.

A lot of grain sorghum was sold from the Turlock district in January and there is not over 40 per cent of last year's crop (mostly gyp) still on hand, as estimated by A. J. Eddy of the T. M. & G. Inc. A reasonably active movement of barley to regular trade channels is noted, though in the middle of this month probably not over 20 per cent of the crop had been moved. This is heavy barley, going about 46 pounds per bushel average on account of being grown chiefly on subirrigated land, where irrigated beans are grown as a following crop. It has been bringing around 2 cents to the grower, according to Mr. Eddy. Alfalfa has been selling at $16 and $17 baled or $14 to $16 loose on the ranch, and a lot more is being planted this spring. About 6700 acres of cantaloupes are planned to be planted and a great many are already in. Cold, rain, wind, pests, and diseases are expected to reduce the acreage harvested to about 5000. Last year not 3500 acres were harvested. Honeydew melons shipped and sold well last fall in cars with watermelons, so there will probably be a good acreage this year. Watermelons will also be planted on a fair area. Sweet potatoes are already up, and the plants are to be set out more by Americans than by the Portuguese who have predominated in sweet potato growing. The problem of storage is a vital one. Commonly the potatoes are corded up dry in cellars, but experiments are on now with the use of sawdust, on which we will report later when more of the tubers have been taken out.



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CALCO METAL GRAIN BINS are made to **save** grain. They save by preventing waste at its starting point—in the field.

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Time to Urge Appropriation Bills

"Big Proposed Appropriations Generally Stand a Better Chance Than Small Ones Because There Are More People Behind Them."—Marshall De Mott, Chairman State Board of Control.

[Written for Pacific Rural Press.]

If you are interested in any bill in the Legislature which proposes to appropriate money for any purpose, you will have to reckon with the following legislators, who are members of the Assembly Ways and Means Committee or of the Senate Finance Committee. If you cannot get their recommendation, you have not one chance in five hundred of passing your bill.

There are two sets of appropriations proposed in bills before the Legislature: (1) Budget appropriations and (2) non-budget appropriations. The former have been approved by the State Budget Board before the Legislature convened and they generally have smooth sailing to the Governor's signature. The latter include all bills not specifically recommended by the Budget Board. (The Budget Board consists of the State Controller and the State Board of Control.) Some of the non-budget appropriations have been approved by the State Board of Control since the Legislature convened. If your bill is among these, it has a fair chance of passage. If it isn't, you better get all of your neighbors to write the Board of Control at Sacramento telling why your desired appropriation should be approved. But the State Board of Control is not the Legislature, and the latter sometimes acts regardless of the former's recommendations. Moreover, there is money in the treasury which was not included in the Budget Board's recommendations. Therefore, your best chance to get your appropriation is to convince the Finance and Ways and Means committees, both of whom must approve it, that your bill is entitled to the money.

Now, these committees have the difficult job of using the approximately $5,000,000 in the State treasury to cover the $21,000,000 of non-budget appropriations asked in the various bills. They will do their best, according to the light that is shed on them, and it is your job to do some light-shedding. They will begin to act on bills shortly after this appears, so prompt action by yourself will be necessary.

Mention the bills by number and by author. Whether sending in petitions with many signatures or individual letters, tell in the briefest way the best reasons why your appropriation should take a part of that $5,000,000. Home addresses of the committee members are given so that you may write to those on whom you will have the most influence. Address them at the Capitol, Sacramento.

SENATE FINANCE COMMITTEE.

W. J. Carr, Los Angeles (chairman); F. H. Benson, San Jose; A. H. Breed, Piedmont, Alameda county; W. E. Brown, Los Angeles; V. J. Canepa, San Francisco; J. J. Crowley, San Francisco; S. C. Evans, Riverside; E. J. Gates, Los Angeles; Thomas Ingram, Grass Valley; H. C. Jones, San Jose; L. M. King, Redlands; B. F. Rush, Suisun; W. S. Scott, San Francisco; W. R. Sharkey, Martinez; H. W. Slater, Santa Rosa.

ASSEMBLY WAYS AND MEANS COMMITTEE

T. M. Wright, San Jose (chairman); Crombie Allen, Ontario; J. S. Brown, El Centro; Miss Esto B. Broughton, Modesto; Bismark Bruck, St. Helena; W. E. Calahan, Antioch; C. W. Cleary, Lindsay; W. M. Collins, San Francisco; F. J. Cummings, Ferndale; F. L. Eksward, Burlingame; A. P. Fleming, Los Angeles; C. W. Goetting, San Francisco; C. M. Kline, San Jacinto; Samuel Knight, Redlands; W. J. Martin, Salinas; A. J. Matthews, Susanville; C. J. McColgan, San Francisco; F. F. Merriam, Long Beach; N. J. Prendergast, San Francisco; A. A. Wendering, Berkeley; J. R. White, Glendale.

Among the bills in which farmers are interested as farmers and which must receive approval of these committees are the following: A. B. 722, Gebhart, $25,000 for tractor, engine, motor, and farm implement investigations; S. B. 70, Rigdon, and A. B. 482, Cummings, pure seeds; S. B. 652, Rigdon, for pure food laboratory in enforcing pure feed bill; S. B. 319, Benson and Jones, $150,000 for deciduous fruit investigations; S. B. 709, Slater, pure disease-free seed potatoes; S. B. 513, Inman, fruit and vegetable standardization; S. B. 363, Jones, $50,000 emergency fund to combat suddenly appearing plant pests; S. B. 75, King, $50,000 to search for beneficial insects to control mealy bugs; A. B. 38, Kline, $150,000 for University Farm in Riverside county.

HOLD ON TO WHAT YOU CAN'T LET GO OF.

[Written for Pacific Rural Press.]

The writer remembers at the beginning of the war how confidently we were assured that the war would have little effect on California beans because the combatants would get all they needed in our eastern States. It looked to us as if any vacancy created by removal of eastern beans would draw on the California crop to fill it and would affect our market. It did. We need not worry about our beans now if, as reported, the Government and Allies have neglected California in favor of the eastern States. All we have to do is to hang onto the beans we can't let go of until the time comes. That is sound advice and bound to be followed, even at serious present inconvenience.

But if Uncle Sam wants us to grow another crop of beans, he will have to say so very quickly. He learned during the war with reference to sugar beets and other crops that he can't safely dicker with Father Time.

A. J. Eddy of the Turlock Merchants and Growers, Inc., reports that there is no call for bean seed, though it is generally picking up at this season. However, a great part of beans planted in Stanislaus county are generally planted around June as a second crop after grain, so there is time to change plans yet.

Manure Spreader Saves Labor and Increases Crops

Many a manure pile reduces the selling value of a farm when, if properly placed, it would add to the selling value and to the living value of the same farm. The reason it is not properly placed (aside from tenancy reasons) is the disagreeable job of pitching it onto high wagons and then standing in it to pitch it off while the wagon pitches worse than a boat on choppy waves. J. W. Mann of Stanislaus county has hauled the manure from an average of 20 head of stock, mostly cows, for the past five years onto his 20-acre ranch and was almost indignant when we asked him if it really paid to use a manure spreader. He covers about one-fourth of his ranch every fall. One piece he mentioned, took just four days to manure with a spreader what it would have taken a man 30 days to spread by hand, and the machine did far better and more even work. One piece of eight acres, fertilized this way a year ago, last fall gave him four tons of oat hay per acre, which was followed the same season by 1500 pounds of beans per acre on the same land. Manure was spread in strips on the alfalfa. It made very little difference in the first cutting; but the third cutting yielded about half a ton per acre better where manure had been. Pretty good wages for handling the manure and good interest on investment in the spreader.

Monarch Tractor

STAYS "PUT" TO THE GROUND.

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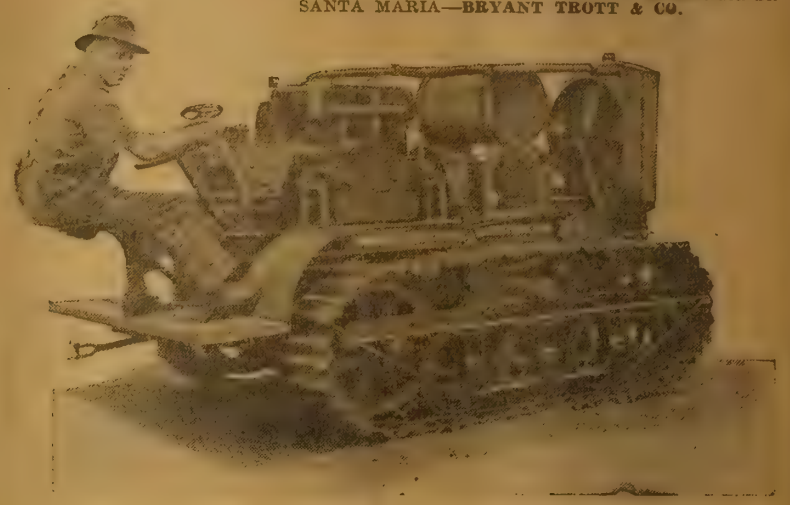
The three-point suspension is a Monarch feature that never fails to appeal to the grower who has had experience with tractors. This construction enables the creeper tracks to accommodate themselves to all soil irregularities, and holds the tractor to the ground. When either side is riding over big obstacles the other automatically accommodates itself to the obstruction without throwing the tractor out of line, straining the frame, or reducing the pull. It is to the track-laying tractor what the Bolster is to a wagon.

Don't experiment—buy a Monarch.

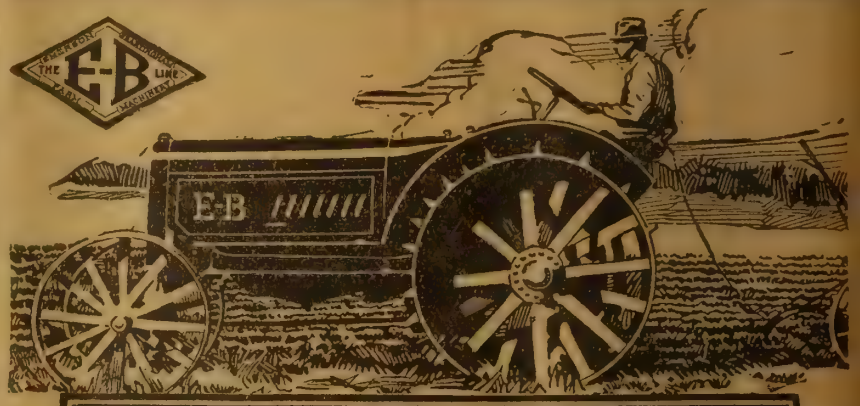
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Some excellent territory for dealers yet open.



Pay For 12-20 Horsepower And Get Full 15-25

PUT the E-B 12-20, S. A. E. Rating, Model AA Tractor to work on your farm. Use it with the E-B 102 Tractor Plow. This is a combination that stands up to the hardest plowing with plenty of Power, Dependability, Economy, Ease of Handling, and E-B Service backed by capable, helpful dealers who know tractors.



THE E-B 102 TRACTOR PLOW
Plows More Acres Better With the Same Fuel
Easy to handle and easy to pull. E-B Quick Detachable Shares make furrows turn with less kerosene cost. Sharp-share plowing readily done when shares are so quickly applied and removed. Sharp shares keep channels of moisture circulation open—better soil conditions.

Surplus Power—because the 12-20 rating on the S. A. E. basis is the most conservative known, 25% extra power.

Dependability through 67 years of implement manufacture and 12 years of tractor building. Enclosed gears, high-grade materials and equipment, such as Hyatt Roller Bearings, K-W Magneto, high-grade Radiator, etc.

Economy—25% greater power with less weight. Kerosene motor cuts fuel cost.

Ease of Handling—E-B Auto Control. Ask your dealer for complete facts.

Brock and Skidmore
Berkeley, Cal.
Farm Tractor and Imp. Co.
Portland, Ore.

THE H. C. SHAW COMPANY, STOCKTON, CALIFORNIA
Distributors for
OSBORNE HARVESTING MACHINERY
and
E-B TILLAGE IMPLEMENTS

RURAL SCHOOLS NEED TRAINED TEACHERS.

[Written for Pacific Rural Press.]

A constant stream of young ladies and young gentlemen are passing, as teachers, through our rural public schools, said President C. M. Osenbaugh of the Chico Normal School at a hearing before the Assembly Ways and Means Committee, March 20, with regard to a bill proposing to appropriate $32,000 for that institution to use in training teachers of agriculture for the rural schools. These youthful teachers usually do not know much agriculture and they do not care to learn. They do not intend to make rural teaching their life work and they stay in it on an average not much over a year. This is a serious handicap to rural schools and a fertile cause of failure to keep country children on farms when they grow up. The teacher always labors under a serious handicap, for he or she is in every agricultural activity compared with the pupil's dad. Because he generally falls short in the comparison, the pupils despise him and fail to get the inspiration that would keep them on the farms. Because he has so little knowledge and inspiration as to the glorious opportunities in farm life, he is unable to teach his pupils to see them.

TO TRAIN AGRICULTURAL TEACHERS.

It is for the purpose of giving dignity to this line of teaching, to make it effective and attractive as a life work, that the Chico Normal School proposes to install a special course to train rural school teachers with emphasis on agriculture. Nowhere else can they get such training in this State and the rural children are suffering for lack of teachers so trained.

The Chico people asked $32,000 to put up and equip a separate building of steel with a great deal of window surface; for instruction here is to be in the nature of practical vocational training. The Budget Board recommended $10,000, but Mr. Osenbaugh told the Ways and Means Committee that he would rather not have anything for this purpose than to take $10,000. With the latter, he said, he could do nothing but make a conspicuous failure which would be pointed to in years to come as proof of the impracticability of the plan. The bill calls for $32,000. One of the strongest delegations that has appeared before the committee presented arguments in its behalf. Besides many from Butte county, there was endorsement in the strongest terms from Sacramento, Yolo and Plumas counties. The ex-dean of the Philippine College of Agriculture told the committee that on arrival in California a year or two since, he was astounded to see how much farther advanced in this line was the education of Filipino kids who are required to study agriculture before they finish the eighth grade, and whose teachers are specially trained for the purpose.

The bill is Number 567, introduced by Assemblywoman Mrs. Elizabeth Hughes of Oroville. It will not be acted upon, probably, until our readers can address Chairman T. M. Wright, stating why such a project is worthy of the money.

COST OF GROWING ONE ACRE OF TOMATOES.

The following is an estimate of the cost of growing one acre of tomatoes in Sonoma county, compiled from various records and furnished by the Vegetable Growers of California Inc.: Plowing, working down and marking ground $9, cost of plants $5, planting and replanting $9.25, cultivating and hoeing $10.70, spraying $15, picking, hauling and handling $45.90, rent for and loss on boxes $2.50, clearing up after harvest $4, depreciation on tools, etc. and incidentals $3.50, rent $40. Total cost per acre $144.85. The average production per acre not to exceed 10 tons: Cost per ton $14.48. In irrigated sections about $15 should be added to the total expense, making the cost per ton $15.96.



Preparing seed bed with Culti-Packer. Note how lumps are crushed and air spaces firmed out.


Saving moisture in dry weather by using disc and Culti-Packer to form mulch soon after plowing.


Culti-Packing growing corn. Quick Detachable Wheels removed for straddling rows.

DUNHAM CULTI-PACKER
TRADE MARK REG.

The Busiest Implement on the Farm

The farmer who uses the Culti-Packer in the right way will keep it busy more days of the year than any other tool on the farm.

From the early spring when it prevents winter killing in the wheat field and meadow, till the last day of fall seeding, there is work where the Culti-Packer will repay many fold the time spent in using it.

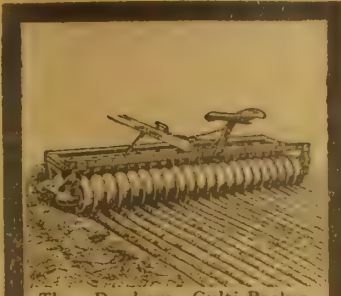
To begin with it starts the seed bed right by crushing all clods, firming out harmful air spaces and mulching the surface. Following the drill or planter it presses soil about the seed, causing quick, even germination and preventing crusts. When plants are small it stirs the soil, pressing it about the roots, destroying any clods or crusts and keeping the field in good growing condition. It keeps moisture in the soil against dry weather by packing the soil underneath and at the same time stirring and mulching the surface.

On every crop the farmer raises the Culti-Packer is being successfully used.—Wheat, corn, oats, alfalfa, cotton, rice, sugar cane, sugar beets, flax, potatoes, etc.

Dr. Tait Butler, editor of THE PROGRESSIVE FARMER, says: "Next to the plow and section harrow the Culti-Packer would take third place among the necessary implements on the farm."

Look up the Culti-Packer now at the nearest John Deere dealer. Ask him for the 56-page illustrated book "Soil Sense" and read what farm authorities everywhere say about this remarkable tool.

The Dunham Co., BEREA, OHIO (Suburb of Cleveland)


The Dunham Culti-Packer will be busy more days of the year than any other tool on the farm.


Preventing winter killing by Culti-Packing winter wheat in early spring.


Culti-Packing directly after seeder to cause quick germination.


CULTI-PACKERS FOR SALE BY JOHN DEERE DEALERS

Culti-Packing field of young oats.

Stop Wasting Money On Your Stump Land Turn It Into Dollars



GRASP the OPPORTUNITY and put DOLLARS in your pocket by clearing your stump land. Stump land was never so valuable as it is TO-DAY. The "K" Stump Puller will do the work in less time and the least expense. Cost just about ½ of a horse power machine and about ¼ of the cost of dynamite. One man or woman with a "K" can out pull 16 large horses. One person single handed can pull from 50 to 150 stumps per day.

HAND POWER
K Stump Puller


Weight, without cable, 171 pounds

No stump too big for the "K"

works by leverage—same principle as a jack—one man can lift or pull 48 tons alone. Works easy as rowing a boat. Works on hillsides or marshes where horses cannot operate. Has 2 speeds and weighs 171 pounds. Made of the best steel. Absolutely guaranteed against breakage. Endorsed by U. S. Government officials. Highest bank references.

Send for my special offer and free book on Land Clearing

WALTER J. FITZPATRICK Box 12 187 Fifth St., San Francisco, Calif.

Motor Car Indispensable on Modern Farm

[By Bert J. Morris, formerly of the Pacific Rural Press.]

MANUFACTURERS of motor cars have known for some time that farmers have been large buyers of automobiles. It has not been possible, however, to tell from registration lists what per cent of farmers owned cars. In 1915 the "National Farm Power," a combination of seven farm papers, with a total circulation of nearly two million, made a survey to determine the per cent of car owners among farmers. A question blank was sent to 11,000 farmers selected at random from the following States: Connecticut, Illinois, Indiana, Iowa, Kansas, Maine, Massachusetts, Michigan, Minnesota, Nebraska, New Hampshire, New York, Ohio, Vermont, and Wisconsin.

The result of the survey indicates not only that farmers are large buyers of cars at the present time but that the tendency is for more and more farmers to buy them. This tendency is made clear by the following statements taken from the replies to the questionnaires: A farmer from Charlestown, N. H., says: "No farmer that is doing any business can afford to be without an automobile." From Manchester, O., a farmer writes as follows: "One-half the farmers here have already purchased; the other half—most of them — expect to purchase soon." From Alpine, Mich., this reply was received: "Up to two years ago farmers in this vicinity were little interested in automobiles. Since then there have been a great many sold, there being about forty in the township at the present time."

Several reasons may be advanced to explain the growing tendency among farmers to own cars. One automobile dealer gives this reason: "The farmer has a billion dollars more to spend than he ever had before—he has more money than any man in any other profession and he will be making up his mind all winter just what kind of an automobile he will buy." Another dealer says: "The farmers have the buying power at the present time and will buy more cars than any other class of people."

THE USE OF A CAR ON THE FARM.

The real reason is, however, the fact that farmers have come to recognize that they cannot compete with other lines of industry unless they adopt the most modern methods and equipment, including the motor car. With the average farmer, the buying of an automobile is an investment. With him, time is money, and the automobile saves time. When it is necessary to make a trip to town or to go on other business, the car will make the journey in a fraction of the time formerly required by the horse and buggy. Further, the increased production due to scientific management has led the farmers to seek the best means of marketing their products. A few years' use of the automobile has shown that it is a great money-saver in marketing farm products. This is vividly stated by an Indiana farmer as follows:

FIRST INSTALLMENT ON MACHINE FROM HOG SHRINKAGE SAVED.

"You see," he said, "I live down in the hog country, about ten miles from the nearest market and freight station. Well, when I sell hogs I get so much a pound for 'em, live weight, and it's quite a trip for my hogs when they go on foot from my place to the station. And even if I feed 'em up good before I start 'em, and give 'em plenty of water, there's a good bit of shrinkage before they get to market. So I figured if I could save the shrinkage I'd get a good bit more for my hogs.

"Well, I looked around, and decided to buy an automobile truck so that I could haul my hogs to market. I made nearly enough from the first five batches of hogs to pay the first installment on the machine! Now I'm selling trucks to all the farmers in my part of the State and they're buying 'em, too."

An Iowa farmer puts the matter in this way: "A car will soon pay for itself on the farm if one has plenty of service for it. I farm two farms, eight and a half miles apart. One contains 160 acres and the other 368 acres, so I use the car going back and forth and for hauling all kinds of things, pulling corn planters, elevators, plows, and almost all kinds of farm machinery from one place to the other. If there is anything wrong on one place or the other, it does not take long to attend to it."

HELPS IN MARKETING PERISHABLE STUFFS.

Another very important use of the automobile is found in the increased marketing of fresh fruits and vegetables. Formerly only farmers living within a few miles of market could raise vegetables and other perishable stuffs at a profit. This was due to the lack of adequate facilities for supplying the market with fresh material from the garden. Farmers living at a distance of twelve or fifteen miles would have to start to town soon after midnight in order to get their produce there in time for the early morning market. The automobile has changed all this. Farmers living fifty to seventy-five miles from town can now supply fresh vegetables, fruit and other products to market daily. The coming of the motor car has more than doubled the garden area of a city. The influence of the motor car has been, therefore, to modify materially the methods of farming. Many a farmer who had been merely eking out an existence for years has taken his place along with the most successful men in other lines of work.

TRANSFORMS RURAL LIFE.

More than any other one factor, probably, the motor car has overcome the proverbial isolation of farm life. From a state of practical exile, the farmer now, with the help of the automobile, leads an active social life. A statement from a farmer well illustrates this: "After the day's work is done, I take the family or the hired men to town or for a drive to the neighbors; and, when the busy season is over, take a few days off for a drive through the country to see different places and to see what people are doing in other parts. It gives a person a chance to keep in better touch with the world. It also gives a person the advantage of going to the best places where one can buy things more reasonably."

The farmer now is interested in the social life of his community as much as the banker, the lawyer or the merchant. When public meetings are held it is easy for him to be present. This means that he is interested in the community life as never before. He is able to attend public lectures, theaters, "movies" and educational gatherings as easily as the city dweller.

THE TRACTOR IN UNIVERSAL DEMAND.

Within the last two or three years farmers who have been using automobiles to do various kinds of work on the farm are now buying touring cars for passenger service only and tractors for work on the farm. It is not possible to gather statistics concerning the number of tractors bought by farmers during the last two or three years, but a few statements from various farmers in different States indicate clearly the growing popularity of the tractor. From Wisconsin comes the statement that farmers have only begun to form an intimate acquaintance with the tractor. "While a considerable number of farmers," states the Motor Age for January 4, 1919 "owned tractors in 1917, it was not until 1918 that the power farm machine came into the wide use that created universal interest in the tractor and compelled the neighbor of the farmer who owns a machine to watch its performance with a greater or lesser desire to own one himself. The result of tractor experience in Wisconsin during 1918 has been to set even the small farmers to talking tractors."

The widely extended use of the tractor has created a great demand for skilled mechanics. Many State colleges have announced courses for tractor students.

The School of Agriculture of the University of California is giving a series of courses on the care of the tractor, in the leading agricultural

(Concluded on page 496)



They Win On The Roads You Ride On

DIRT track champions of America—that's the title Ajax Tires have won for two years in succession.

Think what these Ajax dirt track victories mean to you. Dirt tracks are merely country roads with a fence around them—the very same going you encounter when you drive your car.

In 1918, Ajax Tires shattered 9 world's records and smashed 49 track records, at country fairs in all parts of the United States.

Tires which stand dirt track racing best, are best for service over your own dirt roads.

Ajax Shoulders of Strength

The big reason why leading dirt track racers insist on Ajax Tires is that strong supporting shoulder of rubber which braces each side of the tread at its base. It re-inforces—gives more strength where strength is needed.

AJAX ROAD KING

Note the massive tread of the Ajax Road King. See the triangle barbs. They hold the road in a firm, friendly grip. Put Road Kings on your car and forget your tire worries.

Ajax Tires Are Guaranteed In Writing 5000 Miles

AJAX TIRES

AJAX RUBBER COMPANY, Inc., NEW YORK

Factories: Trenton, N. J. Branches in Leading Cities

THE BEST RUBBER BELT EVER MADE
TEST SPECIAL

Special booklet, mailed free upon application, describing construction of Test Special Belt. Sample also sent. Tell us your belt troubles.

NEW YORK BELTING & PACKING CO.,
519 Mission Street, San Francisco.

Before You Build Get Our Estimate

We are now wrecking

10 Residences 20 Flats
60 U. S. Govt. Buildings at Berkeley

LARGEST STOCK TO SELECT FROM

3,000,000 ft. Dimension Lumber
Everything in Building Material, Plumbing, etc.

40% Saved.

Every Shipment Guaranteed.

SYMONS BROS.
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Water

WHERE and WHEN you want it the year 'round. For house, barn, field, any place. BORE YOUR OWN WELL with our time-tested

Standard Well-Boring Outfit

Easily operated by hand. Bores wells 8 to 16 in. dia., up to 100 ft. deep. One man bored 48-ft. well in 5 hours. Another bored 5 wells averaging 75 ft. each and wrote "its a humdinger."

BORES 100 ft. WELLS by hand

Thousands used during war by U. S. and English Governments.

ONE DAY'S WORK PAYS FOR OUTFIT

Easy to get 50 cents to $2 per ft.—make $20 to $30 per day boring wells for neighbors. One man bored 47 wells—another 75 and another bored 35. Satisfied users in 46 states. Every claim *guaranteed* and *proved*. Write now, TODAY, for full information.

The Specialty Device Co.
Dep't. 48 106 W. 3rd St., Cincinnati, O.

GRIND FEED + USING YOUR AUTO AS A STATIONARY ENGINE



YOUR Automobile will furnish cheap and efficient power for grinding feed, sawing wood, filling silo, shredding corn and all other work a 14 H. P. Gas Engine can do.

Our Equipment Fits:
Ford, Overland, Hudson, Fordson, Dodge, Reo, Studebaker, Buick & others

Simple to connect---does not harm your car. Get one NOW---hundreds in use---Satisfaction guaranteed---only . . **$35.00**

LAWRENCE AUTO POWER EQUIPMENT

Write for Circular.

409 Minnesota St. ST. PAUL, MINN.
LAWRENCE AUTO POWER CO.

180 to 4500 GALLONS PER MINUTE

WATER

LAYNE & BOWLER
TURBINE CENTRIFUGAL
PUMPS
-give most dependable service
-over 6000 in use

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ASK FOR ILLUSTRATED FOLDER No 25

SURFACE IRRIGATION

WELL CASING — TANKS — RIVETED WATER PIPE — SUPPLIES — CORRUGATED and PLAIN TANKS

American Steel Pipe & Tank Co.
Branches: FRESNO — LOS ANGELES, CAL.

WRITE GALLOWAY TODAY • OF WATERLOO

For new 1919 Book. Save $25 to $200 on Gasoline Engines, Manure Spreaders, Cream Separators and other Implements. Sold direct from factory. Our 300,000 satisfied customers prove merit of goods and direct selling system. Close shipping points. Mention implement interested in. Write today.



Wm. Galloway Co., Box 3177 Waterloo, Iowa

WITTE Kero-Oil Engines

Twice the Power at Half the Cost
Sizes 2 to 30 H.P.—Select Your Own Terms—Direct from Factory prices. Write your own order. Save $15 to $200. Prompt Shipment. Big new catalog, "How to Judge Gasoline Engines" FREE by return mail, Postpaid.

Money Back If not satisfied on my New 90 Day Engine Offer

Write Today 2940 WITTE ENGINE WORKS Oakland Ave., Kansas City, Mo. Empire Bldg., Pittsburgh, Pa.

A VOLCANO ON SAN JACINTO?

To the Editor: As an embryo fruit grower, writing with a copying pencil by the light of an ordinary kerosene lamp, from the mountains of Riverside county, I address you, and as a prelude to my remarks I feel constrained to say your editorials are interesting and when confined to comments on the subjects of agriculture are edifying, but when you dip into finance, Heaven forfend! Witness your editorial, "Bonds," in January 25 issue.

Do you honestly believe that "The Cure for Debts Is More Debts?" Or do you class a bond, which is only a mortgage, in the list of assets? Many a man has thought that the cure for debts is debts, but your boost is the first expression that has crossed my view, that because of lack of "distressing knowledge" as to the means of payment let us go right on mortgaging the future!

Frankly, I don't believe that you have ever stopped to analyze where the income that pays highway bonds comes from, the effect on the body of the people, or whether the State has any right to the income from those sources, or whether there is not a better and more equitable method of raising that income.

Still, a part of your remark prompts me to say that I have hope that your reformation may yet be accomplished and that your belief in bonds may be turned to suspicion, because all of last year you fought, tooth and nail, day in and day out, in every issue, the very proposition that would bring about the consummation that you now seem to so devoutly wish.

That is one trouble with the Rural Press. The editors seem to think themselves fitted to advise their readers on every subject from high finance, economics, taxation, etc., to stretching wire fence. When as a matter of fact few of them can understand why the gold dollar of 1914 is worth only 50 cents in 1919, nor can they give a definition of Capital that is accurate, or explain why corporations do not pay taxes, yet they go blatantly and brazenly along proclaiming some such foolishness and untruths as contained in the editorial mentioned, and in the next column, viz: "Economic laws require every healthy man to put in six days' work in a week," but stand up on their hind legs and bray the instant some one wants to enact statute laws that will require every healthy man to put in six days' work in a week, and release the farmers, big and little, from the parasitic land monopolists, real estate speculators, holders of idle lands, bone, brain and muscle mortgages, etc. I wonder if you really want to help?

Not only is W. D. C. (Stevinson), in your issue of January 25, correct as regards the small farmer and the associations, but they have mighty little show anywhere, even in the columns of the Pacific Rural Press, because you sanction the land settlement scheme as practiced at Durham, and the obnoxious proposition of Franklin K. Lane, viz., that swamp land and cut over timber land that somebody else don't want to use is good enough for the boys who went "over there" to fight for their (?) country. Whose country?

Pretty "sassy" letter from a reader. Yes? What?

Now I'm going to read the other editorials in the issue of January 25 and from a few lines I can see, maybe when I am through I'll have hydrophobia.—J. H. M., Beaumont, March 13.

[You are in more danger of delirium tremens. That would seem to be the natural result of such intemperate fermentation as you are indulging in. But why do you risk your sanity by reading the paragraphs which you find so deadly? Skip the page—the balance of the paper is worth ten times what you pay for the whole of it.—Editor.]

The boundaries of the proposed Merced Irrigation District were changed to eliminate 12,000 acres in the Sandy Mush district and to add 22,000 acres in the Le Grande vicinity.

FAGEOL WALKING TRACTOR

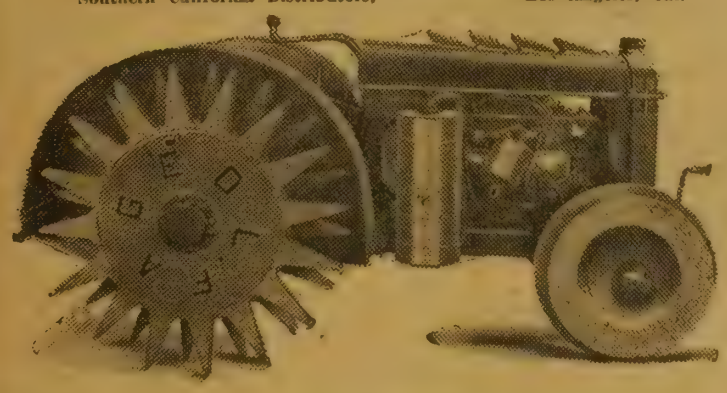
THE sure-footed Fageol Walking Tractor actually steps over the ground—securing traction without slippage with 64 wedge-shaped legs or grousers.

This dependable traction in all kinds of soil is one important factor in Fageol low operating costs.

Mail this advertisement, with your name and address on the margin, for illustrated descriptive literature.

BUTLER-VEITCH
INCORPORATED
Sales Organization—Fageol Products
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RUDDLE & MENNILLO,
Southern California Distributors, Los Angeles, Cal.



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RUDDLE & MENNILLO
SOUTHERN CALIFORNIA DISTRIBUTORS FOR
"FAGEOL" WALKING TRACTORS
231 North Los Angeles St. Los Angeles, Cal.

Federal Farm Loans

Long Term ***Low Rate***

All loans made on an amortization plan whereby the borrower repays the principal gradually with each interest payment.

Over three thousand satisfied borrowers in this district. It will pay you to investigate.

For information apply to the nearest **National Farm Loan Association** or write direct to

Federal Land Bank of Berkeley
Berkeley, Cal.

PIPE

For Every Purpose
NEW
Threads & Couplings
Hot Asphaltum Dipped

New and Used Screw Casing

Fittings and Valves
Special Fittings Made to Order

TESTED AND GUARANTEED.

PACIFIC PIPE CO.
MAIN AND HOWARD STS. SAN FRANCISCO, CAL.

We Manufacture Levelers for Any Power From 6 Horses to a 75 H. P. Tractor

A Schmeiser Leveler

of the "Giant" Type

WILL WORK WONDERS ON YOUR FARM



Moving immense amounts of dirt daily, and working on ground too tough for horses and Fresnos to tackle, SCHMEISER POWER LAND LEVELERS are now being used with utmost success by a great many ranchers, large and small—also by contractors—saving their owners time, labor and money.

So extremely simple, a child could operate one, as a simple twist of the wrist raises and lowers the bucket or holds it stationary, as the case may require.

YOU SHOULD

send for our latest catalog, J-600, which is full of interesting information on Labor Saving Devices and machines for moving the earth.

Schmeiser Manufacturing Co.

12 Mechanic Street DAVIS, CAL.

Manufacturers of

Sure Pop Almond Huller and Separator, 3 sizes; McGarvin Fruit and Olive Graders, any size; Schandoney & Harrington Equalizing Hitches, any size; Diamond Special Harrows, Baker Clips, Clevises; and Schmeiser Portable Automatic Hay Derricks. We sell the Martin Ditcher and Grader.

Moline Mower

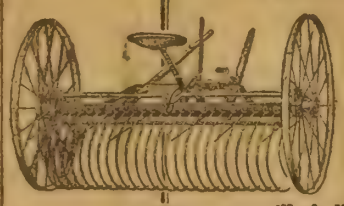
"I have about two acres of soggy land. The sweet clover on this land was as high as the horses, and with the old stalks from last year still on the land. The Moline Mower is the only mower that I was able to cut this clover with, and I have tried them all. I consider the Moline Mower the best that is built. The mower is the lightest draft machine I ever hitched a team to, and certainly do recommend the Moline Mower to any one considering the purchase of a mower,"—*A. C. Maneman, Payette, Idaho.*

This letter shows what service you can expect from a Moline Mower. The Moline gives such satisfaction wherever used and will give you better service than you ever obtained from a mower before.

It will cut any kind of grass; it is unusually light in draft, and it will give you from 25 to 40 years of satisfactory service—many Moline Mowers have been used longer than this.

And remember, the Moline Mower is not a new mower, but has been in use in all parts of the world for the last 60 years.

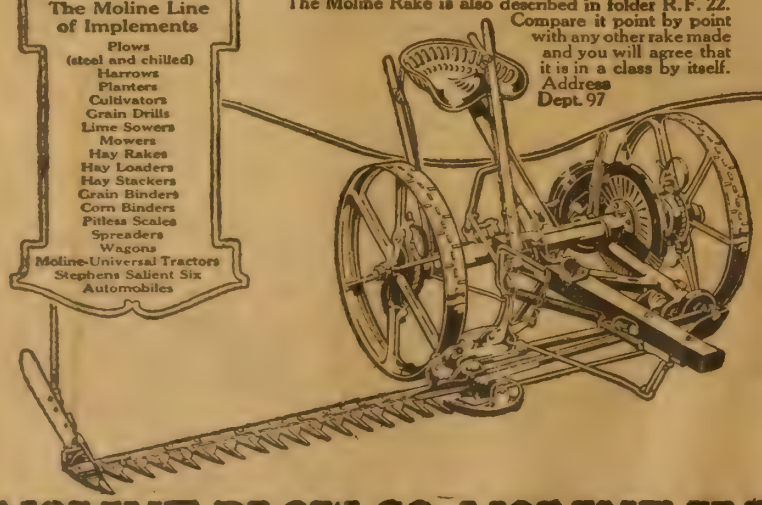
Space does not permit us to tell you all about the good points of the Moline Mower. Send for Folder R. F. 22, which we will gladly send you, and you will readily see why the Moline Mower gives such splendid satisfaction, year after year, cutting all kinds of grass.



The Moline Rake is also described in folder R.F. 22. Compare it point by point with any other rake made and you will agree that it is in a class by itself. Address Dept. 97

The Moline Line of Implements

Plows (steel and chilled)
Harrows
Planters
Cultivators
Grain Drills
Lime Sowers
Mowers
Hay Rakes
Hay Loaders
Hay Stackers
Grain Binders
Corn Binders
Pitless Scales
Spreaders
Wagons
Moline-Universal Tractors
Stephens Salient Six Automobiles



MOLINE PLOW CO., MOLINE, ILL.

MANUFACTURERS OF QUALITY FARM IMPLEMENTS SINCE 1865

Farm Power Needs Investigation

[A pennywise policy it would be to refuse $25,000 for investigations and instruction which are urgently needed to save millions of dollars' worth of farm machinery from a premature scrap heap.]

[Written for Pacific Rural Press.]

DO YOUR SHARE IN MAKING INVESTIGATIONS POSSIBLE.

Assembly bill 722 in the Legislature proposes to give $25,000 additional for the University Farm Agricultural Engineering Division to study these problems, carry on more tractor courses throughout the State, install correspondence courses, enlarge the activities in planning farm buildings, water supplies, septic tanks, etc. Now you still have time to clip this article, write "Them's my sentiments. Please push this bill," and send it to the Ways and Means or Finance Committee member who comes from your section. You will find their names and home addresses in our other columns, but address them now at the Capitol, Sacramento.

Implements and machinery on the farms of California, according to the 1910 census, were valued at $36,493,158. This was an increase of 71.2 per cent over the valuation for 1900, which in turn was an increase of 73.9 per cent over 1890. If farm machinery has increased proportionately in the nine years since the 1910 census, the valuation now would be $60,764,857. But owing to the sharp increase in prices and the unprecedented increase in use of tractors, gas engines, motors, and improved tillage, planting, and harvesting machinery, it is entirely safe to say that today California farmers have over $100,000,000 invested in farm machinery. The very rapidity of increase in use of gas power machinery, as well as its greater complexity, are sufficient reasons for the insufficient information which its operators generally possess. The attempt to operate gas power engines, tractors, motor trucks, etc., with insufficient information is a prime cause of the premature scrapping of these machines. Every year the farmers of California are wasting probably several million dollars of investment in gas machines through excessive depreciation. They are losing still more by fear of tractor farming and fear of gas engines.

What they need and demand is reliable information given disinterestedly and promptly. They not only want their thousands of letters answered fully, but a considerable proportion of them want a chance to take a regular course of study where they may have complete facilities to learn the principles and practice of power farming. No other interest is so all-pervasive in agriculture, except the soil itself, as the power with which to till the soil and prepare its products into marketable form. No other factor is so important in development of the difference between American farmers and European peasants as the more extensive use of machinery. No development of such magnitude has been so rapid, and on no subject is there so much ignorance and consequent loss. On no other subject pertaining to farming has there been so little careful investigation by State colleges of agriculture. And California has been lamentably backward in this respect as compared with many other States.

MACHINERY INVESTIGATIONS PREVENTED.

About three years ago our College of Agriculture captured the man who had developed immensely popular Divisions of Agricultural Engineering at Nebraska and Ohio universities. He intended to continue investigation of urgent but unsettled problems regarding use of gas power in farming. But the scant financial support given to his department at the University Farm at Davis has prevented any particular investigations because all the money has been required to keep up with the demand for instruction alone. This Division gives instruction to seniors in the four-year courses of the College of Agriculture. It gives instruction in all classes of the three-year University Farm practical farm courses. It has held two or three tractor and engine short courses each year, where the enrollment of students exceeded the facilities for their instruction.

THE DEMAND FOR INSTRUCTION.

Four hundred and seventy-five class-students were taught the regular University Farm courses in the two years just ending. Forty-eight seniors of the four-year College of Agriculture course have taken regular class instruction in agricultural engineering. Two one-month courses have been furnished to vocational teachers with an enrollment of about fifty. Seven hundred and seventy-one students enrolled in the various tractor and engine short courses in the past two years at Davis, Riverside, and Visalia. Fifty-eight trips have been made by the instructors to address special meetings, three-fourths of them by the head of the division, Prof. J. B. Davidson himself. Over 4300 letters of inquiry have been answered and about 450 ranchers have called at the office for information.

GREATER ECONOMY IN FARM BUILDINGS.

California before the war was investing over $10,000,000 annually in farm buildings. The Agricultural Engineering Division scouted around the State, spotting the best ideas in practical farm buildings, and has incorporated these in detailed plans on which 3150 sets of blueprints have been made and distributed to farmers ready for the builders to work on. Plans have been prepared for $45,058 worth of buildings erected or to be erected on Univeristy Farm. When the University wanted this division to prepare plans for a cheap resaw silo, plans were prepared for much better silos costing about $100 each less than the ones originally proposed. Under the campaign for silo building which followed in the farm bureaus, about 300 were erected. Thus the division saved farmers $30,000 in first cost of the silos, not considering how much they saved by having the better kind.

TRACTION TESTS ON ROAD AND FIELD.

Prof. Davidson has made tractive resistance tests for the State Automobile Association, showing how much power is required to pull heavy loads over various kinds of roads. Results of these tests will be sketched elsewhere. He has made tests of the drawbar pull of various tractors in the State. He has made authentic tests of various types of spark arresters for tractors to reduce losses from grain fires.

PROBLEMS TO BE INVESTIGATED.

Some of the problems for which authentic answers should be obtained by investigations at Davis include: (1) Influence of speed upon power required to pull plows or other loads; (2) effect of various piston speeds in tractor engines; (3) influence of adjustment of plows, harrows, etc., on the draft required to pull them and on the quality of work; (4) influence of varying soil moisture on pulverization in various soils at various seasons; (5) loss of power in a tractor between the motor and the drawbar; (6) efficiency of various tractors on various soils in various conditions of moisture; (7) effect of varying track width or wheel lug equipment on power required, etc., etc.

GRAIN ELEVATOR DEMONSTRATION.

Grain elevating machinery and Calco field storage bins will be part of the exhibit of the John Deere Plow Co. at the Sacramento Tractor and Implement Demonstration, May 6 to 11. Those who question the feasibility of both handling of grain will have ample opportunity to get all the facts and see a convincing demonstration here.

The Coleman Worm Drive tractor is being vigorously pushed now, with headquarters at Sacramento.

Pump and Power to Run It

To the Editor: Installing a pumping plant with water level at 30 or 31 feet, I dug the pit down 26 feet. By using a 4-inch horizontal centrifugal pump and a 10-horsepower gas engine, setting the belt at 30 to 45 degrees, I will need about 65 feet of belting. By using a vertical centrifugal I could set the pump within a foot of the water and the belt would be shorter and horizontal. Which would work out better? An electric high-tension line runs about 900 feet from the well. Would electric power be more economical than gas power? I asked for an estimate from the gas company, but got no satisfaction. The first cost on an electric system would be higher than for a gas engine. I intend to irrigate orchard, vineyard, and alfalfa. —R. J. J., Oakley.

We would recommend the horizontal pump, setting the engine into a side pit if you want to shorten the belt. A vertical pump and horizontal belt would not shorten the belt more than half, and the belt would wear out sooner on account of the twist as well as the extra tension you would give it. The reason you get no satisfaction from the power company is that one or more transformers would have to be installed costing several hundred to over a thousand dollars, according to voltage in the high-tension line. Use of a motor would cost more if you do not count time and repairs. It would run indefinitely if you do not wet or overheat it and if you keep it lubricated; and it could be supplied with automatic start and stop or with switches to operate at long distance from the pump. It would also enable you to use a direct-connected pump if there were no danger of water rising over it. But a gas engine properly taken care of will give you satisfaction.

Power-Lift Tractor Disk Plows

Power-lift tractor disk plows are new here, according to C. C. McDonald of the Oliver Chilled Plow Works. This company has recently stocked their San Francisco branch with these implements, which have had a good demand in the Middle West and Southwest since last July. The frames have 15 inches clearance from the ground and are built for two, three, or four 24-inch disks, which cut eight, nine, or ten inches width, according to the way they are set.

Transformers and Motors

To the Editor: Can a five-horsepower electric motor be driven without a transformer by a current of 115 volts?—D. P. J., Placerville.

If your current is 115 volts alternating current and the nameplate on the motor says 115 volts alternating current, no transformer will be needed. The same is true of direct current and direct current motors. But if the current in your supply line is more than 10 per cent above 115 volts, one transformer must be used for single-phase alternating current or two and in some cases three transformers will be required if you have a three-phase current and motor. Some companies will not supply three-phase current for so small a motor.

The recently organized Northern California Tractor and Implement Dealers' Association held a three-day demonstration near Chico recently.

Get the ORIGINAL



"An Imitation —be it Ever so Good— is Still an Imitation."

We have found your Spreader to be most satisfactory. The light team, weighing only about 2000, handles it on practically all the farms.

The evenness and strength of the growth after top-dressing with your machine shows it is a tool no farmer can afford to be without if he wants results. J. H. McCLUER.

Two years ago I bought one of your spreaders, last year I got a second one.

A good Manure Spreader is one of the best paying tools a man can have on a farm. We spread lime as well as manure with your "NISCO" Spreaders. Would not think of running my farms without them. A. S. WELCH

I have used your "NISCO" Spreader for five years. Am so well pleased with the work it does, that I would not have any other. Has cost me only 30c for repairs and that was caused by my own neglect. P. I. WORTHINGTON

Original letters on file. Addresses upon request.

When you invest in a manure spreader you are buying an implement that will be the most profitable machine on your farm, if you profit by the experience of others and choose the machine that has stood the test of time. Buy the original, the machine which revolutionized old-fashioned methods, which has always been the leader in quality, in sales and in improvements. This machine is the

NISCO
The New Idea

Lowdown, light draft. Loads and pulls without undue strain on man or team. Has solid bottom with chain conveyors. Pulverizes thoroughly and spreads evenly. 5 to 7 ft. wide. Spreads from 3 to 15 loads per acre, at your option, by merely shifting a lever. Drives with heavy sprocket chain—no gears.

The "NISCO" One-Man Straw Spreader Attachment—Gives you Two Machines in One.



See the "Nisco" at your dealer's. Don't wait for him to see you as he is probably short of help. Insist on the "Nisco," and don't buy regrets by taking some other machine. If you don't know who sells the "Nisco," write us and we will give you his name.

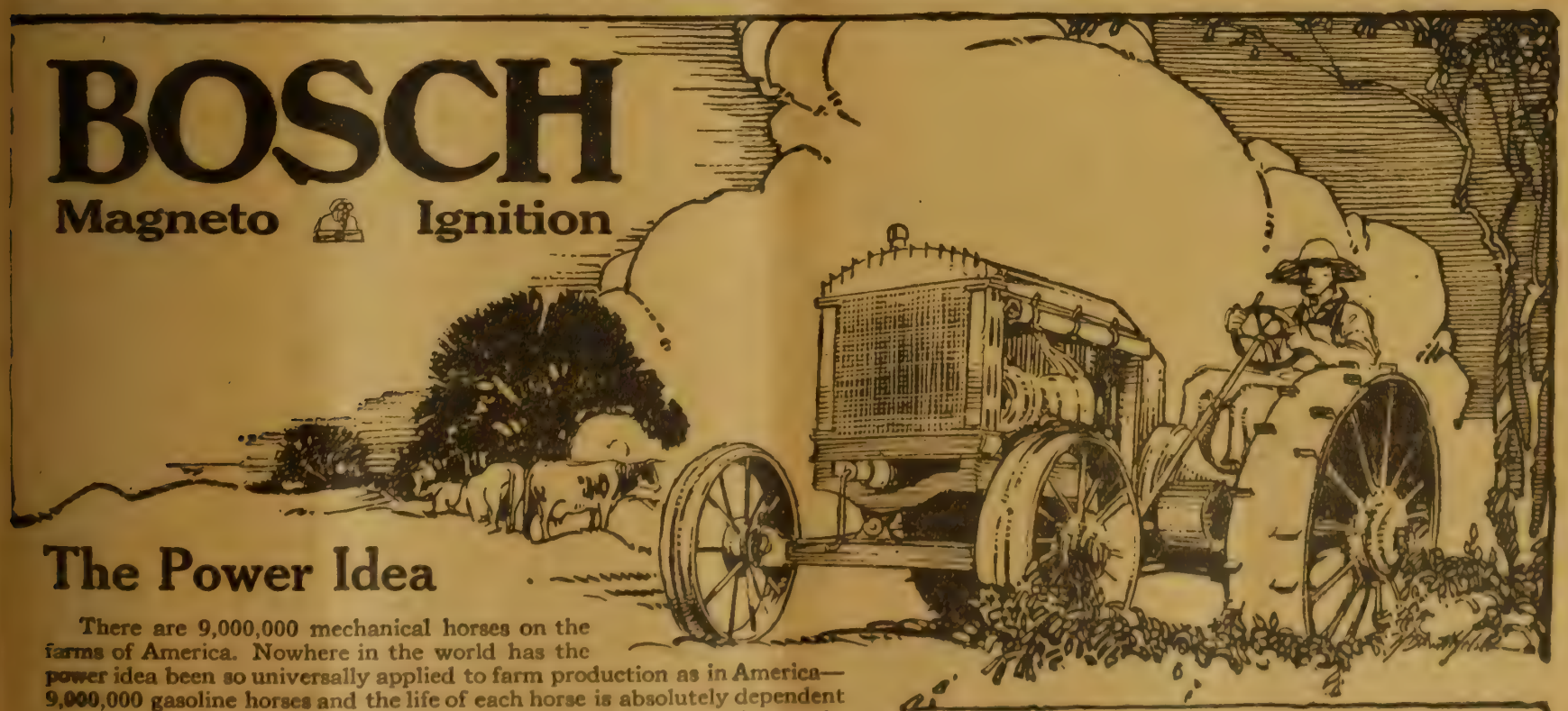
Get our Book—"Helping Mother Nature," which gives much new information about manure and soil fertility.

NEW IDEA Spreader Co.
SPREADER SPECIALISTS. COLDWATER, OHIO

(10)

PACIFIC IMPLEMENT COMPANY,
Distributors,
San Francisco, - - - - - California

BOSCH
Magneto Ignition



The Power Idea

There are 9,000,000 mechanical horses on the farms of America. Nowhere in the world has the power idea been so universally applied to farm production as in America—9,000,000 gasoline horses and the life of each horse is absolutely dependent upon ignition. The only ignition that can be truly reliable under the searching strain of farm work is magneto ignition, and magneto ignition means

BOSCH IGNITION

You will find the tractors, trucks, stationary engines, lighting systems, in fact all forms of gasoline motors with the best reputations, are invariably Bosch-equipped.

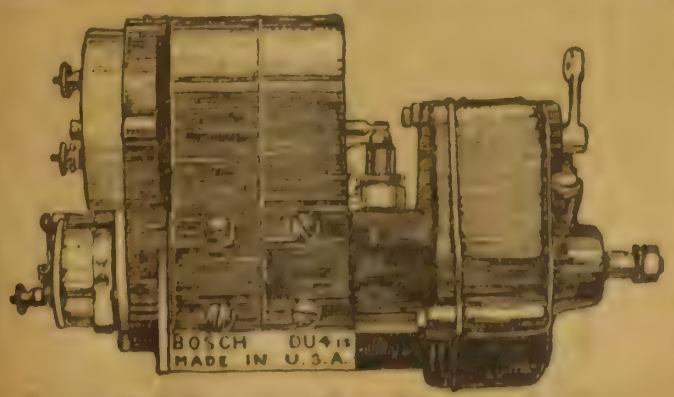
Bosch Ignition on a list of specifications means that the manufacturer of that piece of machinery has spent more money in order to make a better and more enduringly perfect product. He is protecting your interests. That's the kind of a machine you want. Insist on Bosch Ignition you can get it.

Stop in at the nearest Bosch Service Station or talk to the nearest Bosch Dealer. Ask him how and why Bosch is superior. He will give you a convincing demonstration. Get prices on having your farm machinery Bosch-equipped. It will save money in a year's service.

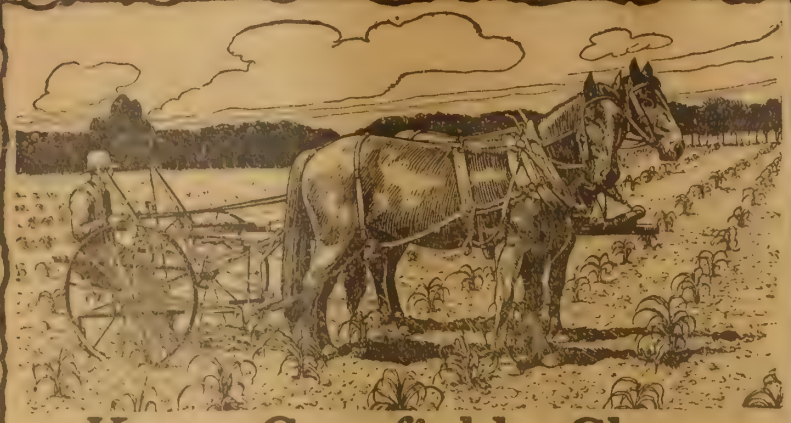
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AMERICAN BOSCH MAGNETO CORPORATION
Main Offices and Works: Springfield, Mass.
Branches: New York, Chicago, Detroit, San Francisco—Service Stations in 200 Cities

AMERICA'S SUPREME IGNITION SYSTEM
Motor Trucks — Tractors — Airplanes — Motor Cars — Motor Boats — Motorcycles — Gas Engines



Bosch Magneto with Bosch Impulse Starter



Keep Cornfields Clean

INTERNATIONAL Corn Cultivators keep the surface soil in good lively tilth and free from weeds.

International No. 1 is built for deep early cultivation, shallow late cultivation, and for laying by. It is a high-arched, pivot pole cultivator of unusual strength and light draft, is easily handled, and has the parallel gang movement so necessary for good clean work close to the corn. Gang equipment consists of 4, 6, and 8-shovel gangs, pin break or spring trip, with round or heavy slotted shanks.

International No. 4 is built for use in fields with crooked rows, on hillsides and for narrow-row crops like peas and beans. No. 4 has a pivot axle and frame that makes quick dodging easy, while keeping the gangs parallel and the shovels facing squarely to the front. It handles easily, does clean close work, and can be adjusted to meet practically every condition of soil, surface, and planting irregularity.

The **International** line includes two-row cultivators, motor and horse; walking, and combined riding and walking cultivators. The list below shows our complete line of farm machines. See the local dealer or write us for catalogues.

The Full Line of International Harvester Quality Machines

Grain Harvesting Machines
Binders Push Binders
Headers Rice Binders
Harvester-Threshers
Reapers Shockers
Threshers

Tillage Implements
Disk Harrows
Tractor Harrows
Spring-Tooth Harrows
Peg-Tooth Harrows
Orchard Harrows
Soil Pulverizers
Cultivators

Power Machines
Kerosene Engines
Gasoline Engines
Kerosene Tractors
Motor Trucks
Motor Cultivators

Haying Machines
Mowers Tedders
Side Delivery Rakes
Loaders (All Types)
Rakes Bunchers
Combination Side Rakes and Tedders
Sweep Rakes Stackers
Combination Sweep Rakes and Stackers
Baling Presses

Planting & Seeding Machines
Corn Planters
Corn Drills
Grain Drills
Broadcast Seeders
Alfalfa & Grass Seed Drills
Fertilizer & Lime Sowers

Corn Machines
Planters Drills
Cultivators
Motor Cultivators
Binders Pickers
Ensilage Cutters
Shellers
Huskers & Shredders

Other Farm Equipment
Cream Separators
Feed Grinders
Manure Spreaders
Straw Spreader Attachments
Farm Wagons
Farm Trucks
Stalk Cutters
Knife Grinders
Tractor Hitches
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International Harvester Company of America
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Billings, Mont. Crawford, Neb. Denver, Colo. Helena, Mont.
Los Angeles, Cal. Portland, Ore. Salt Lake City, Utah
San Francisco, Cal. Spokane, Wash.

Cuts Irrigation Ditches

This implement cuts irrigation ditches, laterals and other ditches, quicker, cheaper and better than any other machine ever built. It's the

Simplex DITCHER-TERRACER



Cuts V-shaped ditch up to 4 feet. Builds terraces, levels and scrapes land, grades roads. Light draft. All steel; reversible. Does work of 100 men. Write for catalog and prices. Sold on money back guarantee. You will want a Simplex.

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THE H. C. SHAW CO., Stockton B. HAYMAN CO., Los Angeles
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Resists wear and pressure

Mica Axle Grease contains powdered mica, which fills up all roughness in spindles and bearings, makes the grease work better and last twice as long. The grease forms a cool, slippery coating. No hot boxes. Ask your dealer. Buy by the pail.

Standard Oil Company
(California)



Tractor Land Leveler at Demonstration

[Written for Pacific Rural Press.]

More and more is it apparent that the high cost of leveling land may be greatly reduced by use of tractors and tractor scrapers. It is also true that fewer men are required to do the same work and they do it in much less time—important in many cases of rush work. Two or three factories in California are making specialties of mammoth scrapers to be pulled by tractors, and in many cases to be raised or lowered by compressed air. They scalp off a knoll and carry the dirt any distance, letting enough drop to fill hollows in the way and leaving a smooth, level job. Probably three of these tractor levelers will be demonstrated by the Schmeiser Mfg. Co. at the Tractor and Implement Demonstration near Sacramento, May 6 to 11, 1919. One of these will cut a 12-foot strip and will be operated from an air compressor run by the tractor. A smaller one 8 feet wide will also be worked by compressed air, and another 8-foot tractor scraper operated by hand screws. The Schmeiser people report that last February they did better business than during any February before.



Getting land leveled in a hurry with least Human labor.

MOTOR CAR INDISPENSABLE ON UP-TO-DATE FARM.

(Continued from page 492)

centers throughout the State. The farmers are not asked to come to the school for the instruction, as the State carries the work to their own community. In this way practically every farmer in the State will have the opportunity to secure training in all problems connected with the handling of a tractor. In the Pacific Rural Press, San Francisco, February 15, 1919, a full description of these courses is given.

MOTOR CAR MAKES FARMING PROFITABLE AND ATTRACTIVE.

Just as the motor car has been a big factor in the development of social life among the farmers, so the tractor is a big factor in the economical development of the farm. These two forces will do more to stem the tide of emigration from the farm to the city than all of the "back-to-the-farm" movements combined. It is futile to urge young men to remain on the farm unless farming can be made as profitable and attractive as other lines of business. With the coming of the motor car and the tractor, the opportunities on the farm compare favorably with any in commerce and industry.

FOUR-WHEEL HAPPY FARMER TRACTOR.

[Written for Pacific Rural Press.]

Visitors to tractor demonstrations the past year or two will remember the three-wheeled La Crosse "Happy Farmer" tractor of 12-24 horsepower with a long tubular "reach" to the front wheel, which ran almost in line with one of the drivers. This tractor has never been much pushed on the Pacific Coast, though the company has a large plant in Wisconsin. Tests by the Ohio University Agricultural Engineering Department at one of the demonstrations last fall showed that it pulled three 14-inch moldboards 8 inches deep, using 2.35 gallons of kerosene and 0.07 gallons of gasoline per acre. A vigorous campaign is now on to show California farmers the low cost of operation, easy accessibility, and other good points of a Happy Farmer four-wheeled model on which deliveries are just now assured. They have held private demonstrations at Chico and Davis and will be at the Sacramento Tractor and Implement Demonstration, May 6-11.

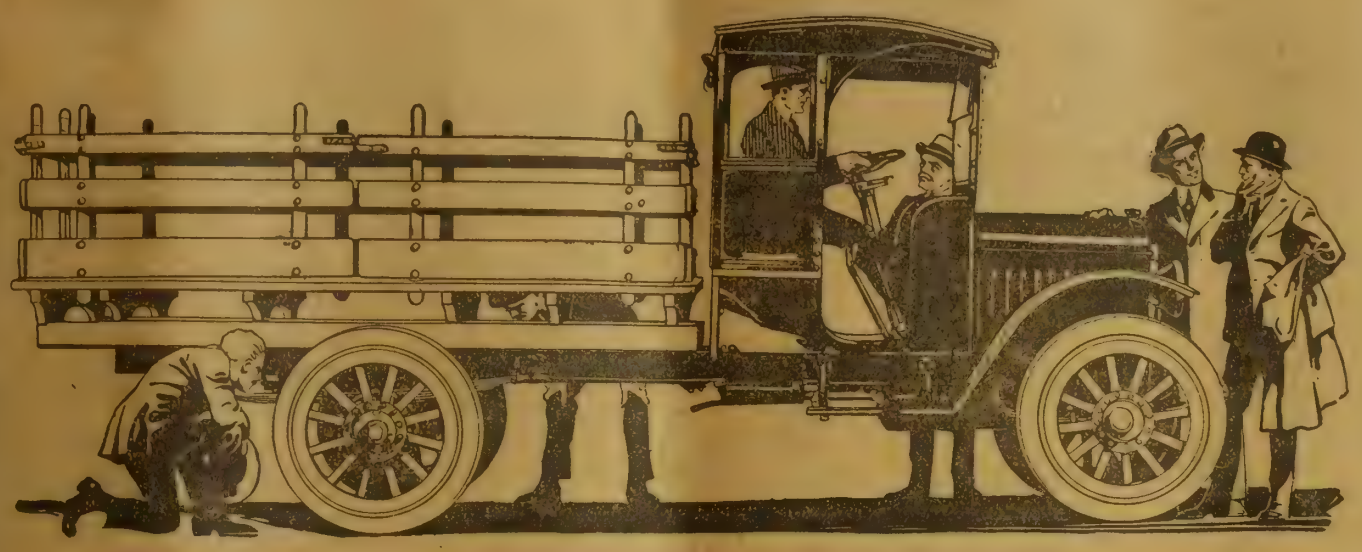
SPRING RUSH DEMANDS TRACTORS.

[Written for Pacific Rural Press.]

Lots of people have been prevented from buying tractors recently because they could not sell their barley and beans, but now, since movement has started, and since the wet weather has retarded field operations, people generally feel safer in investing in tractors and they feel the need more because work must be rushed. This is the survey given us by J. A. Johnson of the J. M. Conley Co., who specialize on Bates Steel Mules but handle also the Case and Waterloo Boy tractors. Mr. Johnson expects to have one or more Steel Mules at the Sacramento Tractor and Implement Demonstration probably pulling Deere implements. He expects the Mule to pull 50 inches of plows in the general demonstrations to the full required depth of six inches or more. It has pulled four twelves 12 inches deep, several inches deeper than that field had ever been plowed before. It pulled four tens 8 inches deep in dry adobe near French Camp last July, where the owner said it would take twelve extra good horses to do the work. This is the compact track type Mule. The old wheel type is out of print.

PLOWS TO BE ADJUSTED BEFORE DEMONSTRATION.

Plows and tractors will be tried out and properly adjusted on the field before the general plowing exhibition on the first day at the Tractor and Implement Demonstration to be held near Sacramento, May 6 to 11, so that service men will not be so conspicuous on the field and the demonstration will go forward without the distressing delays which have heretofore marred these events, according to C. A. Coggin of Baker, Hamilton & Pacific. Mr. Coggin is a member of the demonstration committee. His company will have a tent 60x140 feet to house the many farm implements they handle, and there will also be an implement of each kind in the field.



Four sound horses cost as much as a Maxwell Truck

AND the Maxwell will outwork three good teams. It feeds as it runs. Puts in a net day's work and piles up no expense. It will carry and fetch a thousand miles for a thousand hours at a stretch. No wagon can keep up with it—weather can't hold it indoors. Never founders or flounders and never has a "Blue Monday" or glanders. No animal or machine its equal for willing and competent service.

Does more work, more sorts of work, more hard work, more often under more unfavorable conditions than any carrier.

Designed for the heaviest hauling and the hardest mauling.

The Maxwell goes farther and faster than the biggest truck and travels where they can't. 2400 pounds. Only one farmer in ten ever needs a heavier machine and at that only one time in ten. Farmers the land over are operating Maxwells because it answers every average purpose and costs least to own and least to operate.

The same type of worm drive which $5000 trucks advertise as their great feature. $5000 truck construction and sold with a $5000 truck guarantee. 10-foot loading space. Electric lights and generator. Chassis $1085 f. o. b. Detroit.

Pays its way from day to day.

MAXWELL MOTOR COMPANY, Inc. - Detroit, Mich.

WATER USERS

Anticipating Your Wants==

We have manufactured and stored in our factory one ordinary year's supply and will ship you a Remco Redwood Tank---any capacity from 500 gallons to 10,000 gallons, in 24 hours from receipt of your order.

If you want to connect your tank with your house and barns or irrigate your garden from it, we will ship you Remco Pipe with equal promptness, and our engineers will attend to all the details for you.

We also have in stock for shipment in one day a full supply of Standard Remco Silos, all ready to erect and fill.

Redwood Tank Outlast 4 Towers

Prior to American occupation in California (1846) a ranchman near Cayucos erected a Redwood Tank on a tower of other wood. Since that time he and his son, who succeeded him, have put four towers under this same tank, replacing towers that had decayed.

Four years ago the owner built a redwood tower under this famous old veteran tank and both are now good for many years to come.

There are hundreds and thousands of Redwood Tanks in California that are from 30 to 40 years old.

Remco Pipe Tank Silos

are all built of clear redwood, air dried only

Catalogs, prices and further particulars furnished promptly.

Redwood Manufacturers Company

1608 Hobart Bldg., San Francisco

"REDWOOD FOR DURABILITY" "REMCO FOR MECHANICAL PERFECTION"

Are These Operations Co-operative?

[Written for Pacific Rural Press.]

In last week's issue we said that we thought our readers ought to know the facts regarding the so-called "raw deal" in the purchase of the Keyes Creamery by the Milk Producers' Association. We want to be absolutely fair to the association, so our Mr. R. E. Hodges has made a thorough investigation. Mr. Hodges is a stickler for co-operation and he started out hoping that he would get enough evidence to exonerate the association. Whether or not he has can be decided by our readers. We will simply give the results of his interviews.

REPRESENTED AS A MARKETING ORGANIZATION.

J. W. Scott, a director of the Keyes Creamery, was not at home, but Mrs. Scott gave the following information: The association solicitors represented to farmers that the association would not buy creameries or make butter, but that it was strictly a marketing organization. Mr. Scott would not sign up, but finally told them to send an official representative to meet with the directors of the Keyes Creamery and make a statement. Chas. Geer, one of the directors of the Milk Producers' Association, attended a meeting and made the same statements. Mr. Scott signed up his cows at the meeting, and others agreed to help solicit memberships in the association. Previous to this time the soliciters had had practically no success. After this about 40 per cent of the Keyes patrons signed up, largely due to the influence of the directors.

At the meeting Mr. Geer promised to turn enough cream over to the Keyes Creamery to run it to full capacity and to put into effect such economies in the collection of cream that their expenses would be reduced. The Keyes Creamery had been put in debt a year or two previous by poor management, but had recently been paying on their debts, and it was only a question of time when they would have pulled out. They had the confidence of all of their patrons; had always paid their cream checks and other bills when due. Their inventory, taken shortly before they sold out, showed their plant to be worth $25,000.

After the Keyes Creamery patrons had signed up with the association, the directors held a meeting at which Keyes directors were invited to sell out. Mr. Geer and Mr. Scott protested on the basis of the promises which had been made, and urged directors of the association to stand by these promises. Sentiment among the association directors at the beginning of the meeting was against paying much of anything. When the Keyes people protested they were told that if they did not like it they could keep on running, but that the Modesto Creamery would take their patrons and thus reduce the Keyes Creamery to a point where they could not get enough cream to run economically. The price finally agreed on was $16,000, this amount being named at the insistance of the Keyes directors because it was just about enough to clear up their indebtedness. They were told that it was in the nature of a gift to them because the association did not need the creamery. One of the association directors asked Mr. Scott at that meeting if he never changed his mind in a business deal for business reasons after he had made certain promises. This director left the impression that he believed it was all right to break their promises if it was to their financial interests to do so.

KEYES CREAMERY PROGRESSING.

J. A. Goodall stated that J. W. Scott, John Edwards, J. N. Cross and he were the directors who sold the Keyes Creamery. He made practically the same statements regarding the representations of Mr. Geer as those made by Mr. Scott, but unlike Mr. Scott he did not sign up. He said that at the time the trouble occurred the Keyes Creamery was getting cream from over 200 dairymen, and all were satisfied. Some losses had been incurred, but at that time the creamery was making money. The organizers of the association told the dairymen that they would never have to pay the notes given at the rate of $4.50 per cow, and Mr. Goodall understands that the banks will not buy the notes.

PROMISED TO REDUCE EXPENSES.

John Edwards, one of the Keyes directors above referred to, stated that the same representations were made to him regarding the purposes of the association—that their main object was to eliminate extra expense with special reference to the duplication of cream routes; also to help finance dairymen who needed money to buy feed, etc. They claimed that they would help the Keyes Creamery, and Mr. Edwards believes that they could have been of great benefit to dairymen if they had carried out their promises.

At the meeting in Modesto when the creamery was sold the Keyes people told the association they expected their promises to be kept, but H. A. Sellers, one of the association directors, stated to Scott: "You are a business man. You might say now that you would do so and so as a business man, and afterwards you would do differently as a business man." Edwards did not protest very strongly for fear that he would cause the loss of whatever the association might be induced to pay for the Keyes Creamery.

Lowell Gum was the manager of the Modesto Creamery before the association bought it and he stated in substance, in Edwards' presence, that he expected the Modesto Creamery would fail within a year or two and go back to its original owners. Mr. Edwards signed up his 30 cows, but would not do it again, knowing all that he does now.

STOCKHOLDERS KEPT IN THE DARK.

Two dairymen, readers of the Rural Press, and stockholders in the Keyes Creamery, stated they did not know that their creamery had been sold until the morning the cream collector failed to come, although they thought the stockholders had a right to a voice in the selling.

FAILURE PROPHESIED.

Another stockholder, who does not want his name published, says that the Modesto Creamery felt the competition of the association, and figured that it would be cheaper to sell out to it than to fight it. The association not having money enough to pay the price of $114,000, paid $30,000 and gave their note for the balance, on which they were to pay $1,000 a month. The Modesto Creamery directors continued in office and retained Gum as manager at $500 per month. When Gum died the Modesto directors, not the association directors, decided who should succeed Mr. Gum, and their butter is going to the same people who bought it before the association took over the creamery. The association had to borrow the $30,000 cash payment, but they are keeping up their monthly payments on the balance, and are paying all of their cream checks when due. Our informant believes that the association will die in a couple of years and the dairymen will hold the sack. Meanwhile the association will have paid to the Modesto people $1,000 a month and interest on the $84,000, and they are improving the plant to the extent of $20,000, so that it will be a very good deal for the original stockholders of the Modesto Creamery.

FORMER MANAGER SAYS CREAMERY PROSPEROUS.

E. K. Caswell, the last manager of the Keyes Creamery, said that none of the creameries made money during 1917, but that when he took hold of the one at Keyes on January 1, 1918, prices to the dairymen were cut and other economies were effected so that they made money in 1918.

GOOD STANDING WITH BANKS.

At the Bank of Ceres it was learned that the Keyes Creamery always carried a balance at Ceres, but borrowed from the bank at Modesto. Banks were always glad to make loans to the creamery. They paid 10 per cent dividends the year before they sold out.

MODESTO MANAGER SAYS NOTHING CROOKED.

H. J. Faulkner, manager of the Modesto plant, was courteous but not inclined to talk freely. He promised to arrange for a meeting of Mr. Geer and our Mr. Hodges, but Mr. Geer did not show up.

Mr. Faulkner was a salesman for Baker & Hamilton before taking the management of the Modesto Creamery after Mr. Gum died. He says that nothing crooked has taken place in the association since he became manager, and disclaims knowledge of any crookedness previous to that time.

WHAT CONCLUSION?

These are the facts, not polished up to make an interesting story or distorted to enable us to arrive at a certain conclusion, but exactly as related to our Mr. Hodges. We now turn to the jury—our readers—and say "you decide!"

Perhaps to some it may seem unwise to bring up this deal almost a year old. If we felt that it was past history which would not be repeated, we would remain silent, but as late as February 22, 1919, reports came to us from Hughson of operations which did not seem in line with co-operation, and we believe our readers want to know what the association intends to do in its future organization and extension work. There are many creameries in the State that are doing good work, and if the association practices what it preaches—true co-operation—it should not destroy these creameries. It should either buy them out at a fair price or work in harmony with them.

We understand that a working agreement has recently been made with one of the leading co-operative creameries of the San Joaquin Valley. We are glad to learn of this. It is a step in the right direction. We hope that we may be able to report many more steps in this same direction.

COWS BLOAT ON ANY ALFALFA.

To the Editor: Is there any variety of alfalfa that will not cause cows to bloat when they are put in a green pasture? V. S., Yuba City.

[Answered by Livestock Editor.]

There is no variety of alfalfa that will not cause cows to bloat. It is the tender leafy part of the alfalfa that causes the trouble, and as the best varieties of alfalfa are those which produce the most leaves in proportion to stem, the fact is that the better the variety of alfalfa the more it is liable to bloat cattle. Don't turn your cows in the field on an empty stomach. Give them some dry hay or other roughage in the corral first and partly fill them up. If this precaution is taken you will have little if any trouble from bloat.

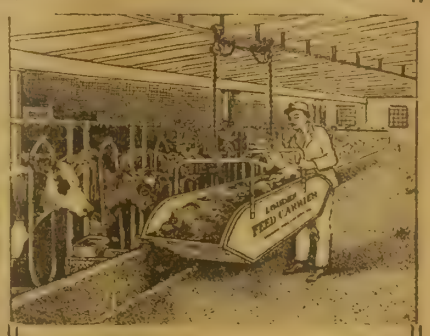
Alarming Decrease in Dairy Production

Butter receipts from January 1 to March 12 were 1,310,200 pounds less than during the corresponding period last year. If this shortage keeps up it means that for the year we will produce 5,000,000 pounds less than last year, when we produced 8,000,000 pounds less than in 1917, and in 1917 we produced 1,500,000 pounds less than in 1916. In other words, our production will be less than that of 1916 by 14,500,000 pounds.

Senator Brown will please take notice that while butter production has fallen off 30 per cent as compared with last year, the price has increased only 9.4 per cent. He had better go slow in his efforts to have the price reduced, or he may drive dairymen out of business and the dear public may not be able to get butter at any price.

The price should go up, not down; or else the cost of feed and labor should be reduced. This is absolutely necessary to insure an adequate supply of butter.

QUICK FEEDING--Without The Waste and Labor



Why hitch up a team twice a day to feed the stock, or make innumerable trips with a wheelbarrow?

With a Louden Overhead Feed Carrier you can carry at one trip enough dry feed or ensilage to feed from thirty to forty head of cattle. There's no waste of feed, no wasted effort, and the feeding is done in half the time required by any other method.

We have Louden Feed Carriers in various styles and sizes, at a wide range of prices that puts them within easy reach of every barn owner.

We have a carrier suitable for YOUR barn, and we'll guarantee it to earn its purchase price again and again in its saving of time, labor and feed.

Ask us for Feed Carrier booklet and prices.

Louden's Litter Carrier Outfit

—save labor, time, and money, same as Louden's Feed Carrier. One man with a Louden can clean the barns in half the time that two men would take without it. Think of that! There's economy for you.

Send today for free book on manure uses, and catalog of Louden's Litter Carriers, Sanitary Steel Stanchions, Cow Stanchions, etc., for modern barns.

We have some open territory for live dealers.

California Hydraulic Engineering and Supply Co.

68 Fremont St., San Francisco
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BOX 321, PETALUMA, CAL.

Milking Shorthorns

Oxford Duke 2nd, 391933; Grand Wapsie, 641734, at head of herd.

Young stock for sale.

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EXPERT LIVESTOCK AUCTIONEERS

Purebred Stock Sales a Specialty

Sales Conducted in All Parts of California.

Ben A. Rhoades, Auctioneer

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Are you getting them? Calf profits mean more to you now than ever before

Blatchford's Calf Meal

has been more than the cow test as the cow [illegible] Calf Meal [illegible] prevents scours—promotes early maturity. Sold by dealers or direct from the makers.

Write for New Data free printed leaves showing you how to increase your calf profits

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Long, heavy coats of hair on horses are a nesting place for parasites causing itch and mange which irritate the horses and keep them from doing best work. Prevent these troubles by spring and fall clipping with a Stewart No. 1 Ball Bearing Machine. Only $9.75. Send $3—pay balance on arrival. Write for catalog.

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DOG DISEASES And How to Feed

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H. CLAY GLOVER CO., Inc.,
118 West 31st Street, New York

Don't Let the Calf's Horns Grow

[Written for Pacific Rural Press.]

The horned cow is a menace to her mates. In crowding around the dairy barn door, in feeding at the rack and in drinking at the trough she is always watching for an opportunity to hook the others. She cause much trouble, and occasionally goring results. There is every reason why the horns should be removed and no good reason why they should remain, except in the case of purebred herds where the appearance of the herd is considered important from a show standpoint. In the average herd dehorning not only makes the animals more easily handled and prevents injuries, but also adds to the appearance of the cows and thereby increases their value.

But why wait until the horns grow out and then be obliged to clip or saw them off when the use of caustic potash soon after birth is more human, requires less time, and does not carry with it such dangers as hemorrhages and infection by flies? It may be done at any season of the year, and as no excessive bleeding results the calf does not suffer any setback in growth.

To obtain the best results the operation should be performed before the calf is five days old, as at that time the buttons from which the horns develop begin to attach themselves to the skull, while before then they are loose and appear more a part of the skin.

Get a stick of caustic potash and keep it in a corked bottle away from the air so that it will not dissolve. When ready to use it wrap paper around all but the end, so as to prevent your hands from being burned. Clip the hair away from over and around the buttons, and apply vaseline around the edges of the hair to prevent the caustic from spreading and causing a sore on the skin near the buttons.

Moisten the end of the caustic stick very slightly and rub on each button alternately three or four times, allowing it to dry each time before applying again. Be careful not to let the stick get so wet that the solution from it will run down the side of the calf's head, as besides causing an ugly sore it might get into the eyes and blind them. Also protect the calf from rain for a few hours after the operation, to prevent the caustic from spreading.

When the operation is performed properly, scabs will form over the buttons, and after a time they will drop off. The head will then assume a much better shape than it would have if the horns were allowed to grow, and later were sawed off or clipped off, and of course this is especially desirable with heifers that are to be kept in the breeding herd. If scurs or stub horns appear after the operation, they indicate that the caustic was not properly applied.

Some farmers make a practice of cutting into the soft horn with a sharp instrument after the hair is clipped and before the caustic is applied, but this is unnecessarily cruel. It is not necessary to cut through the skin, or even to rub the caustic on the spot until blood comes. Simply rub until the roots of the hair are removed and the skin becomes white and rather raw looking.

Care should be taken to have the calf's head securely fastened or held, so that it will not flop around and thus get the caustic on some other spot than over the buttons. The stick potash is much better than the liquid form, as there is danger of the latter running and burning other parts of the head. One stick of potash, if preserved in a tightly corked bottle, will serve to dehorn many calves.

Wire-Gauze Strainers Inefficient

According to reports from about 40,000 farms, wire-gauze strainers are in more general use than any other kind, but examinations with the microscope show plainly that the meshes are much too large to hold back any but the very coarse impurities. One thickness of cheesecloth or other cotton cloth is only slightly more effective. When the cloth is folded about eight thicknesses its ability to remove dirt increases somewhat, but is still inefficient as compared to absorbent cotton or filter cloth.

Filter cloth, which is a specially made cotton cloth, smooth on one side and "fuzzy" on the other, was found reasonably effective. This cloth can be obtained from most dairy supply houses. The milk should be poured on the fuzzy side, the fibers of which stand up like the nap of a carpet and remove all but a small percentage of the solid impurities. The most effective strainer of all, however, is a layer of absorbent cotton placed between two thicknesses of cheesecloth.

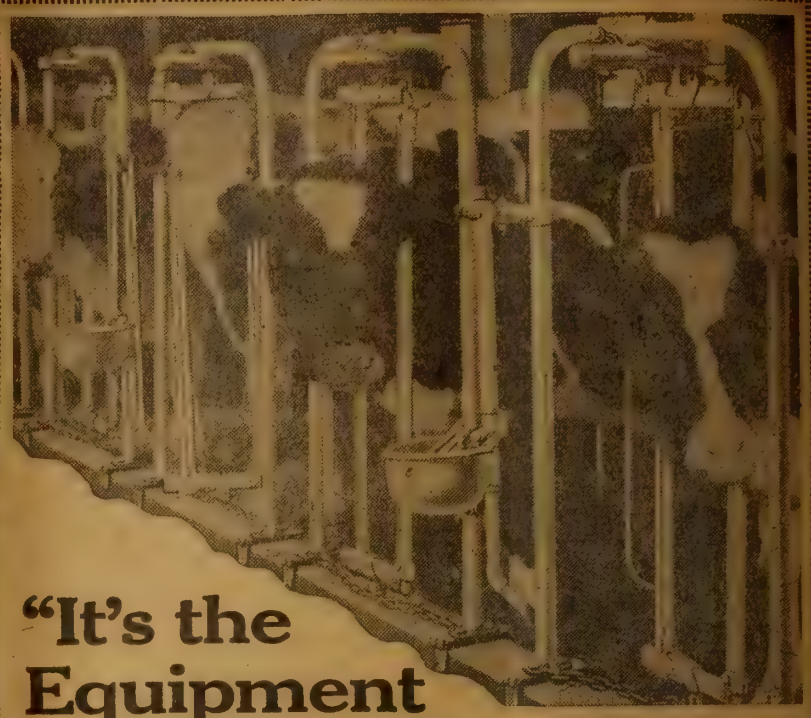
At best, straining milk is a practice that makes milk appear clean and therefore more easily salable, but no strainer removes either the bacteria and objectionable flavors, or the very fine dirt. As a consequence, straining milk fails to improve its wholesomeness to any noticeable degree.

Clean milk is best obtained by sanitary methods which prevent, so far as possible, the entrance of dirt into the milk. This can be done best by having clean cows, in a clean milking barn, milked with clean hands into sterilized small top pails. Detailed information of the proper care and use of strainers and the production of clean milk is given in a new farmer's bulletin, No. 1019, "Straining Milk," which may be obtained on request from the Department of Agriculture.

Quietness and kindness in handling dairy cows increases the milk flow. Loud talking, swearing and rough handling are not permitted in a well managed dairy.



Raphaella Johanna Aaggie 3rd, owned by Napa State Hospital, Napa, Cal. As recently announced, she broke the world's strictly official milk record for one year, producing 30,641.2 lbs. milk and 1,033 lbs. butter. She also made a 7-day, 30-day, and 60-day record for the United States, producing 910.8 lbs., 3,785.1 lbs., and 6,876.7 lbs. She recently dropped a bull calf sired by King Marco Alcartra, son of Tilly Alcartra.



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"Give me STAR equipment and I'll make any barn a better, more profitable building," says a prominent dairyman.

The STAR "Unit System" and curb clamp mean ease and economy of installation; the STAR one-piece arched stall means stronger, better looking, more sanitary equipment; the STAR Alignment Device lengthens or shortens the cow bed instantly. These and many other features make STAR the preferred equipment everywhere.

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STAR Equipment

AUCTION

70 Choice Holstein Cows and Heifers 70

7 Registered Holstein Cows and Heifers 7

REGISTERED HOLSTEIN BULL

On the C. L. KNESTRIC ranch, 3 miles south of

REEDLEY

3 miles west of Dinuba, 7 miles east of Kingsburg on the highway between Kingsburg and Dinuba

Friday, April 4th, at 9 A. M. Sharp

It has taken the owner 15 years to build up this fine herd of Holsteins, and during this time nothing but purebred registered bulls of the best quality have been used. The cows include 40 head of big, young, nicely marked, heavy producing Holsteins. They are all in the best of condition and are without a doubt one of the finest herds of dairy cows in the San Joaquin Valley.

40 HEAD OF HEIFERS, all sired by registered bulls and out of the best producing cows in the herd. They are from 6 to 24 months old. Included in the lot are several high-class springers.

One 3-year-old registered Holstein cow, milking with first calf.
Six registered heifers from 6 to 24 months old. These heifers are royally bred and extra nice individuals.

One 3-year-old registered Holstein bull, well marked and an exceptionally fine individual. He was selected from the famous Holdridge herd at Modesto.
Six brood sows with pigs at side.

TERMS: CASH. Arrangements for credit can be made by seeing owner prior to sale.

If you are in the market for first-class dairy cattle, do not miss this

GENUINE CLOSING OUT SALE

C. L. KNESTRIC, Owner

COL. BEN A. RHOADES

AUCTIONEER.

1501-3-5 South Main St., Los Angeles, Calif.,

The Tuberculosis Fight Making Progress

The accredited herd plan of eradicating animal tuberculosis will be carried on until practically all purebred herds of cattle in the United States are under State and Federal supervision, says Dr. J. A. Kiernan of the Bureau of Animal Industry, Department of Agriculture. When all purebred herds are under supervision it will be possible for cattle raisers to purchase animals from other States with the assurance that they will receive cattle that may be introduced with perfect safety, so far as tuberculosis is concerned. In addition to the accredited herd plan, the tuberculosis campaign will be carried on in circumscribed areas comprising one or more counties. The disease will be eliminated from cattle and swine in such areas and the campaign will be extended until it takes in the entire State.

"In order that the work may progress satisfactorily," says Dr. Kiernan, "it is necessary that livestock owners co-operate to the fullest extent. The success of the movement for eradicating tuberculosis rests upon the livestock owners of the country to a greater degree than on any other force; whenever they are ready and willing to get behind the work success is bound to follow."

"Trafficking in tuberculosis animals has proved a great bane to the cattle industry," he said. "The person who disposes of tuberculosis animals for purposes other than immediate slaughter works a great injustice not only upon his neighbors and the livestock industry, but just as much upon himself because he, in turn, must go out into the market to purchase animals, and perhaps he will buy no better cattle with respect to health than those he has disposed of. It takes in the channels of trade a constant supply of diseased animals which are disseminating the organisms of tuberculosis. There are instances where certain dealers have waxed fat in dealing with diseased animals, but in most instances such dealers have come to grief. They have been the worst enemies the livestock industry ever had, except the cattle rustler; and the man who will deliberately sell his neighbor a tuberculosis animal, will, if he thinks he can get away with it, steal his neighbor's animal. So there is not much difference between the trafficker in tuberculosis animals and the cattle rustler. Both should be put out of business."

Wherever and whenever owners have placed their herds under supervision for the eradication of tuberculosis and have followed the prescribed rules they have succeeded in getting rid of the disease, Dr. Kiernan said. Tuberculosis eradication work is being carried on in more than 40 States.

Mitchell Offers Marvelous Milkers

W. F. Mitchell, Visalia, one of Tulare county's progressive dairymen, is offering all his milking cows and heifers, together with some excellent young service bulls, 55 in all, at public auction on April 3rd. This is an excellent herd, both in individuality and breeding, and it will be a good opportunity to secure first class registered Holsteins at your own prices. Some of the recent official seven-day records made are as follows: Dutchess Elizabeth Victoria at 2 years 9 months, 375.1 pounds milk, 15.39 pounds butter; Dotty Drusilla Canary at 3 years 3 months, 38.12 pounds milk, 13.89 pounds butter; Jenny Wren Edith Pride at 4 years 2 months, 542.4 pounds milk, 21.8 pounds butter; Thornless Cactus 2nd at 3 years 9 months, 432.0 pounds milk, 17.5 pounds butter; Moreland Hermana Jetze at 3 years 1 month, 435.0 pounds milk, 17.2 pounds butter; Johanna Clay Pontiac at 2 years 4 months 352.1 pounds milk, 15.4 pounds butter.

Mr. Mitchell is going out of the business for a year or more until his herd of heifers, 40 in number, commence freshening. These heifers were mostly sired by Prince Hiske Walker, full brother to Lady Hiske Walker, with a seven-day record of 34.25 pounds butter as a four-year-old.

Thos. Stamper of Artois, writes: "You recently prescribed several remedies for scours in calves. Let me give one more which I never had fail me in the five years that I was in charge of a stock farm in England, where before that time fully 50 per cent of the calves died from scours: Take a quart of skimmilk and bring it to a boil—no longer. Cool as quickly as possible and give to the calf. That is all that is necessary."

DON'T MISS IT

Complete Dispersal Sale

45 Registered Holstein Cows, Heifers and Bulls
45 High Grade Holstein Cows and Heifers

E. R. PUTZ HERD
LATON, - CALIFORNIA
WEDNESDAY, APRIL 2, 1919
AT 10 A. M. SHARP

THE REGISTERED HERD contains 24 great granddaughters of Pontiac Korndyke, besides a good lot of young cows and heifers of other substantial breeding. The herd sire, PRINCE LUNDE KOENDYKE 2ND, is a very choice individual and is a grandson of Pontiac Korndyke. He will be sold; also some of his young sons.

THE GRADE HERD is composed of a desirable lot of young cows and heifers, all by registered bulls, well marked and clean, and they are profitable producers.

Every animal over six months of age tuberculin tested and sold subject to retest by the buyer.

The Putz Farm is 9 miles north of Hanford, on paved county highway; 3½ miles east of Laton.

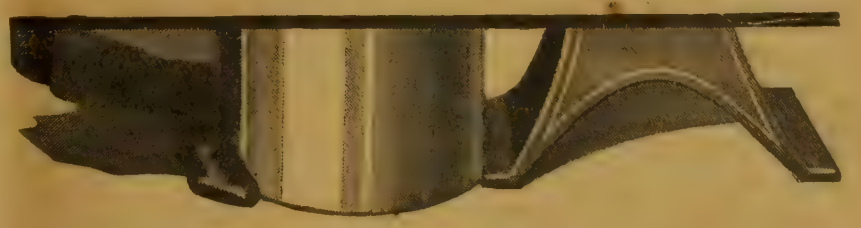
Management

California Breeders' Sales and Pedigree Company

C. L. HUGHES, Sales Manager, Sacramento, Cal.
Auctioneer—COL. BEN A. RHOADES, Los Angeles.



The Best Time to Buy a
DE LAVAL
CREAM SEPARATOR



HE best time to buy a De Laval is when you need it most.

With cows freshened, or freshening soon, you will have more milk to handle.

And with butter-fat at present prices you can't afford to lose any of it.

If you are still skimming by the "gravity" method or if you are trying to get along with an inferior or "half-worn-out" separator, you certainly are losing a lot of valuable butter-fat.

So you see that the combination of larger milk supply and a high price for butter-fat can mean only one thing—you need the best separator to be had.

Right Now

The best cream separator you can get is the only machine you can afford to use these days, and creamerymen, dairy authorities and the 2,325,000 De Laval users all agree that the De Laval is the world's greatest cream saver. They know from experience that the De Laval is the most economical machine for them to use.

If you buy a De Laval you will get a machine that is tried and tested and true—a machine that will give you genuine service—and you will get the cleanest skimming, easiest turning, longest wearing cream separator that money can buy.

Order your De Laval now and let it begin saving cream for you right away. Remember that a De Laval may be bought for cash or on such liberal terms as to save its own cost. See the local De Laval agent, or, if you don't know him, write to the nearest De Laval office as below.

DE LAVAL DAIRY SUPPLY CO.

THE LARGEST DAIRY SUPPLY HOUSE ON THE PACIFIC COAST.

ALPHA GASOLINE ENGINES
IDEAL GREEN FEED SILOS
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JAMES BARN EQUIPMENT
VIKING ROTARY PUMPS
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EVERYTHING FOR THE DAIRY.

Catalog of any of these lines mailed upon request.

61 BEALE STREET SAN FRANCISCO



Retained After-birth

Cows can be made to clean easily without using force.

When cows do not clean properly after calving, it indicates a germ infection which is likely to run through the entire herd and result in Abortion and Barrenness.

The after-birth should be removed at once without force by means of the B-K douche and the cow treated to prevent her becoming an aborter or sterile. Authorities state that while there is no absolute cure for abortion and sterility, nevertheless the infection can be controlled by prompt treatment and the animal saved for successful breeding.

B-K is scientifically correct for this work. Used as a douche for the uterus, it quickly brings the after-birth, dissolves the slimy albuminous matter, kills the germs, stops discharges and controls the infection. B-K does not cause straining, but is soothing and heals the tissues.

Send for "evidence" and free Bulletin No. 52 "Contagious Abortion." If your dealer does not have B-K send us his name.

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Calf Enemies

WHITE SCOURS
BLACKLEG

Your Veterinarian can stamp them out with **Cutter's** Anti-Calf Scour Serum and **Cutter's Germ Free** Blackleg Filtrate and Aggressin, or **Cutter's** Blackleg Pills.

Ask him about them. If he hasn't **our** literature, write to us for information on these products.

The Cutter Laboratory
Berkeley, Cal., or Chicago, Ill.
"The Laboratory That Knows How"



HOLSTEIN VEAL

No Kind or Quality of Veal is so much in demand as that of the Holstein-Friesian breed. It is an important source of revenue to Holstein dairymen, adding an important item to the credit side of the dairy farmer's account. Holstein calves weigh 100 to 135 lbs. at birth.

HOLSTEIN CATTLE

Send for our booklets—they contain much valuable information.

The Holstein-Friesian Assn. of America
Box 141 BRATTLEBORO, VT.

REGISTERED HOLSTEINS

Creamcup Herd offers service bulls and bull calves of 34-lb. breeding. Females offered for foundation stock. Tuberculin tested

M. M. Holdridge, San Jose, Cal.
R. D. "A," Box 437.
Two miles out North First Street.

MILKING SHORTHORNS

For milk and meat
They can't be beat.

We have established a select herd, representing the leading blood lines of the breed. Herd bull, Solano Darlington, of Darlington and Clay breeding. Watch us grow. Fine stock for sale later.

I. T. GROUNDS, Fresno

Next Year's Crop

Prepare for a better crop next year by shearing this season with a machine. Work is much easier. You not only get longer, better wool without scaring the sheep, but leave a smooth stubble that will increase next year's growth.

Use a Stewart No. 9 Ball Bearing Shearing Machine. Price $14. If your dealer can't supply you send us his name. Write for catalog.

CHICAGO FLEXIBLE SHAFT COMPANY
Dept. B 103, 12th St. & Central Ave., Chicago, Ill.

Beets Benefit Beef Cattle

[Written for Pacific Rural Press.]

Very few stockmen throughout the State realize the real feed value of stock beets for beef cattle, yet throughout Europe, Canada and some of our Eastern and Middle Western States they are recognized as one of the most valuable feeds. Beet pulp is being fed in California by carloads, not only to dairy cattle but also to beef cattle, and ranchers are paying all the way from $25 to $50 per ton for the dry beet pulp, which is merely the residue left after taking the sugar out of the sugar beet, when stock beets, which contain all the natural elements with nothing taken out, can be produced right on ones' own ranch for $2 per ton.

Stock beets are one of the finest flesh- and milk-producing crops that we have today, and when fed in conjunction with grain they are worth nearly as much, pound for pound, as the grain itself. This statement may seem a little strong, but experience has shown that stock beets aid digestion and assimilation by keeping the animals in extra good condition. By feeding them in conjunction with grains they increase the feeding value of the grain.

Actual researches have determined a fact of great value to agriculture: that to get the most profitable results from food the albuminoid and carbohydrate elements should bear a certain proportion to each other, and while a decrease in either of them from this proper proportion means insufficient food and the consequent loss of flesh, fat or milk, an excess of either means money wasted. The proper proportion for beef cattle is about one of albuminoid to eight of carbohydrates. There is no other crop which comes so near to supplying the proper proportion of these food elements as stock beets, or mangles as they are called.

An extract from Circular No. 189 of our Agricultural Experiment Station states as follows: "Root crops (such as stock beets) may be fed to milk cows, sheep or steers with good results. A pound of dry matter in mangels is equivalent to about one pound of grain, and mangels can be substituted for about one-half of the necessary grain ration in the proportion of about twelve to fifteen pounds of mangels per pound of grain. They will prove a valuable factor in increasing the flow of milk where cows have access only to dry hay or pasture. A steer being fattened on dry feed will make better use of the ration when some roots are included. Stock beets are unequaled in their value for fattening lambs and maintaining the supply of milk in breeding ewes."

Will Henn of Kansas City, who was one of the leading exhibitors at the Liberty Fair, writes as follows: "As I am a breeder of thoroughbred Shorthorns and Herefords, I have had occasion to feed a great many tons of these beets to my stock and consider them a most valuable feed, especially during the cold winter months when other feeds are scarce and high. I always carry a supply of stock beets in my travels to exhibit my stock. I was surprised to learn that so few are used in California when they can be produced for so much less than the cost of the beet pulp and will supply a great deal better quality of feed. Every stockman should have at least a few acres of them growing." Mr. Henn fed large quantities of these beets to his stock while exhibiting at the Liberty Fair.

The value of Mangle Wurtzel stock beets cannot be overestimated. The average production of stock beets at the trial ground of the Germain Seed and Plant Co. was 35 tons per acre. This is not exceptional. As high as 80 tons per acre has been reported. The average cost of production on the basis of 35 tons per acre is $2 per ton. This, compared with the average cost of beet pulp and other feeds, is certainly worth taking into consideration..

POINTS ON CULTURE.

Stock beet seed should be sown about one inch deep, in well-cultivated soil, in drills 18 inches to 3 feet apart, depending upon the method of cultivation. When the plants are sufficiently large, thin out to stand 10 to 12 inches apart in the rows. The seed is generally sown at the rate of 8 to 10 pounds per acre. Beet seed is very hard and does not germinate as easily as other seeds; therefore the soil should be very moist at the time the seed is planted. If dry, soak the seed in lukewarm water for 24 hours before planting.

If it is desired to store the beets, the well to know that the tops have a feeding value as well as the roots, and their weight will approximate about one-fourth to one-fifth the total tonnage of the roots per acre, depending upon the variety. On loose, well-cultivated soil the beets can be pulled by hand, as they grow from one-half to two-thirds of their length out of the soil. On heavy soil it is sometimes necessary to run the plow along one side to loosen them up.

If it desired to store the beets, the tops should be cut off far enough above the crowns so that each leaf will be cut off separately. Store the beets in a cool, well-protected place. If the tops are to be used for fertilizing, they can be cut off in the field and left there to be plowed under.

The leading varieties of stock beets are the Mammoth Long Red, Giant Half Sugar Mangel, Golden Tankard and Sludstrup.

Here Is That Information

How often we want to know who is the secretary of a certain livestock association, or where we should write to have an animal registered, or who can give us information on a certain subject. And generally we want to know right away, too.

So in this beef cattle issue we give a list of State and National beef cattle associations, as far as our knowledge goes. File it away carefully. It will come in handy many times.

NATIONAL ASSOCIATIONS.

American Aberdeen-Angus Breeders' Association: Chas. Gray, secretary, Union Stockyards, Chicago.

American Hereford Cattle Breeders' Association: R. J. Kinzer, secretary, 1009 Baltimore avenue, Kansas City.

American Polled Hereford Breeders' Association: B. O. Gammon, secretary, Des Moines, Ia.

American Shorthorn Breeders' Association: F. W. Harding, secretary, 13 Dexter Park avenue, Chicago.

Milking Shorthorn Club: W. Arthur Simpson, secretary, Lyndonville, Vt.

Polled Durham Breeders' Association: J. H. Martz, secretary, Greenville, Ohio.

Red Polled Cattle Club of America: Harley A. Martin, secretary, Gotham, Wis.

CALIFORNIA ASSOCIATIONS.

California Cattlemen's Association: L. A. Nares, president; D. J. Stollery, secretary, 320 Sharon building, San Francisco. Directors and zone presidents: Zone 1, M. D. Lack, Redding; zone 2, S. C. Dorn, Oroville; zone 3, Howard V. Jack, Cholame; zone 4, J. W. Guiberson, Corcoran; zone 5, O. B. Fuller, Los Angeles.

California Shorthorn Breeders' Association: C. N. Hawkins, president; T. S. Glide, vice-president; D. J. Stollery, 320 Sharon building, San Francisco, secretary. Directors: Prof. Gordon H. True. H .M. Elberg. Thos. T. Miller, Paul S. Foster, T. W. Dibblee.

Pacific Coast Hereford Cattle Breeders' Association: H. H. Gable, president; W. D. Duke, vice-president; W. R. Madden, Dixon, secretary-treasurer. Executive committee: J. A. Bunting, W. J. Bemmerly, H. M. Barngrover, Prof. Gordon H. True, D. O. Lively.

THRIFTY BEEF FOR SLAUGHTER.

Only healthy, thrifty animals should be taken for slaughter. They should be in good flesh, but not necessarily very fat to make good, economical beef. The very fat animals make juick beef, but yield a great deal of waste fat. The young animal, baby beef, makes tender meat which is lacking in flavor. The more mature animal will give a carcass of better flavored flesh. An old cow, well fattened, makes beef of excellent flavor, and the desired tenderness may be secured by ripening in storage, and by the skill of the housewife in cooking.

ATTRACTIVE PROGRAM FOR CATTLEMEN'S CONVENTION.

A most interesting and instructive program has been arranged for the convention of California Cattlemen's Association, to be held at Davis, April 8 and 9, in connection with the Shorthorn and Hereford sales.

The convention will be called to order Tuesday, April 8, at 10 a. m., and after an opening talk by President L. A. Nares, Gilbert J. Waller, founder of the Hawaiian Meat Company, will deliver an address on the co-operative system in vogue among meat producers and distributors in the Hawaiian Islands. The marketing committee will make a report of its investigations, after which a luncheon will be given, and Secretary Frank Harding of the American Shorthorn Breeders' Association will speak.

On account of the Shorthorn sale at 1:30, no afternoon session will be held, but in the evening there will be addresses by O. M. Plummer, manager of the Pacific International Livestock Show, Portland; Prof. Gordon H. True of the University Farm, who will speak on "Marketing Conditions Affecting the Development of the Beef cattle industry in California"; W. T. Sesnon, president of the California International Livestock Association, on "The Advantage of Purebred Bulls on the Range," and Judge Peter J. Shields.

Wednesday at 9 a. m. business matters of importance will be discussed, and this session, which will end the convention, will be followed by a luncheon. In the afternoon the Hereford sale will occur.

Every cattleman in the State, whether a member of the association or not, should plan to attend this convention. He not only will help along the good cause, but will take home enough added knowledge and inspiration to repay him for the trip a dozen times over.

IS OFFICIAL GRADING NECESSARY?

To the Editor: In your issue of March 15 is an article by J. A. Bunting in regard to the official grading of registered cattle. In my opinion his theory is all right, but not practical. First, the idea of putting up to a breeder to have an official judge to grade his cattle: If the breeder has any respect for his reputation as a breeder, he will not require an outside judge to select for him what is fit to sell. If, unfortunately, he needs such help, he had better quit the pure breed business. The reputable breeder is not going to put any animal of breeding on the market when he does not expect to hear a favorable report. If he does he is not in the game to stay. Furthermore, if a breeder is on the square, which they all are, he makes good to the purchaser, either by replacing the animal or refunding the purchase price. I cannot see how an official grader would be of any benefit to either the buyer or seller.—Wm. J. Bemmerly, Woodland.

On January 1, 1916, the percentages of registered livestock in the United States were: Dairy cattle, 3.36 per cent; beef cattle, 2.69 per cent; hogs, 3.58 per cent; sheep, 1.07 per cent. It is believed that the figures have not changed very much since 1916. Sit up and take notice, you fellows who are worrying for fear the raising of registered stock will be overdone.

CALIFORNIA "BREED PROMOTION" SALES





POLLED HEREFORDS

State Fair Grounds, Sacramento, Cal., Thursday, April 10, '19, at 9 a. m.

25--Head Outstanding Individuals--25

Some Wonderfully Attractive Heifers - A Great Line Up of Young Bulls

Purely a "breed promotion" enterprise. About 20 of the most enthusiastic boosters of Polled Herefords in the United States have contributed twenty-five head of strictly high-class cattle to make the first sale of the breed ever held west of the Rocky Mountains. Each contributor has done his best to have a better animal in this sale than any of his fellow breeders. Cattle have gone here that could not have been bought at any price within reason at private treaty, but for the advancement of the interests of Polled Herefords in new territory they are consigned to this sale. "Strictly Choice" has been the requirement and nothing that will not be a real advertisement for the breed has been accepted.

California and other Western breeders will have rare opportunity to buy at their own door and at their own price very choice specimens of the breed. Every precaution has been taken by the association to see that the sale shall be so made up and so conducted as to result in future demand for hornless Herefords from the coast states.

Buyers unable to attend in person can safely send mail bids for anything in the offering. Nearly all these cattle are yearlings or just past two years old. They will stand the change in good shape and quickly become acclimated. They have their whole useful lifetime before them. They are old enough to show promise of what they will eventually develop into. Many of the yearlings can be shipped in crates by express if necessary and thus save time and money in getting them home.

SPECIAL NOTICE.—Because of the importance of beginners getting started right and recognizing that most of the buyers will be establishing new herds, we have arranged for the presence of Mr. John Letham (dean of Hereford judges and newspaper men), to be at this sale to assist buyers in selecting cattle and appraising pedigrees. Mr. Letham is doubtless the best known breeder, feeder, fitter, and judge of Hereford cattle in America. He is everywhere recognized as a student of pedigrees and his services are always in demand wherever Herefords are known. Californians should avail themselves of this unusual privilege of getting the judgment of this man without cost. If you cannot attend, send your bids to Mr. Letham. If you do attend, get him to assist you in choosing. He knows cattle, pedigrees, and values as well, if not better than any man in the country, and his services are absolutely free.

WRITE TODAY FOR CATALOG AND PARTICULARS. THE TIME IS SHORT.

Col. Fred Reppert, Auctioneer.
H. L. Schooley, in charge.

Jno. Letham, Special Representative.
B. O. Gammon, Clerk.

SALE HEADQUARTERS, SACRAMENTO HOTEL, SACRAMENTO, CALIF.

Address mail there for any of the above named parties.

AMERICAN POLLED HEREFORD BREEDERS' ASSOCIATION

B. O. Gammon, Secy.
Des Moines, Iowa.

After March 25th, address inquiries and requests for catalogs to Pacific Rural Press, 525 Market St., San Francisco.

The Coming Shorthorn Sale

Never since the days of Bates, Booth and Cruckshank has the interest in the "reds, whites and roans" been more widespread than it is at present. This is due largely, no doubt, to the high prices now prevalent for all meat-producing animals, but also in part to the economical production of meat by this perhaps most widely known of all beef animals.

In thinking of Shorthorns, the modern breeder, while he may have his individual preference as to color, does not hesitate to recognize the fact that there are really those colors "red, white and roan" of his favorite breed, although, strictly speaking, there are but the two colors, red and white. The roan color, so called, being but the intermingling of the red and white, varying from the darker red roan to the lighter or white roan. Some who are not thoroughly familiar with these colors condemn anything that is not a pure red in color as not being true Shorthorn or Durham, as they are sometimes called.

The Shorthorn has in all probability the widest distribution of any of the meat cattle in the world. Not a place or country where there are English speaking people and cattle are bred but the Shorthorn, either in its purity or otherwise, is found. This is due not to their absolute superiority as a beef animal—that we will leave for the lovers of the different breeds to settle—but also to the attribute of plentiful milk production under ordinary conditions. Therefore, where you find the English speaking farmer you are almost certain to find cattle of Shorthorn blood.

The coming public sale of this great breed, to be held at the University Farm on April 8th, draws from some of the most noted herds on the Pacific Coast. They are coming from the "high Sierras" on the east, the fertile valleys of the Sacramento and San Joaquin, the wonderful grassy hills and dales of the Santa Clara Valley and the mystic slopes of the "Valley of the Moon." The consignments are of the highest quality and breeding, and those wishing either foundation stock for a registered herd or animals to cross upon native stock will not make any mistake in attending this sale.

The largest consignors are Roselawn Farm, Woodland; Ormondale Ranch, Redwood City; Jack London Ranch, Glen Ellen; and Pacheco Cattle Co., Hollister. The quality of the consignments throughout, whether large or small, is of the highest. None of the animals are over fitted; they are in good shape all around.

The University Farm at Davis is offering two individuals whose breeding alone will attract a good deal of attention from buyers. The bull, California Model, is out of Glenbrook's Marvel, the dam of California Favorite, the grand champion steer at the Chicago International in 1916, and also of California Marvel, the champion Shorthorn steer and reserve champion yearling steer at the International in 1918. The sire of both California Model and Lodestone Mayflower, the heifer offered by the University Farm, is Sultan Mayflower, bred by Frank W. Harding, Waukesha, Wis. A half brother to Sultan Mayflower from the same cow sold in Mr. Harding's recent sale for $7,500.

The offering of the Pacheco Cattle Co. is composed of four bulls by their noted herd bull, Truedale, and will bear careful inspection and consideration from anyone who wants stock either for show or breeding. Pacheco Lad 92d is a beautiful roan with lots of size (2100 pounds at two years), vigor and withal quality. He headed the winning aged herd at Sacramento last year.

In Roselawn Choice, the senior herd sire of the Jack London Ranch, there is an animal offered that is not only a great show bull but an excellent sire as well. He was senior grand champion at the California State Fair in both 1916 and 1917. He is also sire of heifer calves that stood first and second in their respective classes in 1917 at the California State Fair. Two aged cows, Village Pride and Pine Grove Secret, offered by the same people, should attract the attention of buyers. Both are excellent dams and are sold with calves at foot. Pine Grove Secret is out of an imported cow and is of the type of many great dams.

Five heifers consigned by Ormondale Ranch, Redwood City, sired by their senior herd sire, Golden Goods Jr., are worthy the notice of anyone, both as individuals and from the standpoint of their breeding. If these heifers were in the East the price they would bring would surely astonish the natives. This consignment throughout will bear close inspection, as they are all good individuals and best of breeding, as consultation of the sale catalog will show.

Roselawn Farm, Woodland, has the largest consignment and composed of excellent breeding and quality throughout. Six of the heifers offered are by Gibson's Goods, the last of the Choice Goods blood that will ever be offered from the Roselawn Stock Farm. The remaining heifers are sired by a son of Truedale. The bulls offered carry the blood of Choice Goods and Ringleader and are from one to two years old.

The two bulls consigned by T. S. Glide are rich in the blood of prize winners and excellent in conformation. They carry much of the blood of Knight Perfection, that was senior herd sire for many years at Hillcrest Farm.

If the bidding is equal to the quality of the offerings at this sale, a high average will surely be attained.

Packers and Producers Getting Together

As briefly announced in last week's issue, what was officially characterized as an epoch-making event in the livestock industry was the conference at Chicago between representatives of livestock associations and principals of the leading packing concerns of the country. The object was to form an organization along co-operative lines to adjust differences between producers and packers, and to effect more economical methods of production and distribution.

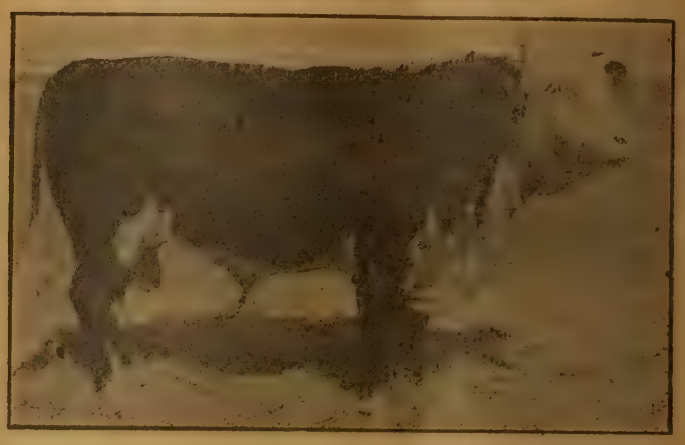
The conference adopted a plan, tentative until sanctioned by interests not at the conference, for the formation of a central committee composed of producers and representatives of the packing industry, the Bureau of Markets and the National Livestock Exchange, to meet in Chicago once a month "for the purpose of studying one another's problems, of adjusting grievances, and of inaugurating such systems as will be helpful to the producer, the packer and the consumer."

One duty of the committee which will be of special interest to livestock men is this: "It shall carefully investigate the annual earnings of the packing industry, including all their subsidiary companies; it shall be privileged to employ a committee of public accountants of recognized standing to audit the yearly statements of the packers. Any statements or figures furnished to the committee by the packers, or by the producers, from time to time, may also be subject to verification by public accountants. Whenever duplication and unnecessary overhead expenses are disclosed it shall be the duty of the committee to recommend their elimination."

We wonder if this is a policy move on the part of the packers or a fair and square plan for adjusting differences, bringing about closer cooperation and putting the industry on a more sound basis. The right kind of an organization, properly conducted, could do a lot of good. Here's hoping that they are getting off on the right foot.

Bemmerly Herefords

CALIFORNIA'S LEADING HERD.



Over 100 choice females in herd.

My stock is the result of 40 years of careful breeding and selection.

Offering for sale registered young bulls and heifers. Grandsons and granddaughters of Beau Donald 31, No. 109885, and Mr. Perfection, No. 215575.

Have consigned 12 head of good ones to the Pacific Coast Hereford Breeders' Sale at Davis, April 9th.

WM. BEMMERLY, Woodland, Cal.

Alamo Herd
Registered Herefords

(Founded by the late Governor Sparks, of Nevada)

Herd Bulls and Range Bulls at Reasonable Prices

Our consignment to the Pacific Coast Hereford Breeders' Sale at Davis, April 9th, includes: 16 2-year-old heifers bred to Reuben Alamo, our great young sire. Also 9 young bulls of outstanding breeding and quality.

W. D. DUKE, Proprietor

LIKELY, MODOC CO., CALIF.

Veramont Stock Farm

Taylorsville, Calif.



HEREFORDS

The practical, beef-producing kind raised under range conditions. See herd of young bulls and heifers at Santa Clara, Cal.

COWS FOR SALE.

We are consigning to the Hereford Sale at Davis, April 9th, 4 sons of Patrician 5th, two of them out of real show cows. Their individuality and breeding eminently fit them for herd bulls.

Also consigning 2 fine daughters of Mr. Perfection Coming, 3-year-old, with bull calves by Patrician 5th. The calves look like show timber.

H. M. Barngrover, Santa Clara, Cal.

Livestock Notes

The Dairy.

J. W. Benoit, Modesto, reports that a three-year-old heifer, Fern Pontiac Ruby Burke, has just made a seven-day record of 29.47 pounds butter.

The Guernsey bull, Florham Autocrat, has been sold by Chas. D. Cleveland of Eatontown, N. J., to Joseph Hope of Madison, N. J., for the record price of $14,500.

Johanna Princess Mooie 2nd, the world record cow in the Palo Alto Stock Farm herd, made 19.19 pounds fat at eight months after calving, instead of this amount of butter, as erroneously stated in a recent issue.

J. A. Goodall of Ceres recently sold seven Jersey cows to the Phoebe Hearst Ranch at Pleasanton. Mr. Goodall is line-breeding the daughters of his old bull with his younger herd sire, both of which come from Flood Farm.

Jane Garden Farms, Sacramento, has sold a son of Sir Aaggie De Kol Acme to V. Moragna, Broderick; to M. H. Whittacore, Dixon, a son of King Korndyke Pontiac. Mr. Whittacore had previously purchased a son of Prince Gelsche Walker Korndyke.

F. B. McKay of Standish has sold to George Forrest of the same place 10 cows and heifers; also his registered Guernsey herd bull, Saylor's Tungsten Courier. To take the place of this bull he has purchased from E. S. Sattison, Strathmore, the bull Beauty's Billy Dale.

The California Jersey Cattle Club held a meeting at the University Farm, Davis, last week and discussed plans for securing more publicity for the breed. It is believed that much good will result from the plans which were considered.

A notice recently sent out by the Holstein-Friesian Association announcing a new 40-pound butter record shows that there are now 45 cows of the breed that have produced over 40 pounds of butter in 7 days. The list includes the California cow Adirondac Weitske Dairy Maid, owned by Bridgford Company, Knightsen.

Elliott-Brant Rancho of Owensmouth has placed a large number of registered Guernsey bulls at the head of small herds recently, one of the most noteworthy sales being that of Golden Prince of the Rancho to G. W. Grice, Ramona. This calf is out of Princess of Meadowbrook with a yearly record of 750 pounds, and it required a dollar for every pound in her record to purchase the bull.

There seems to be no limit to the growth of the Holstein-Friesian Association, as 1000 members were admitted during 1918. At the last meeting of the executive committee in December the following new California members were admitted: J. W. Arthur, Hanford; W. B. Atterbury, Crows Landing; G. Y. Bollinger, San Jose; California George Junior Republic, Chino; C. J. Giddings, Visalia; Glen George Harter, Escalon; George I. Helm, Fresno; N. Irwin, Davis; Kaiser Brothers, Ceres; Leeman Dairy, Sacramento; William M. Miller, Lakeside; A. E. Montgomery, Merced; Joseph Murphy, Solvang; Pecho Ranch and Stock Company, San Luis Obispo; F. V. Perry, Modesto; J. H. Rossetter, San Francisco; Dr. F. H.

(Continued on page 510)

Livestock Sale Dates

April 2—E. R. Putz, Laton. Holsteins.

April 3—Walter F. Mitchell, Visalia. Holsteins.

April 8—California Shorthorn Breeders' Association, Davis. Shorthorns.

April 9—Pacific Coast Hereford Breeders' Association, Davis. Herefords.

April 10—American Polled Hereford Breeders' Association, Sacramento. Polled Herefords.

LIVESTOCK MEETINGS.

April 8 and 9—California Cattlemen's Association. Convention and barbecue luncheon at Davis.

April 10—California Swine Breeders' Association. Annual meeting at Davis.

April 9—California Poland-China Breeders' Association Meeting at Travelers Hotel Sacramento, 7 p. m.

April 11 (subject to change)—Western Duroc-Jersey Association. Meeting at Davis.

Herefords of Character and Breeding

AT PUBLIC AUCTION

84 Registered Cows, Heifers and Bulls

56 Females---28 Bulls

Tuberculin tested--GUARANTEED breeders



Pacific Coast Hereford Breeders' Second Sale

1 P. M., Wednesday, April 9, 1919

University Farm, Davis, Calif.

This splendid offering at public sale of choice selections from some of the best Western herds comes at a time that is most opportune for the buyers wanting to establish a breeding herd of registered Herefords or for established breeders to strengthen their herds.

In this connection it is of especial interest to consider the splendid young cows, bred heifers, and open heifers in the offering. Not only will desirable type and breeding be found in abundance among them, but those that are bred are in calf to some of the best bulls of the breed in the West.

High class bulls, qualified in every way to head good registered females, will be found in this sale in good range of selection. Among them might be mentioned HOPEFUL PRINCE 2ND, reserve champion at Panama-Pacific Exposition; MYSTIC DEBONAIR, and several other young bulls of notable excellence.

HIGH CLASS BULLS FOR RANGE SERVICE

Too much emphasis cannot be laid upon the very desirable lot of bulls suitable for range service in this offering. When such excellent purebred registered Hereford bulls as these are available right here at home, why be satisfied to keep anything but the best at the head of your range herd?

Hereford bulls of breeding and type such as these possess have bred greater profits into thousands of range herds, getting the offspring that reach maturity quickly at profitable weights, with the uniformity that has a real market value. And don't overlook that Herefords have a world-wide reputation for superior rustling ability during the times of short feed that must inevitably be reckoned with.

Opportunity is Large in this Sale for the Buyer of High Class Herefords, for Whatever Purpose or Need.

CONTRIBUTORS TO SALE:

J. H. CAZIER & SONS CO., Wells, Nev.
H. M. BARNGROVER, Santa Clara, Cal.
J. A. BUNTING, Mission San Jose, Cal.
UNIVERSITY FARM, Davis, Cal.
CHAS. RULE, Jenner, Cal.
W. D. DUKE, Likely, Cal.
W. J. BEMMERLY, Woodland, Cal.
MRS. D. O. LIVELY, San Francisco.

CATTLEMEN'S WEEK
April 7, 8, 9, 10, 1919
UNIVERSITY FARM, DAVIS, CAL.
Something of interest every day.

ANNUAL MEETING
The annual meeting of Pacific Coast Hereford Cattle Breeders' Association will be held at 10 A. M., Wednesday, April 9, in Animal Husbandry Building, University Farm, Davis.

Catalog of sale free on request. Please mention Pacific Rural Press.

SALE UNDER AUSPICES OF

Pacific Coast Hereford Cattle Breeders' Association

W. R. MADDEN, Secretary, Dixon, Cal.
H. H. GABLE, President, Esparto, Cal.
Auctioneer—COL. FRED REPPERT, Decatur, Ind.
Sales Manager—C. L. HUGHES, Sacramento, Cal.

Shorthorns---the Great Improvers

Shorthorn cattle have been bred in the United States for 130 years and have been identified with every step of agricultural progress—have been the great improvers in American bovine stocks.

There are four distinctive characteristics of the Shorthorn: (1) A quiet temperament, which has a real cash value in the dairy or feed lot; (2) an excess of scale—from 100 to 300 pounds at maturity—increasing the profits of the grower; (3) a quality of flesh that always attracts the butcher; (4) a tendency of the females to yield a generous flow of milk, which insures their value in the dairy and makes them more dependable breeders and mothers.

Shorthorn steers are making world records at beef markets, and the cows are making splendid records in production. When a Shorthorn cow is not in milk she quickly takes on flesh. There is always a good demand for Shorthorns, either for beef or milk, or both.

The first cross tells the tale and proves the ability of the Shorthorn bull to brand his offspring in size, levelness and feeding quality. The Shorthorn is naturally a growthy type, and whether the beeves go to market as calves, yearlings, two-year-olds or even older, it is the extra pounds along with the quality that count. Both the added weight are Shorthorn characteristics—one of the breed's most valuable assets.

Prominent Breeders.

Brighton Farm, H. L. & E. H. Murphy, Perkins: A select herd of cows of Whitehall Sultan and Choice of All breeding. Herd bull, Brighton Farm Type, a Cumberland bred bull. Three service bulls, five bred cows and four young heifers for sale.

Ormondale Company, Redwood City: Twenty-nine matrons tracing to Imported Sorrel by Roan Gauntlet, Imported Volumnia by Cumberland, Young Mary by Jupiter, Imported Orange Blossom 31st by Roan Gauntlet, Imported Sunray by Stockwell. Herd bull, Golden Goods, Jr., by Golden Goods, out of Roan Marble 3rd. Demand for stock excellent. Two service bulls, 3 bred cows and 5 heifers for sale.

D. & H. J. Baughman, Lone Oak Ranch, Oakdale: An excellent herd headed by Pacheco Lad 124th. Two service bulls for sale.

Jack London Ranch, Eliza Shepard, manager, Glen Ellen: A good sized herd of Villager, Spicy Prince and Selection blood lines. Herd bulls, Roselawn Choice, and London's Village Beau by Sittyton Roan Sutton. Demand very heavy and only a few young animals for sale.

Pabst Stock farm, L. N. Pabst, Cedarville: A herd of 30-some straight Scotch and some heavily Scotch topped. Herd bulls, Maxwalton Style and Maxwalton Lavender. Offering Maxwalton style and four of his sons; also three bred cows and three young heifers.

White & Terry, Glenwood Farm, Sacramento: Sixty cows of the most fashionable blood lines. Herd bull, Snowball by Royal Cumberland, tracing to Whitehall Sultan. A few yearling bulls for sale.

T. T. Miller, Hollister: A herd of 40 cows founded with selections of cows from several of the oldest and most prominent breeders in this country and several animals imported from Great Britain. Herd bulls, Greendale Sultan, grand champion State Fair, 1917; Diamond Choice, of Bellows breeding; Secret Stamp, imported from England. Demand for stock greater than ever before.

Pacheco Cattle Co., Hollister: One hundred and twenty-five head, mostly of Choice Goods and Double Dale blood. Herd sires, True Dale by Double Dale by Avondale; Pacheco Marshall by Village Marshall; Pacheco Sultan by Beaver Creek Sultan. Big demand; all sold out.

S. J. Lowe, Westslope Ranch, San Luis Obispo: Twenty-eight head with blood from the Ames herd, and several sired by British Duke 2nd. Herd bull, Paicines Diamond. No stock for sale at present.

F. G. Baum, San Francisco, owner of Cassel Ranch, Shasta county. Ten registered cows and heifers, headed by a high-class bull. Also raising a large number of grades.

Fair Oaks Ranch, Wm. T. Chapple, Willits: A select herd of Scotch cows of Orange Blossom, Victoria and Elgetha families. Have recently added three Scotch cows, two heifer calves and a bull from the Ormondale herd. A few young bulls for sale.

W. T. Roberts, Willow Brook Ranch, Penn Grove: Ten cows of the milking strain. Herd bull, Adirondac Duke. Demand good and only one bull calf for sale.

Thomas Harrison, Santa Rosa Stock Farm, Santa Rosa. A large and select herd of the best milking Shorthorns, including several imported cows. Herd bulls, Foothills Pioneer by General Clay, and North Start by Imported Brandsby Coming Star. Great demand and only six service bulls for sale at present.

I. T. Grounds, Fresno: Twenty-five head of milking Shorthorns. Herd bull, Solano Darlington of Darlington and Clay stock. Demand far exceeding the supply; no stock for sale.

Alexander & Kellogg, Inisfail Farm, Suisun. Seventy-two head of fine dairy Shorthorns—several with official records. Herd bulls, Glenside, Royal, Kelmscott Viscount 19th (imported), and Westward Ho (imported in dam). Demand very heavy and all sold out of females, but a few good bulls for sale.

Chas. A. Trosi, Vinton: A progressive young breeder who is establishing a high-class herd, headed by Vinton Sultan of Whitehall Sultan breeding.

Carruthers Farms, W. M. Carruthers, Live Oak: A great herd of females of Scotch blood lines. Former herd sire, Count Glory, recently deceased. Senior sire now Hallwood Villager, to be assisted by a son of Count Glory. Thirty calves from these sires, and not an inferior one in the bunch.

Rancho San Julian, Estate Thos.

DIAMOND G RANCH

Seven miles north of Esparto.

Registered Hereford Cattle

A fine son of the International Grand Champion, POINT COMFORT 14TH, now heads our herd. We invite inspection of our range herd, as demonstration of the value of the consistent use of purebred sires.

"GOOD BLOOD TELLS."

H. H. Gable, Esparto, Cal.

Registered Herefords

75 Head in the Herd

REPEATER ANXIETY BONNIE BRAE BLOOD

Sires in Service

REPEATER 67th 635300

CORRECT DONALD 635008

S. R. CROWE,

HAYWARD, CALIFORNIA

Valle de las Viejas

HEREFORDS

SIRES IN SERVICE

Consummation 388812, Beau Rupert 517251, California Rupert 619071, Mainstay III 502498.

50 cows, is purebred Hereford bred to the above sires, for sale.

D. H. OGDEN, Alpine, Cal.

NEVADA HEREFORD RANCH

We wish to direct the attention of all livestock breeders to our splendid offering at the Pacific Coast Hereford Breeders' Association Sale at Davis, Calif., April 9th, 1919. We sincerely believe this consignment will afford you a rare opportunity to secure some very high-class breeding stock at most attractive prices. The bulls selected from our tops have the individuality and pedigree most desirable to Hereford breeders. Every cow is a valuable matron safe in calf, with calf at foot, or with calf at foot and rebred. All to the service of our valuable herd bulls, Harris Standard 2nd 425030, Debonair 64th and Mystic Debonair 592515. Some will be bred, by sale day, to the $10,000 Beau Blanchard 76th, pronounced by every breeder who has seen him as one of the outstanding breeding prospects of America.

OUR BULL OFFERING---

Mystic Debonair 592515—A real herd header with that rare combination, scale with quality and smoothness. An excellent breeder and in just the right condition for heavy service. Sired by the great Chandler breeding and show bull, Debonair 26th. Dam by Beau Mystic, by Beau Donovan.

Standard Boy 645578—A rugged fellow with scale, bone and quality. He stood second in Junior Yearling class at California State Fair, 1918. Sire, our herd bull, Harris Standard 2nd. Dam, Rubena 45th, by the imported Rufus.

Lemule 645563—He is thick fleshed, low set with two good ends and worthy of service in the best purebred herd. Look him over. You'll like him. He is Harris Standard 2nd. Dam by Candidate, by Captain Kidd.

Nevada Lad 2nd 697056—A mellow, thick-fleshed fellow with scale and well proportioned. Harris Standard 2nd claims him and he does him justice. Dam by McCord, by Precursor, by Beau Brummel 51817.

Nevada Lad 3rd 697057—A great head and good all over. He is by Harris Standard 2nd, dam by Thor. A good, rugged bull with lots of bone and scale.

Nevada Lad 697055—He stood first at California State Fair, 1918. Truly he was in a class by himself—no competition. Sired by Harris Standard 2nd. Dam Sabrina 58th, by the Halleck Land and Cattle Company's good herd bull, Three Sixty Eight.

Beau Del Sierra 4th 683440—He is deserving of especial attention. He has wonderful blending of scale quality and character. Sired by the great double Beau Donald, bred Beau Perfection 34th, owned by the University of Nevada, from the same cow as Col. Taylor's renowned Woodford. Dam Nevada Sabrina, out of Sabrina 41st, selected from our herd as a foundation matron for the University of Nevada herd of Herefords.

OUR COW OFFERING---

Though too numerous to mention separately, each individual was selected with the idea of making the best possible returns to the new owners. They are the kind that will produce an excellent calf regularly and will surely make money for any breeder. Two are by McCord, by Precursor, by Beau Brummel; one with heifer calf at foot by Debonair 64th and rebred to Harris Standard 2nd, the other is due to calve April 3rd by Harris Standard 2nd. Two are granddaughters of the famous Generous. One of these has heifer calf at foot by Harris Standard 2nd, the other was bred to him September 7th.

There are many such attractions as these in our consignment, and you can get complete list by applying to W. E. Madden, Dixon, Solano Co., Calif., for catalog.

Every animal sold has our guarantee to be just as represented. We will be glad to meet all livestock men at the sale and will be glad to assist you in any way that we can.

JNO. H. CAZIER & SONS CO.

Wells, Nevada

SIERRA VISTA HERD

Of Pure Bred Herefords

Over one hundred head of registered cattle in herd.

SENIOR HERD BULL

FREDERIC FAIRFAX

(Sired by Perfection Fairfax)

JUNIOR HERD BULL

REPEATER 157th

(Sired by Repeater)

Ranch on State Highway, midway between Madera and Merced, one mile north of Chowchilla.

Sierra Vista Vineyard Co.

P. O. MINTURN, CALIFORNIA.

The World's Largest Herd of Registered

HEREFORDS

The home of MISS RIALTO 2ND, NEVER defeated Grand Champion. Over 900 breeding cows, representing choicest blood lines. Great Bulls in service. Look up our records at the BIG livestock shows.

THE HEREFORD CORP. OF WYOMING, Box 876, Cheyenne, Wyo.

Wm. Cox, Herdsman. Raymond S. Husted, Vice-Pres., Gen. Mgr.

B. Dibblee, John Troup, Supt., Santa Barbara or Lompoc: Large herd of registered Scotch Shorthorns with Villager's Clipper, son of Imported Villager, as senior herd sire.

Roselawn Stock Farm, H. M. Elberg, Woodland: A herd of 45 Shorthorn females of Scotch and Scotch topped breeding, with Crescent Dale and Roselawn Champion as herd sires, that are great types of the breed.

Hillcrest Stock Farm, T. S. Glide, Davis: A herd of 400 registered Shorthorn cows with years of careful, intelligent selection and breeding behind them, with the use of more Grand Champion bulls than any other herd. Count Amaranth, senior herd sire.

Hopland Stock Farm, Hopland: A large and well established herd, headed by Tule King. Stock of supreme quality on hand.

Wickings Ranch, J. H. Rosseter; Geo. H. Strate, Supt., Santa Rosa: A choice herd of Shorthorns that is just in the making. Sure to be a winner in the future.

Butte City Ranch, W. P. Dwyer and W. S. Guilford, Butte City: Shorthorn herd with good milking quality cows and excellent breeding.

John Lynch Ranch, Box 321, Petaluma: Thirty-one breeding cows, rich in Kittie Clay and Otis strains, headed by Oxford Duke 2nd and Grand Wapsir. A most excellent herd of Shorthorns of the milking or dual-purpose strain.

W. M. Rutherford, Petaluma: Milking Shorthorns. Cows showing evidence of good milking quality, of the Kittie Clay and Lee families. Herd sire, Sonoma Boy, of excellent Shorthorn type.

Pocket Ranch, Leon F. Douglas, Geyserville: Foundation stock from Rutherford of Kittie Clay and Lee blood.

George Murphy, Perkins: Shorthorns of milking strains. High class stock.

"There is just one thing about it," remarked Princess Butter Girl DeKol, "we registered cows ought to insist that our owners possess worthwhile ancestors. Hereafter I am going to refuse to be sold to a breeder unless he and his ancestors have records of great accomplishments back of them. It is a shame for a 30-pound cow with 13 generations of 30-pound dams back of her to be owned by a man with just common red blood in his veins. Don't you think so?"

Shorthorn Bulls

FOR SALE

16 Head Three-Year Olds

14 Head Two-Year Olds

These bulls are registered Eastern bulls from the best stock in the country, and were brought to California as calves by the Leland Stanford Junior University.

JAS. H. JONES

511 2nd Street, Chico, Cal.

Where Dual-Purpose Shorthorns Are, There Is Prosperity

Interest in Dairy Shorthorns in England, where the breed had its birth, is now stronger than at any period of history. The great source of beef production is milk, therefore keep up the milk. The demand has been such that we have no more females for sale at present.

THOS. HARRISON

SANTA ROSA STOCK FARM,
Santa Rosa, California.

Ormondale Shorthorns



Herd Headed by

Golden Goods Junior

Heavy-boned cows all of straight Scotch or Scotch topped breeding. Suited for either range or breeder. Every animal positively guaranteed. Our offering for the season nearly all sold.

Our consignment to the Shorthorn Sale includes: Three 3-year-old straight Scotch heifers with calves at foot, sired by Golden Goods Junior, and 5 yearling heifers and an 18-mos,-old bull sired by him and out of straight Scotch cows. Also a 14-mos.-old bull by Village Marshall and of an Orange Blossom cow. This offering is of the highest quality. The bulls fit to head any herd.

The Ormondale Company

REDWOOD CITY - - - - CALIFORNIA

Ranch located 7 miles from Palo Alto on Woodside Road. Visitors welcome.

Rancho San Julian SHORTHORNS



Some of our Senior Calves.

Our herd represents the richest blood lines and the best families of straight Scotch breeding. Last year we imported from the East a carload of the choicest heifers we could find. We won at Los Angeles last Fall, first prize Junior Champion, and Reserve Grand Champion Bull, two other firsts and two seconds.

We have for sale—very choice lot of purebred range bulls, yearlings, and two-year-olds.

Visitors and correspondence invited.

Estate of Thos. B. Dibblee

JOHN TROUP, Supt.

LOMPOC, SANTA BARBARA, CAL.

Carruthers Farms

LIVE OAK CALIFORNIA

SHORTHORNS Bulls all sold. Will sell a few choice cows and heifers.

We have on hand the best lot of young Shorthorns we ever raised. Come and see them. Prices reasonable.

ONE OF THE GREATEST BULLS

on the Pacific Coast to be sold at the

Shorthorn Sale, Davis, April 8th



Roselawn Choice 408816

Senior and Reserve Grand Champion at the State Fair, 1916-1917. His get won first and second places in their classes. He is not only a great show bull, but also a proven great sire.

Have entered some other good ones in this sale. Look them up.

SHIRES

Young stallion and filly colts by Neuadd Hillside, Grand Champion of California, and by Desford Banker, the famous stallion owned by Salvador Stock Farm. Prices very reasonable.

Jack London Ranch

ELIZA SHEPARD, Mgr., Glenn Ellen,
WALTER BURNELL, Herdsman, Sonoma County, Cal.

SHORTHORNS

Pacheco Cattle Company

HOLLISTER, CALIFORNIA

120 BREEDING COWS

LEADING HERD BULL

TRUEDALE

By Double Dale, by Avondale, by Whitehall Sultan.

TRUEDALE is a three-year winner in get-of-sire class and never defeated. Winning wherever shown in 1916-17-18.

We have been unable to supply the demand for Truedale bulls and have nothing for sale at present on the ranch, but have reserved five good ones for the Shorthorn Sale at Davis, Calif., on April 8th next.

One Hundred Head of Beef Cattle on Sixty Acres of Sweet Clover

Sanger, Fresno County, Cal.,
December 5, 1918.

Western Soil Bacteria Co.,
440 Sansome Street,
San Francisco.

Dear Sirs:—

The money I invested in the inoculation and seeding of sixty acres of land to Sweet Clover has been returned to me several times the first season.

I have had as many as 100 head of beef cattle at a time in this field and the meat was of the best quality.

The outlook for another splendid growth of this clover for the coming season is good and I anticipate fully as much pasturage from it as it produced during the season just closed.

Very truly yours,

(Signed) W. D. MITCHELL.



AUCTIONS

Sell your stock or implements at public auction. I can get big prices for you. Have cried successful sales in all parts of the State. Customers always satisfied. Write for terms and dates.

ORD L. LEACHMAN,
1004 Fifth St., Sacramento

Here's to the Hereford

The "overlord of the grazing world" is recognized as the premier range animal, attaining a higher finish and producing a better quality of beef on grass alone than any other breed. Also, Herefords are not fastidious about their food, and will make good use of the products of the average farm. They will utilize feed and forage that other breeds will not eat, and will convert it into high priced beef.

Herefords mature early, and can be marketed at an early age with a great weight of carcass. They have a rugged constitution and can endure extremes of climate and withstand severe hardships. Their hardiness makes them practically immune from tuberculosis. They are prolific and prepotent; the mothers drop strong calves and rear them well. For crossing and grading up common cattle the Hereford shines—his blocky, wide-built body, short legs, strong constitution, and thick-meating qualities being just the essentials needed to improve the average herd.

Being uniform in color and quality, cattle showing a preponderance of Hereford blood sell high at market centers, both as baby beeves and as mature beeves. Registered breeding stock also commands high prices, as the results of 182 public auctions held last year show that 11,594 head sold for an average of $481, the bulls averaging $425 and the females $503.

Prominent Breeders.

G. W. Emmons, Diablo Stock Farm, Danville: Forty cows of Beau Brummel and Lamplighter breeding. Herd bull, Bertram Fairfax. Herd largely made up of the D. O. Lively stock. Ten service bulls and 10 young heifers for sale.

Geo. Callahan, Milton: Cows of Earl of Hill Crest, Lord Welch, Rupert Donald, Prince Rupert and Beau Brummel breeding. Herd bulls, Decorator W by Donald K; Dumont by Boy Blue. Demand heavy and only four service bulls for sale.

E. M. Simpson, Diamond S Ranch, Hood: Eighteen cows of Beau Eaton, Beau Defender, Hesiod Lad and Hesiod breeding. Herd bull, Maxwell Berenda from Whitehall Estates. Demand very heavy; all sold out.

E. A. Noyes & Son, Bar N Ranch, Sutter: Twenty-five cows of Beau Brummel, Anxiety 4th, Don Carlos, Prime Lad and Paragon 12th blood lines. Herd bulls, Don Balboa by Don Carlos; California Disturber by Disturber 4th; Pacific Corker by British Corker. Demand greater than can supply; no stock for sale.

H. H. Gable, Diamond G Ranch, Esparto: Forty-five cows of Beau Donald, Beau Gondolus and Prince Rupert blood lines. Herd bulls, Donald Hope, by Beau Donald 31st; Diamond Fairfax, a great grandson of Perfection Fairfax. Also have just purchased a new herd header—a son of the International grand champion, Point Comfort 14th. Demand very heavy; only one service bull and four bull calves for sale.

J. A. Bunting,, Mission Hereford Farm, Mission San Jose: Sixteen matrons of Anxiety, Prime Lad, Beau Donald and Dale blood lines. Herd bulls, California Prime Donald, the 1918 State fair grand champion, and Anxiety Fairfax. Demand excellent; only an 18 months and a 12 months old bull for sale.

W. S. & W. K. Humbert, Phoenix Hereford Farm, Phoenix, Arizona: Seventy-five head of Anxiety 4th blood lines. Herd bulls, Beau Donald and Beau Bonnie, both out of Bonnie Lad 20th, and half-brothers of the champion Ardmore. A dozen yearling bulls and a few bred cows for sale.

H. M. Barngrover, Veramont Stock Farm, Taylorsville and Santa Clara: Forty cows strong in Anxiety breeding. Herd bulls, Patrician 5th, Don Woodford 4th and California Prince 2nd. Twenty head of pure, unregistered bulls for sale.

Chas. Rule, Rule Ranch, Duncan Mills: Cows of Anxiety 4th blood lines. Herd bulls, Sonora, Beau Rosemont and Roehampton 34th. Demand good and only 25 yearling bulls for sale.

D. H. Ogden, Valle de las Viejas, Alpine: Fifty head of Beau Mischief 6th, Advertiser 5th, Prince Rupert, Acrobats, Beau Donald, St. Grove 9th, Dandy Dale, Kenswick, Lord Carlos 2nd blood lines. Herd bulls, Beau Rupert by Prince Rupert 52nd, California Rupert by Prince Rupert 52nd, Consumation by Beau Real, Mainstay 3rd by Mainstay and Grand Top by Beau Julius by Beaumont by Beau Brummel. Demand good and all sold out of registered stock. Have 50 seven-eighths pure Herefords and calves for sale.

S. R. Crowe, Hayward: Seventy-five females of Repeater, Anxiety and Bonnie Brae blood. Herd bulls,



Specialist in Registered Beef

CATTLE

I am a firm advocate of the use of better sires—**Registered Bulls**—reflecting through correct breeding a high standard of early development in weight, quality and finish, insuring most satisfactory results.

I devote my entire time keeping in touch with the **Registered Beef Trade**, much of it among the most expert and reliable Eastern breeders, which enables me to save time and other expenses when buying.

I will deliver at this end for less money than a stranger to the trade can buy at the other end, so let me quote you prices on **Registered Beef Breeds Delivered.**

I was born among Shorthorns and have been among Beef Cattle ever since. My thirty years' experience in California has shown me just what the State needs in

Registered Beef Cattle

and any one of the following list of a few of my customers—all experienced Beef men—will tell you I deliver the right kind:

MAYO NEWHALL, San Francisco
SIMON NEWMAN CO., Newman
H. H. GABLE, Esparto
B. F. RUSH, Suisun
HOLT & GREGG, Redding
HOWARD TILTON, Gilroy
STANFORD UNIVERSITY FARM
WM. BEMMERLY, Woodland

R. M. DUNLAP, Hotel Land, Sacramento, Cal.

Red Polled Cattle

THE TRUE DUAL PURPOSE BREED

Excellent Beef Form and Good Milking Qualities. Very hardy and great rustlers.

Range Cattle Supreme.



F. A. Mecham Estate

Petaluma, Cal. Imported Treasure.

Repeater and Correct Donald. High-class stock for sale.

Sierra Vista Vineyard Co., Minturn: 90 cows of excellent breeding, headed by Frederick Fairfax, a sire of great individuality and proven worth, with Repeater 157th of excellent lines and promise. Only the best is the motto on this ranch.

W. R. Madden, Dixon: Large herd of firm registered Herefords. Demand has been excellent for breeding stock.

Alamo Herd, W. D. Duke, Prop., Likely: Registered Herefords of supreme quality and conformation. Herd founded by Gov. Sparks of Nevada. Headed by Reuben Alamo, a great young sire.

Simon Newman Co., Newman: One hundred head of purebred cows, with Hesiod Lad as senior herd sire and Bonnie Brae 84th and Bonnie Brae 99th as junior herd sires.

W. J. Bemmerly, Woodland: One hundred registered Hereford families of excellent type and conformation, headed by bulls that would improve almost any herd. The result of 40 years of careful breeding.

Pioneer Stock Farm, A. S. Nichols, Sierraville: Purebred Herefords from foundation stock purchased from the herd of the late Gov. Sparks of Nevada.

Nevada Hereford Ranch, Jno. H. Cazier & Sons Co., Wells, Nevada: A grand herd of 275 head, of Anxiety 4th blood lines through Precurson by Beau Brummel, Harris Standard by Standard out of Disturber cows, Mystic Debonair and Debonair 64th by Debonair 26th, and out of Beau Mystic and Beau Donald cows; also some cows from imported bulls. Herd bulls, Harris Standard 2nd, Debonair 64th, Mystic Debonair and Beau Blanchard 76th, the $10,000 bull recently purchased. Twenty-five service bulls, 20 bred cows and heifers, and 20 heifer calves for sale.

Red Polls Few but Fine

There are few herds of Red Polled cattle in the State, but in quality the animals compare favorably with any to be found in the United States.

Mrs. Mecham of the F. A. Mecham estate, who is well qualified to speak on this subject, thinks the Red-Poll the true dual-purpose cow and the breed one of the best for the open range. The truth of these claims is well supported when we consider the milk producing qualities of the cows and the excellent beef form of the steers. Red Polled bulls crossed on ordinary horned range cows will show in the offspring 75 per cent solid red in color and 90 per cent hornless. These two qualities alone are of great importance, as the color qualification makes for uniformity and the polled characteristic is valuable in shipping and feeding. Combined with the above qualifications are their hardiness, and they are the greatest of rustlers.

Prominent Breeders.

F. A. Mecham Estate, Live Oak Stock Farm, Petaluma: Largest herd of Red Polled cattle on the Pacific Coast, headed by Eyke Dandy 3rd and Teddy's Best. One of the oldest and best herds in the United States.

7 J Ranch, N. A. W. Reynolds, Burney: A herd of Red Polls just in the making with promise of great things for the future.

Attractions of Aberdeen Angus

"Aberdeen-Angus usually dress out a higher percentage of marketable meat than any other kind," says a Government Bulletin on "Breeds of Beef Cattle." The Angus men claim the superiority of their breed on this feature, and they point out that the highest dressing percentage does not necessarily mean the highest percentage of marketable meat. Gobs of tallow will increase the dressing percentage, but may be put on at the expense of quality; also coarseness of bone doesn't show on the dressing sheet. Still Angus cattle have won 15 out of 16 carcass grand championships at the International.

It is generally admitted that Angus cattle are not as good rustlers as Herefords or Shorthorns and do not prove as hardy on the range, but for raising cattle under fence and on farm pastures "the Doddie does a bit at every bite" and cannot be excelled.

Prominent Breeders.

Diamond L Ranch, C. N. Langton, Visalia: Ten cows headed by Imkerman 2nd, a bull purchased from Aberlour Ranch, Bishop.

Carl Reough, Bishop: A fine young herd, composed of 20 heifers from the Aberlour herd, and a bull from the University Farm.

Eldersley Farm, J. H. Ware, Live Oak: A high class herd of females, including the 1917 State fair grand champion. Herd bull, Eldersly Prince, grand champion bull at 1917 State fair. Two service bulls, four bred cows and heifers, and 10 calves for sale.

Uneeda Glenn County Herd of
Duroc-Jersey Hogs
KEY HERD OF PACIFIC COAST
Won at Sacramento:
Grand Champion Sow, Senior Champion Sow, Junior Champion Boar, seven Firsts, 23 other prizes.
PIGS BY NOTED SIRES
High Orion, the world's record-breaking sire, Great Wonder, Grand Champion Iowa; King Orion Cherry, First Prize Indiana and Ohio, and other best boars of the breed. Get some of their pigs. Few bred sows and gilts left.

UNEEDA QUEEN MODEL, Grand Champion State Fair, 1918.
H. P. SLOCUM & SON
WILLOWS, CAL.


THE POPLARS RANCH
Registered Hampshire Swine
A limited number of three-months-old weanlings for sale. Am booking orders for future delivery of youngsters by Gen. Tipton. Have a few young boars sired by Duke's Allen, Grand Champion, 1917, Sacramento.
C. J. GILBERT, Lancaster, Cal.

Grand Champion Herd of Hampshires
FOR SALE.
Brood Sows, litters at foot. Sows bred for fall litters. Young Boars and Gilts.
Best families.
Finest individuality and clean-cut markings.
Call or write.

Address F. V. GORDON or F. A. LANGDON, Llano Vista Ranch, Perris, Cal.


Champion Duroc Boar
For Sale to Avoid Inbreeding
CALIFORNIA'S DEFENDER
Junior champion P.-P. I. E. Sire Slocum's Crimson Wonder, dam Gladys XI. Also, 25 young boars from this famous sire.
Diablo Stock Farm, Danville, Cal.
E. F. PETERSEN, Superintendent
Phone Danville 8-F-2.

Roc Stein Ranch DUROCS
Have for sale two boars, one of GOLD MODEL and one of CRIMSON MONARCH breeding.
Both are about a year old, weighing 400 lbs. Also eight open gilts and four bred gilts. These gilts are the pick of last year's litters.
W. M. WAY & SON
Route 1, Box 320 MODESTO, CALIF.

OAK KNOLL FARM
LAKEPORT CALIFORNIA
We have sold all our young boars and are now booking orders for March delivery. Highlander, the $1,000 Grand Champion Boar, heads our herd of
CHESTER WHITES
SAN FRANCISCO OFFICE, 601 BALBOA BLDG.

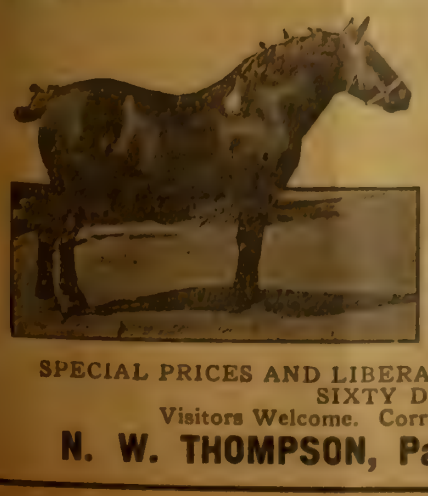


REGISTERED DUROC-JERSEYS
Every point the buyer demands for a profit-making hog is found intensified in the Duroc. We can supply you with weanling pigs, either sex, and gilts from 7 to 10 months. Our herd boar has the blood of Ohio Chief Defender, Crimson Wonder, Jack's Friend, Joe Orion, Etc.
THE GARDINER RANCH,
ROUTE 4, BOX 735 SACRAMENTO, CAL.

ASK YOUR DEALER FOR
El Dorado Cocoanut Oil Cake
for Milk Cows and Chickens and Young Pigs and Hogs. Cheapest food in the market today. If your dealer doesn't carry it, address
EL DORADO OIL WORKS,
433 California Street, San Francisco

HAUSER'S DIGESTER TANKAGE
Gives Greatest VALUE for LEAST MONEY. IT MAKES THEM FAT.
HAUSER PACKING CO. LOS ANGELES

DIGESTER TANKAGE
Send for Sensible Folder on Feeding Hogs
WESTERN MEAT COMPANY
Animal Food Dept. 704 Townsend St., San Francisco

Imported and American Bred
PERCHERONS - BELGIANS - SHIRES
Stallions

A Large Collection of Stallions ready for service this season.
Heavy boned, ton types, with plenty of style and action. Prize-winners and descendants of prize-winners. No better in America. State certificate of soundness and life insurance furnished with every horse. If your community is in need of a high class stallion, come to Patterson, California, and see the largest and best collection in the West.
SPECIAL PRICES AND LIBERAL TERMS FOR THE NEXT SIXTY DAYS.
Visitors Welcome. Correspondence Invited.
N. W. THOMPSON, Patterson, California

READAKS SPECIAL
Registered Big Type **Poland-Chinas**
Bred Sows and Gilts, 25c. per lb. F. O. B. Gilroy.
W. J. HANNA, GILROY, CAL.

TAMWORTHS
(The Bacon Hog)
Largest Herd in the State
DUROC-JERSEYS
Mature Stock and Weanlings of both sexes. Sure to please.
SWINELAND FARM,
W. O. Pearson, Prop. Woodland, Cal.

LIVESTOCK AND DAIRY NOTES.

(Continued from page 505)

Shanks, Leavitt; Charles H. Station, Calexico; W. W. Taylor, Long Beach; Charles Yocum, Tulare; A. J. Zabala, Soledad; John D. Patterson, Patterson.

The John Lynch Ranch, Petaluma, have recently sold two Milking Shorthorn heifer calves to John Whobrey, Myrtle Point, Ore., and a bull calf to Egbert Veerkamp, Placerville.

At a meeting of the temporary directors of the California Dairy Council, held March 20, W. H. Roussel was elected chairman and Sam H. Greene secretary-manager. The first regular quarterly meeting will be held about April 17, at which time it is planned to have a big booster meeting, open to the public, at which prominent men will speak.

Thos. Harrison of Santa Rosa reports that the demand for Milking Shorthorns is tremendous. He has recently made the following sales: One bull to Oroville Orange and Olive Groves, Palermo; one bull and two females to A. J. Tarish, Taylorsville; one bull to W. Riel, North Yakima, Wash.; one female to W. Stevens, El Dorado; one bull to W. F. Grover, Ukiah; one bull to O. M. Maust, MacDoel; one bull to W. H. Whittaker, Chehalis, Wash.; two females to Mr. Hickley, Bennett Valley, Santa Rosa.

Beef Cattle.

W. M. Carruthers, Live Oak, reports the sale of a Shorthorn bull to Hamman Stock Farm of Valley Springs, Calaveras county.

Ormondale Co., Redwood City, have sold to Rancho Chiclin, Trujillo, Peru, two weanling bulls sired by Golden Goods Jr. and out of Cruikshank cows.

Richard Fairfax, a five-year-old Hereford bull, has just been purchased by Ferguson Bros. of Canby, Minn., for the world record price of $50,000. The best previous American price was $31,000, paid for Ardmore.

W. R. Madden, Dixon, reports the sale of three Hereford bulls, 18 to 20 months old, to the Jacobs Estate Company of Reedley. These bulls were sired by an Eastern bull, Gunmetal, owned by W. D. Duke of Likely.

Ormondale Co., Redwood City, report that the wonderful matron, Mayflower 4th, has dropped a corking good roan bull calf, sired by Hallwood Villager; also Jim's Beauty, a noted cow purchased in the East, has dropped a fine bull calf by the same sire.

Twenty-four cattlemen have organized the Plumas-Tahoe Cattlemen's Protective Association to oppose a movement to force the cattlemen using the range between the South Fork of the Feather River and Canyon Creek to band their cattle together in the care of herders jointly employed.

Swine and Swinemen.

Dr. J. A. Crawshaw, Hanford, has sold to J. R. Miller, Tulare, a young herd header sired by California Gerstdale.

Anchorage Farm, Orland, has sold two Berkshire sows to Longe & Sons, Nevada City, and one to Joseph Gassoway of Town Talk. Both are bred to a son of Star Leader.

McDowell & Kendall of Lemoore report the arrival of some great Duroc litters sired by a California Defender bred boar and out of their University Wonder sows.

Conejo Ranch, Newbury Park, has recently received 40 Duroc-Jersey sows and 28 Hampshire sows, purchased in the Corn Belt by Bert Manley, superintendent.

Jane Garden Farms, Sacramento, have sold to Jack B. Harkinson, Sacramento, a Duroc boar by Kings De Luxe.

Young & Clark, Lodi, have sold a son of the noted Poland-China boar, Big Bone Bob, to Walter S. G. Nelson, San Jose.

Allen Thompson, Tulare, says the recent special swine edition of the Pacific Rural Press was a great number and that the publishers deserve great credit for what they did.

Carruthers Farm, Live Oak, reports the sale of 20 sows to J. W. Hill of Tejon Ranch, Bakersfield; a boar to J. M. Robinson of Collinsville; two gilts and a boar to J. M. Vogel, Fresno.

T. Weisendanger of the Purebred Sow Farm, Sacramento, has just purchased four splendid gilts from the Castleview Ranch, Santa Rosa. These gilts are sired by Mayfield Rookwood and Lustre's Dominator.

Fred Gatewood, Fresno, has just recently received from Sam McKelvie of Nebraska a show gilt bred to Big Price Equal 2nd, a son of the first prize aged boar at the National Swine Show in 1918.

R. C. Sturgeon, Tulare, has sold a bred Duroc gilt to J. E. Taylor, Templeton; 2 gilts and 1 boar to J. W. Green, Escondido; 1 service boar to Alex. Whaley, Tulare, and 2 boars to Dr. Bryson's ranch at Angiola.

Hale I. Marsh of Modesto has a sow that proves the prolificacy of Poland-Chinas. Big Lady F has farrowed litters of 12, 13, 15, 8, 9, 10 and 15 pigs. She has raised practically all and they have developed into uniformly strong, vigorous pigs.

A. J. Van Cleef, Riverdale, recently had three sows farrow 11, 9 and 7 pigs respectively and are raising them all. These sows are of the Rosebud strain from Will Bernstein's herd. This strain is particularly noted for farrowing large litters and raising them all.

The California Poland-China Swine Breeders' Association will hold a meeting at the Travelers' Hotel, Sacramento, April 9, at 7 p. m. This meeting will follow the several sales and meetings at Davis, and as no meeting of the association has been held for some time it is hoped that there will be a large attendance.

Madera county seems to be a coming locality for Poland-China breeders. According to W. A. Clark, a young and enthusiastic breeder, an effort is being made to organize a Madera County Poland-China Breeders' Association. He says there are several large ranches going into the purebred side of hog raising and the hogs are being marketed through the Farm Bureau.

Winsor Ranch, Bonita, has sold to W. B. & E. W. Hewitt of Van Nuys for $300 the five and a half months' old boar, Top Sensation 1st, by Top Sensation. This is believed to be the highest price ever paid in California for a boar of that age. Other sales made by Winsor Ranch include a yearling boar by Great Wonder to A. B. Lindsay, Long Beach; six bred gilts to San Pasqual Ranch Co., Escondido, and a mature brood sow to Ralph Mitchell, National City.

Anchorage Farm, Orland, are selling their Berkshires so fast that soon we shall have to devote a special column to announcing their sales. Since March 1 they have sold the following: One daughter of Star Leader and one bred gilt to George P. Upham, Martinez; four bred gilts to M. G. Algots, Los Angeles; two bred gilts to D. D. Wilson, Loomis; four mature sows and a son of Star Leader to H. Tracy, Corning; one sow pig to Mrs. F. Fuller, Taylorsville; two bred gilts to Wm. M. Walsh; one young boar to Mr. Ondres, Orland; two bred gilts and one sow pig, the gilts bred to a son of Star Leader, to M. Morey, Orland; one boar pig to R. Ryerson, Holtville; one bred gilt to C. K. Robinson, Sacramento; three sow pigs to the Pig Club, Redding; two bred sows, in addition to the two bred gilts recently purchased by him, to E. N. Eube, Glenn; one bred gilt to M. Fortini, Orland; one bred gilt

60--Registered Holsteins--60

AT PUBLIC AUCTION

THURSDAY, APRIL 3, 1919

Owned by W. F. MITCHELL

PACKWOOD FARM - VISALIA, CAL.



FAYNE SPRING FARM PONTIAC DE KOL, daughter of the 34-pound sire, Spring Farm King Pontiac 6th, Now on official test and has 26.29 lbs. butter in 7 days to her credit as a senior 4-year-old. She is in this sale.

19 GRANDDAUGHTERS OF SEGIS PONTIAC DE KOL BURKE will be sold. This blood occupies a position of first rank, two of his daughters holding the California records for yearly production in both divisions of the 2-year-old class. Another of his junior 2-year-old daughters now on test has over 26 lbs. butter to her credit in 7 days.

14 COWS AND HEIFERS WITH OFFICIAL RECORDS UP TO OVER 31 POUNDS BUTTER IN 7 DAYS are in the sale. Among them are the great 31-lb. cow, Fidessa Helena, and the 26-lb. 4-year-old shown above. This is a very desirable offering of young A. R. O. females, just the kind that will make satisfactory foundation cattle.

39 COWS AND HEIFERS BRED TO PRINCE HISKE WALKER will go to the highest bidder. Think what the calves from these great dams will be worth by such a sire.

PRINCE HISKE WALKER WILL BE SOLD, for the sole reason that Mr. Mitchell is keeping only the young daughters of this great sire as his future breeding females. He is a full brother to the 34-lb. junior 4-year-old Lady Hiske Walker, is only just past 4 years old and will undoubtedly have at least 60 living daughters before he is 5 years old.

ATTEND THIS SALE BY ALL MEANS. IT CONTAINS SOME OF THE MOST DESIRABLE YOUNG HOLSTEINS TO BE OFFERED DURING THIS SALE SEASON.

Catalog free on request.

Note.—Mr. Mitchell's Packwood Farm is about 7 miles north of Tulare, just off the main state highway. Sale begins promptly at 10 A. M. on date above.

Management

California Breeders' Sales & Pedigree Co.

C. L. HUGHES, Sales Manager, Sacramento, Cal.

Auctioneer—COL. BEN A. RHOADES, Los Angeles.

BRIGHTON FARM SHORTHORNS

One three-year-old bull bred by H. R. Clay.
Two outstanding yearling bulls sired by Sir Type, a son of Cumberlands Type.
A few yearling heifers of same breeding.
Also registered Berkshires of both sexes of best breeding.

H. L. & E. H. MURPHY **Perkins, Sacramento Co., Cal.**

Eldersley Farm Angus

Home of Grand Champion Bull

Prince Eldersley

and Grand Champion Cow

Sciota Coquette

We have some choice young bulls for sale. Also a few choice cows with calves at foot.

J. H. WARE, Prop.

LIVE OAK, CAL.

THICK, SWOLLEN GLANDS

that make a horse **Wheeze, Roar, have Thick Wind or Choke-down,** can be reduced with



ABSORBINE

also other Bunches or Swellings. **No blister, no hair gone,** and horse kept at work. Economical—only a few drops required at an application. $2.50 per bottle delivered. **Book 3 S free.** ABSORBINE, JR., the antiseptic liniment for mankind, reduces Cysts, Wens, Painful, Swollen Veins and Ulcers. $1.25 a bottle at dealers or delivered. Book "Evidence" free.

W.F.YOUNG, P. D. F., 86 Temple St., Springfield, Mass.

HILLCREST STOCK FARM

(T. S. GLIDE)

SHORTHORN CATTLE

CONSIGNING TO THE SHORTHORN SALE A SON AND A GRANDSON OF KNIGHT PERFECTION

Shropshire & French Merino Rams DAVIS, CALIFORNIA

REGISTERED

Polled Angus

DIAMOND L RANCH
C. N. LANGTON, Prop.
Route B, Box 122,
Visalia, - - California.

and one sow pig to J. F. Nahas, Merced; two bred gilts to Gee Bros., Corning; two bred gilts to Long & Sons, Nevada City; one bred gilt to Joseph Gassoway, Grass Valley; one bred gilt to G. R. Holcomb Estate Co., Reno, Nev., and one boar pig to Gleuo Pettay, Redding.

Sheep.

W. M. Carruthers, Live Oak, has purchased 20 Shropshire sheep from Butte City Ranch, to establish on his farm in connection with his Shorthorns and Berkshires.

Forty-five new flocks of sheep containing 45 to 300 head each have been established in Glenn county during the past year, according to Farm Advisor W. H. Heileman.

A long period of demoralized markets caused many sheepmen to send lambs prematurely to the shambles and this has caused an acute scarcity which has brought the market up to $19.50 at Chicago.

Thirty-five hundred sheep have been placed in small bands on San Joaquin county farms where sheep had not been kept before, and dogs are slaughtering them, according to a veterinarian of that county who is occasionally called to treat the dogs' and sheep's wounds.

A nation-wide campaign to promote the consumption of lamb has been inaugurated by the National Wool Growers' Association, and a former Government food inspector has been employed to lecture and demonstrate the dressing and cooking of lamb. Sixty per cent of the sheepmen's profits come from the sale of lambs and the future of the industry depends largely upon the increased consumption of lamb. In this country we use only about five pounds per capita per year, while in England 26 pounds are consumed.

Livestock Miscellaneous.

Several horses have died in Utah from eating beat top silage, which has been tried out for the first time.

The value of livestock on the Orland Irrigation Project has increased from $60,300 in 1911 to $640,000 at the end of 1918.

The Nevada Stockmen's Association has been organized. It already has 350 members, representing a $60,000 industry.

Riverdale is becoming quite a center for purebred stock along Holstein-Friesian and Poland-China lines. Ranchers who recently started in business in this way are: H. M. Hancock, Holstein-Friesians; W. L. Choisser, Holsteins and Poland-Chinas; Harry Hill, Holsteins; A. J. Van Cleef, Poland-Chinas.

As an evidence of the wonderful productiveness and earning power of land about Turlock, a recent sale of a ranch owned by George Simon, containing 632 acres, purchased 12 years ago for $3,534, brought $43,400, a price that would have been considered impossible a few years ago. Mr. Simon expects to devote all his time to selling silos now that he has sold his ranch.

LIVESTOCK DIRECTORY.

Rate in this directory 3c. per word each issue.

SWINE.

Berkshires.

GRAPEWILD FARMS BERKSHIRES A few spring boars and fall pigs by Big Leader, Grapewild Farm Leader and Majestic King.
A. B. Humphrey, Prop., Escalon, Cal

CROLEY'S BALANCED HOG FEED—The cheapest feed to fatten hogs. Write Geo. H. Croley Co., Inc., Livestock Supplies, 8th and Townsend streets, San Francisco

BERKSHIRES bred at Imperial Stock Farm are the kind that satisfy. Write us or call and be convinced. R. J. Merrill & Son, Morgan Hill, Cal

BERKSHIRES IN PERRIS — They make money for me. Write for catalogue and prices. F. L. Hall, Perris, Cal

BERKSHIRES—Sired by Star Leader, the $1500 boar. Koumiss Registered Stock Farm, Modesto

BERKSHIRES by Ringleader 20th, greatest son of Grand Leader 2nd. Geo. M. York, Modesto.

FOR REAL GOOD BERKSHIRES write Frank B Anderson R 7 24W Sacramento Cal

CARRUTHERS FARMS BERKSHIRES — Cholera Immune Live Oak, Cal

REGISTERED BERKSHIRES—Write R. D. Hume, Dos Palos, Cal

BERKSHIRES—Fair Oaks Ranch, Willits, California.

CASTLEVIEW

GIANT TYPE BERKSHIRES

We are booking orders for spring pigs from Grand Champion Sows and sired by Mayfield Rookwood, sire of Champion Barrow, at 1919 Western Berkshire Congress.

CASTLEVIEW RANCH, SANTA ROSA.

ANCHORAGE FARM.

MONEY-MAKING BERKSHIRES—The prolific, easy-feeding kind that make the highest priced pork from the lowest priced feed. They will increase your profits. Prices reasonable; satisfaction guaranteed. Write for free booklet, describing our worlds reserve champion, STAR LEADER. We are now making a special offering of bred sows and gilts.
Anchorage Farm, Orland, Cal.

$25.00—$35.00—$50.00
BARON DUKE 201ST
Omaha Grand National Champion
BOAR PIGS: 3, 5, and 6 months old, from 650-pound prize-winning sows. We will sell nothing that we wouldnt use ourselves.
SANDERCOCK LAND CO.,
906 K St., Sacramento.
In charge of Natomas Land sales.

Poland-Chinas.

"GROW THEM OUT"

BERNSTEIN'S PIG SALE.

Saturday, April 26, 1919, I will sell to the highest bidder, 65 head of registered Poland-China hogs. A few bred sows and service boars. All the rest are PIGS. From weanlings up to gilts ready to breed. This is your opportunity to

BUY THEM YOUNG AND GROW THEM OUT.

W. Bernstein, Owner. Write for catalog to W. T. Dice, Sec., Box 374, Hanford, Calif.

SOW BARGAINS—We are offering some exceptionally nice tried sows, bred and open gilts, at attractive prices. They are all sired by the undefeated and world's grand champion Superba and out of big type sows, which cost me $200 and over. Investigate before buying elsewhere. Rough's Greenfields, Arlington Station, Riverside, Cal.

ELDERSLY FARM—We are offering some excellent tops from our fall and spring pigs at attractive prices, sired by one of America's best-bred boars, Big Black Bone Wonder, with grand championship breeding on both sides. He is a real 1000-lb. boar. J. H. Ware, Live Oak, Cal.

NOW BOOKING ORDERS for spring pigs, either sex, from my prize-winning, large type Poland-China hogs. Also will book a few orders for bred gilts, February and March farrow, and a few good, serviceable, aged boars. Hale I. Marsh, Modesto, Cal.

THE BEST IN THE WEST — California Gerstdale and President's Equal are my herd sires. Fall and spring boars now ready to move—each one a corker. Dr. J. A. Crawshaw, Hanford, Cal.

BARGAINS IN POLAND-CHINA SOWS—All immune. Good mothers and prolific. Registered stock. Also boars. Write for details. N. C. Hansen, Coachella, Cal.

BOOKING ORDERS for spring pigs, sired by "Bob Big Bone" 281289, litter brother of the Junior Champion at Sacramento, 1918. P. E. Mitchell, Atwater, Cal.

WEANLING PIGS, both sexes, Gerstdale Jones and Caldwell's Big Bob blood lines. Booking orders for spring. Forest View Ranch, Paradise, Cal.

OXBONE HERD offers March boars for sale from King's Big Bone Leader, grand champion at State Fair, 1918. Write F. E. Fay, Tipton, Cal.

WACKEEN HERD POLAND-CHINAS—Big type herd boar, the $700 Grand Champion of California. Lee McCracken, Prop., Ripon, Cal

40 SOWS and daughters of Big Bone Bob and I B A Wonder sows for sale. Price right. N K Horan, Lockeford, Cal

POLAND-CHINA GILTS — Four months, $25.00. Registered and crated. Edward A. Hall, Rt 1, Box 39, Watsonville, Cal.

BIG TYPE POLAND-CHINAS—Stock from the best herds of the Middle West. N Hauck, Alton, Humboldt county, Cal

20 HEAD of Big Bone Bob, Grand Model and I B A Wonder Stock for sale. J. W. Wakefield, Acampo, Cal

LAKE SIDE STOCK FARM—Large, smooth and big boned Poland Chinas. Geo. V. Beckman & Sons, Lodi, Cal

REGISTERED POLAND-CHINA SWINE—Prize winners. Finest stock in the State. M. Bassett, Hanford, Cal

POLAND-CHINAS—Quality and bone our hobby. Fall boars for sale. H. D. McCune, Lemoore, Cal

BIG-BONED POLAND-CHINAS—From Eastern prize-winners. D. H. Forney, Lodi & G, Fresno

POLAND-CHINA PIGS WITH RIBBONS—Prices right. Johnnie Graves, Westley, Cal

POLAND-CHINA PIGS — [illegible] hitt, and Ross blood. B. M. Harris, Fresno

POLAND-CHINAS—A few [illegible] boars for sale. R F Guerin, Visalia, Cal

READ OAKS RANCH herd of registered Poland-Chinas. W. I. Hall, Ceres

BIG-BONED POLAND-CHINAS — [illegible] sale. E. A. Myers, Escalon, Cal.

POLAND-CHINAS—Young stock for sale. H. E. McMahan, Lemoore, Cal

Chester Whites.

PUREBRED CHESTER WHITES — Spring [illegible] prices. Wray M. Peck, Escalon, Cal

BILLIKEN CHESTER WHITES—One yearling boar for sale; everything else sold. Will book orders now for spring pigs. C. B. Cunningham, Mills, Cal.

CHESTER WHITE PUREBREDS—Weanlings, August boars, 4-month gilts. Prices low. Cedarhurst Ranches, Route 2, Sacramento.

Duroc-Jerseys.

DUROC-JERSEYS AT IRELAND—Home of Cherry Volunter II., Grand Champion Boar at Riverside. Ireland's Orion Defender and Orion's King of Ireland are excellent sires in service. Booking orders for spring delivery. Ranch at Owensmouth. City office, 1219 Brockman Bldg., Los Angeles.

SWEETWATER DUROC-JERSEYS—We have produced more champions and foundation animals of merit than any herd in Southern California. We solicit the inspection of the most critical breeders. Winsor Ranch, Bonita, San Diego county. Address, R. K. Walker.

DUROC-JERSEYS WANTED — Registered gilts, open and bred. Also young sows. State ages and breeding; when bred; price. Jersey Queen Farm, San Jose, Cal.

WE WON MORE MONEY on Durocs at the State Fair than any other exhibitor. Why not buy some of this winning stock? June Acres Stock Farm, Davis, Cal.

DUROC-JERSEYS — Burke's Good Enuff, Golden Model, King's Colonel and Pathfinder blood. Derryfield Farm, National Bank Building, Sacramento.

DUROC WEANLINGS for the farmer. Easy feeders; 200 lbs. at seven months. W. W. Everett, River Bend Farm, St. Helena, Cal.

A FEW CHOICE BRED GILTS, spring boars and gilts of the best blood lines. H. P. Slocum & Sons, Willows.

BOUDIER DUROCS all sold out, excepting some sow pigs weighing 100 lbs. apiece. H. E. Boudier, Napa.

HEAVY-BONED DUROCS — A few service boars for sale. Ormondale Co., Route 1, Redwood City, Cal.

REGISTERED DUROCS — All from prize-winning stock. W. P. Harkey, Gridley, Cal.

DUROC-JERSEYS—October pigs, $15.00 to $25.00. Jack London Ranch, Glen Ellen.

REGISTERED DUROC-JERSEY GILTS for sale. D. Fricot, Angels Camp, Cal.

REGISTERED DUROCS—Stock for sale. W. J. Fulgham & Sons, Visalia, Cal.

YORKSHIRES.

LLOYTON HERD REGISTERED YORKSHIRES—Bred gilts and pigs from eight weeks up. Lloyd & Tointon, Llano Road, Santa Rosa, Cal.

Hampshires.

OUR 28-MONTHS OLD herd boar, sure breeder, 15c. lb. Two open and bred gilts. Weaned pigs. Write: Uneda Hampshire Swine Farm, Tom M. Bodger, Prop., Gardena, Cal.

MY HAMPSHIRES are money makers. Stock for sale. Buy now. L. A. Denker, Saugus, Cal

HAMPSHIRE SWINE — Young stock for sale. Ira Hart, Dos Palos, Cal.

Miscellaneous.

O. I. C. BREEDERS' NOTICE—I will sell Ohio Boy, two-year-old imported boar; none better. Also boar pigs ready for spring breeding (sire Ohio Boy, dam Toddler's Beauty, imported). Write for full information. Jas. Little, Wasco, Cal.

LARGE YORKSHIRES—The ideal hog for the progressive farmer. Young stock for sale. A. L. Tubbs Co., Calistoga, Cal.

MULE-FOOT HOGS — Large type. H. T. Bailey, P. O. Box 37, Lodi, California. "The Blue Gums."

DAIRY CATTLE.

Holsteins.

A PRICE ON EVERY ANIMAL.
Herd free from tuberculosis. All sales subject to sixty days' retest. Sons of **Finderne Soldene Valdessa**, whose dam is not only a world record cow in seven-day division, but has two sisters holding world's records for yearly production.
Toyon Farms Association.
679 Mills Building. San Francisco.

WHEN IN THE MARKET for young bulls and females, write me. My herd sire and show bull, El Prado Wayne Colantha, is also for sale. Every animal in my herd is priced. J. W. Benoit, Route C, Modesto, Cal.

HIGH-CLASS HOLSTEINS—I have for sale some sons of Sir Veeman Korndyke Pontiac from A. R. O. dams. Write for particulars or come see them. R F Guerin, Visalia, Cal

SUNNYBROOK RANCH, WILLITS, CAL.—Registered Holstein bull calves, sired by a grandson of King of the Pontiacs

PALO ALTO STOCK FARM, Palo Alto, breeders of registered Holsteins. Heifers and service bulls. Reasonable prices.

CREAMCUP HERD — Registered Holsteins, Pontiac bull calves. M. Holdridge, Rt. A, Box 437, San Jose, Cal.

REGISTERED HOLSTEIN BULLS with world's record backing. Kounias' Registered Stock Farm, Modesto

BREEDERS OF REGISTERED HOLSTEIN cattle and Berkshire pigs. Whittier State School, Whittier, Cal

F. H. STENZEL, SAN LORENZO, CAL.—Breeder of Registered Holsteins. High test producers.

REGISTERED HOLSTEINS—A. W. Morris & Sons Corp., Importers and Breeders, Woodland, Cal

REGISTERED HOLSTEINS — Best blood lines of the breed. R. L. Holmes, Modesto, Cal.

GOTSHALL & MAGRUDER — Breeders of registered Holstein-Friesians, Ripon, Cal

CHOICE HOLSTEIN bulls for sale. No females. Millbrae Dairy, Millbrae, Cal

BREEDERS OF REGISTERED HOLSTEIN cattle. McAllister & Jones Co., Ceres, Cal.

HOLSTEIN BULLS and bull calves from A. R. O. cows. C. A. Meier, Lemoore, Cal.

REGISTERED HOLSTEIN CATTLE—E. E. Freeman, Route B, Modesto, Cal.

EL DORADO HERD OF HOLSTEINS — Alex Wheeler, Tulare, Cal.

Jerseys.

SUNSHINE FARM JERSEYS—Tuberculin tested. Production counts. J. E. Greenough, Merced

YOUNG BULLS from Register of Merit cows. W. G. Gurr, of Orland, Cal.

Guernseys.

GRAPEWILD FARMS GUERNSEYS.
A 21-months-old bull out of dam with record of 615 pounds in A. A. class, and a few young bulls up to 1 year of age.
A. B. Humphrey, Escalon, Cal.

HIDDEN VALLEY FARM offers for sale 2 young Guernsey bulls, ready for service, out of high record advanced register dams. A. J. Welch, proprietor, Redwood City.

EDGEMOOR FARM GUERNSEYS — First in the show ring and in official records. Few animals of either sex for sale. Edgemoor Farm, Santee, Cal.

PALO ALTO STOCK FARM, Palo Alto—Breeders of registered Guernseys; both sexes; prices reasonable.

Ayrshires.

NORABEL FARM AYRSHIRES—Purebred young stock for sale at reasonable prices. Le Baron Estate Company, Valley Ford, Cal.

ELKHORN FARM AYRSHIRES — Choice young bulls at reasonable prices. J. H. Meyer, 440 Montgomery St., San Francisco, Cal.

AYRSHIRES — Registered; all ages. E. B. McFarland, 412 Claus Spreckles Building, San Francisco.

BULL CALF—Serviceable age. Redwoods Ayrshire Farm, La Honda, Calif.

MILKING SHORTHORNS.

BREEDERS OF REGISTERED SHORTHORNS—Milk strain; choice young stock for sale. John Lynch Ranch, Box 321, Petaluma.

INNISFAIL DAIRY SHORTHORNS—Registered young bulls for sale. Alexander & Kellogg, Suisun, Cal.

BEEF CATTLE.

AM A SPECIALIST in registered beef cattle and familiar with the best herds in the country. If you need Shorthorns or Herefords, make use of my experience, save money and be satisfied. R. M. Dunlap, Hotel Land, Sacramento.

RANCHO SAN JULIAN SHORTHORNS—Purebred range bulls, unregistered, for sale. Estate Thos. B. Dibblee, Santa Barbara or Lompoc, Cal. John Troup, Supt.

ALAMO HERD REGISTERED HEREFORDS (founded by Governor Sparks). Herd and range bulls. Reasonable prices. W. D. Duke, Likely, Modoc county, Cal.

REGISTERED YEARLING SHORTHORN BULLS — Heavy-boned, thick-meated, Scotch and Scotch-topped breeding. Ormondale Co., Route 1, Redwood City, Cal.

REGISTERED MILK AND BEEF SHORTHORNS, bulls and heifers for sale; catalogue free. Thomas Harrison, Santa Rosa Stock Farm, Santa Rosa, Cal.

HEREFORDS—Sierra Vista Herd, Minturn, California. Over one hundred registered animals. Fairfax and Repeater bulls head the herd. On highway.

THE NEVADA HEREFORD RANCH, Jno. H. Cazier & Son Co., props., Wells, Nevada. Registered Hereford cattle. Breeding stock for sale.

REGISTERED SHORTHORNS—A few choice young bulls, grandsons of Fair Knight. Prices reasonable. Fair Oaks Ranch, Willits, Cal

JACK LONDON RANCH—Breeders of prize-winning beef Shorthorns. Glenn Ellen, Cal. Eliza Shepard, Supt.

HOPLAND STOCK FARM—Registered Shorthorns. Prices on application. Hopland, Cal

REGISTERED HEREFORDS—H. H. Gable, Diamond G Ranch, Esparto, Cal.

SIMON NEWMAN CO., breeders of Registered Herefords, Newman, Cal.

GEORGE CALLAHAN, Breeder of registered Herefords, Milton, Cal.

GEORGE WATTERSON—Breeder Registered Herefords, Bishop, Cal.

HEREFORDS—Mission Hereford Farm, Mission, San Jose, Cal.

SHORTHORNS — Carruthers Farms, Live Oak, Cal.

SHEEP AND GOATS.

F. A. MECHAM ESTATE, Petaluma, Cal.—Breeders and importers of Shropshire, Rambouillets and American Merinos, both sexes. Also Red Polled cattle. Take electric car at Petaluma or Santa Rosa for Live Oak Ranch

DORSETS AND ROMNEYS — Dorset ram lambs for sale. John E. Marble, South Pasadena, Cal.

BISHOP BROS., SAN RAMON, CAL. — Breeders and importers of Shropshires.

KAUPKE BROS., WOODLAND, CAL. — Breeders, importers of Hampshire sheep

CHAS. KIMBLE—Breeder and importer of Rambouillets. Hanford, Cal.

CALLA GROVE FARM, MANTECA, CAL.—Breeders and importers of Hampshire sheep

SHROPSHIRES FOR SALE—Both sexes. C. J. L. Stonebraker, Route A, Chico, Cal.

HORSES.

FOR SALE
Reg. purebred Jack; ditto Jennet. 10 brood mares, running stallion, 4 saddle horses, 1 work horse, 20 young mules, 1 to 6 years old. These mules are all big boned and will mature to about 1200 lbs. average. Bargain on lot or will parcel. This is a dispersal sale. I retain only stock necessary to work ranch and sell with same.
F. G. Warner, El Dorado Ranch, Placerville, Cal.

MISCELLANEOUS.

SOUDAN GRASS SEED Dairymen and stockmen—Why not plant your summer fallow land with Soudan grass and have hay for cattle next winter. I have plenty of good seed guaranteed free from Johnson grass. Price, 10½c. per lb. J. E. McGrury, Patterson, Cal.

BUTTE CITY RANCH—Shorthorns, Shropshires, Rambouillets and thoroughbred horses. Write for prices and descriptions before buying. Butte City Ranch, Box B, Butte City, Glenn county, Cal. W. T. Dwyer and W. S. Gordon, owners.

FOR SALE—[illegible] beef cattle, young cows bred to [illegible] Hereford bull. Yearlings and weaning calves. Must sell one car at once to make room for car registered Hereford bull. Dan Quaid, Palo Alto.

FOR SALE—Fifty [illegible] yearling, two and three-year-olds and mares. Address Miss Lois Jones, 416 Lath St., Ukiah, Cal.

REGISTERED HOLSTEINS and Durocs-Jerseys. Sturgeon Stock Ranch, Tulare, Cal.

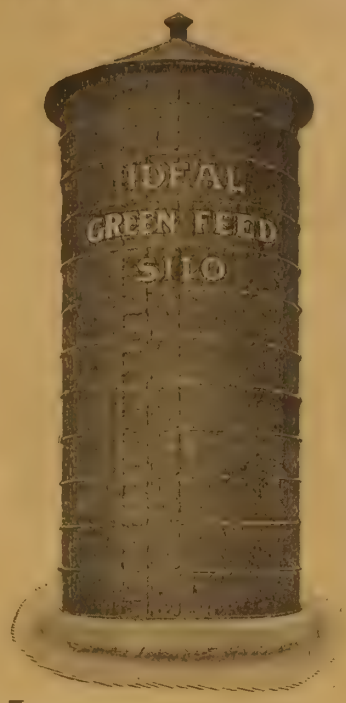
Here's the way to get the big milk flow:

(1) Put that first alfalfa crop into an Ideal Green Feed Silo.

(2) Feed it out as silage this summer, when green feed is gone.

(3) Refill with corn this fall.

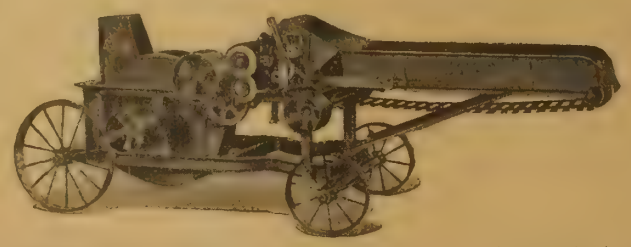
(4) Feed succulent corn silage all winter. That's the way to cut feed costs, too.



THE rigid, exacting specifications under which Ideal Green Feed Silos are made, their acknowledged superior design and our reputation for quality dairy equipment is your guarantee of a sound, serviceable silo. Let us tell you all about the IDEAL.

CATALOG, PRICES AND TERMS UPON REQUEST

The ACME Cutter



LAWN MOWER TYPE KNIVES—produce even, clean cut silage and give largest capacity. ALL STEEL FRAME. Mounted on truck. A combined silo filler, dry feed cutter and alfalfa meal machine.

A SIZE FOR EVERY DAIRY—SEND FOR CATALOG.

De Laval Dairy Supply Co.

61 BEALE STREET, SAN FRANCISCO.

$1900 Milk Check from 14 Milk Cows Pastured on Sweet Clover

Tulare, Cal.,
Route A, Box 72,
Dec. 28, 1918.

Western Soil Bacteria Co.,
440 Sansome Street,
San Francisco.

Dear Sirs:—

Your representative, Mr. C. A. Dorsey, asked me for a few facts as to results I have received from 13 acres of Sweet Clover inoculated with Westrobac. I ran 23 head of cattle on this field, 14 of which were milk cows, which gave me a cash income from the creamery of $1,900.00 for the last twelve months. We used other feed for four months during this time, the clover did the rest. This field would have furnished pasture for forty head and made a better quality of feed than it did for the twenty-three head.

(Signed) C. R. SORTOR.

Complete Creamery Equipment

Three-ton Remington ice machine, 900-lb. churn, 200-gal. Jensen pasteurizer, 8 H. P. submerged boiler, and many other articles that go to make up a complete creamery equipment.

G. W. STONE, Route 2, BYRON, CAL.

The sides of a fall pig eating pumpkins stick out like those of a colored boy eating watermelon. But you never heard of either one dying from the effects. Instead it seems to enlarge their capacity, for they both grow. It doesn't cost much to raise a crop of pumpkins in the corn field. Better plan to put in some this year.

Always keep the harnesses clean, especially the parts that touch the horse. You will get enough better results from the horses to pay for the time spent.

Polled Herefords Making Headway

The year 1919 is destined to be a remarkable one in Polled Hereford affairs. In the Middle West it was started with one of the greatest series of sales ever staged, and now the promotion campaign is to be extended to the Coast, where it is expected that a great market is hungry for good stock of this breed practically unknown out here.

April 10, at Sacramento, Coast farmers will have a rare opportunity to buy at their own door and at their own prices some of the choicest specimens of the breed, as the leading Middle West breeders have contributed 25 of the finest hornless Herefords ever led into a sales ring, the object being not to make money but to advance the interests of the breed in this territory.

Perhaps it would not be out of place to explain just what Polled Herefords are and how they came to be hornless, for that is what they are—Herefords naturally without horns. To quote from Sanders' "Story of the Hereford," "In the year 1901 Mr. Warren Gammon, Des Moines, Iowa, circularized the members of the American Hereford Cattle Breeders' Association, asking if any hornless "freaks" had ever appeared in their respective herds. As a result 14 head of registered Herefords that had never developed horns were brought to light. They were the property of reputable breeders, so that there could be no question as to their pure descent. Ten of these were females and four were bulls. Mr. Gammon bought all of the latter and seven of the cows, and began mating them, with the result that practically all the calves dropped were polled; and it is stated that these polled bulls when mated with horned Hereford cows gave 50 to 75 per cent of hornless calves. This was the beginning of the Polled Herefords of the present time."

An organization for the registration of animals and the promotion of the Polled Herefords as a breed was formed in 1907. For four years Warren Gammon served as secretary of this organization, but he has since been succeeded by his son, B. O. Gammon, and the latter has continued to serve and is still serving in this capacity.

To tell of the growth in numbers and popularity of this breed seems almost like a fairy tale—how the organization started with a membership of five in 1907 and grew to 1150 by January 1, 1919. Two hundred and forty were added in 1918 and 100 of this number since September 1. Over 15,000 head of hornless Herefords are now on record, all of them past nine months of age, which means that the breed numbers at least 20,000 today. However, this is enough of statistics to show how rapidly the breed has gained in numbers in the last decade.

The slogan of the breeders of Polled Herefords has been, "Nothing gone but the horns," and so far as can be seen this is true. The beef conformation of this breed is fully equal to that of the normal type, being broad, deep, low down and blocky, that finishes quickly under the most intensive conditions if desired, or by proper handling can be grown out profitably into the larger type. The disposition is, if it can be, even better than the horned type, although they have plenty of pep and courage to resist ill treatment. The claim is made by some that they are not as well fitted for the range owing to lack of the natural weapons of offense and defense. Therein lies the advantage in the comparison of those conditions "offense" and "defense." What little advantage horns are as weapons of defense is more than offset by their use against one another in offensive warfare under all conditions, and especially in the feed lot and shipping.

Breeding hornless cattle is certainly a much more humane method of attaining the conditions desired than the clipper, saw or caustic.

As Polled Herefords are not well known out here, the plans for the sale include the free services of John Letham, one of the best judges of Hereford type, individuality and pedigrees in America, who will assist buyers in making their selections. We shall be glad to send catalogs of the sale to all who will write direct to this office for them.

BARNGROVER CALF HARD TO BEAT.

To use a hackneyed expression, we present a very poor picture of a very good calf. He is Plumas Lad, a 14-months'-old Hereford, owned by H. M. Barngrover, Santa Clara,



and consigned to the Hereford sale at Davis. He is by the Barngrover herd sire, Patrician 5th, and out of a show cow, and combines in his pedigree the blood of two great sires—Lord Erling and Paragon 12th. There will be three other sons of this bull in the sale—all real herd headers.

CALIFORNIA A BEEF CATTLE PARADISE.

(Continued from first page)

side of the State, but in normal times the increase does not keep pace with our increase in population, yet we ought to be exceeding this increase in order to have an over-supply with which to develop a foreign market.

MARKETING CONDITIONS IMPROVING.

There is an over-supply here during one period of the year—beginning in May. This is partly because of the shipping of grass-fed stuff in large quantities at one time instead of practicing intensive feeding for an all-the-year-around market, and partly because of unsatisfactory marketing facilities. The marketing committee of the Cattlemen's Association is now considering a plan to take the tops of the herds in May and June and ship them to Eastern markets in trainload lots to relieve the congestion here.

Another fault of the present marketing system is that the small farmer who cannot ship in large quantities is at the mercy of the local buyer who takes too big a share of the profits. This problem also is being considered by the marketing committee of the State association, and probably a remedy will soon be found. Local shipping organizations may be formed, or perhaps the Farm Bureau auction plan, which has worked out so successfully in selling hogs, will be adopted.

Anyway, it is certain that the efforts of those who have the matter in charge will greatly improve the beef cattle marketing situation, and while, of course, the industry will always have its ups and downs, there is no reason why it should not be developed to two or three times its present proportions and at a most satisfactory profit to those who embark in it. Plunging or speculating is not advisable in this or any other agricultural line, but the man who uses conservatism and sound judgment will find the raising of beef cattle a safe, sound, profitable venture.

The leeward side of a barbed-wire fence is an expensive shelter for milk cows. One more costly will prove cheaper in the end, and the increase in the cream check will pay for it.



Uncle Sam Used Pine

In His Aeroplanes

Every ounce of weight, every fibre of strength counts in an aeroplane. Wood, steel, and aluminum are chosen for particular parts because they best fulfill the requirements of those parts. In the long wing-spars the essential qualities are found in pine. Its clean, straight grain and its strength make it exactly the right wood.

SIMPLEX SILOS are built of Oregon Pine (Douglas Fir). All other wood silos have staves that are spliced for the tall sizes.

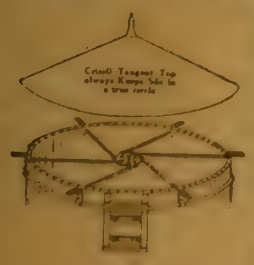


SIMPLEX SILO

Every Simplex is built of one-piece staves—even in the 40-foot lengths. There are no end joints. That makes the Simplex air-tight, water-tight, rigid.

Other features of the Simplex help to supply these very necessary features.

The Crissell Tangent Top Device



keeps the staves perfectly aligned always. It makes any difference between the shape of the top and the bottom impossible. Simplex sides stay straight and always in perfect circle.

THE INTERLOCKING ANCHORAGE SYSTEM binds the Simplex to the earth with the best strength of steel and concrete.

SOONER OR LATER YOU WILL BUY A SILO.

MAIL THE COUPON NOW.

SANTA FE LUMBER COMPANY,
16 California St., San Francisco, Cal.

Mail me your booklet on Simplex Silos and information about Papec ensilage cutters.

Name .....

Address .....

My lumber dealer is .....

And An Ensilage Cutter



The Papec is the logical companion to the Simplex. With it you can fill your silo when the crop is at its best. Papec is a 6-fan cutter that **throws** and **blows** the ensilage up the chute. More force for less power.

The coupon calls for Papec information, too.

Santa Fe Lumber Company

16 CALIFORNIA STREET, SAN FRANCISCO, CAL.

Classy Offerings for Hereford Sales

Public sales of registered livestock are becoming more popular and deserve the support of all enterprising stockmen, be they breeders of registered or market animals, as it tends to the advertisement and wide economical distribution of breeding animals and therefore improvement of all classes of farm or range stock. Breeders of beef cattle particularly early recognized the benefits of public sales and where necessary have combined in holding these sales in some central or otherwise advantageous point. Consignments are sometimes shipped quite some distance if the particular place or sale seems to offer special inducements.

The Pacific Coast Hereford Cattle Breeders' Association, in holding their second sale at the University Farm, Davis, on April 9, have consignments coming from as far east as Wells, Nevada, and as far north as Modoc county. However, aside from these two consignments, herds much closer to the sale point make up the quota. Several of the well-known herds of California have made no consignments to this sale owing to the fact that they are all sold out.

To anyone acquainted with range cattle conditions from the Pacific Coast eastward as far as such conditions exist, to think of range cattle is to think of "white faces." Not that all range cattle are Herefords—far from it—but there has been enough Hereford blood infused into the native range stock to place the well-known color markings of this breed on many of such cattle. For some reason the Hereford just naturally seemed to drop into the place of the Texas "long horn" just as the "long horn" stepped into the vacancy left by the buffalo. It seemed to be another case of the "survival of the fittest." Whether the Hereford is to be replaced by some other breed of beef cattle, time alone will tell. It is safe to say, however, that it will be many a long year before the characteristic color markings will disappear from the Western range.

The color markings so characteristic of the Hereford are a great point in their favor, as it tends greatly for uniformity in appearance. A carload in a feeding pen or a thousand on the open range extending as far as the eye can distinguish such things all makes for the same uniformity and with enough variation between the amount of red and white to prevent monotony.

Combined with this uniformity of color markings goes excellent beef form, feeding qualities and disposition, so that when a rangeman wants to improve his stock and learns of a Hereford sale like the one mentioned above he is very apt to decide to attend. Also, if he be a man intending to start a herd of purebreds and sees in the advertisements that such breeders as H. M. Barngrover of Santa Clara, W. J. Bemmerly of Woodland, J. A. Bunting of Mission San Jose, J. H. Cazier & Sons of Wells (Nev.), W. D. Duke of Likely, Chas. Rule of Duncans Mills, and University Farm at Davis have consignments, he decides that it is sure to be a good place to go and look and that is equivalent to bidding.

The consignments number 84 animals, of which 56 are females and 28 bulls, all tuberculin tested and guaranteed breeders.

It has been possible to see only a few of the animals consigned, but so far as seen they are characteristic of the best of the breed.

H. M. Barngrover of Santa Clara, Cal., is offering two young matrons with calves at foot that will look mighty good to those wanting foundation stock. The heifers, Annie 3rd and Lone Girl, are sired by Mr. Perfection and their calves by Patrician 5th, who is proving a most excellent breeder. Three bulls, Oregon, Alaska and Plumas, are sired by Patrician 5th and out of show cows of supreme breeding. These bulls will bear very close inspection by those wishing herd sires. Roosevelt is a fine type of range bull, sired by Patrician 5th, fit for service.

Wm. J. Bemmerly of Woodland will consign 12 head of good ones. Mr. Bemmerly has picked from over 100 choice animals in his herd, which represents over 40 years of careful breeding.

In the year 1900 the writer saw the Hereford herd of the late Gov. Sparks of Nevada, known as the Alamo herd, since purchased by W. D. Duke of Likely, and if the past is any criterion by which to judge Mr. Duke's consignment, he certainly will have cattle that will cause much spirited bidding. At the time mentioned above, the Alamo herd was on exhibition at a fair held at the old Tanforan race track at South San Francisco. The exact number of animals shown has passed from memory, but they were of the broad, low-down, blocky type, with plenty of quality and constitution and with the development at an early age that was then commencing to be known as baby beef.

The offering of Jno. H. Cazier & Sons Co., Wells, Nev., is a splendid one, including bulls of great individuality and breeding, and cows that surely will make money for their new owners—some bred to the $10,000 Beau Blanchard 76th, one of the greatest bulls in America. Too much cannot be said in favor of this consignment.

To describe all of the good animals would be to say something about each one offered. Buyers can hardly go wrong in bidding on any animal in the sale.

"I will stop advertising my livestock; that will decrease my expenses. I will reduce the wages of my hired men; that will increase my profits. Then I will cut prices on my stock; that will put me ahead of my competitors." But it didn't, and as a failure he made a brilliant success.



MAYFLOWER 4TH. OWNED BY THE ORMONDALE CO.

In a beef matron look for a short neck; a broad, strong back; a good heart girth; a low flank; deep, heavy quarters; short, straight legs, and good bone.

Poultry and Rabbits for Profit

Conducted by R. H. Whitten, Livestock Editor.

FEEDING THE BABY CHICKS.

It is well to start incubators so that the eggs will begin to hatch on the morning of the twentieth day. Generally all will be hatched by the following afternoon, but don't disturb them until late at night, when you will want to take out the trays and remove the egg shells. Reduce the heat slightly and keep the chicks in the incubator until the following night—the twenty-second. As they should not eat at this time, it is better to have them in the incubator, as they are more quiet and can rest better after their struggle in coming into this world.

After dark transfer them to the brooders. The next morning they will be the liveliest, hungriest animals you ever saw. They will pick at anything, but if you want the best results you will give them nothing but sour milk.

If there is one thing more than another to which successful breeders attribute their good results it is the liberal use of sour milk. The lactic acid is the greatest foe of the bacteria found in the large intestine, and as nearly all common poultry diseases, aside from roup, are of intestinal origin, the importance of lactic acid in the food is clearly seen. Feed the sour milk in a thick, clabbered form, if you can get it, and you will eliminate bowel trouble and white diarrhoea. If none is available, try one of the semi-solid or dried buttermilk preparations on the market.

At this first feeding have fine grit and charcoal before the chicks, but no solid food. After about twenty minutes put them back under the brooder for an hour or so, and then give them their first real food. You will find rolled oats the best. Scatter on a board and leave before the chicks twenty minutes. These oats look the same as the rolled oats that come in breakfast food packages, but you can buy them in bulk much less. It is best to chop them for the first few feeds.

Be particular to see that every chick comes out from the brooder and that every one starts eating. If you find one that is backward, imitate a mother hen by tapping your finger in the grain, and also put the chick among those that are eating well.

For the balance of the first day give alternately at two-hour intervals chick feed and rolled oats. Chick feed is a mixture of cracked grains, and unless you raise thousands of chicks it will be best for you to buy the prepared mixtures on the market. There are many good brands. Competition on the basis of quality is now so keen that there is not so much filler in these mixtures as there used to be.

Beginning the second day, the chicks should be fed five times a day, and an excellent schedule is as follows:

6:00—Chick grain in litter. Sour milk; leave for the day.
8:30—Rolled oats in hopper; leave 20 minutes. Water; leave for the day.
11:30—Green feed in hopper.
2:00—Chick grain in litter.
4:30—Egg and bread in hopper.

For litter chopped straw is best. Use a very little until the chicks learn to scratch for the grain; then gradually increase the amount until it is quite deep.

Take the chill off the water if the weather is cool, and for at least two weeks do not allow the chicks to have water until after their first meal each day.

For greens, a little lettuce is best at first, very soon followed by chopped alfalfa, kale, chard, cabbage or whatever is available.

For the egg and bread mixture, use the infertile eggs taken out of the incubator on the seventh day. Boil them hard and grind them, shells and all, in a household food grinder, together with stale bread.



Chicks of the same age, but one hatched from a hen's egg; the other from a pullet's egg.



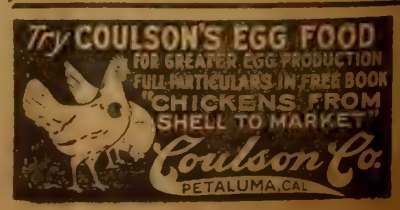
Going to Brood CHICKS?

Then send for the latest KRESKY catalogue, 20. Our latest development of the Liberty Stove has 'em all beaten.

Economy, Efficiency, Convenience

Kresky Brooder Stove Factory

Petaluma, - Cal.



Use about four parts of bread to one of egg, and feed the mixture at the rate of one egg for each 50 chicks daily. This egg mixture is great stuff—the nearest to the natural diet of bugs and worms. It is fed last because the chicks like it best and will eat more of it. If the droppings become too soft, omit this feed for a day or two and substitute boiled rice.

There should be a three-section hopper before the chicks constantly, containing charcoal, fine grit and fine shell.

On the eighth day change the schedule and at 2 o'clock substitute dry chick mash for grain. Here again, unless you are feeding thousands of chicks, it will be best for you to buy the mash. Also, on the eighth day discontinue the egg and bread mixture and substitute chick grain—at this time of day in a hopper instead of in the litter so that the youngsters can stuff their crops full before going to sleep.

On the fifteenth day begin to add whole grain to the chick grain, increasing the amount gradually and decreasing the amount of chick grain until at the end of the first month you are feeding whole grain entirely. This may be the same as that fed to adult birds, except that you should add oat groats (hulled oats) at the rate of one part to about four or five of the mixed grains. These oat groats make the feed rather expensive, but nothing can take their place as a developer of bone and muscle.

Beginning the second month the chicks should be fed only three times a day, as follows:

6:00—Grain in litter. Sour milk and water constantly.
11:30—Greens. Dry mash in hopper.
4:30—Grain in hopper.

Do not give the chicks access to the mash until noon, as they should be kept busy scratching all the morning. During the afternoon they should gradually fill their crops until at dusk they are so full they can hardly walk.

This schedule takes us through the second month, at which time the first culling should take place and the surplus cockerels should be marketed. We will take the matter of culling and subsequent feeding up in a later issue.

PULLETS NOT GOOD BREEDERS.

It is not enough to have hatching eggs fertile. That alone will not insure strong, husky, fast-growing chicks. The eggs must be of good size, so as to produce large chicks, as these make the most rapid and most profitable gains. And the germs must be strong, otherwise the chicks will lack vigor and will never develop well.

These two reasons prove why pullets' eggs do not, as a rule, give good results for hatching. The eggs are smaller than those of hens, so the chicks are handicapped in size at birth. And as the best pullets—the ones ordinarily selected for breeders—begin to lay early in the fall and keep everlastingly at it, they are pretty well run down by spring and lack the necessary vitality to produce strong germs. Consequently, what chicks do hatch are weaklings, and they always remain such, irrespective of feeding and care.

The accompanying illustration shows the customary results more vividly than any word picture. These two chicks were hatched at the same time and received exactly the same feed and care. The only difference was that the larger one was hatched from a hen's egg; the smaller one from a pullet that had begun to lay early in the fall and had made a big record up to the time the egg was selected. She could produce but she could not reproduce. The hen, on account of late molting, had only been laying a few weeks before her egg was selected, so she had rested up and was in condition to produce eggs with germs of high vitality.

However, this should not be taken to mean that pullets' eggs should never be used for hatching. If a pullet was hatched early, was raised on a non-stimulating ration, and was not allowed to lay until fully matured, she will prove a good breeder, especially if she was hatched early enough to cause a partial molt in the fall. This gives her egg organs a rest after her laying period, and when they resume activity they are strong and fully developed.

But don't use eggs for hatching from a young, immature pullet; from one that lays a small egg, or from one that has been laying for several months without a rest. You can't make it pay.

SUGGESTIONS FROM THE MARKET END.

The Tulare Co-operative Poultry Association recently began marketing its eggs through the Challenge Cream and Butter Association of Los Angeles. After a few weeks' experience, the Challenge Association made some suggestions to the members of the Poultry Association through the Hen Coop, the official organ if the latter association, and these suggestions will prove so helpful to all farmers of the State that we quote them. They show how to deliver eggs that will bring a higher price.

"The greatest complaint has been from dirty eggs. These may be classed as muddy eggs, eggs smeared over with yolks and washed eggs. The consumer rightfully objects to being supplied with unsanitary food, and draws the line on dirty eggs. At first we received dirty eggs mixed with the clean eggs, but soon found that the trade would not stand for it. Now your association is grading the dirty eggs into separate cases, which helps us a great deal, although we have considerable difficulty in selling the dirties at 5c per dozen below the price of the clean ones.

"The remedy, of course, lies in more sanitary production. Dirty eggs in large numbers are entirely unnecessary. The first essential is a well-drained chicken yard. A high, sandy knoll is best. If the poultry houses cannot be so located, a few loads of sand around the buildings will afford drainage and will tend to keep the hens' feet clean. Plenty of dry, clean scratching litter will serve as the hens' door mat. Plenty of nests, abundantly supplied with clean straw, and gathering the eggs twice a day with dry hands will produce clean eggs, even if there is some mud underfoot.

"We find a few very small eggs, termed peewees or bantam eggs; also a few extremely large eggs. Neither kind is suitable for marketing. The very little eggs injure the sale of the large ones, even though graded into the size known as pullet eggs. Many of the large eggs break before reaching the consumer, and besides, these jumbos never bring what they are worth according to food value. All freak eggs should be eaten at home, as well as the dirty eggs, as far as possible."

The Chico and Durham high school districts are making arrangements to merge and erect a splendid high school in Chico, with a branch at Durham which will give local students their first two years, sending them to Chico for the last two years of their course, as reported to us by Frank B. Durkee.

Poultry Breeders' Directory

HATCHING EGGS—White Leghorns, Light Brown Leghorns, Dark Brown Leghorns, White Rocks $2.50 per 15; $10.00 per 100. All bred to highest possible standard of beauty and utility. Mahajo Farm, P. O. Box 597, Sacramento, Calif.

SPRING CHIX—Rhode Island Reds, Barred Rocks, Brown and White Leghorns from Hoganized stock, bred to lay. Satisfaction and safe delivery guaranteed. Tolosar Poultry Ranch, Washington Ave., San Jose, Cal.

S. C. RHODE ISLAND REDS EXCLUSIVELY—Pacific Coast Aristocrats. Hoganized Book. Booking orders for day-old chix and hatching eggs. Order early. Roseville Poultry Farm, Motor A, Box 200A, Ceres, Cal.

FOR SALE—We have a pen of as fine and better fingered White Leghorn hens and a four fingered cock all hoganized. A chance to breed a three hundred egg hen. Will receive offers. C. E. Atteberry, Turlock, Cal.

BUFF WYANDOTTES—Prize winning stock of high quality. Eggs $3 and $5 per 15. Send for circular which contains price list. 100 No baby chicks. Mrs. W. O. Johnson, 1817 Summit Ave., Pasadena, Cal.

SANTA CLARA VALLEY HATCHERY has the chicks for you from six different standard breeds, all bred for egg yielders. Can furnish references from my old customers if desired. Lincoln Ave., San Jose, Cal.

BRONZE TURKEY EGGS—No more eggs till further notice. Albert M. Hart, Clemente, Cal.

GIANT BRONZE TURKEYS—Gold Nugget Strain. Prove their superiority by winning Gold Special Sweepstakes for best turkeys at the following great shows: Arizona State Fair, 1916; Texas State Fair, 1917; California State Fair, 1917-1918; Los Angeles Show, 1917-1918; Pacific Coast Land and Industrial Exposition, Oakland, 1918. An unequaled record. Large turkeys can be raised at practically the same cost as small ones. Toms for sale that will increase size and improve any flock. I am the originator of the Gold Nugget Strain. J. Will Blackman, 607 East Third St., Los Angeles, Cal.

SULLIVAN'S FAMOUS BUFF ORPINGTONS—Want the best? Write Sullivans, Specialists. Oldest flock on Pacific Coast. Line bred for 20 years. Said by Walter Hogan, originator of "Hogan System," best layers of this variety he ever handled. Have won thousands gold and silver special prizes, cups and ribbons—more than all competitors combined, on the Pacific Coast. Eggs, $3.00, $5.00 per 15; $12.00 and $15.00 per 100. Breeding stock. Write for prices. Mr. & Mrs. W. S. Sullivan, 100 Market Road, Agnew, Santa Clara Co., Cal. Telephone S J [illegible] R. 5.

MY THIRTY PULLETS AT FOUR—Sixth month (January) cleared $31.00. Why? Bred 20 years to lay 200-290 eggs yearly. White, Brown, Buff Leghorns; Anconas; Reds, Barred, White Rocks; Minorcas; Orpingtons; Ducks; Turkeys; Geese. Clearing customers $5.00. Valuable circular with proof—free. Chicks two-thirds booked to May, reasonable yet most weeks still open for hundreds. Increasing our hatcheries as demanded (70,000). Many repeat orders monthly, yearly. Breeders Pullets. J. Beeson, Pasadena, Cal.

WHITE LEGHORNS are the most profitable breed of poultry. If you are in the business for profit, you will eventually have them. Early broilers; early layers; early profits; we sell only **White Leghorn Baby Chix** from heavy laying **Hoganized** hens. Safe delivery of full count live chix guaranteed. Prices per 100: February, $15; March, $14; April, [illegible]. The Pioneer Hatchery, 408 Sixth street, Petaluma, Cal.

SINGLE COMB BROWN LEGHORNS—The large, modern, heavy-laying type that won high honors for us at the National Egg-Laying Contest. No better layers, none others so hardy. For 20 years our strain has won highest prizes at New York, Boston, Chicago, San Francisco, etc. Absolutely the finest Brown Leghorns in America. Eggs, $3 and $5 per 15; $15 per 100. Williams Bros., Fullerton, Cal.

BARRED PLYMOUTH ROCKS—Champion prize winners and wonderful layers. Choice cockerels, hens and pullets for sale. Hatching eggs from twelve grand matings. I have made a specialty of Barred Rocks for over twenty years. That's why I win at all leading shows. "Nothing Better In Poultry" than Vodden's Barred Rocks. Catalog free. Chas. H. Vodden, Box 396, Los Gatos, Cal.

BABY CHICKS, HATCHING EGGS, BREEDING MALES—Barred Rocks, Ancona, R. I. Red, Black Minorcas, White Minorcas, White Orpingtons, Black Orpingtons, Light Brahmas, Buff Leghorns, Brown Leghorn and MacFarlane White Leghorns. Also Duck, Geese, Turkey eggs. Circular and price list free. Poultrymen's Co-operative Hatchery, D. E. Doke, Mgr., 732 So. Spring, Los Angeles.

BABY CHICKS—We specialize this season on money-making White Leghorns—hatching from stock with high records that are unimpeachable. Also Brown Leghorns, Anconas, Minorcas, Rocks, Reds, Orpingtons, and White Wyandottes. Especially interesting circular with price list ready January 1st. B. W. Archibald, Soquel, Santa Cruz Co., Cal.

S. C. WHITE LEGHORN CHICKS—Any quantity, from A-1 Hoganized and trapnested stock, winners of 1st, 2nd and special for pullet and 1st cockerel at Pacific Coast Land Show. Booked up for March delivery; orders taken for April 18th. A. O. & P. M. Forster, 2918 Otis St., Berkeley, Cal.

GOLDCROFT BUFF ORPINGTONS fulfill every standard and utility requirement. Won San Jose show first, second, third, pullet and cockerel. Eggs, $5.00 and $3.00 from winning pens; $2.00 from general flock; $12.00 per hundred. Stock for sale. Samuel Abrams, Los Altos, Cal.

SUPER QUALITY WHITE LEGHORN CHICKS, hatched right in Jubilee machines from best strains of foundation stock. Our customers come back each season; we can refer you to them. Write at once before we are all sold out. Newton Poultry Farm, Los Gatos, Cal.

PEERLESS WHITE WYANDOTTES—Our 200-egg strain, bred for years for show qualities and high egg production. 50 cockerels, 100 pullets for sale. Trios and mated yards. Eggs for hatching. Catalogue free. J. W. Atkinson, Box B, 130 Willard St., San Jose, Cal.

HATCHING EGGS FROM OUR HEAVY-LAYING, prize-winning, single comb Rhode Island Reds. Seven superb matings. The best pays. Place your order now. Mating list free. Ward's Poultry Farm, S. C. R. I. Red specialists, South Lincoln Ave., San Jose, Cal.

BABY CHICKS EVERY WEEK—Order early and get the date you want. White and Brown Leghorns, Rhode Island Reds, Barred Rocks, Anconas. Also hatching eggs. Safe delivery guaranteed. Write for circular. Stubbs Poultry Ranch and Hatchery, Palo Alto.

FINEST HATCHERY IN THE WORLD—CHICKS, White Leghorns, Rhode Island Settings—1000's—hatched right in our $60,000 brick and concrete hatchery from our Hoganized heavy layers. Stock, eggs. Pebblesole Poultry Farm, Sunnyvale, California.

RHODE ISLAND REDS—Rose and single comb Rhode Island Red hatching eggs from 220-egg record layers. Cockerels rose and single comb. Pens. Improve your color, type, and egg capacity. Write for mating list. Wm. Larm, 3915 39th Ave., Fruitvale, Cal.

OUR FINE FEMALES—Can supply you with eggs at 30c each and up that will hatch just what you want in general purpose fowls. Write for mating list. O. B. Hunt, White Rock Fancier, Berkeley, Cal.

RHODE ISLAND REDS—Best all purpose bird. Oakland show. First cock, second cockerel, fifth pullet on four entries. Hatching eggs. Prices for asking. John L. Reed, Route C, Box 30 B, San Jose, Cal.

BABY CHICKS—Hoganized White Leghorns, utility Rhode Island Reds, Barred Plymouth Rocks, Anconas and Rose Andalusians. Free circular. McDonald Poultry Ranch, King Road, San Jose, Cal.

BABY CHICKS—from Hoganized breeders, 180 egg type and up. White Orpingtons and Silkies, Buff Orpingtons. Order early for future delivery. M. S. Woodcock, San Mateo, Cal.

RHODE ISLAND RED EGGS for hatching. Mrs. Richard Holdridge, P. O. Box 282, Dixon, Cal.

PRUSSIAN HILL POULTRY RANCH—A few fine Blue Andalusian Cockerels, $3.00 and $5.00. Hatching eggs. Rocks, Minorcas, Andalusians, $2.00 for 15; Baby chicks at 20c., 25c., and 50c. each. Geo. I. Wright, Mokelumne Hill, Cal.

RHODE ISLAND RED CHIX or eggs from our Hoganized standard and utility breeding combined. Prices no higher than ordinary stock. Buff Orpington eggs or chix from prize winners. Munier Poultry Yards and Hatchery, Cupertino, Cal.

BABY CHIX R. I. REDS
My specialty. Bred for eggs, size, color. Hens on free range means strong chix. 16c each; 15c in 1000 lots. Denton Poultry Yards, Box 360, Campbell, Cal.

CROLEY'S RED STAR CHICK FEED—California's standard Baby Chick Feed for twenty-five years. Manufactured by Geo. H. Croley Company, Inc., 8th and Townsend Sts., San Francisco, Cal.

BABY CHICKS—Hatched from our S. C. White Leghorns, a result of many years' careful selection and breeding. San Jose Poultry Yards, Fifteenth and Margaret streets, San Jose, Cal.

BABY CHICKS—Hatched from our own stock in our own hatchery. Hens are of S. C. White Leghorn utility stock, bred for commercial laying. H. A. George, Route 2, Box 29, Petaluma.

ANCONAS—Sheppard strain direct. Hatching eggs, $4.50 per 50; $2.00 per 15, plus postage. White Leghorn, $6.00 per hundred. No eggs after April. A. S. Wilkinson, Winton, Cal.

THOROUGHBRED R. I. REDS—Thompson strain heavy layers. Hatching eggs, specially selected, $2.00 per 15. 80 per cent fertility. Mrs. C. M. Hagood, Rt. 1, 504A, San Jose.

MODEL POULTRY FARM—White Leghorn specialists. Our fifteenth year. Baby chix and hatching eggs for sale. Our prices are right. W. C. Smith, Prop., Corning, Cal.

SELECTED—S. C. Leghorn and Barred Rock eggs for hatching. Hens typed to lay 200 to 260 eggs per year each. $6.00 per 100; $1.50 for 15. Jay Maxwell, Madera, Cal.

BARRED PLYMOUTH ROCK EGGS for sale. Good range flock headed by cockerels from 260 to 290-egg stock. $1.50 per setting. Mrs. J. A. Vassar, Laytonville, Cal.

WHITE WYANDOTTES—Eggs for hatching from our heavy laying prize-winning stock. Baby chix. Choice breeding cockerels. R. W. Stawetski, Route B, San Jose, Cal.

FOR SALE—Bourbon Red turkeys and eggs for hatching, $5.00 per setting of 13 eggs. Book your orders early. Albert E. Balmer, Alhambra Valley, Martinez, Cal.

EGG BRED—Buff, Brown, White Leghorns, Golden Campines, Dark Cornish. Winners wherever shown. Send for circular. Percy Ward, 3142 Ward St., Fruitvale.

DUCKS—Mammoth Pekins and White Runner eggs, 15c. each. Poultry of all kinds. Write us your wants. Wood Poultry Yards, 632 North 3rd St., San Jose.

EASTMAN'S "BRED-TO-LAY" Hoganized and trapnested Barred Plymouth Rocks. Baby chicks. Eggs; cockerels. Fairmead Poultry Farm, Fairmead, Cal.

SCHMITTY'S BARRED ROCKS leading at the showrooms as well as at winter laying. Write for 1919 mating list. Geo. Schmitt, Box 263, Corcoran, Cal.

BABY CHICKS—Booking orders for spring deliveries. White and Brown Leghorns, Rhode Island Reds, Barred Rocks. E. W. Ohlen, Campbell, Cal.

SAVE THE BABY CHICKS—Write today for our valuable booklet, "Making Every Chick a Chicken." Mailed Free. Box 593, Modesto, Cal.

BABY CHICKS (White Leghorns) shipped on approval before remitting. No weak ones charged for. Schellville Hatchery, Schellville, Cal.

BABY CHICKS—We have the large heavy-laying S. C. White Leghorns, severely culled last year. Send for prices. Tupman Poultry Farm, Ceres, Cal.

HATCHING EGGS—Barred Rocks, White Leghorns, and R. I. Reds, $5.00 per hundred, $1.25 per 15. J. A. Brannin, Corning, Cal.

THOROUGHBRED BUFF ORPINGTON EGGS—from heavy laying stock. Settings, $1.50. Mrs. M. Lopez, Lathrop, Cal.

CHICKENS, DUCKS, GEESE, GUINEAS, Pea Fowl, Pigeons. Wm. A. French, 545 W. Park St., Stockton, Cal. Stamps.

A FEW PAIRS AND TRIOS of prize winning Partridge Cochin Bantams for sale. Susan Swaysgood, Pomona, Calif.

BUFF ORPINGTONS, BUFF DUCKS, BOURBON RED TURKEYS—The Ferris Ranch, Rt. 2, Box 144D, Pomona, Cal.

BLACK MINORCA EGGS—$1.50 per 15. Special mating, $2.00. Edward A. Hall, Rt. 1, Box 39, Watsonville, Cal.

PUREBRED S. C. B. MINORCA EGGS, $2.00. Special matings, $3.00 per 15. Mrs. J. W. Moore, Exeter, Cal.

PIT GAME CHICKENS that are game. Also eggs for hatching. Frank McMann, 689 32nd St., Oakland, Cal.

LIGHT BRAHMA EGGS—13, $2.00. Stock for sale. J. Dolan, 146 Wyandotte St., Stockton, Cal.

RABBITS.

RAISE RABBITS—Real rabbit book published and membership in the California Commercial Rabbit Association, with all back educational bulletins showing hutch plans, feeding schedules, moderne formulas, and educationals for following year, $2.50. H. A. Sanderson, Eagle Rock, Cal. Dept. C.

BOOKS YOU NEED—Western Rabbit Book, 50c; Western Poultry Book, $1.00; Making a Living on an Acre" and "Care of Rabbits, Ducks, Pheasants, etc.," 25c.; Richey's Fur Rabbit Guide, 50c. All four for $2.00. Mrs. C. A. Richey, 610 N. Benton Way, Los Angeles, Cal.

LOS ALTOS RABBITRY—Choice large utility New Zealand Reds. Write your wants. Satisfaction guaranteed. E. G. Watzen, Los Altos, Calif.

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THE HOME CIRCLE

A MAN FROM YOUR OWN HOME TOWN.

Sing, O Muse, in the key of G,
A little song from ward twenty-three;
And, pardon me, please, if I give vent
To something akin to sentiment.
There's many a day and hour in here
When we want to cry and we want to cheer;
There's a jazzy feeling that will not down
When a man comes in from our own home town.

There's been many a long and lonesome day
Since we came back to the U. S. A.
We see many men—each day thirty-four—
From burgs that we never had heard of before,
While we have on each side a friendly mate,
Who hails from a distant, stranger state.
We like them, yes, but we want to see
A man from the town where we used to be.

We marched and fought, by design or chance,
All over the muddy map of France;
And we longed with a longing that grew and grew
To talk with a man from the place we knew.
Not long ago, on a morning when
My morale was batting about .110—
"Where are you from?" And I made reply,
And he grabbed my hand and cried: "So am I!"

The universe wore a smiling face,
As we talked and talked of the old home place;
We talked of the streets and the home-town jokes,
And we found that we knew each other's folks;
And I hadn't a single kick at all;
I decided right there that the world is small;
It added a bit to its great renown
When I met a man from my own home town.

You may be among the enlisted men,
You may be a Lieut. or a Major-Gen.;
Your home may be up in the Chilcoot Pass,
In Denver, Colo., or Pittsfield, Mass.;
You may have come from Chicago, Ill.,
From Buffalo, Boston or Louisville—
But there's nothing, old top, can keep you down
When you meet a man from your own home town.

THE TOWN FOUNTAIN.

On a warm summer day Gordon Hunter sat on the front seat of the new automobile, which his mother drove so happily, and the two chatted contentedly as the low, shining car slid quietly under the cool, overhanging elms that lined the winding street of the pleasant suburb.

"Let's keep in the shade," said Mrs. Hunter, "and just ride anywhere where we can keep cool, till we hear the train whistle; then we'll fly for the station, for Daddy. Shall we?"

"I'm pretty thirsty," answered Gordon. "I'll tell you—let's drive down to the fountain by the Town Hall, and I'll get a drink—and then we can watch the horses. I love to."

"All right," agreed his mother, as she turned the car and headed it for the main street of the little town.

In front of the Town Hall was a large elm, casting an oasis of shade in the long block of glaring pavement.

"We'll be out of the way of the teams, here," Mrs. Hunter said as she drew the car close to the curb, "and we'll sit in the shade and watch the horses till the train comes."

Gordon jumped out and put his mouth over the bubbling stream of water in the square compartment of the stone fountain reserved for thirsty people. A little stone frog carved on the edge of the fountain rim seemed almost, from his expression, to share Gordon's satisfaction in his cool drink. Lower down were two compartments, also with ever-bubbling, fresh, cool water for tired, hot, thirsty dogs, and even as Gordon drank, a thirsty little terrier, dusty of face, and with his red tongue hanging out, trotted across the Town Hall, straight for the cool water.

"Good, isn't it?" said Gordon, giving the dusty little dog a friendly pat. "My, I feel better!" he sighed as he climbed in again by his mother. "I know just how a horse feels when he comes up to that fountain and sticks his nose in for a drink—or a tired little dog. Suppose it feels the same, doesn't it, mother, if you are a boy or a beast?"

"I suppose it does," smiled his mother. "See, here comes a team of horses, pulling that heavy load of lumber." The great horses tugged with outstretched necks as they saw the water, and, coming up to the fountain, thrust their dusty noses deep in the bubbling pools. Noisily they sucked in long swallows, till finally, with satisfied eyes, they lifted dripping noses and clanked their cooled bits comfortably before starting again on their patient way. By this time, three other horses were waiting their turns—one a driving horse with shining coat and daintily lifted feet, who sniffed daintily at each of the three bubbling pools before deciding out of which one to take a fastidious drink. Next came a fat old rogue of a grocery horse, who drank greedily and noisily, then with loose, flapping lips tried to play in the water, in order that he might stand still and enjoy the shade.

"Come on, Captain! You know you've finished, you old rascal," called the grocery boy; and comfortable old Captain moved lazily out into the glare of the hot, paved street, loath to take up his unending rounds.

More horses, more little panting dogs, more tired men, more warm, romping children—all stopped thankfully in the shade of the old elm, drank the clear, cool water and went their ways refreshed.

Gordon was fascinated, as always, and Mrs. Hunter's eyes were soft and happy.

"Who gave this town the fountain, mother?" suddenly asked Gordon.

"Don't you know, dear? The old man who lives on the slope, next the Town Hall. He can see the fountain from his windows. Sometimes I've seen him standing at that long window, watching the many drinkers, who are always enjoying his gift to them."

"Is he nice, mother?"

"Don't you think he must be a good man, Gordon, to have thought of giving cool drinks to so many people, besides all the tired little dogs, and patient, hard-working horses? Just to have thought to have cool water where any thirsty creature in this warm, dusty town knows where to find it seems not a little thing to me. Think how many times you run here for a drink. Then think of all the other little boys who come, besides the never-ending procession of animals."

"I'd never thought about his being kind," admitted Gordon. "I've just always been glad to get a drink. How do you suppose he knew how it felt to be so thirsty—so thirsty that he didn't want other people to get thirsty?" the boy's inquisitive mind probed.

"I don't know that," smiled Mrs. Hunter. "Maybe he was once a miner in one of the Western deserts, where water is the chiefest treasure, or perhaps just out of a kind heart he thought of this simple but very real and useful way to give comfort to all tired, thirsty people or animals who might pass his way."

"Ah, there's the whistle! Now we must fly! Good-by, fountain, we'll come often to watch you!" she called gaily as the car sped toward the station.

"Mother"—and Gordon's voice was more serious than usual—"mother, has every town a nice, cool, shady fountain?"

"No, son; I wish every little town did have one, don't you?"—Rose Brooks.

RESPONSIBILITY OF MOTHERS.

Many women's clubs have taken up the matter of modest dressing since the close of the war has developed more interest in women's attire. In one State the Legislature has been appealed to, to enact a law dealing with the extremes in women's dress.

The majority of the extremes in styles are seen on young girls, but it is their mothers who are to blame for their attire. Young people, acting upon impulse, often use poor judgment and they need wise guidance.

Morals and dress are closely associated and many street costumes are an offense to one's finer sensibilities. Sheer, filmy fabrics are beautiful, but they should be displayed over a substantial lining.

Heavier cloths that too closely outline the figure are as immodest as the transparent gown.

Let mothers give this matter more than a passing thought and garb their daughters becomingly but also modestly.

COOKING HELPS.

When frosting a cake, first sprinkle lightly with cornstarch in order to prevent the frosting from spreading rapidly when put on the cake.

To cut warm bread or cake, heat the knife in boiling water, wipe dry and cut with it while still hot. Reheat in this way as soon as cooled.

When making pies from juicy canned fruit, wet and pinch together the crusts in the usual manner and then bind with a strip of white cotton cloth that has been rung out of cold water.

Crumbs made of dried stale bread, put through the meat chopper, are better for croquettes than cracker crumbs, as they do not absorb the fat so readily.

If you have trouble with the flour lumping in gravy, try using rice flour for thickenings.

Garden Work for Month of April

In April practically all tender plants are safe, so that planting may be pushed on rapidly. All mid-summer blooming bulbs, as dahlias, tuberoses, begonias, should be set in warm, moist soil and seedlings of cosmos, asters, centaureas and the like should be removed from frames and seed boxes to the open ground.

April is a good month for the subdivision of plants which grow in clumps, like callas or fleur-de-lis. It is also the month to begin chrysanthemum planting for fall blooms. The best of the new shoots broken from the old roots will make good plants in the open garden. All sorts of border plants should be transplanted now.

Roses and carnations should be relieved of surplus buds if fine, large flowers are desired. The lawn should come in for attention—disposing of all weeds, cutting frequently and fertilizing.

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"Write or visit the bank and I will explain the superior service this bank gives to out-of-town depositors."

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Cashier

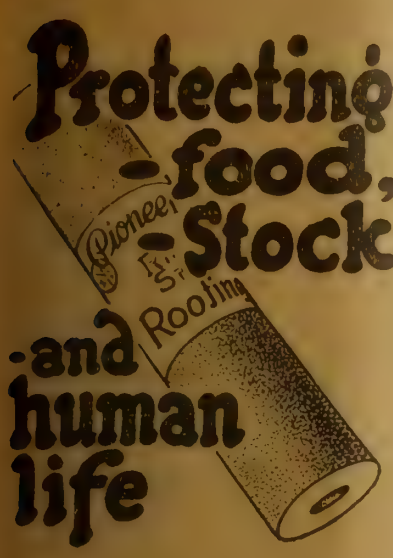
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In addition to the manufacture of Pioneer Ready Roofing, insulating and building paper, we also are printers of orange and lemon wrappers, roll wrapping paper, paper bags, bread wrappers, etc.

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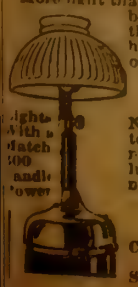
247-251 S. Los Angeles St.

MORE LIGHT THAN 20 OIL LAMPS

AT LAST—the light of lights—A beautiful lamp that lights with common matches just like oil lamp, but makes and burns its own gas from common gasoline, giving a brilliant, steady, restful, white light of 300 candle power.

MOST BRILLIANT LIGHT MADE

Brighter than the brightest electricity. More light than 20 oil lamps. Cheapest and best light made. Costs less than one-third of a cent per hour. Safer than the safest oil lamp. The



COLEMAN QUICK-LITE

No wicks to trim—no globes to wash. No dirt, no grease, no glare or flicker. Absolutely safe. Fuel can't spill—no danger even if tipped over—will last a lifetime.

Write or office for Catalog 21-R. P.

COLE LITE & SALES CO.
216-18-20 East 41st St.
Showrooms 324 S. Hill St.,
Los Angeles.

CREAMED DISHES.

The making of creamed dishes is one of the important branches of cooking, as it furnishes unlimited variety and is an appetizing form to serve left-overs.

The white sauce which forms the base for this class of cooking is easily made, if directions are carefully followed, but in some cases, through carelessness, this sauce, which should be smooth and creamy, is pasty and lumpy.

The white sauce should be made of different thicknesses, according to how it is to be used. For creamed soups it is quite thin; for croquettes and similar dishes, quite thick.

For most creamed dishes a sauce of average thickness is used and this kind always takes two tablespoons of butter or substitute and two tablespoons of flour to each half pint of cold liquid, which may be water, milk or cream. Put the butter in a saucepan over a slow fire and melt, but do not brown; remove from the fire and add flour, stirring until well blended; return to fire and cook until it bubbles, then add cold liquid gradually, stirring until the boiling point is reached, and season with salt and pepper. Do not cook more than a couple of minutes after the boiling point is reached.

If the sauce is to stand for any length of time, place the saucepan in hot water, add a few small pieces of butter to prevent a crust from forming on the top and cover.

The liquid and seasoning used change the sauce, giving variety, but the measurements of flour and butter to the liquid remain the same always.

BAKED APPLES.

When properly cooked, there is no more appetizing dish than a baked apple. For variety, the fruit can be stuffed before baking with raisins, walnuts or prunes, or after baking with jelly or orange marmalade.

For baking, wash and core and remove a portion of the skin about one-half inch wide, from the center of the apple. Place in a pan and pour over a syrup made of one cup of boiling water and one cup of sugar boiled about five minutes. Cover tightly and bake in a moderate oven until tender.

When done, remove cover, sprinkle with sugar and let glaze. If one or two apples are sliced and placed around the apples while they are baking and then the syrup is strained over the apples, a rich jelly should form.

The apples can be served plain or with cream; a meringue can be made of the white of an egg beaten very stiff, adding two tablespoons of sugar and a little vanilla. Place a spoonful on each apple, return to a moderate oven and bake a delicate brown.

If the apples are well flavored, no seasoning is necessary; but if somewhat tasteless, add a small stick of cinnamon, a clove or two or a slice of lemon and cook with the fruit, removing before the sugar is added.

SEEN IN THE SHOPS.

A very good sale of Sheffield silver ware is continuing at one of the stores.

The dark jersey coats and plaid skirts seem even more popular this year than last.

Black seems to be the leading color this spring in hats and it is much shown in suits and dresses.

A good many very small hats are shown with low crowns and narrow brims trimmed with tiny flowers and a bow of ribbon.

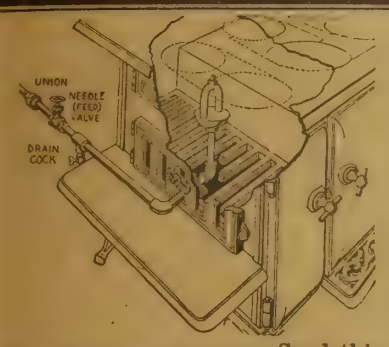
Electric motors for the sewing machine are shown by all good electrical houses and are almost a necessity where much sewing is done.

SHOWERS FOR BOYS.

The average boy loves water if he can have it in quantity, and every home that has water under pressure should have something for a shower bath installed before the warmer weather arrives.

The price on these is not prohibitive, for there are kinds you can install, with the help of the boy himself, for less than $20.

One that was being demonstrated had a long rubber tube that connected onto the bathroom faucet and then connected onto a metal pipe held in position by screws against a wall. This pipe extended out to form the ring from which the water fell. Around this is a large wire ring which carries a rubber curtain to prevent splashing the bathroom. More and more, everyone is accepting the thought that the only way to bathe is in clean running water, so why not make it possible in your own home?



Coal Oil Gas

HOME MADE

Turn Your Old Stove Into a New Gas Range

"The simplest thing in the world" does it—

A PREMIER OIL-GAS BURNER

for cooking and heating home, office, or factory—thousands in use—City and counutry.

Fits any stove without change—Man or boy can place it—Lights in a minute, bakes perfectly. You cannot afford to cut wood or carry coal any more.

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Send this "AD." with $5.00 for Burner (only) or,

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COMPLETE One-Burner Outfit—$9.85 forwarding charges collect.

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"COUNTRY ROADS" for country roads.

RACINE Country Road Tires are specially designed and *extra tested* in Racine Rubber Company factories, to stand the wear and tear of country road service.

The tire is named for the road it's designed for.

The fact that Racine Country Road Tires are Extra Tested means much to you. Each of the Racine Extra Tests adds extra service. Each adds extra mileage—extra value for every dollar you invest in these tires.

Use Racine "Country Roads." They save you money.

For your own protection be certain every Racine Tire you buy bears the name

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RACINE TIRES

RACINE RUBBER COMPANY EXTRA TESTED TIRES

Market Comment

"Don't Care a Fig"? Think Again.

Owing to the superior quality of the California fig, reduced stocks all over the country, and continued unsettled shipping facilities from the Eastern ports, prices for figs have reached an unprecedented figure. Packers are now offering 12½c for White Adriatics, 17½c for California Smyrnas and 8c for culls. The Fig Producers' Association quotes 20c a pound for Smyrnas, 15c for White Adriatics, 11c for Black Missions and 20c for Calimyrnas. On account of the chaotic conditions, some packers are proposing to contract for fall pack, agreeing to pay the growers the prevailing price at time of delivery. However, few agreements of this kind are recorded.

Strawberry Contracts on 11c Basis.

Small shipments of strawberries are coming in from Southern California and selling at $2 to $3 per crate. Contracts are being made on an 11c-per-pound basis. Some growers are asking 11½c. There is an exceptionally heavy demand from canners this year, which, combined with a short crop, will keep prices high for fresh fruit this season. The California acreage this year is estimated at 4000 acres, slightly greater than last year but 200 acres short of the 1917 crop. There is a general 30 per cent decrease in acreage in the United States, which accounts for the canners' activity.

Bean Growers in the Limelight.

California bean growers are going to jump into the world with both feet. George A. Turner, president of the California Bean Growers' Association, will depart for New York next week to set in motion an energetic and far-reaching selling campaign. Turner will establish offices in New York to be maintained permanently. He will carry a full line of samples of the California bean and complete data on quantities available, ability to deliver and all the information necessary to swing the deals that will whittle away California's top-heavy stock.

Orange Orchards Outyield Gold Mines.

The present has been a most favorable season for growers of all varieties of citrus fruits. The navel orange crop of California will this year total 18,000 carloads, as against 7000 last year, and a normal of 25,000; but this season's prices rule high and will net the growers handsome profits, as packers operated on a brokerage rather than on a commission basis. Only this week the market advanced again—from $4.50@5.00 to $4.75@$5.50 on medium-size navels.

Hops Still Hopping Upward.

California hops are now selling for around 35c per pound. New contracts are being made on a three-year schedule at 25c, 21c and 20c. Last year a number of hop fields were torn out, but the discouraged ones have reconsidered and now the hop acreage is increasing again in California. We learn that E. C. Horst & Co. will plant 600 acres to that crop this spring.

Prune Prices Promise Well.

The 1919 prune crop is of surprising interest to California dried fruit men at the present time. From 10c to 10½c is being freely offered for the new crop and the growers are signing up in larger numbers. The more optimistic are holding out for a still higher price. It is reported that there is no holdover from last year's crop and that the present promises to be a bumper output.

A Protest That Paid Big.

Millions of dollars have been saved from the united efforts of the Northwest against freight advances, according to J. Curtis Robinson, traffic manager of the Northwestern Fruit Exchange, as he spoke before the apple growers in their fourth annual convention at Seattle.

Reduced Wheat Crop in Australia.

Australia's wheat crop is estimated to be 40,000,000 bushels less than in 1917-18.

THE MARKET REPORTS

Figures Given Are Independent and Reliable.
Prices Quoted as Paid to Producers.

SAN FRANCISCO

San Francisco, March 25, 1919.

WHEAT.

It is announced that the U. S. Food Administration Grain Corporation will begin to sell its surplus wheat holdings on March 15 in an effort to prevent an increase of flour prices. It is stated that the millers have been offering from 10c to 15c a bushel above the Government price and the Government will now use its surplus to stabilize flour prices. This will have no effect on the price of wheat.

The following prices were announced by the Federal Grain Corporation last year and are still in effect. They are figured f. o. b. San Francisco, Los Angeles, Seattle, Tacoma and Portland and guarantee the grower a minimum of $2 f. o. b. shipping point:

Per bushel—	
No. 1 hard	$2.20
No. 2	2.17
No. 3	2.13
No. 1 soft	2.18
No. 2	2.15
No. 3	2.11
Club or Sonora, No. 1	2.16
do, No. 2	2.13
do, No. 3	2.09
Recleaned for seed, per ctl.—	
California Bluestem	$4.15@4.25
Early Baart	4.15@4.25

BARLEY.

While there is no increase in the local market for barley the grain is strong on account of the shipments abroad which are progressing. On the exchange May barley sold at $2.35, which indicates that local dealers are not looking for a recession in price in the immediate future.

Choice feed, per ctl	$2.25@2.30

OATS.

Red feed oats were stronger on account of the advance in the price of barley. While sales are light the price of choice was advanced 7½ cents and the range was materially reduced.

Red feed, per ctl	$2.22½@2.25
Red for seed	2.50@2.70
Black for seed	Nominal
Recleaned Red or Black for seed	$3.00@3.10

CORN.

California corn is weak and sold at lower prices than those quoted. However, it is reported that first-class corn in prime condition is worth the quotations. The bulk of the Egyptian and Milo on the market is damaged or still too green for use, and the prices vary with each transaction, so that no market price can be given. It is reported that there is no absolutely No. 1 of either on this market.

California	$2.25@2.35
Egyptian, choice	Nominal
Milo	Nominal

HAY.

Receipts of hay for the past week were 1605 tons compared with 1035 the previous week. The large increase was mostly hay bought to fill orders placed by the Government for shipment to Manila about April 1. This shipment will be 900 tons and the hay must be warehoused and double compressed to save space in shipping. In other respects the market has been without change. Demand in the city is light, but a rise in price would probably be followed by active buying on the part of those who have been living from hand to mouth until the market touched bottom.

No. 1 wheat, per ton	$19.00@21.00
No. 2 wheat, per ton	15.00@18.00
Choice tame oat, per ton	20.00@22.50
Wild oat, per ton	15.00@17.00
Barley hay, per ton	15.00@17.00
Alfalfa, per ton	15.00@18.00
Stock hay, per ton	13.00@16.00
Barley straw, per bale	.50@ .80

FEEDSTUFFS.

Rolled barley advanced to $48 and $49 in response to the advance in the price of the whole grain. Rolled oats are strong but price was not changed this week. Otherwise the market is dull and unchanged.

POTATOES, ONIONS, ETC.

The potato and onion markets are slow and prices remain at last week levels. Sweet potatoes are stronger and sold at a higher range. Green onions are more plentiful and their prices were lowered. Garlic continues strong, with higher prices. The green vegetable market is becoming more plentifully supplied and prices are falling in consequence. Strawberry rhubarb is now coming in in boxes and sells at $2 to $2.50. Asparagus varied in price considerably during the week, but with freer supplies its price is downward. Wednesday's quotation was 8 to 12½ cents.

String beans	Nominal
Peas	6@8c
Lima beans	None
Carrots, per sack	$1.50@1.75
Asparagus	8@12½c
Rhubarb, San Jose, per box	$1.75@2.00
do, Strawberry, per box	2.00@2.50
Cucumbers, hothouse, box of 30	3.00@3.50
English, per dozen	$2.50@2.75
Eggplant, per lb	None
Lettuce, per crate	$2.75@3.00
Celery, crate	Nominal
Spinach, crate	$0.50@1.00
Tomatoes, Southern, per crate	None
do, Mexican	$2.00@2.50
Sprouts, per lb.	6@8c
Potatoes—	
Rivers	$1.85@2.15
Oregon	1.75@2.15
Washington	1.90@2.10
Idaho	1.90@2.15
Sweets, per sack	4.50@4.75
Onions, Warehouse Stock—	
Yellows	None
Australian Browns	$3.50@3.65
Green River	75c
Green Alameda	$1.50@1.75
Garlic	50@60c

BEANS.

The campaign for the greater consumption of beans is having an effect recognized by the dealers in the greater demand this week for some varieties. Under this demand Garbanzos were advanced in price from 25 to 50 cents, while other varieties for which the damend was created were stronger, although their prices were not increased. The demand for cranberry and Mexican reds was practically at a standstill and both these varieties were offered at prices decidedly lower than last week.

Bayos, per ctl	$6.25@6.40
Blackeyes	3.25@3.40
Cranberry beans	4.50@4.90
Limas (south, recleaned)	6.75
Pinks	4.90@5.00
Mexican Reds	4.75@5.25
Tepary beans	2.50@2.75
Garbanzos	10.75@11.00
Large whites	5.40@5.60
Small whites	6.50@6.60

POULTRY.

Broilers and hens sold at lower prices this week and the entire market is weaker. Five cars of stock arrived from the East and the market is somewhat overstocked. If arrivals continue next week in the same proportion as this week a lower price all along the line is anticipated. There are only few turkeys coming in at this time and their shipment is expected to stop altogether in the near future.

Turkeys, live, young spring, lb	34@36c
do, old	30@34c
do, dressed	40@42c
Broilers, 1½ to 2 lbs	50@55c
do, 1¼ lbs.	48@50c
do, ¾ to 1¼ lbs	45@48c
Fryers	45@50c
Hens, extra, per lb., colored	35@36c
do, Leghorn	38c
Smooth young roosters, per lb. (3 lbs. and over)	42c
Old roosters, colored, per lb	23@24c
Geese, young, per lb.	38@40c
do, old, per lb	38c
Squabs, per lb	65c
Ducks	38@40c
do, old	38c
Belgian hares	17@20c
Jack rabbits	$3.00@3.50

BUTTER.

Butter dropped 2 cents on Monday of this week, and Tuesday and Wednesday lost three cents more. This change in price was in accordance with the Eastern market, which was strong all last week until near close, when a top-heavy condition developed. Exporters stopped buying in the Eastern markets and their local consumption showed a falling off at the high prices demanded. The supply of butter in storage in San Francisco is less than 7,000 pounds and Eastern storage reports also show amounts far below the normal. With these conditions it does not seem unreasonable to expect butter to make at least a partial recovery of the present prices, though they are generally regarded as abnormally high.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extra	58	58	58	56	55½	53
Prime firsts			Nominal			
Firsts			Nominal			

EGGS.

Eggs continue to show strength and to advance in price. During the past week there has been some movement to cold storage, and something over 14,000 cases are locally now in storage. Considering the season this is a small amount, although it shows a marked increase over reports of a week or two ago. Eggs continue to be shipped East and it is stated that five cars went direct from Petaluma to the Eastern markets this week. Shipments north and south from San Francisco are also reported. A peculiar circumstance in the egg market is that the price seems to have little relation with receipts. It is stated that with heavy receipts on Monday and Tuesday in the Chicago market, the price advanced. On Wednesday with a marked falling off in receipts the price of eggs receded half a cent. It is stated that the shrewdest dealers on the local market are puzzled over the fluctuations in eggs, and that they are unwilling to hazard a guess as to the future.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	39	39½	40½	41	41	41½
Extra 1sts	Nom.	—	—	—	—	
Firsts			Nominal			
Extra pullets	37½	38	38½	39	40	40½

CHEESE.

Trading on the exchange is quiet and a lack of interest is manifested generally among the dealers, who apparently have sufficient stocks for the immediate needs of their trade. In sympathy with butter Fancy California flats sold off a half cent. Otherwise prices were unchanged.

Fancy California flats, per lb	28c
Firsts	Nominal
Oregon triplets, fancy	34½c
Oregon Y. A. fancy	39c
Monterey cheese	22½@25c

FRESH FRUITS.

Lack of sunshine apparently kept down the arrivals of strawberries this week and receipts did not show the increase expected. A day or two of warm weather would cause a decided increase in arrivals. Apples continue firm at unchanged prices.

California apples	$2.50@3.75
Northwest apples	3.00@4.00
Winter pears	2.00@3.50
Persimmons	None

CITRUS FRUIT.

Some smaller tangerines arrived on the local market this week and were sold at $2.50. Otherwise there was no change in prices or market conditions.

Oranges, navels	$3.50@5.00
Mandarins	3.00@3.50
Tangerines	2.50@3.50
Lemons, fancy	4.00@4.50
do, choice	3.50@4.00
do, standard	3.00@3.50
Lemonettes	2.00@3.00
Grapefruit	2.50@3.50

HONEY.

Honey is being offered by producers outside the Honey Growers Association at 14 cents. No purchases of any amount at this or any other price are reported.

LOS ANGELES

Los Angeles, March 25, 1919

BUTTER.

This market shows an increase in prices since a week ago. The demand continues good. Receipts for the week were 389,301 pounds.

We quote:

California extra creamery	58c
do, prime first	56c
do, first	55c

EGGS.

This market still showing a firm tone All offerings being taken. During the week there was received 2641 cases.

We quote:

Fresh ranch, extras	42c
do, case count	41c
do, pullets	38c

POULTRY.

There was no change in this market to report since a week ago. The demand however, was good, but receipts light.

Broilers, 1 to 1¼ lbs	42c
Broilers, 1½ to 1¾ lbs	50c
Fryers, 2 to 3 lbs	42c
Roasters (soft bone), 3 lbs. and up	34c
Stags and old roosters, per lb	18c
Hens	32@33c
Turkeys	36@39c
Ducks	34@35c
Geese	28c

VEGETABLES.

A sharp advance in prices is reported on potatoes since a week ago. Peas continue to decline in price. Sweet potatoes continue to advance. Cauliflower celery and onions remain firm, while cabbage shows a steady improvement. This market reports good demand with fair sales.

We quote from growers:

Peas, per lb	4@8c
Potatoes—	
Northern Burbank, per cwt	$2.50@2.75
Idaho Russets, per cwt	2.20@2.25
Sweet potatoes, per cwt	3.50@3.75
Garlic, per lb	50c
Onions—	
Australian Brown, per cwt	$3.75@4.00
White Globe, per cwt	3.00
Cabbage, per 100 lbs	2.25@2.50
Celery, local, per crate	4.00@7.00
Celery, northern, per crate	8.00@9.00
Cauliflower, standard crate	1.50@1.75
Hubbard squash, per cwt	2.00
Banana squash, per cwt	1.50
Pumpkins, per cwt	.75
Rhubarb, per 30-lb. box	2.25

FRUITS.

The deciduous fruit market continues good. Prices are advancing and the supply steadily being reduced. The supply is only fair, however.

We quote from growers:

Apples—	
Black Twigs, Northwest pack	$3.00@3.25
Baldwins, Northwest pack	3.00
White Pearmains, 4-tier	3.25@3.50
Yellow Newtown Pippins, 4-tier	3.00@3.50
Bellefleur, 4-tier	2.15@2.35
Bellefleur, 4½-tier	2.00@2.25
do, 3½-tier	2.00@2.25
Winesap, loose, per lb	6½@7c
Roman beauties, Northwestern, per peck	3.25@3.50

HAY.

Buyers very backward in this market. There is still a fair demand for choice alfalfa.

We quote f. o. b. Los Angeles:

Barley hay, per ton	$21.00@24.00
Oat hay, per ton	25.00@28.00
Alfalfa, northern, per ton	20.00@21.00
Alfalfa, local, per ton	21.00@23.00
Straw, per ton	9.00@10.00

BEANS.

This market reports more activity since a week ago. An advance in prices is reported on Limas and Pinks. There is a feeling that prices will get no lower than present quotations.

We quote from growers:

Limas, per cwt	$6.75
Large white, per cwt	5.50
Small white	5.50
Pink, per cwt	6.00
Blackeyes, per cwt	3.00
Tepary, per cwt	3.00

DRESSED MEATS.

San Francisco, March 25, 1919.

STEERS—20@20½c; cows, 18c.

COWS AND HEIFERS—17½@19½c.

CALVES—19@22c, according to size, etc.

LAMBS—30c lb; yearlings, 26@28c.

SHEEP—Wethers, 18@20c lb; ewes, 16@18c.

Moran & Co. quote the following prices for live stock delivered and weighed off cars at their plant in South San Francisco: Steers: Choice, 1050 to 1200 lbs, 13c; medium to good, 950 to 1050 lbs, 12c; good grass steers, 1000 to 1200 lbs, 11½@12c; other steers, 950 and over, 10@11c. Cows, 950 lbs. and up, 10c; medium to good cows, 9c; canners, 6½c.

HOGS—Hard, grain-fed, well finished, 175 to 250 lbs, 18c; 150 to 175 lbs, 17c; under 150 lbs, 16½c; 250 to 300 lbs, 17½c; 300 lbs and up, 17c. Usual dockage and discounts for rough and unfinished hogs.

Special Livestock Market Report

San Francisco, March 26, 1919.

CATTLE—The cattle market is steady, with receipts not over-plentiful, but about adequate to the wants of retailers. Medium grades are in strong demand. Calves continue scarce.

Steers—
- No. 1, weighing 1000@1200 lbs...12¾@13c
- do, weighing 1200@1400 lbs...13@13¼c
- do, second quality .....11½@12c
- do, thin .....9@10c

Cows and heifers—
- No. 1 .....9@10c
- do, second quality .....8@9c
- do, common to thin.....6@7c

Bulls and stags—
- Good .....6½@7½c
- Fair .....5½@6½c
- Thin .....4½@5½c

Calves—
- Lightweight .....11½@12c
- Medium .....10¼@11c
- Heavy .....8@10c

SHEEP—There is a small though fairly uniform demand for mutton and lamb, though somewhat restricted by the prevailing high prices. Lambs arriving on the market are generally in good condition and fair supply.
- Lambs .....15@15½c
- Yearlings .....12½@13c
- Sheep, wethers .....12@12½c
- do, ewes .....9@10c

HOGS—The hog market shows a strong trend upward and there was a sharp advance in prices during the past week. The local situation is influenced by the runaway market in the East. It is thought the crest of the rise has been reached there—at least for the time being.

Hogs—
- Hard, grain-fed, 100 to 150.....17¼c
- do, 150 to 250.....18c
- do, 250 to 300.....17½c
- do, 300 to 400.....17c

Los Angeles, March 25, 1919.

CATTLE—Light receipts for the past week reported. Few steers were offered, and the market for them is weak.

Per cwt., f. o. b. Los Angeles:
- Beef steers, 1000@1100 lbs.....$11.00@13.00
- Prime cows and heifers..... 9.50@10.50
- Good cows and heifers..... 8.00@9.00
- Canners $6.00

HOGS — Receipts are very light and prices remain firm. Demand continues good. Offerings are of fair quality only.

Per cwt., f. o. b. Los Angeles:
- Heavy, avr'ging 275@350 lbs..$15.00@16.50
- Mixed, avr'ging 225@275 lbs.. 16.00@17.00
- Light .....17.00@17.50
- Rough docked 20 lbs., piggy sows 40 per cent.

SHEEP—Lamb receipts are adequate and their quality is fair. Prices are steady with a fair demand.

Per cwt. f. o. b. Los Angeles:
- Prime wethers .....$9.50@10.50
- Prime ewes .....8.50@9.50
- Yearlings .....10.00@11.00
- Lambs .....14.00@15.00

Portland, March 25, 1919.

CATTLE—Steady; receipts 55. Steers, best, $13.00@14.00; good to choice, $11.50@12.50; medium to good, $10.00@11.00; fair to good, $9.00@10.00; common to fair, $8.00@9.00; good to choice, cows and heifers, $10.50@12.25; medium to good, $7.00@8.00; fair to medium, $5.00@6.00; canners, $3.50@4.50; bulls, $6.00@8.50; calves, $9.50@13.50; stockers and feeders, $7.00@10.00.

HOGS—Firm; receipts 168. Prime mixed, $18.75@19.00; medium mixed, $18.50@18.75; rough heavies, $16.75@17.50; pigs, $16.00@17.50; bulk, $18.75@19.00.

SHEEP—Steady; receipts none. Prime lambs, $16.00@17.00; fair to medium, $14.00@15.00; yearlings, $11.00@12.00; wethers, $9.00@10.00; ewes, $6.50@10.50.

EASTERN.

Chicago, March 24, 1919.

(United States Bureau of Markets.)

HOGS—Receipts, 70,000; market, 10c to 15c lower; closed, firm; estimated tomorrow, 25,000. Bulk of sales, $19.50@19.65; heavyweight, $19.65@19.75; medium weight, $19.50@19.70; light weight, $18.95@19.65; light light, $17.50@19.00; sows, $17.25@$18.90; pigs, $16.75@17.50.

CATTLE—Receipts, 17,000; choice steers, steady; others steady to 25c lower; good and choice butcher stock, strong; others, steady; calves, 50c to 75c lower; feeders strong; estimated receipts tomorrow, 13,000. Heavy beef steers, $11.50@20.00; light beef steers, $9.75@18.75. Butcher cows and heifers, $7.00@15.25. Canners and cutters, $5.25@9.75. Veal calves, $13.75@16.25. Stockers and feeder steers, $8.00@14.25.

SHEEP—Receipts, 18,000; fat lambs, 25c to 50c lower; feeding lambs and sheep about steady; estimated receipts tomorrow, 9000. Lambs: 84 lbs. or less, $18.00@$20.40; 85 lbs. or better, $18.25@20.35; culls, $15.25@18.00. Ewes: medium and good, $12.00@15.00; culls and common, $6.00@$11.25.

WEEKLY BUTTER AVERAGES.

Cents per pound for Extras.

Week Ending	San Francisco 1918	San Francisco 1919	Los Angeles 1918	Los Angeles 1919
Jan. 2	50.40	66.10	50.16	63.16
" 9	51.08	61.50	50.00	64.00
" 16	52.33	61.70	50.50	64.16
" 23	52.50	55.83	52.00	62.16
" 30	53.00	44.91	51.83	49.00
Feb. 6	50.80	43.58	49.66	47.33
" 13	52.00	46.80	48.00	47.66
" 20	51.41	51.58	48.00	53.16
" 27	51.30	53.90	49.33	55.00
March 6	50.66	56.16	50.00	59.00
" 13	51.16	55.58	49.50	58.00
" 20	47.83	54.41	47.00	56.00
" 27	46.30	56.41	43.30	58.00
April 3	43.16	....	42.16	....
" 10	39.25	....	39.50	....
" 17	39.00	....	36.83	....
" 24	40.50	....	38.16	....
May 1	40.83	....	39.00	....
" 8	40.66	....	39.00	....
" 15	40.46	....	39.00	....
" 22	44.33	....	41.00	....
" 29	42.30	....	39.00	....
June 5	43.90	....	41.58	....
" 12	44.92	....	40.58	....
" 19	46.50	....	41.75	....
" 26	47.42	....	43.00	....
July 3	48.08	....	46.00	....
" 10	48.00	....	47.50	....
" 17	50.83	....	48.66	....
" 24	52.66	....	45.16	....
" 31	52.16	....	51.00	....
August 7	52.16	....	50.83	....
" 14	51.66	....	49.00	....
" 21	52.25	....	49.58	....
" 28	53.00	....	50.00	....
Sept. 4	53.00	....	50.00	....
" 11	54.90	....	50.33	....
" 18	57.50	....	51.67	....
" 25	61.33	....	56.17	....
October 2	64.75	....	58.00	....
" 9	64.50	....	59.33	....
" 16	62.50	....	60.66	....
" 23	61.75	....	60.00	....
" 30	60.50	....	58.50	....
Nov. 6	59.60	....	58.83	....
" 13	60.00	....	57.00	....
" 20	61.00	....	57.25	....
" 27	61.60	....	58.75	....
Dec. 4	62.60	....	60.00	....
" 11	62.00	....	60.16	....
" 18	63.50	....	61.01	....
" 26	64.60	....	62.16	....

WEEKLY EGG AVERAGES.

Cents per dozen for Extras.

Week Ending	San Francisco 1918	San Francisco 1919	Los Angeles 1918	Los Angeles 1919
Jan. 2	52.80	75.60	48.16	69.50
" 9	60.91	69.91	50.66	66.66
" 16	65.66	58.70	55.00	62.41
" 23	65.66	52.58	58.00	54.66
" 30	61.25	48.75	54.00	52.33
Feb. 6	58.50	42.00	51.66	43.00
" 13	44.40	40.90	44.83	37.80
" 20	44.75	36.41	40.83	39.33
" 27	42.40	37.40	39.58	33.60
March 6	36.83	37.58	35.00	37.00
" 13	37.91	37.16	38.00	37.00
" 20	40.66	38.16	39.63	42.00
" 27	39.50	40.41	40.00	42.00
April 3	38.91	....	38.33	....
" 10	37.58	....	36.33	....
" 17	39.16	....	36.83	....
" 24	40.50	....	39.66	....
May 1	41.66	....	39.33	....
" 8	40.08	....	37.00	....
" 15	39.16	....	38.83	....
" 22	40.50	....	39.00	....
" 29	38.66	....	37.41	....
June 5	40.80	....	38.83	....
" 12	41.00	....	33.75	....
" 19	43.33	....	33.00	....
" 26	44.32	....	39.08	....
July 3	44.91	....	41.75	....
" 10	48.30	....	45.00	....
" 17	47.66	....	45.50	....
" 24	47.91	....	45.16	....
" 31	48.83	....	46.56	....
August 7	49.50	....	46.58	....
" 14	52.08	....	48.00	....
" 21	56.33	....	50.17	....
" 28	59.20	....	53.00	....
Sept. 4	62.40	....	56.33	....
" 11	63.70	....	58.67	....
" 18	61.30	....	59.00	....
" 25	60.17	....	55.67	....
October 2	65.42	....	59.75	....
" 9	65.08	....	60.00	....
" 16	71.30	....	62.66	....
" 23	78.88	....	70.33	....
" 30	86.41	....	79.33	....
Nov. 6	87.90	....	78.00	....
" 13	86.00	....	78.00	....
" 20	77.25	....	72.00	....
" 27	70.80	....	72.33	....
Dec. 4	92.00	....	73.83	....
" 11	82.08	....	74.33	....
" 18	79.65	....	72.33	....
" 26	89.00	....	71.66	....

Agricultural Notes

Fine looking new potatoes are seen in the markets now, considerable quantities having been shipped up from Imperial county.

Cultivation of 850 acres for rice planting is being planned by Mortimer Bros. at Dos Palos. Last year they had a fine harvest from 1000 acres.

Farmers around Modesto are plowing and preparing the ground, but in many cases have not decided what they will plant owing to market conditions.

A Los Angeles company is making arrangements to plant 10,000 acres to cotton between Dos Palos and Firebaugh on Miller & Lux property.

Tomatoes grown in the Oakdale Irrigation District will be canned by the Pacific Pea Packing Co. of Oakdale this season as an experiment. The many new settlers of the district are anxious to get a crop that will make immediate returns.

Cauliflower shipments from San Lorenzo are in full swing and will continue for about two weeks. Little rhubarb is being cut in the district, as extensive shipments are not expected until April 1. Peas are being picked, according to weather conditions.

The Southern California Fair Association has organized for its sixth annual fair to be held at Riverside, October 7-11, inclusive, with the following officers: John I. Bishop, president; F. P. Younglove, vice-president; R. T. Sullivan, treasurer; W. W. Van Pelt, secretary-manager. The committees are arranging the premium list, which will be ready for distribution at an early date.

The Hughson Sorghum Sugar Company, capitalized at $10,000, has filed articles of incorporation. It plans to erect a factory at Hughson to turn out sorghum syrup and its by-products in time to take care of this year's crop. A price of $6 a ton for cane unstripped will be paid the farmers. A large acreage of sorghum will be planted in this district.

A course in farm management for disabled soldiers who have been on the farm has been evolved by the Federal Board for Vocational Education. Indications are that the demand for these trained men will exceed the supply. Disabled men taking training are allowed a support fund of $65 a month. All expenses are paid and places found for the graduates. This training is mainly given in the land grant colleges of the various States.

At a mass meeting held at Ione on March 12 it was unanimously decided to favor bonding the county for $300,000 for good roads. It is confidently expected that the vote will result favorably to the project, which means so much to the prosperity of the whole county. Engineers estimate that the approximate distance covered by the present plans is 42 miles. Farmers as well as business men realize that good roads are a sound investment as well as a convenience.

The twelfth annual picnic day at Davis, to be held April 26, will be attended by 25,000 visitors, according to indications now. The refreshment committee says, "Don't forget your coffee cups," as it is planning free coffee to all visitors who have their own cups. Entry blanks have been sent to high schools and athletic organization by the entertainment committee for the athletic contests, and the parade committee is planning novel stunts and tractor features. All machines will be met as usual at the gate by students, who will act as escorts over the Farm. Last year 3500 autos passed through the arch.

Increased acreage and sugar yield are the objects of experiments with sugar beets being made by P. J. Prein of Woodland in the Sutter Basin. The Sacramento Chamber of Commerce is having Mr. Prein also work on twenty one-eighth-of-an-acre plots in West Sacramento and the down river district. The plots are scattered so that records can be kept for varying soils. Heretofore sugar beets have been raised on grain land with not totally satisfactory results. Sacramento is anxious to get one or more sugar refineries if beets can be grown extensively. Six to eight months will be required for these experiments. Farm advisors of Yolo and Sacramento are cooperating with Prein.

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FOR SALE—A number of stoker or vats. These are of 5-inch reinforced construction machined and reinforced, painted inside and out (inside measurements in feet 3x10 3x5 1x6 1x4. Depth in all cases 11 inches. These vats have been used but are in very good condition. Sunset Publishing House, 130 4th St., San Francisco, Cal.

FOR SALE—1250 feet 11-inch slip joint galvanized iron irrigation pipe; one 8-inch centrifugal pump and 6-cylinder Winton engine. Three year old registered Holstein cows. 1 four year old registered Jersey bull. A. H. McHuron, 519 California St., San Francisco.

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All sizes standard pipe and straight iron screw casing. All kinds of fittings. Guaranteed good as new. Write for prices. Weissbaum Pipe Works, 100 Eleventh street, San Francisco.

COMPLETE CREAMERY EQUIPMENT—3-ton Remington ice machine, 900-lb. churn, 200-gallon Jensen pasteurizer, 8-H. P. submerged boiler, and many other articles that go to make up a complete creamery equipment. G. W. Stone, Route 2, Byron, Cal.

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WEBSTER, WEBSTER & BLEWETT, Savings and Loan Bldg., Stockton, California. Established 50 years. Send for free book on patents.

ALL SIZES OF PIPE and screw casing, both new and second-hand, dipped and undipped. Guaranteed. Prices right. Shecter Pipe Works, 304 Howard St., San Francisco.

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MADE OF REDWOOD, Hawley's Perforated wooden well casing, the best and cheapest well screen made. Send for descriptive circular. G. M. Hawley, La Mesa, California.

FOR SALE—3-inch vertical centrifugal pump, $125.00. 9 H. P. Otto gasoline engine, almost new. 12 H. P. Otto gasoline engine. Louis H. Mueller, Niles, Cal.

FULLY EQUIPPED CHEESE FACTORY at Woodbridge, Cal. Located in center of dairying district. For sale or rent. Inquire, Ralph C. Clark, Lodi, Cal.

CO-OPERATION (not operated for profit) reduces living expenses. Particulars and catalogue from Co-operative League, Commercial street, San Francisco.

FOR SALE AT A BARGAIN—18-35 Yuba Tractor in first-class mechanical shape—farming implements included. Apply D. P. Corcoran, Gridley, Cal.

SWITCHES MADE FROM COMBINGS—75c. per stem. Three-stem braid, $2.00. Mrs. Effie Smith, Longvale, Cal.

COUNTRY LANDS.

FINE, MODERN, EIGHT-ROOM HOUSE and garage on large lot, one block from new Ravenswood school and two blocks from electric car in Runnymede. Two miles from S. P. depot, Palo Alto. Write to Cora V. Humphry, R. F. D. 1, Box 61, Menlo Park, California, or telephone Palo Alto 362 R.

FOR SALE—The famous Bane Almond orchard at Orland. On account of labor conditions, as well as physical condition, I have concluded to sell my almond orchard, either in subdivisions of 10 acres, or as a whole. For particulars address P. D. Bane, Orland, Glenn Co., California.

158 ACRES HILL LAND—5 miles from Upper Lake. 3-room house, barn, shop, and store room. Spring water piped to house. 30 acres tillable land, 10 acres in trees and vines, the rest range land. Price $5000. A. F. Griner, Owner, Rt. 1, Box 35B, Lakeport, Cal.

FOR SALE BY OWNER—Good fruit ranch in Happy Valley irrigation district, Shasta county. Healthy climate. Good markets. Wm. de la Rose, Rt. 1, Box 137, Redding, Cal.

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I HAVE ABOUT 1000 LBS. of recleaned Sudan Grass seed left which I will sell at 15c. a pound. Also about 1200 lbs. of choice recleaned Black Amber sorghum which I will sell for 3½c. a pound, and about 200 lbs. recleaned Honey sorghum at 6c. a pound. Send me your order together with your check and it will go out the same day I receive it. C. F. De Witt, Box 427, Modesto, Calif.

YOUR ALFALFA SEED should meet the needs of your soil and moisture conditions. One of the seven different kinds of Green Gold brand seed will yield heaviest and live longest because they are selected for particular conditions. Our illustrated booklet tells you all about each kind. Write for it now. Bomberger Seed Company, Desk B, 725 Tenth street, Modesto, Cal.

ARE YOU INTERESTED in strawberry planting or seed potatoes? I will be at Hotel Roslyn, Los Angeles, Thursday, April 3rd, and will be glad to meet prospective planters and growers. A fine grade of plants and seed in commercial varieties for next season's delivery. H. A. Hyde, Watsonville, Cal.

GRAFTING WOOD—Willson's Wonder Walnut for sale by the originator. Never has failed a heavy crop of largest, finest nuts. Youngest bearer. Also genuine Franquette wood. F. C. Willson, Encinal Nurseries, Sunnyvale, Santa Clara county, Cal.

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YOUR GARDEN THIS YEAR WILL NOT be complete unless you have a few hills of the world's finest muskmelon, "Casad's Special." Send for seed package. Geo. B. C. Casad, grower and originator, Covina, Cal. R F D.

FLORIDA SOUR AND CAL. SWEET ORANGE, seed bed stock. The time to plant is approaching, order now. Southland Nurseries, 1911 E. Colo. St., Pasadena, Cal.

SUDAN SEED—New crop, recleaned. Less than 100 lbs. 17c; $15.00 per hundred. 500 lbs or more 13c lb. f. o. b. your station. Geo. Rauch, Los Molinos, Cal.

BUY YOUR SUDAN GRASS SEED early, while the price is right and you can choose from a lot of tested seed. For prices write, C. B. Twomey, Ripon, Cal.

WALNUT TREES, artichoke plants, and Worcester Gooseberry plants for sale cheap. Monmouth Walnut Nurseries, P. O. Box 826, Watsonville, Cal.

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RECLEANED SUDAN GRASS SEED—Lots of 500 pounds and over, 15c per lb. f. o. b. W. R. Dreyer, Paso Robles, Cal.

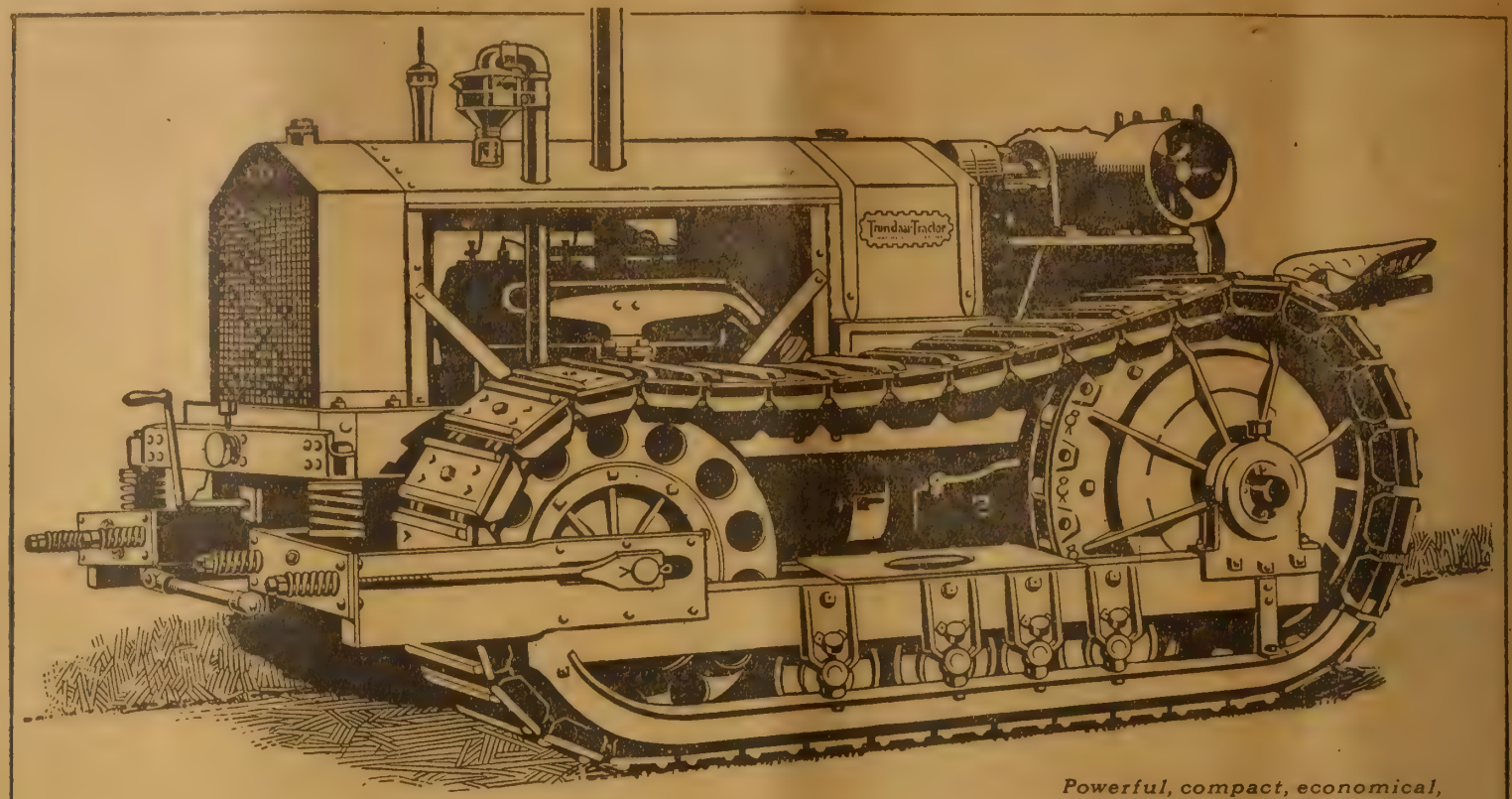
BEET SEED FOR SALE—Choice grade half sugar beet seed in any quantity. W. J. Brown, Box A, Gilroy, Cal.

CELERY—Strong, field-grown plants for early. 100 for $1.00. Box 267, Redwood City, Cal.

BURBANK'S THORNLESS BLACKBERRY—Plants, 5 for $1.00 postpaid. H. Gray, Marcola, Cal.

WANTED.

POSITION WANTED as manager of hog ranch or diversified farm. Experienced with registered stock, irrigated crops and deciduous fruits. Address H. Duvenack, 1004 Park St., Alameda, Cal.



Powerful, compact, economical, dependable. The Trundaar Tractor puts through every farm job on schedule time

A year's profit saved in one day

WHEN the loss of a day may mean the loss of a harvest, you appreciate most keenly the need of a tractor that will never fail you. When help is short and time is pressing, a tractor that will give service, day after day without fail, will bring big returns on your investment. When the Trundaar Tractor was designed, the point the engineers kept most clearly in mind was that this tractor must always be ready for use when needed.

Why this tractor is so dependable

The design of the tread is one reason why the Trundaar is uniformly dependable. This tread, of the endless chain type, is built on the old log-chain principle. The connecting links are short, thus reducing the play and minimizing wear. Absolutely no lubrication is required. On treads where lubrication is necessary, the mixture of dust and oil works into the parts and grinds them away much as emery would. If a link on the Trundaar Tread does get broken, no time is lost. The links and grouser plates are attached by four bolts and can be removed and replaced in fifteen minutes.

Big, powerful engine

The engine in the Trundaar is as dependable as the tread. The Special Buckeye Tractor Engine supplies an excess of power for all field and stationary work. It is built expressly to stand the rough going and constant running to which a tractor engine is subjected. It is rated at 20 horsepower on the drawbar and 35 horsepower on the belt. Grant Miles, of Fairfield, Washington, writes:

"During my spring plowing I pulled seven 14-inch plows 5 inches deep on level land, and on the hilly part of my farm I pulled five 14-inch plows 5 inches deep."



Individual multiple disc drive clutch

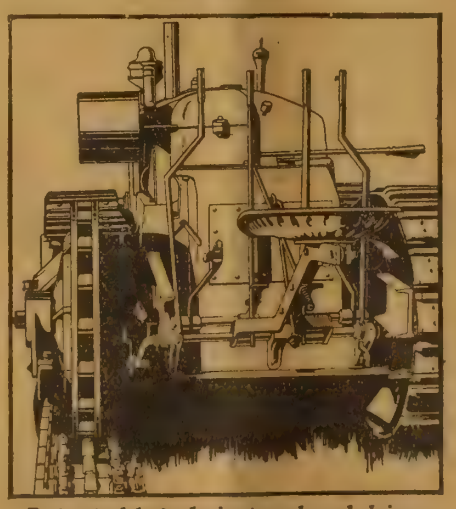
All vital parts of the Trundaar run in oil and are absolutely protected against dust. Even the air intake of the carburetor is fitted with a clarifier which prevents the dust from getting into the cylinders.

Each tread is controlled by a powerful multiple disc clutch running in oil. This special feature eliminates the need of gear and pinion drive which is frequently a cause of interrupted service.

The massive Trundaar transmission, the powerful driving clutches and the double three point suspension all are planned to make the Trundaar the dependable tractor.

If you are operating a farm of 200 acres or more you should know about the Trundaar. Write today for information showing what this tractor is doing under conditions similar to yours.

The Buckeye Manufacturing Company
Anderson, Indiana



Patented log-chain tread and driver

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Trundaar Tractor
SPEEDS UP THE BUSINESS OF FARMING

Vol. XCVII—No. 14 Forty-ninth Year

THE PACIFIC RURAL PRESS

SAN FRANCISCO APRIL 5, 1919 LOS ANGELES

Anthracnose of Berries and Its Control

Written by H. I. Schnabel, Assistant District Club Header, Sebastopol, Calif.

ALL VARIETIES of berries may be affected by anthracnose, but the loganberry is the only one in this section on which serious damage is done. The average life of the loganberry vine here is about five years. With proper pruning and by spraying, its usefulness can be extended many years more. In Oregon there are many vines ten to fifteen years old and still profitable. This is due chiefly to spraying.

Will It Pay to Spray the Loganberry?

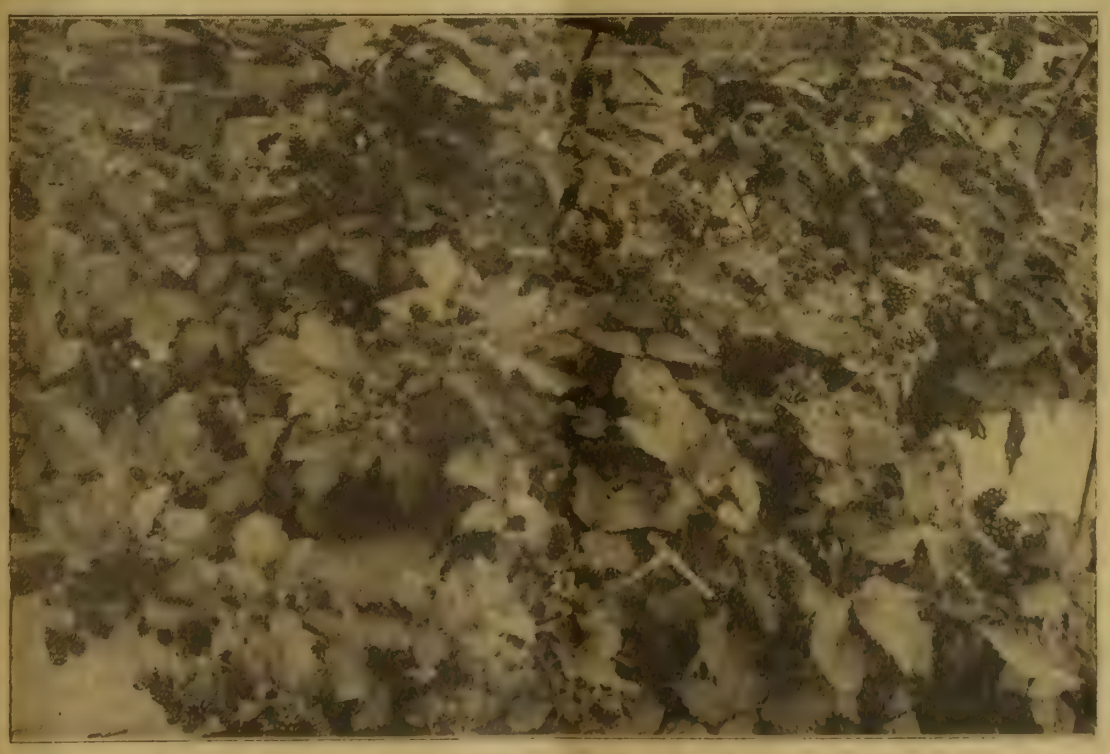
In answer to this it is only necessary to recall the advantages of this variety. It brings a good price and matures early. The sale of loganberries brings in the first ready money of the summer. This point alone is worth a good deal to most ranchers. But the value of this variety is so well known that it needs no argument. It is worth spraying, if by so doing you can increase the yield or prolong its life, or both.

Appearance of the Disease.

Anthracnose is a fungus disease affecting canes, leaves and fruit. On the stems the disease produces spots of varying size and color. These spots have a pale center with irregular brown or black margins. They may run together, forming long, irregular patches of diseased tissue. On the leaves small spots are produced with pale centers, but with rather broad reddish or purple borders. The fruit may be attacked and if so, dries up when about half grown.

In the last stages of the disease the vine sends out a great many small canes and none of these ever amount to anything. In the earlier stages long canes may send off a great many branches at their tips. When this happens the foliage on these fan-shaped branches is lighter in color than on the rest of the plant. This is probably the first sure sign that the plant is doomed. The following year only numerous small canes will come from the crown.

To control, prune out the old vines just as soon as the crop is off. If the old canes are left till spring, they will infect the new growth. All diseased vines should likewise be removed.



Berries are used throughout the Gold Ridge section (Sonoma county) as an interplant with apples to secure an income till the apples produce fruit in commercial quantities.

Trials with Spraying.

One of the trials was conducted on H. A. Chinnock's place near Hessel Station. Three sprayings of Bordeaux were used in all. The standard 4-4-50 formula was used. A little soap and resin were added to give spreading quality.

The first spray was applied August 20, 1917, after the old canes had been removed but the new ones were not up. The second spray was applied March 4. A third spray was applied April 25.

Checks were left for each spray. The first spray required 200 gallons of material per acre and cost about $2.50. The later sprays did not require so much material, as the foliage was lighter.

The following results were noted: Row with one spray (fall) had 25 good vines, 69 diseased vines; row with two sprays (fall and spring), 29 good vines, 55 diseased vines; row which received no spray, 14 good vines, 78 diseased vines. It would appear from this that the spray checked the disease to a degree, but it is not all that could be desired. The yield, however, was four times as much on the sprayed as on the unsprayed part.

Trials with spraying for anthracnose by the Michigan Experiment Station on black raspberries in 1914 included: First, dormant (spring); second, when new shoots are 6 to 8 inches long, just before blooming.

The following kinds of spray were used:

Dormant—Lime-sulphur, 2½ gallons to 50; soluble sulphur, 10 pounds to 50; Bordeaux mixture, 4-4-50.

Summer—Lime-sulphur, 1¼ gallons to 50; soluble sulphur, 1 pound to 50; Bordeaux mixture, 4-4-50.

The results of the Michigan experiments are as follows: Three applications of lime-sulphur gave very satisfactory control of the disease in both 1914 and 1915. One dormant application of lime-sulphur gave good control in 1914, but was not so good in 1915. Soluble sulphur did not give satisfactory control, although the disease was checked to some degree. Bordeaux mixture gave only fair control. It was found to injure the foliage under certain conditions.

The Michigan recommendations for anthracnose are these:

First — Prune out and burn all old canes (also diseased canes) just as soon as the crop is off.

Second—Spray with lime-sulphur, preferably three times, as follows: Dormant spray (spring), 2½ gallons lime-sulphur to 50 gallons of water; new shoots, 6 to 8 inches, 1¼ gallons lime-sulphur to 50 gallons of water; just before blossom, 1¼ gallons lime-sulphur to 50 gallons of water.

These are the sprays recommended for Michigan. It seems that we should at least give it a trial under California conditions. Any one of the above sprays will do some good, but not as much as all three. It is important to begin control measures before too many vines are affected. To allow a diseased condition to remain too long unchecked is to permanently weaken the plants infected and to imperil the rest of the plantation. Prices now offered for loganberries warrant the expenditures necessary for control operations and more.

LOGANBERRIES IMPORTED FROM OREGON.

[Written for Pacific Rural Press.]

All the loganberry plants to be had this winter were bought up by M. J. Moniz, a nurseryman and fruit grower of Sebastopol, Sonoma county. In reply to our questions, Mr. Moniz thinks one reason why the Oregon loganberry is longer lived than our own is because they have been caring for them better and they spray in January with lime-sulphur or Bordeaux. He himself had prolonged the life of his berries by double spraying—the first time the begi[illegible] February and the second about six weeks later, using Bordeaux [illegible] canes sprayed lasted two years longer than a field adjoining of the same age left unsprayed. Four years is the average length of life of logans in the Sebastopol section, he said, though when they were first planted here they used to last about

(Concluded on page 529)

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R. E. HODGES - - - - Assistant Editor
R. H. WHITTEN - - - - - Livestock
JNO. J. FOX - - - - - - Horticulture

EDITORIALS

THE OUTLOOK.

THE abundance of spring rainfall throughout the greater producing area of the State is an assurance of large production from perennial and winter-sown plants and an optimum of growing conditions for crops planted during the frostless season—either by conserved moisture or by irrigation. There promises to be also increased availability of agricultural labor and presumably some relief from risks resulting from emergency wage-rates which have no relation to the selling prices of the commodities produced. It seems, therefore, probable that production may be more confidently pursued, under the regulation of good judgment, than has been possible during the last two years or more, because there promises to be less impulse toward plunging—now that the reels calling the farmers to patriotic sacrifice no longer traverse the screen of public exhortation. To apply President Cleveland's dictum, agriculture is now "confronted by a condition, not a theory." This means that food production returns to a frontage which it has always faced and in which it is more sure to discern attainable objectives. There was no lack of objectives in the horizon of "speeding up" and exhortation to "greatest possible production of everything," but many who went "over the top" bravely toward them fell into entanglements and ambuscades and machine-gun nests of extreme labor cost, transportation embargoes and commercial conspiracies and casualties were multiplied beyond all calculation. Now that plenty of moisture is assured from valley skies and mountain snow-banks, and the farmers' firmament is cleared of cloud-riding camouflagers, producers may safely proceed toward large production, for the demand promises to be good for California's distinctive products, while lessened production of some common staples will clear up what there is left of unprofitable accumulations. In fact, it looks as though the real-value figures of the 1919 products would reach a higher aggregate than was heaped up for the 1918 products, figured largely upon prices which we did not get.

RESEMBLANCE TO THE LEAGUE OF NATIONS.

IT MAY be fanciful, but we think we see in the present crop outlook conditions an analogy to the State in which the League of Nations enterprise finds itself. In this President Cleveland's epigram also holds: "We are confronted by a condition, not a theory." For the theory upon which the project took flight is sadly cloud-screened and the League is bravely striving to come through by surmounting conditions as they really are. This gives us more hope of successful world-service and it is really very fortunate that the League should encounter the breaks in its gait at the starting line rather than at the distance pole! And surely the conditions under which it is trying to make a get-away are very disconcerting. The submerged nations which the League expected to plant firmly on life-rafts of peaceful existence on which they could joyfully paddle to havens of international brotherhood, are belaboring each other with oars and pike-poles and a strong east wind is bringing upon them a heavy sea of disorder, which threatens to submerge them deeper in anarchy than they formerly were in autocracy, perhaps. Meantime the great saving-nations of the earth have not only this sad condition among their proteges to overcome, but they have hard conditions of their own to adjust to their national standards of right and safety. There seems to be occasion to wonder whether some great powers and ex-powers were not, and are not still, seizing upon our American theory of the League to pull their own chestnuts from the embers of the world conflagration. And while wondering about what others are doing for themselves it seems timely to wonder what they are trying to put over on us. Here, too, it seems to be a matter of condition rather than of theory, for as we write the report comes that Japan has already secured an option on some Mexican territory and President Wilson is said to be trying hard to galvanize the Monroe doctrine by modification of the League covenant so that the doctrine may not fall into another of President Cleveland's creations—"innocuous desuetude." Washington was surely right in warning his children against entangling alliances with foreign nations. It was the theory that the danger would be European: the condition seems to be that it is Asiatic. However that may be, it is becoming more clear each day that the close scrutiny, which opposition is compelling, is fitting the theory of the League of Nations more closely to conditions as they really exist and in that way increasing its chances of being useful to the world and safer to ourselves.

FARM OWNERS AND OPERATORS.

AND now we are ready to admit that in our narrow field of California agriculture we are up against President Cleveland's distinction between condition and theory just as hard as President Wilson seems to be in his grander enterprise of world statesmanship. We started out gayly and confidently in support of our theory that the way to secure a rationally conservative and progressive organization of California agriculture would be to organize an affiliation of all the active co-operative associations we have and to arrange to have them do a joint business for the promotion and protection of agriculture through a representative, delegated assembly. To this day no one has denied that it is a perfectly good theory and many have declared that it is the only way to do it. To a superficial observer our theory might seem more fortunate than President Wilson's, for nobody kicked ours, while his theory has struck floating mines all the way from Idaho to Cape Cod and from New York to Mississippi. The result probably will be that President Wilson's world-ship of state will sail into harbor with some good stout patches on its hull, while ours will never get out of the drydock—which is the proper place for a theory which no one thinks worth patching up to meet conditions.

This being the case, we are quite ready to try to meet the condition which confronts us in some other way. We are now studying a new organization through which our agriculture may be effectively organized for a fair deal to all engaged in agricultural production without affiliations with promoters of disorder, which is, we hope, impossible in this country. This new effort at agricultural organization originated among well-known and reputable farmers of San Joaquin county and is now taking form in other counties—as was shown in our last issue in the report of the inception of the movement in Santa Clara county. Its name is the "Farm Owners and Operators' Association." Our Mr. Hodges is now making a study of its parentage, purposes, methods and achievements thus far, and will soon present the results of his investigation for the consideration of our readers. In it we are clearly confronted by a condition of existence, not a theory of it, and its concreteness commands our deepest interest.

FARM BUREAU PUBLICATIONS.

THERE is also a keen issue between conditions and theories in the situation which has arisen in certain county publications known as "Farm Bureau Monthlies"—which have been undertaken in most counties having Farm Advisors and Farm Bureaus which support them and provide in part for their work. The Farm Bureau Monthly arose as a house organ of the local farm bureau and has been until recently of "circular" form and dimensions, serving as a means of communication between the Farm Advisor and the farmers, who voluntarily contributed to the undertakings of the county bureau which worked with him. Recently a few county farm bureaus have abandoned the original plan of local publication and have given their name and support to expanded proprietary sheets in which editors and business solicitors undertake to demonstrate their journalistic genius. It is not a matter which directly concerns us, for our field is technical and State-wide and cannot cover details of local county interest. But we must suggest that such expanded publications are unjust to the county papers which are forced to enter into competition with them and must often result in weakening or checking the progress of our established county press, which is the foundation of our general, State journalistic structure. In many and probably in most of the counties which have farm bureaus there are enterprising and creditable county papers which have worked early and late for years to promote county development and individual prosperity of county producers. In many cases, we doubt not, the fact that county bureaus exist is due to the advocacy and more specific assistance which the local editors and publishers have extended to them as enterprises of potential value to their constituents. It is our conviction that entering the local field as competitors in news distribution and business patronage is a proceeding of questionable wisdom on the part of the farm bureaus. Though we have been thinking of the matter for some time, it is doubtful if we should have entered an issue about publication which is not of concern to us, had it not been for the declaration of belief and practice by the Sacramento Farm Bureau, which is opposed to the ventures we have indicated. This bureau, in announcing the suspension of its monthly for lack of funds, adds these declarations:

> Several counties have changed the character of their publication and by publishing advertisements have put their papers on a self-sustaining basis. This, however, merely cheapens the paper, as well as to defeat the purpose for which the paper is published. At the last Farm Bureau directors' meeting a committee of three, composed of E. A. Gammon, Arthur E. Greene and R. E. Watson, was appointed to look into the matter of Farm Bureau publication. A representative from another county was present at this meeting and desired to take over the publication for its value as an advertising medium. The committee believes that a change of character of the paper would be an unwise move, and that rather than do so it is more desirable to discontinue the publication until more funds are available.
>
> And until that time arrives the Sacramento bureau will furnish its material for publication in the county papers, to which it geographically and otherwise belongs. The service of the established county press to the advancement of agricultural interests is very great and we are glad that the Sacramento Farm Bureau has decided to recognize it in this way.

HOUSE ORGANS AND PIPE ORGANS.

BUT though the foregoing is not of direct importance to us, there is a corollary to it for which we have at least a Platonic affection, and that is the disposition of co-operative associations to project their circulars of special information to their membership into quasi technical journals of general agriculture. Though they announce their output as house organs, they are apt to begin very soon to lay pipes to tap the reservoirs of joy into which real agricultural editors continually dip their hyacinthine locks or to penetrate the vaults in which real agricultural publishers store their great gains of gold and gems. This is their theory of the reward of the passion to write and the passion to print—beyond the scope and capacity which their house-organ charters authorize—and they are confronted by the conviction that the effort yields them nothing but trouble and expense—because the public discounts it as subsidized, ex-parte pleading and avails them nothing when a situation arises in which they need and really deserve a push in public favor. But this is not the worst of it. They nibble like mice into the great cheese of influence and patronage which the recognized and respected journals

of agriculture have labored for decades to hoop up and they undermine the foundations of such legitimate journals upon public approval and patronage, which is the only basis upon which their permanence and improvement can be made secure. Now California has about half a dozen recognized journals of agriculture, of which the oldest, most widely circulated and best is—but modesty forbids its nomination. All these journals are working for the promotion and prosperity of California farming to the best of their capacity and resources. In a way they are all non-profit concerns, for everything above cost goes back for improvement of those which make a surplus and possibly some of them will not recoup in a generation the expense of their foundation. These journals, maintained at such sacrifice largely because their owners desire to do something worth while for the advancement of the State, constitute California relatively the best provided in the country with agricultural journals, because no agricultural journal published in California can get much circulation beyond the State to whose peculiar climatic conditions its contents are adapted. For half a century or less these journals have labored for the upbuilding of the industries which are now the admiration of the world. Practically all they have accumulated for themselves is the good repute and good will which the California public generously accords to them. Their theory is that the enterprises of the State, developing rapidly in wealth-creation and the people of the State, multiplying rapidly in widely distributed prosperity, naturally desire and expect to take technical information and suggestion from the established journals which these enterprises and these people have created. The condition is that the best and most influential publicity is not being realized for our co-operative enterprises because no self-respecting technical journal can play second to a house organ, even though

—from one blast of wind
To many a row of pipes the soundboard breathes.

QUERIES AND REPLIES

By the Editor.

Inquirer Must Give Full Name and Address.

Vine Hoppers and Mildew.

To the Editor: Last year our vines suffered by the vine hoppers and we sprayed with nicotine, but did not seem to kill many of them. I have been informed that nothing else can kill the hopper but nicotine spray applied at a particular time. I want to try this year again and at the same time I want to know what to do for the mildew. What can I mix in with nicotine? What, how and how much?—H. M., Livingston.

It is essential to spray for vine hoppers, after they are hatched from the eggs and before they get wings. Watch for them on the under sides of the leaves and spray as soon as you find any of them with wing pads developed. In ordinary years in the Fresno section such spraying has to be done between May 20 and June 10. To secure a fungicide also one pint of nicotine can be added to 200 gallons of lime-sulphur (dilute 1 to 35 for use on foliage), but treatment for mildew should usually be applied much earlier than desirable for leaf hoppers. For mildew, sulphur should be used on the new growth when not advanced more than six inches and should be blown upon the top of the leaves where it will readily vaporize. To get the leaf hoppers the spray must cover the under sides of the leaves where they are.

Buckwheat for Bees.

To the Editor: We are desirous of planting some buckwheat this year on land which can be irrigated and which has been in corn for two years. Please give us your advice regarding planting, pounds of seed per acre and if it will be necessary or expedient to irrigate. There has been no buckwheat planted in our vicinity and we do not know whether it will do well here or not. It is for our bees.—S. N. C., Modesto.

It ought to be easy enough to grow buckwheat on good corn land to the blooming stage. Even if it should get a blast of hot wind, which it does not like, it should strike out for bloom again if there is moisture enough in the land to push it. For a seed crop it may be more difficult. It has to be sown after frost danger is past, as it is very tender and soil-warmth is necessary. The seed can be broadcasted at about 35 pounds to the acre on such preparation of soil as would be made for corn or it can be drilled in for furrow irrigation and continuous bloom may be had until the plant is blasted by too high heat or by frost. What is called "common buckwheat" is better for bloom than some of the selected kinds, which have a higher value for grain. We presume you know that buckwheat honey is dark colored and of low commercial value generally.

Fertilizing Value of Alfalfa Hay.

To the Editor: What is the value of damaged alfalfa hay put on a bearing orchard of prunes and what to a young orchard? How should it be applied and which is the best time? What can one pay a ton for this hay and get the return in this way?—J. S. S., Lawrence.

When the prices of fertilizers are normal, that is when they are not affected by war conditions, the plant foods in a ton of alfalfa hay are equivalent to what you could buy of fertilizers for $8 or $10. Therefore, theoretically, if the crop you are growing needs fertilizers and is worth enough to warrant you in adding the expenditure to the other costs of production, the hay would be worth the amount stated. Whether a ton of hay would bring you more than ten dollars in the form of more prunes or larger prunes or better thrift and growth of the trees for future crops of prunes, can only be told by trying it on your soil and your trees. The result depends on the figures you can make on the yield and value "before and after taking," or by comparing equal areas of the same soil having hay and not having it. The question is incapable of answer except on the basis of actual test. The hay should be plowed under early in the rainy season if dependent upon rainfall for decay: with irrigation, later applications are permissible.

Farmers' Selling Licenses.

To the Editor: Suppose a man has a farm in one county and the nearest town to his farm, and where he does all his business, is in another county, and where they make everyone take out a license to sell anything he wishes to sell, will he have to pay license to sell what his farm produces? Is it a State law, or can each county make what laws it wants?—L. C., Nipomo.

The State does not require a selling license from any farmer nor, so far as we are aware, does any county do so. You are probably up against a town ordinance in your market town, and the town trustees may enact such an ordinance partly for revenue and partly because local storekeepers have influence enough to get such legislation to protect themselves from competition with producers. In such cases it is not a question of whether your farm is in the same county with the town or not. The town lays tribute upon all outsiders.

Popcorn Dodging Worms.

To the Editor: Would you advise early or late planting of popcorn to best avoid worms? In either case, what time would you suggest? Can you tell me the most popular commercial variety?—A. W. L., Atwater.

We do not know which to advise, for both early and late plantings sometimes come through almost clean because they happen to silk between the broods of moths when none of them are flying. It is our notion that extra early planting is most apt to do it, because the succession is closest when there is most corn feeding up the worms. Early planting is done at whatever date the particular place becomes free from danger of frost. The "White Rice" is the most popular variety, but do not risk growing much unless you can get a contract with a buyer. The general market is not very dependable.

Mulching the Strawberry Bed.

To the Editor: I have a strawberry bed irrigated by a whirling spray; also some long rye hay without any grain in the heads. Would it be practical to use the hay as a mulch to conserve moisture and keep the berries clean? They use straw this way in the East, but I don't know whether or not it is done in California.—R. M. C., Sebastopol.

Yes, the plan is just as good in California when you are irrigating by artificial showers. It makes a very neat cover and gives clean berries and strong plants because it holds moisture near the surface—if one does not mind the amount of fuss in getting the stuff on and off—which costs too much in commercial practice. There is some danger of burning by reflected heat from the bleached cover in the hotter parts of the State, but perhaps not so near the coast as you are.

OUR CIRCULATION JUMPS THIS WEEK

Commencing with this issue, by an order received from the Purchasing Department of the Y. M. C. A., we shall mail each week 1500 copies of The Pacific Rural Press to France. These 1500 copies are to be used in the educational department of that great philanthropic organization for the benefit of the soldiers of the American Expeditionary Forces.

Black Walnuts on Oak Clearings.

To the Editor: I am clearing new land from small oak and pepper trees and a low green brush common to Lake county. The trees are being chopped and I will use goats for the next two years to kill the suckers. I then plan to pull the stumps. When will the best time be to plant the black walnut? I am sprouting the nuts now in the nursery. If I plant this spring, do I gain anything? And will the roots injure the young walnuts with fungus growth?—J. H. G., Lakeport.

The sprouted nuts should be planted in nursery rows right away—when the soil is right. You can grow the seedlings in nursery for two or three years and then plant out successfully or you can plant the nuts in place now, if you wish to take the trouble of surrounding them with palings to hold off the goats. The black walnut is practically unaffected by root fungus.

Planting Peanuts.

To the Editor: What time of year shall I plant peanuts and which variety would do best in the mountain country? Have sandy soil. Also, what about irrigation?—T. A., Calpella.

Plant after danger of frost is over: at corn-planting time in your district. We do not know which variety does best at elevations. The "California White" is the variety chiefly grown. Irrigation is essential in all but low river-bottom loam, which is naturally moist. The water should be applied between the rows and not by flooding—therefore ridge planting is desirable. Put on water before the leaves show lack of it, so the plants will grow continuously without stopping and starting again.

Killing "Oregon Grape."

To the Editor: A correspondent asks for "some methods of killing out or getting rid of 'Oregon grape' root. It has about taken our little ranch." I pass this question on to you, thinking that you or some of your readers may be able to give valuable suggestions. The Oregon grape root mentioned, I am assuming, is the Mahonia or Berberis aquefolium.—W. L. H., Davis.

Unless it is practicable to goat the land, we know no way but to keep cutting off all the top growth during the summer and pulling out all the roots which come to sight during the winter plowing. If any reader knows better, we should like to have his experience.

Borers in Prune Trees.

To the Editor: Can you please tell me what to do for prune trees affected with some sort of worm that burrows its way into the tree, killing the limbs and whole trees? Does this disease spread from tree to tree?—B. L. B., Visalia.

There are several borers which can do what you describe. We cannot tell which you have without a specimen. If you will get out one and send it, signing your full name to the letter, we will do the best we can to inform you. These pests go freely from tree to tree.

California Weather Record

The following rainfall and temperature record is furnished the Pacific Rural Press by the United States Department of Agriculture Weather Bureau at San Francisco for the week ending at 5 p. m., April 1, 1919.

Stations—	Rainfall Data: Past Week	Rainfall Data: Seasonal To Date	Rainfall Data: Normal To Date	Temperature Data: Max'm	Temperature Data: Min'm
Eureka	.2	43.78	38.40	68	42
Red Bluff	.09	25.67	21.49	75	50
Sacramento	.11	17.09	17.04	74	46
San Francisco	.13	23.54	19.54	65	48
San Jose	.29	18.98	14.68	71	40
Fresno		6.56	8.27	80	46
San Luis Obispo	.03	16.78	18.13	54	46
Los Angeles		8.18	14.02	72	50
San Diego		8.08	9.86	64	52

SNOW ON GROUND MARCH 31.

Emigrant Gap 24 inches, Portola 5 inches, Squirrel Inn, 4 inches, Huntington Lake 35 inches, Cascade, bare, Summit, 100 inches, Sierraville, bare, McCloud, bare, Inskip, 50 inches.

Spring Orchard Notes

[Written for Pacific Rural Press by John J. Fox.]

Care in Single Plowing.

On the subject of single plowing, especially away from the trees and vines, let us again revert to the care necessary in carrying out this operation. There is rarely more than two rounds to make after the double plowing has been finished and there never ought to be more. With the larger trees there is no point in getting too close to the butt except to do away with the weeds, and this can be done later with cultivator and disk unless the trees are young. Then a hoe should be employed to crack the ground around them. There are two very substantial reasons why you should not plow too close to a tree or too deep. If you plow close, some of those trees are going to be barked and bruised and infection of wood rot or crown gall invariably enters here. If you plow too deep, you may snag a large root, the injury to which is much more important than breaking your little plow, for it also results in infection. The job of single plowing from the trees only comes once a year. It is the meanest job on the ranch next to spraying, especially if the ground gets a bit hard. But it doesn't last long and it pays to take plenty of time and infinite pains. An irritable man or a lunging, headstrong horse should not be used on this operation. For the man must take pains to drive and weave a little the last round and not take it out on the horse by jerking him around every time a flying branch whips him in the face. The best horse in the world loses interest if he is yanked around by a fool. The writer himself has been a fool in this particular in years gone by and can speak with a very intimate knowledge in this matter.

Sulphuring Vines.

Supplies of dry sulphur are now being laid in ready to sulphur the young vines the first time. During the war it was not always easy to obtain sulphur just when it was wanted, but conditions are easier now. The first sulphurings of the vines are the most important ones and it will be especially so this wet spring. This is done when the first shoots of the vine are six or eight inches long and again when the blooms open up. It is much better to use a good knapsack or other blower to do the sulphuring than shakers or sprinklers, because every part of the leaves and vine get a speck of it; also there is far less waste, which is of secondary importance. The finer the sulphur, the better results are obtained — the larger the sack of sulphur is containing your 100 pounds; the finer it has been milled, so that is a good way to judge.

Atomic Sulphur and Copperas.

Good results have been obtained on the Stanly ranch in Napa county by using atomic sulphur when the weather continued too dull to use dry sulphur to advantage. Andrew Rasmussen of Calistoga uses a spray just before the buds open of 20 pounds of copperas to 50 gallons of water and claims his freedom from mildew is due to this treatment. This is used as a dormant spray. To wait until the vine is in heavy foliage before sulphuring in the northern and coast counties especially increases the cost both in time and material and increases the risk. The general impression prevails that all grapes may realize a good price again this year, but this is only an opinion. Anyway, wine grapes or table grapes, we have pruned and cultivated them, and we must go the whole hog and do the thing right. It's no use being a "piker" and taking a quarter of a chance. So let us sulphur at the right times, do it thoroughly and watch the indicator with hopefulness.

Spring Plowing.

In many sections where the land is heavy or underlaid with clay, spring plowing has been delayed and must be rather late now. It will, at any rate, give the cover-crops a chance and a few men are getting uneasy lest they should have more to turn under than they can successfully stow away. But there is very little fear of this in most places. We find there is quite a demand for men with teams or tractors to assist in the plowing and the demand is hard to fill. Inside of a couple of weeks everybody will want their work done at once. It looks as if a lot of preliminary disking will have to be done to help hold the ground from drying out after the rains are over and until the plows can get round to it all.

Cut and Cover Up Bruises.

Where trees are badly bruised so as to break the bark—and accidents will happen even with the boss himself at the helm—it pays to go over the ground after you are through. Gott hammit won't mend them. Make a good clean cut of the wounds and paint them over with asphaltum. It seems a big chore to suggest at such a very busy time of year, but it pays. Many a man has a strong lad that can do such work after he returns from school, who would like to earn a quarter occasionally and who would be interested in this minor surgical operation as well as feeling that he was carrying out important work.

STATE'S ALMOND CONDITIONS.

There was a splendid bloom and a pretty good setting of almonds generally. We have noticed that the fruits that will hang are not so numerous as the blooming promised. Cool and rainy weather through the blooming season is blamed for this. A "whale of a crop" is no longer expected. It is time for another spraying of sulphur now (April 5) as a safeguard against rust and mites.

VIGOROUS OLD VINES.

A. M. Stone of Hanford has some vines 38 years old that last season gave him as good a crop as he has ever had from them—and he has gathered 35. They seem to be unimpaired by age, he says. He has 100 acres on his ranch north of town, of which 24 are set to vines. From the 24 acres he last year secured a yield of 54 tons of raisins.

REMINDERS FOR ORCHARDISTS.

While the soil has plenty of moisture and length growth is proceeding is a good time to give those citrus trees a couple of hundred pounds of nitrate of soda or sulphate of ammonia. It doesn't do to jog them up unless there is plenty of moisture to keep the extra growth in good trim.

Get that arsenate of lead and atomic sulphur or Bordeaux on hand, ready for the codling moth and scab spray in the calyx. It is a poor plan to wait till the day it has to be used.

An extra spray nozzle doesn't cost much and is a mighty useful accessory when one lead goes on the bum.

The spray outfit is the most important tool on the fruit ranch these spring days. Keep it in good running order yourself. George might forget it.

The late rains have made cover-crops in some places so exuberant that the owners will have quite a picnic getting away with them. We have noticed several lately being chopped up with a cutaway disk, preparatory to plowing.

Vineyardists! Buy your sulphur NOW. Feed that tractor plenty of good oil and she'll simply purr along through the orchard. Was it Leviticus called it the oil of joy?



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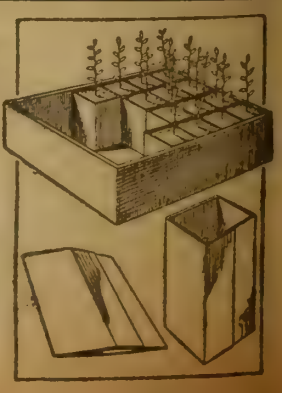
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Citrus Conditions in Tulare County

The recent rains have greatly benefited the citrus groves of this county in general and at present the trees show a healthier appearance than for nearly two years past. The new fruit wood development is fairly under way at this date and gives evidence of being generally normal or a little heavy. Little can be said at this date relative to soil conditions, but it is evidence that the recent rains have also benefited greatly relative to this condition. No doubt the rains have had a leaching effect on the soils where salt was present.

A large number of the citrus growers have acted very prudently this year regarding their plowing and have accomplished this work during the late fall and winter months. On properties where plowing or clean culture have not been resorted to, a very heavy volunteer growth is present.

THRIPS.

The rains of this season have caused rather unfavorable conditions for the overwintering generation of citrus thrips eggs and it would not be surprising to find a decided decrease in the thrips infestation in general throughout the county. A large number of growers have been induced to spray for their control during January and February, though there is no special reason from the standpoint of efficiency for spraying for thrips control at this time of year. Three to four applications of straight lime-sulphur solution, about 2 per cent strength, if applied correctly and at the proper time, will act as a control for citrus thrips.

CITRICOLA SCALE.

"The citricola scale will very likely increase more rapidly than for the past two dry years," says Frank R. Brann, Horticultural Inspector of Tulare county. "This I am presuming on the grounds that normal climatic conditions are prevalent during May and June. The citricola scale is already distributed lightly, or moderately, over a large portion of the citrus growing area, and in view of the apparent improved condition of citrus tree vitality it seems likely that this pest will thrive under these conditions this season. The sap flow of the citrus is becoming stronger each day, and the citricola scale are commencing to migrate to the twigs and smaller limbs, where they are enabled to secure this sap (food) in greater quantities in order that they may develop more rapidly to maturity, preparatory to hatching the new generation. The hatch will occur from the fore part of May to about the middle of July. Fumigation by the use of hydrocyanic acid gas should be done in all cases where conditions warrant treatment this season."

Dealcoholized Wine

To the Editor: I notice in a prominent newspaper of interior California the suggestion that wine manufacturers turn their attention to the making of dealcoholized wine, which the editor states is far more delicious than grape juice. The Government should do whatever it can for owners of wine-grape vineyards. I would suggest instead that your representative at Sacramento have the committee on agriculture consider the matter of having State and United States Department of Agriculture join in making full experiments on best methods of making denatured wine. If that and the grape syrup worked up by the California Agricultural Experiment Station had good commercial possibilities, the Government might even help to carry these products along for a year or two until a market was secured. Leaving aside all thoughts of justice to the winemen, it would be a fine thing for both State and nation if two new important products like denatured wine and grape syrup could be sold in every American home.—Rancher, Exeter.

COMMENTS BY PROFESSOR BIOLETTI.

So far, nobody has been able to make a dealcoholized wine that would be pleasing to a wine drinker or to anybody else. At least, that was my impression some time ago after looking into various processes then suggested. Lately a number of processes, mostly patented, have been advertised and the owner of each patent states very clearly that all other patents are useless. The latest patent I have seen is that of a former employe of the Viticultural Division, D. Cozzolino. I have not seen his product, but as he is the only man who has been able to dealcoholize beer and obtain a product that would deceive a German brewer I have more confidence in his method than in the others. However, I have not tasted the material that he makes and doubt even if it were good that there would be any possibility of obtaining a market for it in time to save any of our wine grapes. Moreover, as you cannot dealcoholize wine before you have made the wine, it appears that the process would be against the law, although this reasoning applies also to the manufacture of vinegar from fresh grapes or apples.

GRAFTING WALNUTS BY THE BARK METHOD.

[Written for Pacific Rural Press.]

"I am now doing considerable walnut grafting, using the bark method," said Eugene S. Kellogg, Horticultural Commissioner of Santa Barbara county. "I think this method has many advantages over the others inasmuch as you do not have to split the stock and, besides, you can work a great deal faster. I have my grafting wood held in cold storage and find that it has kept very well. We will try out all the promising varieties this season. The trees here are just now beginning to come out (March 27), having been held back by the cold weather."

Mr. Kellogg says further: "Our machinery is now set up for mixing materials for aphis and codling moth control. Professor R. E. Smith, who has charge of this work, has now five tons of blackleaf 40 on the way from the East. We have 36 power dusters with which to work and we think that this will be sufficient equipment to cover our entire acreage (in Santa Barbara county). We plan to use a 10 per cent mixture of lead arsenate on the codling moth as well as doing some liquid spraying. We have some infested walnut trees under screen to ascertain the time when the moths will emerge so that we will know when to apply the mixture."

Apricot Conditions—Watch Closely

Your correspondent rambled through the Winters, Vacaville, and Suisun fruit sections March 27 and 28, and has found conditions in all fruits most promising, excepting for apricots. It was raining the first day, but we noticed quite a lot of rot showing up in almost all the orchards through Suisun, Lagoon Valley, Pleasant Valley, and Winters. The crop will be a disappointment. In the orchards we stepped into at Vacaville the rot was less noticeable, but a few specks of shot-hole were already apparent. In the Lagoon Valley and Suisun some damage from frost was noticeable. The foggy, misty weather has made spraying very difficult. The cots have not been shedding and rot is found under many of their little jackets. As soon as these are shed a spraying with atomic sulphur of 20 pounds to 100 gallons or six gallons of lime-sulphur to the tank should be used NOW. A lot of die-back (black-heart) is reported and we noticed it very bad in parts of the Suisun and W. Vacaville fruit sections on some of the best ground. A light north wind would help now, but spraying with a sulphur is about the only thing we can do to help ourselves.



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Thrips and the Man

[Written for Pacific Rural Press.]

In our peregrinations through the northern counties to observe orchard conditions we found, generally speaking, very few thrips up to the 19th of March, but that day they appeared in rapidly increasing numbers and we found people busy spraying cherries, pears and prunes. Of these three, pears and cherries need the keenest attention because in pears especially they seem to be most destructive.

PRUNES IN FINE SHAPE.

Prune buds are in stronger shape this year than they have been for years and the soil and moisture supply is in condition to keep them vigorous. For that reason alone the prune situation can be looked at without alarm, except that where thrips are very numerous it pays to spray for the larvæ a little later—particularly on Imperials and Robes, where they seem to do extra malicious work. Though the writer noticed many thrips on the 19th, 20th and 21st of March, the actual damage to that date was slight. If the blooms come out pretty rapidly now, a heavy setting is practically assured and the thrips can then be tackled with some hope of getting most of them before they lay their eggs in the stems.

In Sheridan Baker's orchard, east of Santa Rosa, good work was being done with Bean spray guns. Six gallons of a miscible oil and one pint of blackleaf 40 was being used. The orchard here had been plowed, but thrips were very few and their damage negligible. We found a few dead thrips on the blossoms, and a few live ones here and there that had got down out of harm's way. The cover-crop was also being sprayed.

In the Healdsburg section we went into the Cuneo and Grant orchards also into those of Mrs. Cochran and Mrs. Gladden on the Russian river, and found very few thrips. Also saw a few French prune blooms—the first of the season—March 20.

A BAD INFESTATION.

In the orchard of V. E. Sucher at Santa Rosa we found the worst infestation of thrips, though spraying had just been completed. The spray used was 6 gallons of a miscible oil and half a pint of blackleaf 40 to 200 gallons of water. There are 20 acres of old prunes here, well pruned, clean and in nice shape. The thrips had probably emerged, many of them, subsequent to the spraying. In this orchard it will probably be a race between the blooms and the insects, though there should be a good crop anyway. For the buds are heavy and strong, the soil is a gravelly clay to a clay loam and is in a high state of cultivation. Mr. Sucher's brother is in France and he has all the work on 30 acres to do himself. And soil of this character takes some handling. We found some dead thrips, but many more live ones, well down in the blossoms, where they were safe. But even here no bloom was actually punctured to the core.

Henry Brush has 15 acres of full-bearing prunes east of Santa Rosa and he was spraying with 6 gallons of crude oil emulsion and a pint of blackleaf 40 to the tank. We noticed a lot of dead thrips here and a few live ones and the cover-crop of bur clover and weeds was well saturated. Mr. Brush and his men were hard at it to finish up ready for plowing.

W. L. Stone, nearby, was spraying with the miscible oil and blackleaf. His cherries were just in right shape to spray, with a few blooms already open.

On a Royal Ann that he had just finished spraying we counted 15 dead thrips in one bloom cluster and practically no live ones. This was March 20 and he was going right onto his pears. These, however, will have to be sprayed with lime-sulphur as a thrips and scab spray.

ALMONDS GETTING ATTENTION.

There will probably be more spraying of almonds against mites and rust than ever before. Last year was a bitter lesson to some men who saw their trees nearly naked by the end of August.

Every nut will be wanted and a good price is in evidence. That is why so many new spray outfits are in evidence. Their work must surely tell in the sum total and quality of the season's output in all lines.

PEAR GROWERS URGED TO SPRAY.

The following letter was given the writer by a member of the California Pear Growers' Association: "Buyers are in the field in all the pear-buying districts. They are offering in Contra Costa county 15c for 1919 dried pears. In Napa county 12½c. It is probable that even higher figures will be paid for extra quality lots. One year ago at this time 8c was being offered. This shows an increased demand for dried pears and demonstrates the usefulness of the association. Growers are urged to spray very thoroughly to prevent scab, thrips and worms. Last season there was a market at low prices for wormy pears. This season the authorities expect to be more rigorous than ever with wormy fruit. Safety first is a good motto. If you can grow a crop of good, clean fruit this season, don't worry about prices. The association will get the price if you get the fruit. 'Spray, spray, spray. Quality pears will bring the prices."

ALFALFA RANCH, 21 PER CENT NET ON $500 PER ACRE.

We expressed surprise at the $500 per acre for which J. M. Bomberg of Modesto sold his alfalfa ranch recently. "Well," said Mr. Bomberg "it paid 21% net profit on $500 per acre last season. We actually so $13,000 worth of products from this place of 65 acres. Ten years ago fed all of our stock and sold 75 tons of hay. Our sales have increas every year until last season we sold 150 tons of hay, besides feeding Jerseys and a lot of horses and hogs. Five-sixths of the farm has be in alfalfa, one-sixth being plowed up each year for barley and corn sila We have distributed about 500 manure-spreader-loads of manure per ye on the land.

FRUIT OUTLOOK IN NORTHERN CALIFORNIA.

The peach outlook in Butte, Sutter and Yuba counties indicates a record crop in both quality and tonnage. Almonds and apricots will be lighter, plums and cherries are very promising on "condition." The demand even on the probable increase of the peach crop will probably rule strong, though it may be one-fourth heavier than last year.

It is reported that a number of orchards are still under contract to canners at $25 and $30 a ton, w growers are hoping can be raise agreement to an average of $3 Tuscans, Phillips and Midsumr The prospects throughout in Newcastle, Auburn, Placer and hill fruit sections are excellen date and work is well under considering the season.

According to a late dispatch, fers to fig growers have been alr made for the 1919 crops as foll 20c a pound for Smyrnas, 15c White Adriatics and 11c for B Missions.

IF YOU NEED ALFALFA SEED

don't delay in ordering, as supplies are very low and you may be disappointed by waiting longer.

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Horticultural Jottings

Figs are backward in the Vaca alley and Winters and growers are leased with conditions.

Pliny tells us that in his day the omans cultivated 32 varieties of ears—over 2000 years ago!

The Federal Land Bank of Berke- y has passed the $11,000,000 mark the total of loans closed to ril 1.

Dr. W. E. Lilly has purchased 60 res on Bear Creek, ten miles from erced, and is preparing to set the hole acreage to figs.

No damage to apricots from frost reported from Hanford (Kings unty), and none from Santa Clara unty to date (March 24).

One hundred per cent on all fruit ops on "condition" is reported arch 22 in Sonoma county by Hor- cultural Commissioner O. E. Brem- r.

Wine grape growers of Lodi are id to have been offered $25 a ton r 4000 tons of the coming season's apes by E. W. Foley & Co., of esno.

Several acres of New Oregon (im- oved) strawberries have been set t on the Gold Ridge section of noma county and are said to do tter here than the Banner.

Prunes in Santa Clara and the rthern coast counties will be in ll bloom about April 7 or 8 when is issue appears. The trees every- here are in splendid condition to te (April 3).

Articles of incorporation of the lden State Canneries, with a cap- al stock of $1,000,000, have been ed at Riverside. This concern erates canneries at Hemet, Elsi- re and Ontario.

Seven new fruit packing houses ve been incorporated recently in agara county, N. Y., for handling ples, pears and grapes with or- nizations modeled after the Cali- rnia Fruit Growers' Exchange.

M. J. Moriz of Barlow Station, noma county, has 30 acres of nine- ar-old Gravensteins very heavily dded and which give indications a heavy crop. The same is true all apple orchards in this section.

Misbranding adulterated olive oil a penal offense and word has been ceived from Washington that a mber of prosecutions have been stituted by the Federal authori- s against those contravening the t.

A sale of the Valencia crop from 5 trees in the Sunland district of e Monte Vista Valley for $5,400 is e record sale on Valencias reported is season. The crop is estimated 2200 boxes and was purchased by e Ryan Fruit Company.

"Apricots will be a poor crop in is section," said W. E. Pearson Lagoon Valley (Solano county). Ve have been hit by both frost d rain." Mr. Pearson has 10 acres prunes and some apricots, peaches d plums. Other fruits were prom- ng, apparently.

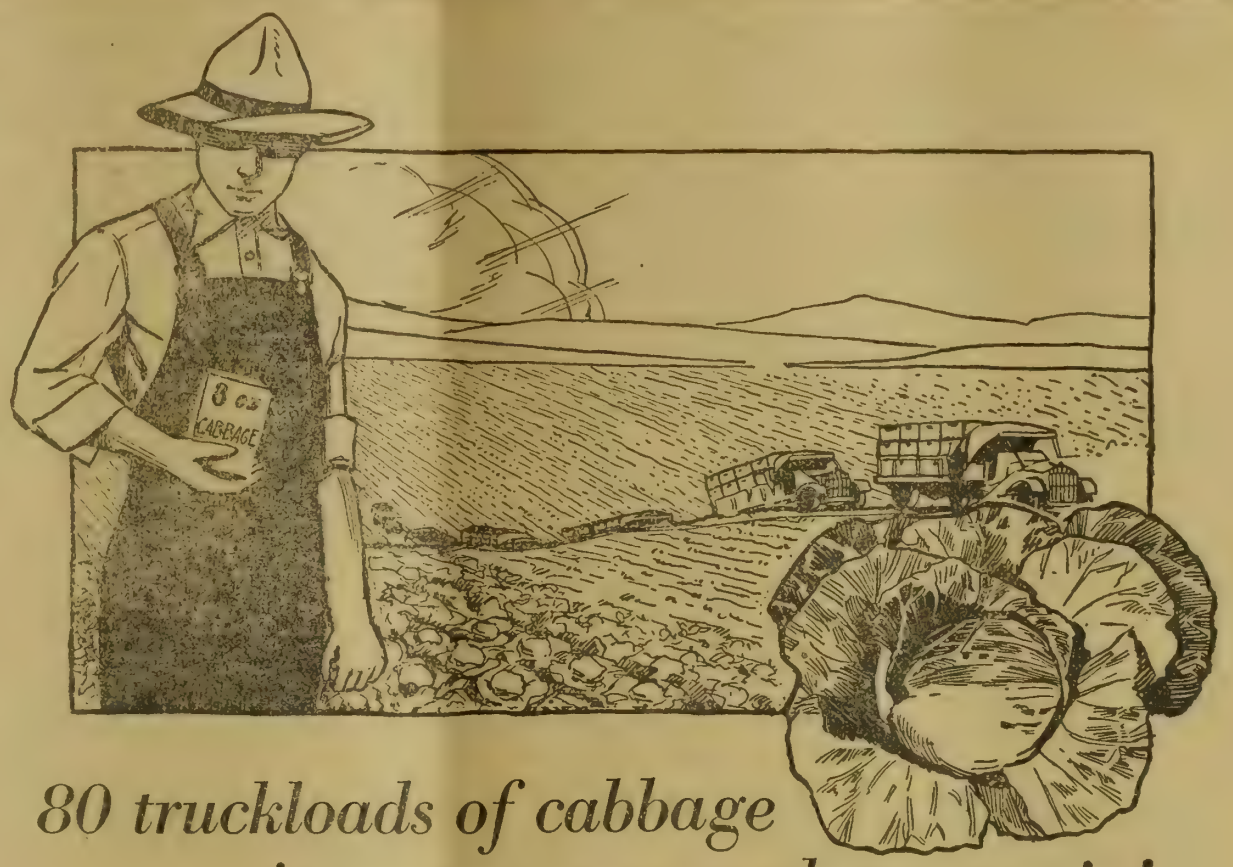
Indications are that peaches, plums d apricots will all provide good ops in Tulare and Kings counties. e demand for peaches and apri- ts is already reported to be brisk. ose apricots in the north will be appointing in yield, the demand likely to harden.

Mendocino county prune growers e organizing and will become a rt of the California Prune and ricot Growers' Association. Last ar the pear growers of this county ned the California Pear Growers' sociation and estimated that they nefited thereby to the extent of 0,000.

Carpinteria members of the Santa rbara Walnut Growers' Associa- n are going to erect a new pack- g house for the coming season. is plant will be modern in every tail and so designed as to be read- enlarged to accommodate more mbers, according to Eugene S. llogg, Horticultural Commissioner.

There is great activity in the fig dustry in the Merced section. ough almonds and peaches are the o leaders. Quite a large acreage rmerly in grain is being planted to figs, especially around Tuttle and Le Grand. W. H. Huffman, a Bear Creek orchardist, is reported to have sold his this year's crop of Calimyrnas at 20c a pound.

The Balfour-Guthrie Company is putting out a spray known as the "Special Mealy Bug Spray," which is said to have given a high degree of control and enabled the grape grower to ship most of his crop where infestation had been. Six to seven gallons of Universal Brand Mealy Bug Spray, together with one pound of dissolved glue per 200 gallons, applied the latter end of March or early in April when a few of the shoots are three inches long and other buds bursting, is the right time to apply for control.



80 truckloads of cabbage in your pants pocket—yes sir!

Sounds improbable—you say? Not at all! Listen: a one-half pound bag of Morse's cabbage seed will slip into your pants pocket. And that amount of Morse's Seed can easily produce on four acres of average soil, 80 truck loads (10 carloads) of cabbage—worth at least $75 a truck.

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The improvements consist of the following:

18½ acres of 5 year old bearing French prunes.
5 acres 4 year old almonds, in bearing; three different varieties.
5 acres in alfalfa.
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Electric pumping plant, abundance of water.
Cement piping for irrigating over entire place, all land leveled.
Four room plastered bungalow with two screened porches.
Tank house with two rooms.
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Chicken house and corrals for 400 chickens, water piped into corrals.
Domestic orchard and shade trees surrounding bungalow.
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GOLD BEAR

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FOR CALIFORNIA SOILS

Here and There in the Fruit Business

[Written for Pacific Rural Press.]

$125 a Ton for Dried Wine Grapes.

It is reported that practically all the fruit companies of Lodi are offering $125 a ton for any kind of dried black wine grapes. The contracts are binding and no unusual conditions are imposed. It is figured that grapes will dry out an average of four green to one dry. Allowing $15 a dry ton for evaporating, this would leave $22.50 a ton green to the grower. Buyers are to furnish sacks or boxes to contain the dried article. If an evaporator can be made available in the neighborhood, the probability is that many grapes will be dried and sold in this way. The cost of a plant large enough to deal with the crop is the sticking point and a matter that is being looked into. At Fresno 7c is reported being offered or $140 a ton. Five thousand tons were dried here last year and this year the whole crop may be dried—perhaps 20,000 or 25,000 tons. Come seben, come 'leben!

The State's Supply of Snow.

Up to the end of January snowfall was deficient in our mountains, according to the U. S. Department of Agriculture Weather Bureau. On January 31 and all through February there was a series of storms which brought enough snow to "alleviate" danger of water shortage this summer. More than the usual amount of snow fell at all mountain stations from which reports are received, in many instances the normal February fall being doubled. Emigrant Gap (Placer county) heads the list with 158 inches, 68 inches of which fell in 48 hours. The greatest amount still on the ground on February 28 was 145 inches at Summit (Placer county), altitude 7017 feet. This time last year the farmers and growers in the San Joaquin who depend on the rivers entirely were feeling very uneasy. This year they are confident.

A Fine Block of Prunes.

Last week we went into two orchards belonging to Messrs. Cuneo and Grant, respectively, near Healdsburg, primarily on a thrips quest. These orchards form a portion of a block of similar trees comprising nearly 500 acres. The buds and the growth of these trees was remarkable for strength and vigor. In the Cuneo orchard the end growth of branches had been cut back to laterals and we judged the trees would carry pretty well any load they might produce. We heard that $1,600 an acre was refused for some of this orchard land two years ago. It would have run nearly four tons to the acre last year if it had not been for the rain. The trees were sprayed last year with crude oil emulsion and looked nice and clean in their natural cover-crop of bur clover.

Watsonville Apples.

Santa Cruz and Monterey counties produced about 2,600,000 boxes of apples last year, as compared with 2,700,000 the year before, according to the final report of the U. S. Bureau of Crop Estimates. The quality and tonnage was increased by the September rains. A larger percentage of green fruit than usual was packed because of the strong prices prevailing. Thus the output of dried apples for the past year is put at 5200 tons for the State, as compared with 9000 tons the year before. The Watsonville dried apple production was about 2700 tons, as compared with 5100 tons the previous year. Most careful work has been carried out at Watsonville and Sonoma county in matters of pruning and spraying this year.

Honey-Takers Are Money-Makers.

Commenting on our report of $500 from 32 stands of bees last year, D. O. Taplin of Napa received $180 from nine colonies the past season. Mr. Taplin is chairman of the bee committee of the Napa County Farm Bureau and told us of how little some people know of bees who are anxious to keep them. One man sent for one drone and one queen to start a colony. Another sent for bee eggs! We saw one man who had sent East for a queen and three workers, which he received by mail, and they were dead in three days. This was last month. It pays to get acquainted with bee life and habits before embarking in the business.

The Sebastopol Berry Growers' Ass'n.

It is reported that the Sebastopol Berry Growers' Association is to have 80 per cent of the berries in that section signed up, only about 700 or 800 tons still remaining on the outside. One grower said that an independent buyer obtained about 400 tons last year at $75 and when the prices went on so high promised to pay sellers a certain amount more than the $75. But the money was never forthcoming and these growers were out about $10,000. And so now they have enriched the association with their memberships and interest.

The Busy Bee a Big Bug.

"The United States is the largest honey-producing nation in the world and California the largest producer of all the States. The world's largest apiary of 6000 colonies is located in the Sacramento Valley and it produces over 100 tons of honey a year, which this season reached 22c a pound. The biggest problem in California is to kill off and eliminate the German black bees and replace them with Italian bees." These are some points that Jay Smith, the Government bee expert, has been bringing out in his lectures.

The Sahara Evaporator.

These dryers are to be manufactured in units or batteries to handle from one to 1000 tons of raw material a day—they to evaporate anything from meat and fish to eggs, and from spinach to fruit. They are built ready to set up anywhere in units. We were interested in seeing them in San Francisco and shall watch to see how they come out with a full load of apricots or peaches—proof under a commercial run on heavy stuff.

A New Grape Association.

A new grape association has been formed at Lodi whose intention is to pack and ship their own fruit at a minimum cost by either owning or renting their own packing plant. They will ship through the California Fruit Exchange. This is a strictly co-operative society, with no stockholders or liabilities, but a prorating of costs of handling the fruit of members.

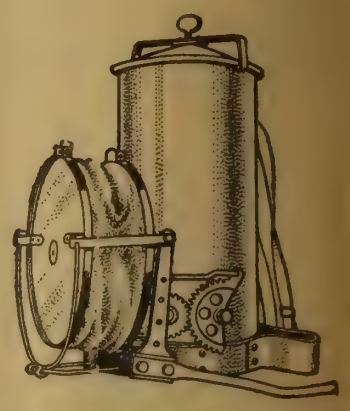
Farmers' Telephone Lines.

Have been constructed or enlarged in the Mt. Vernon, Roseville and Long Valley section through the Farm Bureau. Gold Hill is now organizing a line and two other centers in Placer county are talking about it. The cost is $3.80 a year to each farmer.

To the Victor Belong the Spoils

A 10-cent base for prunes is reported to be offered by independent packers from San Jose for the 1919 crop. This creates a record. It may be only a rank gamble, but it looks more like concerted action on the part of the "interests" to weaken the farmers organization by disturbing the loyalty of members. It is always of a prosperous year that organizations are in greatest peril from propaganda and promises. Also pride in peddling their own products on the part of producers. Loyalty is the sheet anchor of the home, the business, and the organization as it is of the nation. Who wants to sell out his comrades for a chance in a lottery?

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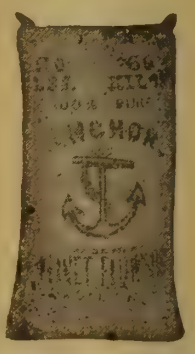
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LOGANBERRIES IMPORTED FROM OREGON.

(Continued from first page)

eight years and bear very well, indeed.

SHOULD BE PLANTED DEEPER.

Another reason that Mr. Moniz suggested for the anthracnose condition, which is generally responsible for the early death of the vine, is that they are not planted deep enough. The crown of the plant should be not less than five inches below the surface at planting. The first plowing each year should be to the vines and the second not too deep and away so as not to disturb the shallower feeding roots and small shoots. Anthracnose has shown up more on logans (and Mammoths) the last two dry years than ever before. He told us that he saw a profitable patch of loganberries in Salem, Oregon, that was 16 years old and patches 10 to 12 years old were not at all uncommon where there was plenty of rain and a deep, rich clay soil.

WHY ACREAGE WAS REDUCED.

On the Gold Ridge, loganberries averaged 2½ tons to the acre. The reason that the acreage had been so greatly reduced was because the price paid for logans had fallen down to a par with blacks, in spite of the susceptibility to anthracnose of the former. Now that $30 a ton more is offered for logans, a fresh impetus has been given to planting for this piquant berry, which is growing in demand. One hundred and twenty-five dollars a ton is now being offered for them, though growers will not consider a term contract beyond one year at this price. Mr. Moniz also thinks the berries need more fertilizing, as well as moisture, and he is going to try a dressing of nitrate of soda. He says the late spring spraying seems to help the set of fruit and to prevent the infection of berries which dry up on the vine if attacked. D. U. Toffelmier, next door, has 15 acres of berries, half Lawtons and half Mammoths, which average about two tons to the acre. But he has also 40 acres of hops that average 1200 pounds to the acre, besides apples and prunes; and hop men are feeling pretty good these days.

REHABILITATING A RUN-DOWN PROPERTY.

[Written for Pacific Rural Press.]

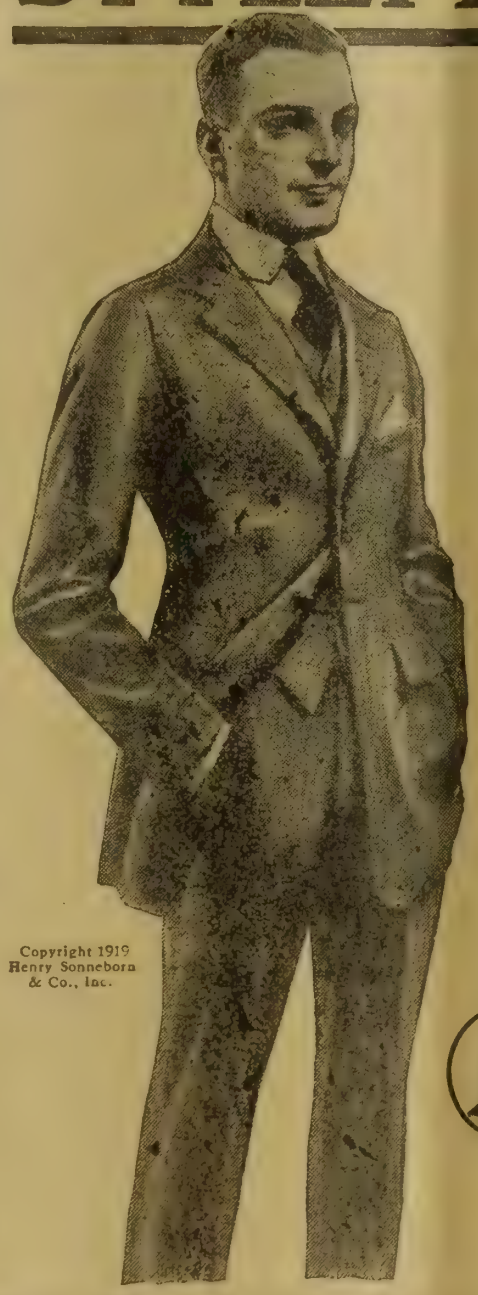
A few years ago the writer was asked to advise as to the handling of an extensive fruit ranch that had been badly run down by many years of renting. The last renters, some Italians, had paid about $1,500 a year rent and couldn't make a go of it. We went over every acre of the ranch and recommended taking out about 60 acres of trees, thoroughly spraying and pruning others and replanting in centers where rows were to be taken out. This place is on the Dry Creek Road at Napa and last week we asked the manager, Dave Manson, how he came out on the crop the past year and were quite pleased to hear that the second year of his administration the place had turned off $12,000 worth of fruit including $4,000 for apples, $3,500 from prunes and the rest from pears, cherries, etc. In the two years since we went over the ground together he has planted some 12,000 prune trees and only lost 100 of them—the first planted making six feet of growth last year.

Mr. Manson claimed that it was a hard season, as for three weeks he was obliged to drive team himself, hauling fruit, being unable to obtain a teamster even at $3.50 and found. The trees are now being kept spraved and pruned and the property will become a source of profit rather than expense. Much better results could have been obtained with a choice of laborers, which it is hoped will be obtainable the coming season.

Harold E. Alley of Santa Margarita has been appointed Horticultural Commissioner of San Luis Obispo county and John A. Winkleman Horticultural Commissioner of El Dorado county.

The planting of grapes and figs in Tulare county has been perhaps a little above normal according to Chas. F. Collins, Horticultural Commissioner of Tulare county, though definite figures are not yet available.

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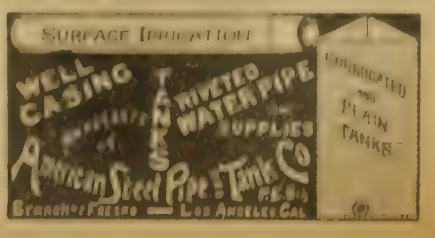
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Farm Bills in the Legislature

[By Our Special Sacramento Correspondent.]

A Toothless Feed Law.

"The people like to be buncoed," said P. T. Barnum in defense of his fakes. "The people like mystery," said a well-known commercial feed manufacturer in opposition to Senate bill 93, which provides that commercial feeds must be labeled with the names of their ingredients and the percentage of worthless filler. He objects to the bill because at one time he printed the formula of a perfectly good feed and at once the sales fell off, while his customers turned to feeds that had more mystery and less nutrition in them.

Well, it looks to the writer as if any people intelligent enough for the democratic form of government are intelligent enough to be trusted with a knowledge of what they pay their money for and what they feed to their livestock. They may need education as to the relative value of various feeds for various purposes with various animals. It is true that the names of ingredients which Bill 93 would require to be tagged onto commercial feeds might not for a time mean a great deal to the average feeder. But the livestock man or the poultryman intelligent enough to feed mill feeds is also intelligent enough to study their values. He has not done this extensively heretofore because he has had no satisfactory way of applying such knowledge due to the fact that he had to buy without knowing what was in the sack. He will learn the values of various feeds when he is enabled to know when he is buying them.

Objection is made to the statement of percentage of fillers such as rice hulls, corn cobs, sawdust, etc., because, forsooth, it will be hard to sell such feeds if they are labeled! Of course it is recognized that even hogs must have certain amounts of nutritionless fiber in order to keep their digestive apparatus functioning and its contents moving. The argument is that people will not buy feeds labeled to contain filler and consequently will lose the beneficial effects of that filler. On the other hand, it is argued by the same people that farmers can be depended on to buy the cheapest feed regardless of its value. We are wondering why feed mixed with cheap filler should not be sold at a low enough price to fulfil the last argument if it is desirable for the good of livestock to feed filler.

It is true that a feed containing 50 per cent filler and 50 per cent of high-priced, highly concentrated ingredients might be worth more as livestock feed than one containing only 1 per cent of filler and 99 per cent of lower priced concentrates to make prices the same in both cases. It is true that for awhile many feeders would choose the feed with only 1 per cent of filler and might thereby lose the benefit of the higher priced concentrates. We believe, however, that if the latter are really profitable to feeders, livestock men and poultrymen will in no great time find it out through advertising and through educational publicity of the University and farm papers, and the situation will adjust itself properly.

There is objection on the part of some, that they cannot always use the ingredients whose names are printed on tags to be placed on a certain brand. They may run out of certain ones before the day is done and it will be a hardship to change the labeled tags. We wonder if the buyers of feed are not entitled to know when such a change is made. If they want to get the same sort of feed in successive purchases, will not the very difficulty mentioned more surely insure uniformity of one purchase with another of the same brand? Even though the percentage of protein, fat, and fiber remain the same, are not Americans going to know what is the source of those elements?

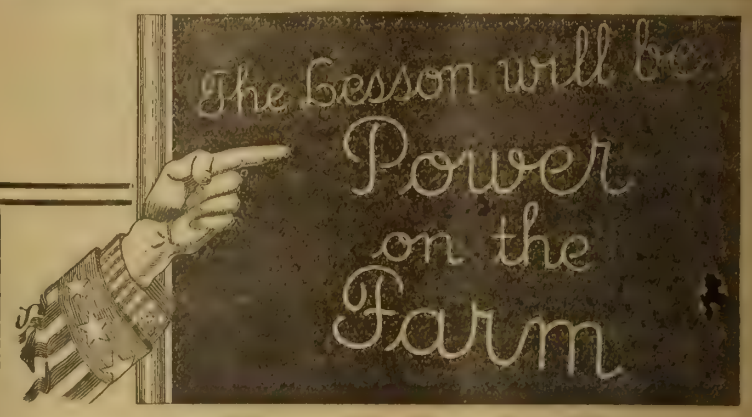
The bill has been amended in the Senate to remove from the label the mention of ingredients. It has been re-amended in the Assembly Committee on Livestock and Dairies to put this feature back into the bill. Our readers may yet help make the law what it was intended to be, by urging the legislators on whom you have most influence to work for its passage in its original form. San Francisco people claim to have enough votes to kill it unless its teeth are pulled.

More Bacteria in Cream.

Three times as many bugs will be allowed in cream as in milk, instead of only twice as many, if the Assembly and the Governor approve Senator Dennett's amended bill which has been passed by the Senate.

Viticultural Investigation Bill Fails.

Assemblyman Bruck's bill, which would have provided (1) for a State investigation of viticultural losses due to national prohibition, and (2) for recommendations to the Legislature of 1921 of ways to recompense such losses if any are found, was thoroughly argued in the Assembly after being forced out of the Agricultural Committee, and has been lost by a vote of 23 to 43. M Bruck had amended it to provid that the State should not stan any expense of the investigatio which would of course then hav



POWER DRIVES THE FARM

The Second Annual Tractor Demonstration Will Be Held at Sacramento, May 6th-11th, 1919. It Will Be a Six-Day Lesson on Power on the Farm. It Will Be the Largest Exhibit Ever Held on the Pacific Coast.

Tractors--Power Farming Machinery--Accessories

Tractors with 4 wheels, tractors with 3 wheels.
Tractors with 2 wheels, tractors with 2 tracks.
Tractors with 2 tracks and 1 wheel.
Tractors with 2 tracks and 2 wheels.
Tractors with 1 track and 2 wheels.
Tractors with one-cylinder engine.
Tractors with two-cylinder engine.
Tractors with four-cylinder engine.
Tractors with eight-cylinder engine.

—of upright, horizontal, single opposed, double opposed, valve-in-head, T-type and L-type—in fact, all the types of engine construction.

See them pulling mould-board plows, disc plows, harrows, scrapers and all kinds of farm implements. Remember, there's nothing quite like seeing. At this demonstration there will be tractors to meet every demand for the big and little ranches, for the orchard, grove and vineyard, for hauling, for the pulley.

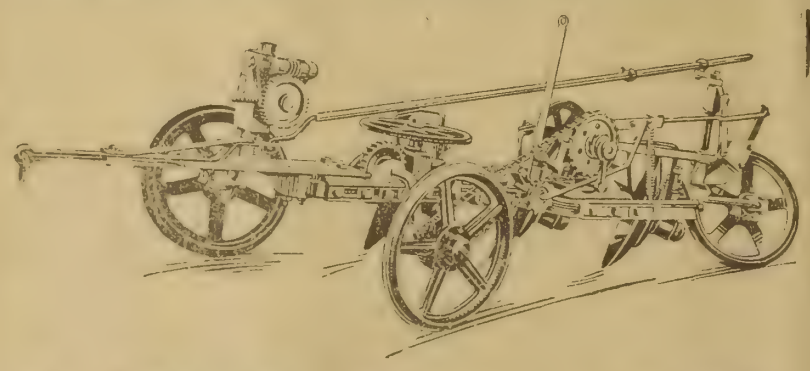
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Free Admission. Free Auto Parking. Free Camping Grounds Nearby. Excellent Restaurant Fully Equipped.

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A Real Power Lift Orchard Disc Plow

In other plows the lift mechanism is placed between the land wheel and the body of the plow, throwing the land wheel out at a considerable distance. The position of the lift in our plow enables us to set the land wheel in close, where it belongs, so that with a Knapp you can plow within eight inches of the trees, throwing the soil away from them. Put a Knapp behind your tractor and you'll avoid trouble. Built heavy—and sturdy—and strong—all the way through.

Send for New Folder.

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Knapp Tractor Disc Plow

been paid by those interested. It was Mr. Bruck's idea to make the bill pass easier by removing the appropriation. An attempt was made to amend the bill by providing that nothing in it should be construed as admitting any obligation on the part of the State to pay such losses, but Mr. Bruck would not stand for that.

Commissions' Attorneys Lose Salaries.

Efficiency and economy are to be observed in the State Government by eliminating the salaries of seven attorneys for various commissions if the bill recently urged by Governor Stephens becomes law. These attorneyships now draw $16,300 per year. Their work in the future is to be done by two extra deputies of the State Attorney General's office. Some of the legislators are objecting to the removal of some such attorneys without removing all of them.

Prohibition Enforcement Bill Passes.

Senator Harris' bill providing effective measures for enforcing the national prohibition amendment in California has passed the Assembly with certain amendments and now goes back to the Senate for concurrence in the amendments. These are likely to occasion but little delay. Then the bill goes to the Governor and the referendum.

State Government and Institutions.

The Assembly Ways and Means Committee has this week reported its recommendations for support of State Government and State institutions. It includes expenditures of $19,964,913, an increase of $101,100 to cover small advances in various departments.

PROGRESSIVE PEACH GROWERS.

[Written for Pacific Rural Press.]

The three years' contract of the California Peach Growers' Association with the grower members expires on April 1. The association has the option of extending their contracts for two years more. No doubt practically all growers will renew their contracts and many new signatories are expected to come in, too. A campaign has been arranged to obtain the new acreage in all the peach growing districts of the State. One of the most successful gatherings of peach growers was held at Kingsburg, others at Selma and elsewhere. J. F. Niswander, the manager, says that the prospects for the coming year look bright. There has been no over-production. He said there were about 2000 tons of peaches not sold, but the Government has these peaches and the association is ready to sell them when they are released. Frank Wilson, president of the association, considers that one of its greatests assets is the peach-peeling machine, which is owned in its entirety by the association. In a short time only peeled peaches will be sold to the trade.

CANNERY - VEGETABLE ASSOCIATION.

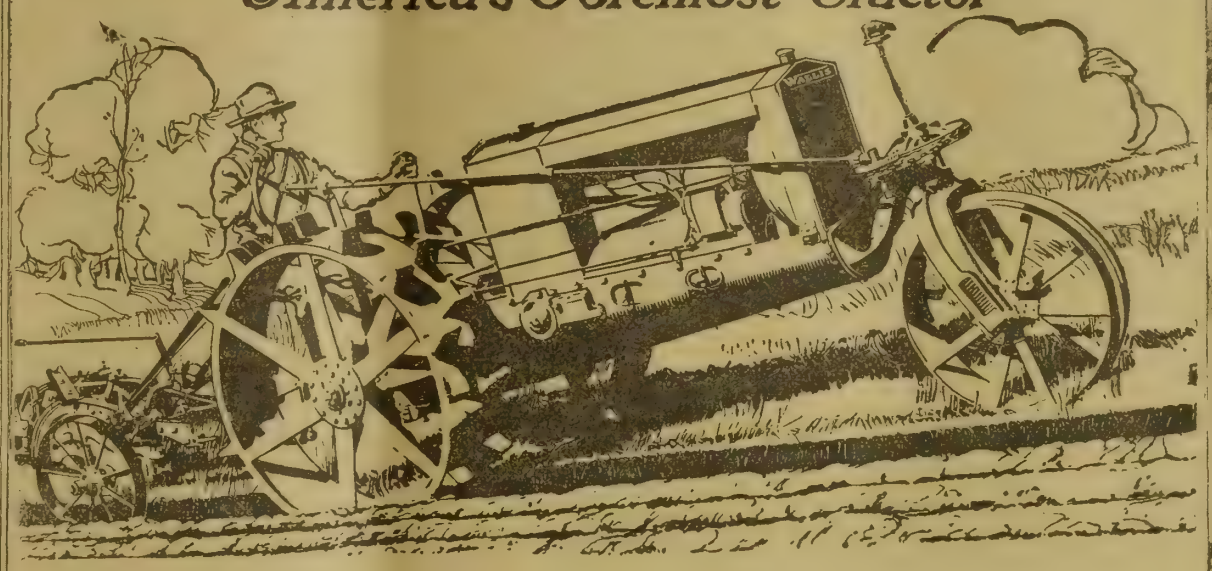
The farmers about Empire, Stanislaus county, have organized an association called the Empire Growers and Distributors' Association, for growing and marketing peas, cabbage, cauliflower, tomatoes, spinach, etc. About 38 farmers were in attendance at the first meeting, at which E. A. Hutching was elected president, J. W. Guyler vice-president, C. W. Caylor secretary, Frederick Goodwin treasurer. The object is to induce someone to put up a cannery at Empire. About 450 acres are already planted to peas. About 250 acres will be planted to lima beans and about 75 to tomatoes. This, with the fruit that is being produced in the vicinity, is enough to keep a cannery going most of the year.

THE USE OF THE DISK.

The disk cultivator is being used largely this year to hold heavy orchard ground over until it can be plowed. The cut-away and smooth are both used and they will be needed more than ever this season in obtaining and maintaining a mulch, especially if the alternate rain and north wind continue into the spring. Most of the early plowed land will be disked and pulverized into shape, the second plowing of orchards having gone out of fashion a great deal among the comparatively few men who practiced it.

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America's Foremost Tractor



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Wallis was the first to use a rear axle gear drive—entirely enclosed. Wallis built a powerful four-cylinder engine of latest tractor type, and drop forged, cut and hardened steel gears. Wallis enclosed all gears and moving parts in a light but durable steel armor where they run in a bath of oil. Lowest plowing cost per acre is a Wallis accomplishment. This is economy which plays an important part in the final estimate of your farm profits.

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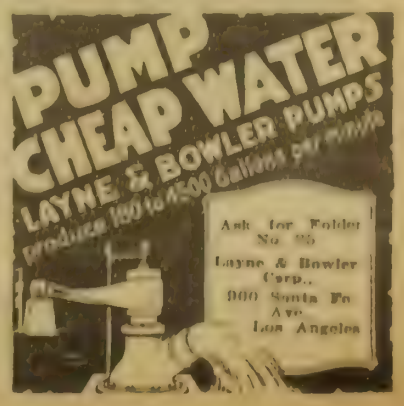
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McQUAY-NORRIS LEAK-PROOF PISTON RINGS

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By creating uniform pressure on the cylinder walls, McQuay-Norris LEAK-PROOF Piston Rings stop piston ring leakage, increase power, decrease carbon and save fuel and oil.

Wherever you are you can get them to fit any car, truck and tractor. Jobbers and supply houses in over 300 distributing points carry complete stocks of standard sizes and over-sizes, backed by a factory stock of 3,000 unusual sizes. You don't have to wait—the rings are awaiting your order.

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"To Have and to Hold Power"—a simple, clear explanation of piston rings, their construction and operation.

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McQUAY-NORRIS Superoyl RINGS

A special ring for engines that pump oil.

Used in top groove only of pistons to control excess oil, with McQuay-Norris LEAK-PROOF Piston Rings in lower grooves to insure maximum compression and fuel economy.

PLANT THE RIGHT SEED AT THE RIGHT TIME

Plant the right variety for your purpose, whether you are growing for home or market, or whether you are growing for cattle, horses, hogs, goats, rabbits, or poultry.

See the 1919 catalog of the

Aggeler & Musser Seed Co.

620 SO. SPRING ST., LOS ANGELES.

Giant Winter **Rhubarb**

Now Is Best Time to Plant

Should return from $1,000 to $1,500 per acre first year. If interested in Rhubarb or Berries, write for special prices.

J. B. WAGNER, Rhubarb and Berry Specialist, Pasadena, California.

Good Prospects for 1919 Grain Sorghums

[Written for Pacific Rural Press.]

With the strengthening of barley and other grain markets comes a safer feeling to those who have planned to grow milo, gyp, feterita and other sorghum grains. The future, too, looks favorable, for not only are livestock and poultry growers who use the sorghums feeling more confidence in enlargement of their herds and flocks, but acreage to be planted to the sorghums will probably be less this season than last. There was at last planting time a well-grounded fear that cantaloupes and other semi-luxuries might find handicapped transportation. At the same time it seemed the patriotic thing to plant summer grains in the place of less substantial food crops. Pork and egg producers were in a ferment and their herds and flocks were decreased, but a great effort was being made to get more farmers to raise more of these coarse-grain eaters.

MINOR SORGHUMS.

Certain sorghums are becoming more popular for syrup and new syrup mills are being established at various parts of the State. These sorghums and other varieties are also increasingly used for silage, especially in locations where Indian corn would not grow so well. We cannot encourage great expansion of broom corn, which is another variety of sorghum. But all of these are minor considerations to the sorghum-grain production.

POOR STANDS—WHY?

It is a shame to see along in summer the enormous acreage of milo, gyp and other sorghums which annually goes to waste for lack of a proper stand, or for lack of enough moisture. The bare spots have to be worked, and rent or interest must be paid for them to produce nothing.

WELL BEGUN IS HALF DONE.

Let us call attention of our readers to the general uselessness of such a condition in the summer of 1919. We have had plenty of rain generally. The ground is "full of water," because our winter rains have not run off in floods as they often do. The soil is in prime condition for plowing, good help is not so scarce, more power machinery and tractors are available, now let us put the land into condition this spring so that the extensive bare areas may not disgrace our fields next summer. If the surface is dry, let us disk it before plowing, to avoid turning clods under the surface where pulverizers may not pulverize them, but where they will aerate the roots of your crop until they will be drier than a saloonless nation. Then plow deep and work up a good seedbed. It will cost a little more, but not proportionately to the added crops. Then wait until the ground is plenty warm to give the seeds a fair chance to make a good stand. Don't let it dry out meanwhile, and don't let it get weedy. Occasional harrowing will take care of that, and the crops will pay the cost besides adding a good profit. But don't harrow deeply after the seedbed is first put into good condition. We have seen farmers delight in seeing the trail of a springtooth harrow late in spring by the moist dirt it exposes—just so much lost moisture for which the crops will suffer.

Remember that while sorghum grains will grow where it is dry, dry, dry, they, like cactus, will do proportionately far better if they get enough moisture, seedbed preparation, and cultivation. The reason for so many failures is that the crops are treated with more contempt than coyotes.

AGRICULTURAL NOTES.

A tract of 10,000 acres of cotton is planned for the San Joaquin Valley West Side, between Firebaugh and Dos Palos.

The market for Pima cotton seems to be hesitating before opening up freely; but there is good reason for hope of early interest. Pima seed have gone as low as $45 per ton.

Grasshopper poisoning is estimated to have saved Kansas farmers about $5,000,000 on wheat and alfalfa last year. Turkeys are good for grasshoppers, too, and vice versa.

Present stocks of barley in growers' hands in the United States are about 40,000,000 bushels greater than the average of the five-year pre-war period, as announced by the U. S. Department of Agriculture.

Full barley cargoes in wooden ships from the Pacific Coast to the United Kingdom take a rate of $30 per ton, as announced by the U. S. Shipping Board, March 28. This is a reduction from $45, and it ought to be a material aid in moving the crop.

Albert F. Etter of Ettersburg writes that he is shipping 3000 plants of a dozen different varieties of the Ettersburg strawberries to New Zealand. These berries do well there, also in Australia. At Portland the Ettersburg No. 80 is topping the market for price.

We find considerable optimism in country districts and city markets regarding the barley situation. This grain, much needed in Europe, is moving rather freely since the embargo was lifted; and all other grains are strengthened accordingly. This is good news for those who have planted the winter grains and for those who may yet plant the various kinds of corn.

Mid-Western millers are already trying to forestall trouble with the 1,250,000,000-bushel wheat crop which may be produced in 1919, by suggesting that the Government encourage growers to hold their wheat until 1920, paying them a cent per bushel per month bonus. They also ask the Government to prorate the exported wheat from the various States on the basis of their production. California is not worried, for our greatly increased crop is needed at home.

A REPORT of the tractive resistance of various kinds of roads was made for the California State Automobile Association by Prof. J. B. Davidson of the University Farm Division of Agricultural Engineering. A dynamometer was hitched between the tongue and doubletrees of a farm wagon loaded with rice to make a total load of 6,000 pounds.

PULL REQUIRED IN POUNDS PER TON.

Over a level, unsurfaced concrete road	27.6
Concrete base ⅜-inch skin top asphaltic oil and screenings	49.2 to 51.6
Water bound macadam, level, good condition	64.3
Concrete base, 1½-inch Topeka top, level, good condition	68.5
Gravel road, good condition, level	78.2 to 81.3
Earth road, fine dust, level	92 to 99.3
Earth road, stiff mud on top, firm underneath, level	218
Loose gravel, not packed down, new road, level	263

In a careful test recently made by Consulting Engineer A. N. Johnson of the Portland Cement Association as reported in the Engineering-News-Record, a motor truck with a two-ton load used 204% as much gasoline on an earth road as on smooth, hard roads of concrete. The truck made 11.78 miles per gallon over the good concrete road, 11.44 on the extra smooth brick road, 9.88 over a fair brick road, 9.48 on the fair bituminous macadam road, 9.39 over the good gravel road, 7.19 over the fair gravel road, and 5.78 miles per gallon over the earth road. The saving between the extremes would be at the rate of $3,000 per mile per year on roads carrying a daily traffic of 500 equally loaded vehicles, besides the great saving in time, reduced wear and tear on the trucks and consequent longer service, tire economy, and increased commercial value of the traffic.



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THE Goodyear Cord Tire is tangible evidence of our belief in the triumph of manufactured goodness.

It is the very finest tire that we know how to build—much finer than we could have built five, three or even two years ago.

It is built thus finely in the simple conviction that the most people want that kind of a tire.

There is considerably less conscience or idealism in this policy than of what may be taken as sound business sense.

The Goodyear Cord Tire travels smoothly and surely, and it lasts uncommonly long.

Among users it has aroused an expectancy of mileage easily double that of four years ago.

Its reputation and employment are steadily and swiftly growing as word of its advantages becomes more widely spread.

Today it is standard equipment on a pronounced majority of the finest motor cars built in this country.

The Goodyear Cord Tire costs more money to buy than do tires of an earlier type.

Its additional cost represents additional material and labor that are actually embodied in the tire.

It is the experience of users that despite their somewhat higher purchase price, Goodyear Cords cost less in the end.

Our factories have succeeded in attaining normal production and Goodyear Tires are now available everywhere.

THE GOODYEAR TIRE & RUBBER COMPANY, AKRON, OHIO

GOODYEAR
AKRON

The Close of Imperial Pioneering

[Written for Pacific Rural Press.]

Only a short time ago pioneering here was real hard pickings. Didn't know whether a chicken would live here or not. Or, after you did get it raised, that you could sell it. Cantaloupes proved a sorrowful crop in 1912 and 1913, when we all succeeded in getting good crops, only to find no market where to place them. Now careful systems of distribution are planned, cantaloupes are profitable, and overproduction is never given a second thought any more.

A. J. McPherrin of Imperial was one of the first to put up a silo. Now silos are too numerous to even start counting them. Dairymen feel they can't afford to be without them, especially when we hear of a certain concern which will loan you the funds to build one and take a mortgage on the silage for the payment. Or, even go so far as to buy the silage if you wish to sell it so as to fatten their beef stock.

Oh, yes, of course, we are going to have that all-American canal.

What about E. H. Erickson of Brawley, who found it possible to save the Breba crop on his Smyrna figs by an early hatch of the blastophaga or fig wasp, which came early in the Capri tree?

Also that the earliest apricots are grown here and the pomelo has great possibilities, not saying a thing for the cotton industry, which so far has kept clear from the boll weevil.

Last year a great deal of product raised here was not even hauled to the station but sold f. o. b. on the ranch.

TABLE GRAPES LOOK PROMISING.

Emperors, French, Malagas and Persian No. 21 are already wonderfully leafed out, especially the Persian 21, which is similar to the Thompson, only a little more oblong in shape. Somehow the Muscats do not do so well in this locality.

Now don't forget when the leaf hoppers begin to hatch and start flying around. Get busy with your nicotine sprays and fight while the fighting is good. After they get large, spraying is of little consequence.

CLOSE SETTING OF DATE TREES.

We found on the Frenitas ranch date seedlings are doing excellent, being set out only seven feet apart. Now the blossoms are showing up the gender of the trees, a great many of the male and barren trees are being taken out, thus in many places making the spacing about right. Date seedlings do not bloom or show gender until about three or four years old.

THE SWEET POTATO PROBLEM.

Plants should be set out on the highest ridges possible in double rows, any time between last of April or first of June. Give very little water, and only when leaves show touches of sunburn. Subirrigation is the idea to keep a constant moisture. The potatoes are the best where the ridges are the highest, says Mr. Low of Seeley. About one cultivation per season should be enough. Potatoes planted thus should be ready to harvest about September. I have known some acreage to yield about 9000 pounds. Some were sold last year at 4c f. o. b. ranch.

EXPERIENCE OF ASPARAGUS GROWER.

All the way from getting chickens drowned to coyotes eating them and even incubators burning up, is the line of luck told by J. J. Shalloo of Imperial county, who is now making good on asparagus. Put in asparagus, four acres, four years ago; used one year early arguentil plants. End of first year cut $150 worth and shipped it all East to an early market. Got as high as $6 per crate for the first and on the average of $1.75 per crate for most of it throughout the season. Last year cut $345 worth and sold it all on the ranch. This year has contracted with San Diego firm at $2.40 per crate f. o. b. ranch, netting all but about 20c cost of crate and moss for packing. Will use about 225 crates this season.

The first irrigation should not be too early so as to chill the ground, thus checking the early growth, which depends upon heat to develop it. Say about January 20 is the proper time. In November, before the shoots are really dried out, cut and mow the asparagus close to the crowns. In the four years Mr. Shalloo has applied only 30 loads of dry manure.

PIMA GROWING TO BE FINANCED.

On March 26, 1919, the heads of the Firestone Auto Tire Co. visited El Centro. They wish to lease acreage, give contracts for Pima cotton, establish Pima gins and in general finance the Pima industry in the Imperial Valley. We hope they do. Also we hope the growers will take lessons and also safeguard themselves against conditions which have occurred in the Salt River Valley of Arizona. Here a similar large tire company did some financing in the line of contracts and gins and got a monopoly on the Pima business. The market dropped. The contracts were good, but didn't read when the company or corporation had to take the cotton off the growers' hands. Ginning progressed so slowly that the growers are now forced to take lottery turns on the ginning, and probably throw a chance that the cheapest seller could get the first turn and so on. We want to see the grower helped and hope they will block the kick in case of being imposed upon.

Federal Farm Loans

Long Term *Low Rate*

All loans made on an amortization plan whereby the borrower repays the principal gradually with each interest payment.

Over three thousand satisfied borrowers in this district. It will pay you to investigate.

For information apply to the nearest National Farm Loan Association or write direct to

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Berkeley, Cal.

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Studebaker CARS

THE New Studebaker Cars—notable for their thorough quality, for their comfort, their economy, and their beautiful lines—are the supreme product of Studebaker's 67 years of manufacturing experience.

You have known Studebaker Cars for years—you know how they have proven good under all the varying conditions of service on country roads. Your father—yes, and your grandfather—knew, too, the inbuilt quality and proven excellence of Studebaker vehicles.

Never has Studebaker quality and honest value been more self-evident than in the New Studebaker Cars. The long years of experience, the feeling of responsibility to buyers, the pride in that name Studebaker, show in every detail of design and manufacture.

The New Studebaker Cars, in three distinct sizes, represent the best that engineers know. They embody so many splendid features of construction that you must see them to really appreciate their mechanical excellence.

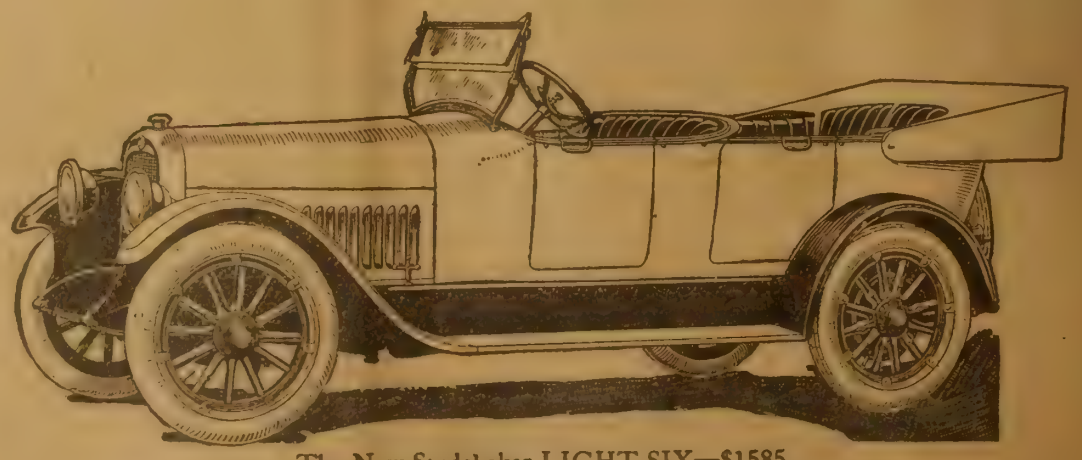
The LIGHT-FOUR	The LIGHT-SIX	The BIG-SIX
$1225	$1585	$1985

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The New Studebaker LIGHT-SIX—$1585

119-inch wheelbase; 50 h. p. motor, with "two-range" carburetor; genuine leather upholstery

MERCED AND STANISLAUS BEAN GROWERS ACT.

The Merced and Stanislaus county farm bureaus met in joint session at Turlock in March and the matter of the large amount of beans in storage at the present time, with no market, was presented to the meeting by the growers through their directors, stating that they were unable to find a sale for them, holding back business in many lines and incurring heavy financial losses to the grower. The following resolutions were adopted:

"Be it resolved, That at the present time, in these two counties and others, thousands of sacks of beans are in storage and unable to find sale for them at a price which will net the grower cost of production. Many growers have obligations and expenses to meet that were contracted in raising these beans and a large amount of this money has had to be borrowed from the banks, and insomuch as these beans were largely grown at the urgent request of the Government and the United States Food Administration officials, we feel that it is their duty to assist in every possible way to find us a fair market price for these beans.

"Be it further resolved, That we believe that all importations of foreign beans should be stopped and no more allowed until all the beans that were grown are disposed of.

"Be it further resolved, That with the Victory Loan coming on, many of the growers, in their present condition, will find it almost impossible to buy the bonds that they wish to, and assist the Government as they would like to."

YUBA FIELD CROP SITUATION.

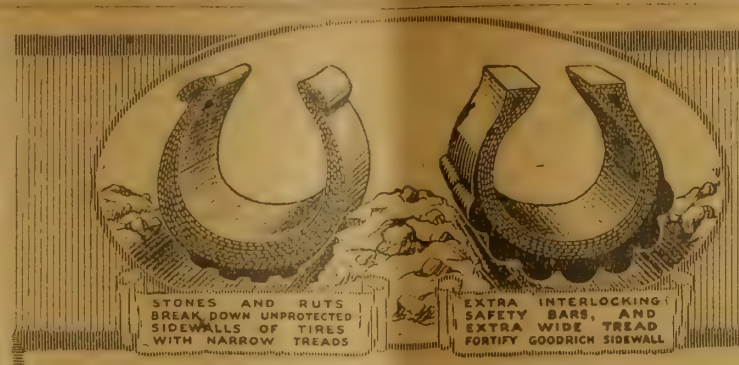
Pitiable tales are heard from many bean farmers of Yuba county who are desperately hard up and must move their beans soon, as noted by Farm Advisor William Harrison. Acreage last year amounted to 5000 acres, which was double that of 1917. Wheat occupied 12,000 acres in Yuba county in 1918 and is 22,000 in 1919, considerably of the Baart variety. Barley decreased from 20,000 acres in 1918 to about 5000 in 1919. Rice will have increased from 6780 acres in 1918 to about 10,000 in 1919, plus other rice projects which are being delayed until water is assured. Nearly all gravity water has been taken up and several outfits are boring wells for rice. Seed potato growing offers the brightest prospects for the hill districts of Yuba county, in Mr. Harrison's opinion. Fine-flavored potatoes grown in the hills last season could not be hauled on account of bad roads, although one concern alone shipped 300 carloads from Idaho to the valley part of Yuba county last season. Camptonville is the center of the Yuba potato district and is ideal for seed potato growing, as per conditions observed by Mr. Harrison in Colorado and other States.

WHICH IS THE BEST ALFALFA?

To the Editor: What is the comparative food value of Hairy Peruvian and Chilian alfalfa? A dairyman tells me that every time he begins to feed the Hairy Peruvian the production of milk diminishes, and when he turns to Chilian it increases. In feeding rabbits I notice that they eat the Hairy Peruvian much cleaner than the Chilian.—G. W. K., Ripon.

[Answered by J. M. Bomberger, Modesto.]

Just as the variations between individuals within any one dairy breed are vastly different than the breeds when compared one with another, so is the variation between lots of Hairy Peruvian hay produced by different farmers greater than the variations between Hairy Peruvian and Chilian, each as a class. Much more depends on how hay is cared for at harvest time and the stage at which it is cut than upon the variety. Lately I have been selling Peruvian alfalfa hay, and when we got through and began selling Chilian the buyers were unanimously in favor of the Peruvian. I think you will find as many feeders in favor of Hairy Peruvian as against it from the feeder standpoint.



Rut Riding, and the Goodrich Sidewall

BETWEEN your farm and town is at least one stretch where you either drive in the groove of wagon trucks—or ride the bumps beside them. Without arguing which you do—or which is better for your tires—it is enough to say the ruts grow deeper day by day—and their sides of sand and gravel bits grind busily away at the sidewalls of your tires.

Turn now to Goodrich Tires, and see how the interlocking safety bars of Goodrich's thick, practical *safety tread* spread beyond the ball of the tire to the sides of it. And examine how the extra wide tread carries on up the sides beneath the side strips, and fortifies the inside of the tire with an extra shield of tough tread rubber.

That's the Goodrich answer to rut riding. It is one reason why Goodrich Tires meet the demands of farm service as if they were designed expressly for it.

For a Ford Car, Goodrich's "Three Seventy-five" Tire—a bigger Ford size—makes a super-Ford out of your car.

For a high power car, Goodrich Silvertown Cord Tires deliver a special high power service. Remember that whether you need pneumatic tires or truck tires, a farm on a Goodrich basis is saving money on its tires.

Buy Goodrich Tires from a Dealer

GOODRICH TIRES "BEST IN THE LONG RUN"

Full powered

"Red Crown" is straight-distilled, all-refinery gasoline. Look for the Red Crown sign before you fill.

STANDARD OIL COMPANY (California)

RED CROWN GASOLINE

The Gasoline of Quality

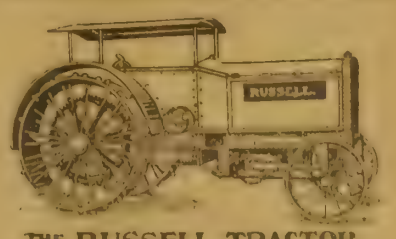
The Threshing Problem Solved

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Save $15 to $200

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Blake, McFall Co., Portland, Ore.

Are Your Crops Handicapped?

[Written for Pacific Rural Press.]

If you should start to make engines, and if you had to pay 25 per cent more for iron than your competitor whose engines require the same amount of iron as your own you would either have to sell 25 per cent higher than he does or else go out of business. With patented engines, you might induce people to pay 25 per cent more. But with farm crops, such as rice, alfalfa, wheat, sugar beets, cotton, beans, etc., there is not so much chance for you to patent the product of your district or to point out its superiority over that of other districts and thus to sell at a higher price than others in California which grow the same crops.

ALFALFA WATER HANDICAP.

If you grow alfalfa and have to pump water from 100 feet below the surface, you will be at a serious disadvantage in the struggle for prosperity as compared with an alfalfa grower who lifts water only 25 feet, other conditions being equivalent.

RICE SOIL HANDICAPS.

Measurements on both sides of the Sacramento Valley a few years ago showed that on 18 fields, half on the east side and the others on the west side, rice growers used as little as one second-foot per season per 80 acres, and as much as one second-foot per 24 acres. One field used 18.7 acre-feet of water per acre, while another used 4.27 acre-feet per acre. The average was 8.23. In all cases the rice had enough water. The variation was partly due to careless wastage, but chiefly to varying soil and subsoil conditions, preparation of seedbed, depth to water-table, proximity of sloughs, and methods of handling water. One of the best growers in the valley used an average of 4.58 acre-feet per acre on one field for each of three seasons. The man who used 18.7 acre-feet per acre had to sell his rice at the same price and he had no greater yield. He was handicapped in achieving prosperity by the extra cost of the water, which probably amounted to $15 or $16 per acre.

BEAN VARIETIES AND INSECTS.

Certain varieties of beans are now grown in well-defined districts of California. Competition has eliminated them from other districts. Lima beans brought grief to many a man who tried to grow them in the interior and sell in competition with the coast growers because he couldn't get the yield per acre. The process of segregation of varieties is not yet complete and hundreds or thousands of growers are still trying to become prosperous growing beans under a handicap of less favorable conditions than bean men have in other districts. Certain sections are known to be worse infested with weevils, red spider, etc., than others, and if all costs of production are the same growers of infested beans go to the discard.

COTTON YET TO BE SEGREGATED.

Varieties of cotton grown in the wrong localities and sold in competition with those grown in favorable localities either take a lower price per pound for lower quality or a lower price per acre for lower yield. In either case, other things being equal, it was a mistake to try the competition; and the attempt has reduced prosperity. Some sections of shorter or wetter seasons may yet come to grief trying to compete with those better adapted.

ORANGE SEASONS AND FROSTS.

Early oranges from California capture the holiday trade and high prices which our chief orange district cannot touch because its oranges ripen too late. If it were not for this advantage, it is hardly to be doubted that our early orange districts would suffer acreage contraction rather than the expansion they are now enjoying. But within each district are some growers whose prosperity is negligible due to less favorable conditions than their neighbors. Chief of these perhaps is the liability to frost. The man who has to spend $30 per acre fighting frost cannot be as prosperous as his neighbor who is practically frost-free, always assuming that other things are equal.

In the investigation to learn the cost of producing milk for San Francisco, it was found that the cost per gallon varied over 200 per cent from the lowest cost reported.

INVESTIGATE BEFORE PLANNING.

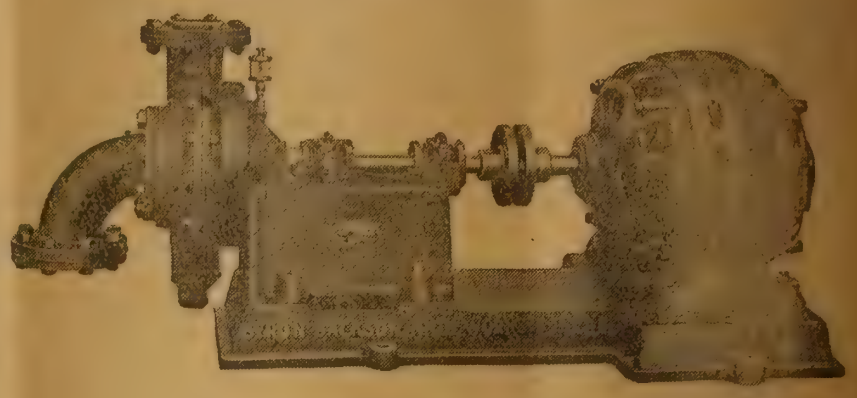
These illustrations are enough to emphasize the necessity of considering this economic phase of farming before the crop plan is made out for the year or for the decade or two in case of tree fruit. Other considerations may out-balance the handicap of unfavorable conditions and higher cost of production, but the farmer who seeks prosperity will always investigate whether the crop he proposes to grow will have to compete under handicap with the same crops grown elsewhere under more favorable conditions.

The new Modesto irrigation board expects shortly to have a joint meeting with the Turlock board to arrange an election for the voting of bonds for the construction of the Dom Pedro dam.

UNCLE SAM DEPENDS ON YOU!

Is your soil producing the maximum?

"BYRON JACKSON" PUMPS are built to meet every condition of "supply and demand" on your ranch.



Write us your conditions.

New Catalog No. 60-A for the asking.

BYRON JACKSON IRON WORKS, Inc.

LOS ANGELES SAN FRANCISCO VISALIA



Maud Muller Up To Date

"RAKING the meadow sweet with hay" loses none of its romance while it gains in its dollars-and-cents aspects by the use of up-to-date haying tools.

Haying time waits for no man. To guard against possible loss be prepared to mow, rake, ted and load your crop from hayfield or meadow at the proper moment.

For years you have been cheerfully complying with Government request to save materials by repairing your old machines rather than making replacements. Now that the need for this has passed, would it not be the part of real economy to buy a new machine and be assured of uninterrupted and maximum service at a time when a break-down would mean serious embarrassment and loss.

Deering, McCormick and Milwaukee Mowers, Rakes and Tedders and International and Keystone Side Delivery Rakes and Loaders

are doing satisfactory work on thousands of farms, needing little attention, and successfully meeting all hayfield emergencies. The combined side-delivery rake and tedder is a winner.

International and Keystone loaders lift the hay 10 feet without injury to blossom and leaves. Sweep rakes, stackers and combined sweep rakes and stackers clean up big fields in a hurry.

The use of these thorough-going, swift, dependable tools is making **haying** time **paying** time.

And hand in hand with every haying tool goes service. The I H C dealer is equipped to handle quickly your repair and adjustment needs. He is always in close touch with one of our 89 branch houses, whose resources and facilities are at your service.

Our organization, being an essential industry, has been speeded to top-notch efficiency. By anticipating your needs and ordering early, you make it easier for us to take back our soldier boys without disturbing our present organization.

Write us for catalogues and buy your haying equipment from the I H C dealer.

The Full Line of International Harvester Quality Machines

Grain Harvesting Machines

Binders Push Binders
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Tedders Loaders (All types)
Baling Presses Rakes
Sweep Rakes Stackers
Comb. Sweep Rakes & Stackers
Bunchers

Belt Machines

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Power Machines

Kerosene Engines
Gasoline Engines
Kerosene Tractors
Motor Trucks
Motor Cultivators

Corn Machines

Planters Motor Cultivators
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Cultivators Binders Pickers
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Los Angeles, Cal. Portland, Ore. Salt Lake City, Utah
San Francisco, Cal. Spokane, Wash.

Field and Garden Suggestions

[Written for Pacific Rural Press.]

Delta Potatoes Cleaned Up.

The Delta potato crop is cleaned up, according to Henry E. Hansen, manager for George Shima at Stockton. The last of the 1918 crop on Mandeville island has just been dug. The Los Angeles market, March 27, paid an increased price for Delta potatoes and a decreased price for Idahos. Fancy "Red Bag" potatoes sold at $3 per cwt., the freight from Stockton to Los Angeles being 31½c. Idahos went down to $2.15. The quantity of potatoes now in Stockton warehouses are mostly for seed. Mandeville island will again grow potatoes, requiring 54,000 sacks of seed at 9 sacks per acre. It is doubtful whether Bouldin island will be cropped to potatoes this year, but the work of pumping water off from it is progressing favorably. While the 1918 crop has been moved early in the season, Mr. Hansen hesitates to forecast the probable 1919 acreage. Costs of production were particularly high last year and many outfits did not make the profits they expected.

All-American Canal and Public Land.

To the Editor: Regarding your article in the issue of March 8 about an all-American canal for Imperial Valley, is the land to be irrigated from this canal in private or Government ownership, and where should we apply to file on some of it.—P. H. G., Wabuska, Nev.

Your inquiry was referred to the U. S. Land Office at El Centro. Their reply follows: "The majority of land which is not now under irrigation but is proposed to be irrigated from the "all-American" canal, is yet Government land, but not now subject to filing. It is withdrawn from all forms of entry, disposal, or sale, by order of the Secretary of the Interior, dated April 20, 1909. It is not owned by private interests. The land office at which filings must be made for this land is located at El Centro, Cal."—Vene Bloomer, Register, and B. H. Lien, Receiver.

Objects to Bee Bills.

To Senator W. E. Brown, Los Angeles: Several bills have been proposed regarding the bee industry. I have studied these carefully and find them very objectionable. The Government at this time is doing much to foster the bee business, especially small beginners, asking the beemen to encourage them in every way. This law, if made operative, would entirely shut out small investors, which is the object of the originators of this measure. It would entirely eliminate those who do not belong to the California Honey Producers' Exchange. I feel sure that if you weigh these bills carefully you will find them not so conducive to the best good of the industry as the existing law. Bill numbers are 782, 797, 766 and 779. All have the same earmarks.—Alma Olson, manager Golden Sunset Apiaries, R. 1, B. 33, Burbank.

Rice Irrigation.

"We first turn water onto rice right after it is planted just to sprout it," says J. V. Biard of Glenn county. "We turn it off just before the rice comes up and turn it on again when it is about four inches tall. If we don't get it on then, the rice is likely to lie down and never straighten up again. The ground must be kept deeply submerged continuously until time to dry it off for harvest. Rice needs a steamy atmosphere so you can see the steam, and the water should get uncomfortably warm during the day.

Potato-Growing on the Toboggan.

Acreage in early potatoes for this year will be greatly decreased, according to the Bureau of Crop Estimates. Reports from Southern California show the same tendency—Los Angeles county 6000 acres as against 7000 in 1918, Orange county 3000 acres against 3500 in 1918, San Fernando Valley 2000 acres against 3500 in 1918. The high cost of fertilizer, labor, seed, packages, high freight rates, and fear of car shortage, as well as the low price and losses of 1918, are held responsible for the smaller plantings.

Sudden Grain Planting.

"I have seen land plowed, seeded, harrowed, and rolled all at one operation; but ground which is in good shape for plowing is too wet to harrow and roll," says Marcus De Witt of Sutter county." For emergency planting, a good procedure is to broadcast and plow under with 8-inch bottoms."

Highway Commission Report.

The first biennial report of the California Highway Commission is recently printed. It contains a volume of information which ought to be in the minds of our citizens, because we will soon be called on to vote whether we want a $40,000,000 bond issue for extension of our highways.

CUSHMAN

Light-Weight Farm Motors

Cushman Engines weigh only one-fourth as much as ordinary farm engines, but they are **balanced so carefully** and **governed so accurately** that they run much more steadily and quietly. They are also the **most durable farm engines** in the world, on account of improved design and better material and construction.

4 H. P. weighs only 190 lbs., being only 48 lbs. per horsepower. Besides doing all ordinary jobs, it may be attached to any grain binder, saving a team, and in a wet harvest saving the crop. Also it may be used on corn binders and potato diggers. Very easy to move around from job to job.

8 H. P. weighs only 320 lbs., being only 40 lbs. per horsepower. For all medium jobs. Also may be attached to hay presses, corn pickers, saw rigs, etc. 8 H. P. and larger Cushman Engines are all double cylinder.

15 H. P. weighs only 780 lbs., being only 52 lbs. per horsepower. For heavier farm jobs, such as 6-hole corn shellers, ensilage cutters, large feed grinders, small threshers, etc.

20 H. P. weighs only 1200 lbs., being only 60 lbs. per horsepower. For heavy duty jobs, such as shredders, shellers, grain separators, heavy sawing, etc.

Cushman Engines stand up under wear and tear and do not wear unevenly and lose compression. Every running part enclosed, free from dust and dirt and properly lubricated. Equipped with Throttling Governor, Carburetor, Friction Clutch Pulley and Water Circulating Pump. Ask for book on Light-Weight Engines.



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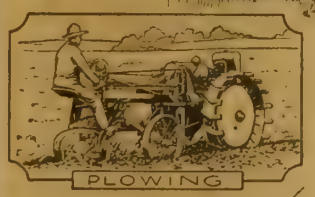
One Man Harvests 40 Acres a Day with this Outfit



MOLINE UNIVERSAL TRACTOR

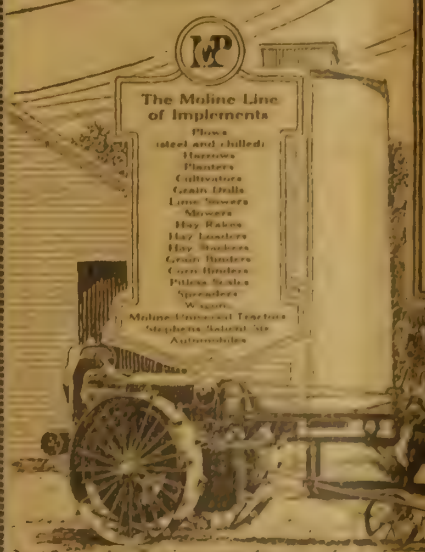
and the new

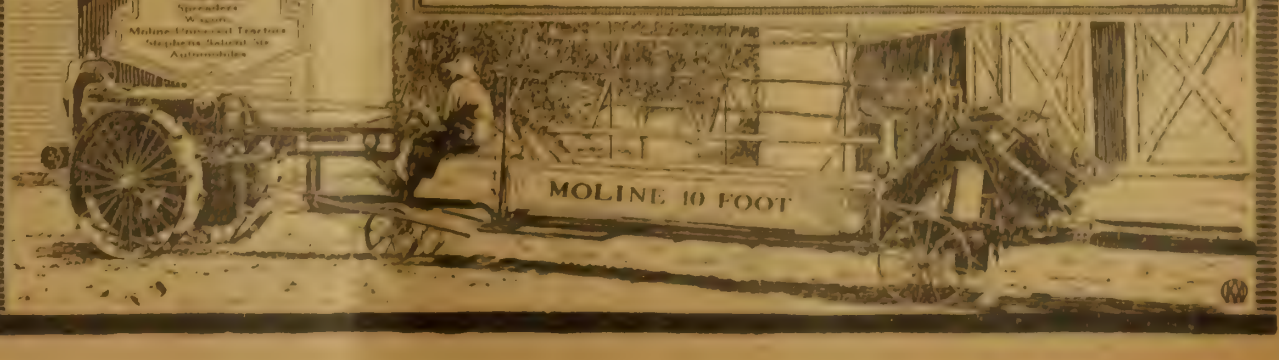
Moline 10 Foot Grain Binder











This new Moline 10-ft. tractor binder attached to a Moline-Universal Tractor running 3½ miles per hour, with one man in control of both tractor and binder, will cut 40 acres of grain in a ten-hour day. This is more than 2 men and 8 horses with two 8-ft. binders can do; and more than 3 men with any other tractor pulling two 8-ft. binders can do.

Considering the amount of work it will do, and the saving in expense, the Moline 10-ft. binder is the lowest priced binder ever made, and it will last twice as long as any other. But of greater importance is the fact that you can now harvest your grain when it is ready in half the time you ever did before—this may save you the price of the entire outfit any rainy season.

The Moline 10-ft. Binder is made to work with the Moline-Universal Tractor. One man controls both tractor and binder from the seat of the binder. The entire outfit is easily and quickly backed to turn square corners so that a full width of cut can always be maintained. The new Moline Binder is constructed heavier throughout and has much greater capacity than any horse drawn binder.

Equipped With Hyatt Roller Bearings

Important bearings, 32 in all, are equipped with Hyatt roller bearings. These bearings double the life of the binder, allow it to run at much faster speeds, make lighter draft and require only one oiling a season. This feature alone saves one hour or more a day. Elevator gears are enclosed and packed in grease. There are many other features about this binder which enable you to harvest faster, cheaper and better than you ever did before.

A header attachment is provided so that the Moline Binder can be easily, and at small expense, converted into a header.

If you have only 20 acres of grain to cut, it will pay to own this outfit. You will pay for binder cutting your own and neighbor's grain.

Moline Tractor Works Year 'Round

After harvesting you can use your Moline-Universal Tractor to run a small separator and do all the threshing in your neighborhood. There is no end of uses for the Moline-Universal Tractor. You can plow, disc, seed, cultivate, mow, harvest, etc., and do all your belt work with it.

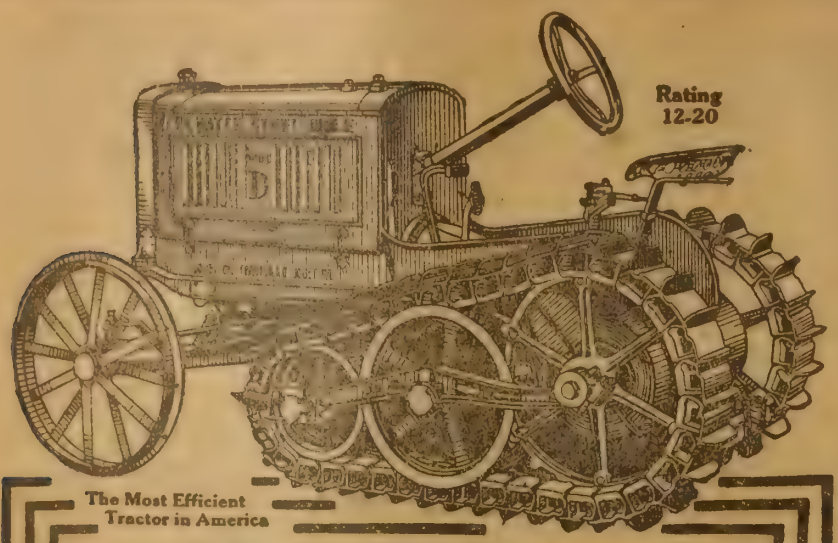
The Moline-Universal Tractor does all farm work *including cultivating*, and one man controls both tractor and implement from the seat of the implement.

Thousands of farmers in all parts of the country are proving every day that the Moline-Universal is the most practical, economical and efficient tractor made, that it practically doubles a man's results and reduces expense.

It will pay you to use the Moline-Universal Tractor and Moline Grain Binder this year. See your Moline Tractor Dealer now or write us for full information.

Moline Plow Company, Moline, Illinois

Manufacturers of Quality Farm Implements Since 1865



The Most Efficient Tractor in America

SELF-STEERING

The front wheel of the Bates Steel Mule follows the furrow wall as faithfully as a locomotive follows the rail. Thus the operator's attention is free for the plows.

In addition to this exclusive feature the Bates Steel Mule incorporates all the essentials that go with reliable service, such as roller-bearings throughout, hardened cut stel transmission gears, valve-in-head hardened cut steel transmission gears, valve-in-head kerosene motor, completely enclosed working parts

Come and see this machine before you decide which tractor you want.

THE ONLY CRAWLER TRACTOR ADAPTED TO BEET CULTIVATION WITHOUT MAKING CHANGES.

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KROGH PUMPS absolutely hydraulically and automatically water balanced. No end thrust whatsoever.
Also DEEP WELL TURBINE PUMPS for bored wells 10 inch diameter and up
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Western Canada for years has helped to feed the world—the same responsibility of production still rests upon her. While high prices for Grain, Cattle and Sheep are sure to remain, price of land is much below its value.

Land capable of yielding 20 to 45 bushels of wheat to the acre can be had on easy terms at from $15 to $30 per acre—good grazing land at much less.

Many farms paid for from a single year's crop. Raising cattle, sheep and hogs brings equal success. The Government encourages farming and stock raising. Railway and Land Co's. offer unusual inducements to Home Seekers. Farms may be stocked by loans at moderate interest. Western Canada offers low taxation, good markets and shipping; free schools, churches and healthful climate.

For particulars as to reduced railway rates, location of land, illustrated literature, etc., apply to Supt. of Immig., Ottawa, Can., or

GILBERT ROCHE, 3-5 First St. Sheldon Bldg., San Francisco, Cal.
Canadian Government Agent.

Highway Bond Issue, Forty Million!

[Written for Pacific Rural Press by E. E. Hodges.]

Enthusiasm and unanimous support almost to be marveled at are in evidence from all parts of the State regarding the proposed bond issue to finish our system of State highways outlined under the first bond issue and to include a number of new projects which have been urged at the present session of the Legislature. Repeated hearings have been held by the Roads and Highways committees of the Legislature under Senator M. B. Johnson of San Mateo county and Assemblyman W. J. Martin of Monterey county, to consider the merits of proposed roads. Very few of the latter seem to have any demerits—at least no proponent of one road seems willing to object to any other proposal. But we hear unanimously from representatives of various parts of the State that the people are in a mood to vote overwhelmingly for any sized bond issue which may be necessary to complete whatever proposed highways may be OK'd by the Legislature's highway committees. The latter have used every effort to obtain full information as to the necessity, mileage, cost, and condition of every proposal and the amount of traffic or travel it will serve.

PAVED ROADS WANTED NOW.

Not only do they want the roads built, but they want them now, and enthusiasm greeted the suggestion of so amending the constitution by a special election that a special session of the Legislature could be called to submit the bond issue at another special election and have money available by next Fourth of July.

A roll call to which representatives of practically all of the counties responded showed that they were pleased with the recommendations submitted and would vote bonds up to $40,000,000 anyhow.

The committees in joint executive session then decided on a $40,000,000 bond issue, though strong pressure tried to raise the limit to include some projects which they have left out. We give below a summary of the work to be included:

RECOMMENDATIONS FOR THE HIGHWAY BOND ISSUE.

For the completion of the original State Highway system and for the State to complete in their entirety the eight co-operative laterals enumerated in the Highway Act of 1915, including return to the several counties which have expended moneys on these eight co-operative roads such sums as have been expended by them under the co-operative agreement	$20,800,000

The amounts for the construction of new roads proposed by this committee are as follows:

Barstow to Needles, 180 miles; repair present road	$360,000
Oxnard to San Juan Capistrano, 78 miles; grading and paving	4,000,000
Barstow to Mohave, 75 miles; repair existing roads	150,000
Santa Maria to Bakersfield, 74 miles; grading only	1,000,000
Skyline Boulevard, San Francisco to Santa Cruz, 60 miles; grading and paving	2,471,000
Rio Vista to Fairfield, 24 miles; paving	384,000
Auburn to Verdi, 96 miles; paving to Colfax; grading to line and surfacing where needed	1,000,000
Ukiah to Tahoe City, 186 miles; paving partly macadam; graded Grass Valley to Tahoe City	2,700,000
Crescent City to Oregon line, 40 miles; grading only	400,000
Santa Rosa to Sheliville, 24 miles; paving	450,000
Big Pine to Oasis, 30 miles; grading	300,000
Placerville to Sportsman's Hall, 14 miles; macadamizing	100,000
Relocation of Feather River Canyon Road, 65 miles	850,000
Kings River Canyon Road, 20 miles	100,000
Calistoga to Lower Lake, 32 miles	200,000
Mecca to Blythe, 100 miles	300,000
Rumsey to Lower Lake, 35 miles	250,000
San Gabriel Canyon Road	127,000
Arroyo Seco Road	100,000
Lancaster to Baileys	800,000
McDonalds to Navaro, 47 miles	600,000
Carmel to San Simeon, 53 miles	1,500,000
Klamath River Road, 132 miles; grading and drainage	612,500
Susanville to Doyle, 47 miles; grading and gravel	240,000
Pacheco Pass Road into Hollister, 8 miles; paving	150,000
Three Rivers to Sequoia Park, 14 miles; paving	300,000
Bear Creek Canyon Cut-off; grading	100,000
Michigan Bar to Jackson, 22 miles ($220,000 requested)	100,000
Orland to Chico, 21 miles; paving	250,000
Tiburon to Alto, 5 miles	80,000
Total	$39,974,500

Projects omitted, though strongly supported, are: Lake Almanor road, Chico to Susanville, 22 miles, $220,000; Oroville to Willows, 35 miles, $375,000; Madera to Mariposa (Yosemite Valley route), 65 miles, $1,500,000; Red Bluff to Eureka, no definite estimates; Bakersfield to Inyokern, 89 miles, $700,000. The last-named road is the only one across the Sierras south of the Feather River Canyon route, which would be open the year around. Its proponents have made a vigorous campaign against being left out, as have also those who believe that the State ought to make a permanent road from Madera to Mariposa Big Trees.

Shall I Grow Sorghum or Maize?

[Written for Pacific Rural Press by Tulare Rancher.]

I notice your advice to a Tulare rancher to the effect that milo maize can be planted, as the standard expression goes, "after all danger of frost is past" and ground gets good and warm. This rule is a little better theoretically than practically down here, as it seems very difficult to get milo to come up properly until very hot weather comes and frost is a hazy recollection. You can get a better stand in June than you can earlier, and June is early enough, too. Milo seems here to require much later planting than the White Egyptian and in the judgment of the writer is far superior to it in every sense of the word.

In my judgment the grain sorghums are a rather unsatisfactory crop. The only place to grow them is on rented land when the planter intends to move off in the fall and leave the next man to care for the wreckage. At the best of it, the financial returns are not high; there is always a big risk of rain injury in the fall, with serious trouble in taking care of the crop without much of it molding; the roots and fodder are a trouble and expense when it comes to the following crop and the sorghums leave the soil cemented together and poorer by far in humus. Even a half crop of pink beans is quite certain to bring in about as much money as a fair crop of milo, provided a local market can be secured, and the soil is left rich and mellow.

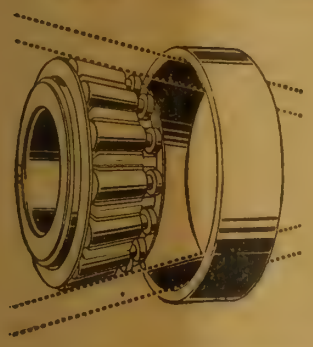
While the exposed heads of milo will make a field look like prosperity, the much heavier ears of Indian corn, where that can be profitably grown, will pay better in the long run; and the husks will prevent bird injury or damage by rain and foggy fall weather; while the fodder is far more valuable, easier handled, and after the fodder is off the ground the land is in better shape and easier to handle than where milo is grown. Of course, milo will get by on poor land and with poor care, while things have to be "right" for Indian corn. When a choice between the two can be made, the writer prefers the Indian corn.

HINTS ON STARTING MILO.

A neighbor who grows considerable milo every year for his poultry always soaks his milo seed before planting and thinks he gets a better stand and quicker growth by so doing. He takes a couple of pounds of seed, or as much as he is going to plant at one time, puts it in a bag and soaks it over night. Then in the morning he spreads it out in the shade in some safe place until all the free moisture is dried off and it will be as loose in the planter as ordinary dry seed, and then plants it in the usual way.

There is one advantage of milo over Indian corn—it seems to be far better as a standby in poultry food. In this immediate section it has been, since America started to save wheat, about the only grain fed to fowls, except, of course, for milled foods in certain flocks.

TIMKEN TAPER



Dotted lines show how the inside of the "cup" of a Timken Bearing is *tapered* to fit over the *tapered* rollers.

"Take Up" instead of "Wear Out"

Suppose your valves couldn't be ground when they got leaky.

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Suppose bolts couldn't be tightened up after they worked loose.

Your truck, tractor or motor car would be mighty short lived if it were not for take-up here and at other points where wear goes on. Rattles and pounds would soon develop to tear the machine to pieces.

In the bearings which always have to stand a lot of hard knocks and heavy pressure, take-up is especially important. The take-up feature of the Timken Roller Bearing enables you to make a new bearing of it at the end of every season. All that's needed is a part turn of the adjusting nut or removal of a shim.

Another important thing that Timken Taper does for the tractor, truck or passenger car, in wheels, differential, and other points of service, is to take end thrust just as well as downward load.

Because of Timken Taper, Timken steel and workmanship, Timken Bearings not only resist wear themselves, but they protect and extend the life of other important working parts of the machine. Learn more about Timken Taper in the booklet "Timken Bearings for Farm Tractors."

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(Catalog No. 260)



The frame of this Cultivator is made of one continuous piece of high carbon steel with a truss connecting it to the main castings, supporting the two steering wheels. This construction makes a cultivator that is almost impossible to break down in the center and in consequence the wheels are always in line and under easy control.

The lower frame or tooth bar is from the same quality of steel with a strong arm at each end which connects with the lifting rod, allowing no chance for the frame to dip or run deeper at the ends. The seat is set back far enough to give an unobstructed view of the rows. The foot control of the front wheels is adjustable with a turnbuckle for taking up wear and is very easy on the operator. A lock is provided for the rear wheel that holds it rigidly in line except on the turns. An important item for the beet grower is that the sweeps, hoe steels, chisel points and all repair parts are carried in stock. You do not have to wait for them to be sent from the Eastern manufacturer.

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The LAUSON 15-25 DUST PROOF-ALL GEARS ENCLOSED

is built so that mechanical perfection and ruggedness appear in every detail of construction. It will stand the hard gruelling work of power farming day in and day out without a rest. Sold with or without Christensen starter.

Known as the Pattern Tractor

It is dust proof; all the gears, including the final drive, being fully enclosed and running in a bath of oil.

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You owe it to yourself not to purchase a tractor until you have seen the Lauson. Taking into consideration its power and durability, it is the most economical farm power unit on the market today. Your nearest local dealer will be glad to demonstrate the Lauson on *your* farm. If you don't know him, we will be glad to send you his name and address.

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The Fresno tractor demonstration has been postponed indefinitely. Perhaps the California Tractor and Implement Association will hold its next State demonstration in the vicinity of Fresno.

Mechanical Power on the Farm

Users of tractors, engines, pumping plants, motor trucks, automobiles, electric motors, and other mechanical farm power are invited to make this department an exchange of their experiences and troubles.

FOUR-WHEEL DRIVE AND STEERING FEATURES.

There is a notable increase of interest in motor trucks and tractors which drive by all four wheels. There is also an increase in the idea of steering motor trucks and auto trailers by all four wheels. The four-wheel drive feature doubles the traction and often gets trucks out of soft or slippery places where they would stick with traction on only two wheels. W. R. Hughes of the Pacific Nash Motor Co. tells of seeing one wheel of a Nash Quad pull the truck out of a slippery place where the other three wheels could get no traction. The power goes to the wheel which gets the traction, because of an automatic locking device in both the front and rear differentials, so that no one wheel can spin without spinning the rest.

With traction on all four wheels, the load can be evenly distributed over them instead of providing a great rear overhang which puts practically all of the strain of weight and pull on the rear wheels and their tires.

The four-wheel steering feature reduces power required to drive on turns where roads are softer than pavement. Rear wheels automatically follow in the tracks of front ones. On ordinary vehicles where they must make new tracks for themselves through mud, sand, and other soft roads, the draft is greatly increased.

NEW TRACTOR WITH BIG WORM DRIVE.

A new and distinctive tractor in California, though familiar in Oklahoma, Kansas, and Texas, is the Coleman worm-drive, four-wheel tractor just introduced to our State by the Hunt Tractor Co. of Sacramento. It has the largest worm gear (30 inches in diameter) we have seen on a tractor, permitting the worm to engage four teeth fully and two teeth partly. This reduces pressure per square inch and the worm drive is guaranteed for the life of the tractor. Its transmission runs in a straight line from the clutch in the flywheel to the worm, being shifted from its 2¾-mile forward speed to neutral and reverse by sliding straight-cut gears. The machine now on sale has 16-30 horsepower, the Climax motor turning 600 to 800 r. p. m. It is hoped that the 10-20 size also will be here in time for the Sacramento Tractor and Implement Demonstration, May 6 to 11. The wheels are equipped with Loxon lugs, cast bent angles which are hooked onto the wheel and all held in place by one master bolt.

SIXTEEN-VALVE TRACTOR.

A tractor new to Californians but which was exhibited at the San Francisco Automobile Show and will probably be at the Sacramento Tractor and Implement Demonstration, May 6 to 11, is the "Twin City Oil Tractor," a compact kerosene burner with all the latest improvements. We are not sure that one of their new 12-20 sixteen-valve in the head machines will be there, but such a model is on the market at least in the East. Two inlets and two outlet valves on each cylinder are claimed to exhaust burnt gases more freely and completely, so that the gas for each explosion is all entirely clean and therefore maximum power results. Complete emptying of the combustion chamber at each stroke also keeps down the heat and avoids pre-ignition. With 4¼-inch cylinders and a 6-inch stroke at 1000 r. p. m., the motor of this 12-20 tractor is claimed to develop 40 h. p. with gasoline or 35 with kerosene. The governor is enclosed and sealed to prevent careless alteration of engine speed. Its crankshaft is counter-balanced, though the four larger models made by this company are plain and the same distinction applies to its removable cylinder sleeves. Bosch magneto and impulse starter, force-feed lubrication by a geared oil pump, forced water circulation, and spur and bevel gear transmission are some of its other features.

DYNAMITE RELEASED.

Because no longer required for the public safety, the Director of the Bureau of Mines, in charge of explosives regulation, has made the following changes in the general information and rulings under the Act of October 6, 1917 (40 Stat. 385) and as amended by the Sundry Civil Act of July 1, 1918:

"1. All regulations relating to the purchase, possession, and use of explosives for reclaiming of land, stump blasting, ditching, and other agricultural purposes are revoked and no further license will be required.

"2. These revocations do not allow enemy aliens or subjects of a country allied with an enemy of the United States to manufacture, purchase, or sell, use or possess explosives at any time.

"3. Provided, that nothing in the above shall release any person whosoever from complying with the law in the matter of safeguarding and storing of explosives."

LIGHTFOOT ORCHARD TRACTORS.

With its machinery all between two tracks and being only 50 inches above ground at its highest point, and being only 52 inches wide, the new Monarch Lightfoot tractor is one of the most compact ones made. It is improved since the writer drove the first one shown in California at the Los Angeles Demonstration. It has the Monarch reversible driver and idlers and the simple wearproof tracks. It is steered by manipulation of the independent clutch to each track and will turn a square corner. The high tension ignition, impulse starter, force-feed oiling, force-pump cooling, and automatic governor all tend to remove worry from the driver. It weighs 3700 pounds and pulls 1400 pounds on the drawbar, being rated as 12-7 horsepower. This is one of the narrowest tractors made and is specially designed for vineyards and orchards.

PUMPS MAKE PEACHES.

"Before we installed pumps on our orchard, chiefly of peaches, in Sacramento county, we got about three full crops in five years," says President Geo. H. Cutter of the California Fruit Exchange. "The last six years we have been able to irrigate, and, barring a touch of frost, we have had six full crops. We attribute the regular crops largely to fall irrigation, which develops the buds plump and strong as the rains did last fall generally throughout the State."

POWER-LIFT PLOWS SAVE LABOR.

Ninety per cent of plows sold by the Pacific Implement Co. are tractor plows, and two-thirds of the sales of light tractor plows are fixed for power lift, according to Mr. Freeman of that company. The smaller tractor plows are economical chiefly in saving labor, but a hand-lift plow does not save enough labor to suit when power-lift plows are available.

REVERSIBLE AND STUMP-JUMP TRACTOR DISK PLOWS.

A new reversible hop and vineyard tractor disk plow will be shown at the Sacramento Tractor and Implement Demonstration, May 6 to 11, by the Spalding-Robbins Co., according to W. H. Cline. A "stump-jump" tractor disk plow will be another feature, the disks jumping over rocks, roots, or stumps independently of each other.

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ACTUAL photograph of 40-80 H. P. Avery Tractor in the Rice Fields near Chico, pulling 156 inches of plows, 10 inches deep, through black adobe, at a rate of 2½ miles per hour.

Avery Tractors stand up to their work—and work day in and day out without serious delays—without excessive upkeep costs—without expensive repairs or replacements.

Avery Tractors work in all soil conditions—they go where any tractor can go and in many places where other tractors cannot go.

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Over 700 California farmers bought Avery Tractors last year.

Write and let us give you the names of farmers who are using Avery Tractors with both satisfaction and profit.

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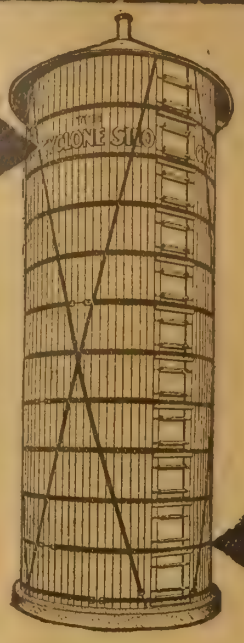
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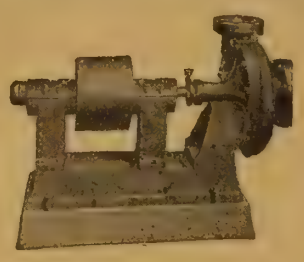
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345 S. Main St., Los Angeles, Cal.

Dangers in Imported Birds

[Written for Pacific Rural Press.]

To the Editor: I notice in the daily papers the announcement by Fish and Game Commissioner Connell that "$10,000 of the license funds would be spent in the introduction of the Greyson quail from Mexico," and former Fish Commissioner in backing the project says: "The success of the venture would represent a value to the State and sportsman which could not be reckoned in dollars." What, then, is it to be reckoned in—is it in the destruction of farmers' crops? Mr. Keller says the bird lives in both high and low altitudes, but prefers the agricultural sections, living in corn fields and other cultivated areas." Wise old bird! Of course, it prefers farmers to grow grains and fruits for it. What do you know about the Greyson quail? What does it eat?—Reader, Los Angeles.

You have raised a very important question. We do not know much about this Mexican quail. It is probably much like other quail, which are good crop-eaters, and is therefore likely to cost farmers more every year than the Game Commission proposes to pay for getting it.

Besides, introducing exotic birds is strongly condemned by those who know most about birds as a mistaken and dangerous enterprise. On this point it is pertinent to read the strong statement just published in a splendid California book on birds entitled "The Game Birds of California," by Grinnell, Bryant and Storer (1918, Univ. Press, Berkeley), as follows:

"A review of the attempts to acclimatize foreign game birds in California shows that the success attained has not been commensurate with the money and energy expended and that two of the underlying causes of failure have been the lack of careful preliminary investigation of the factors controlling acclimatization, and the improper method of liberation. Every introduced species must meet certain requirements, the chief of which relate to the climatic conditions of temperature and humidity, the food supply, the safety of breeding places, and the availability of suitable cover for protection from enemies. Not one, but many, limiting conditions must be satisfied; hence the chances that a given species will succeed in a new environment are small, and, also, the number of species possessing the necessary all-around adaptive ability is small. The possibility of establishing a foreign game species has been demonstrated in the case of the pheasant in Oregon, and more carefully planned undertakings here might lead to success in the case of other game species. Even though a foreign species proves to be desirable, there is always the attendant danger that the introduced bird will wholly supplant some native one, an event the full consequence of which must be carefully weighed. The chances of failure in acclimatizing the immigrant, of introducing an undesirable bird, of wholly supplanting some native species, and of introducing some contagious disease fatal to native species, all emphasize the great need of directing effort and money toward the conservation of native game birds rather than toward the introduction of foreign ones. Conserve our native species! There are none whose qualities are superior; they are part of the natural heritage of our land, and have been serviceable to us in the past; we are responsible for their preservation."

From all points of view, then, we are likely to waste our money and do damage "which cannot be reckoned in dollars" by going out to get this Mexican quail.—Editor.

Finance Committee Approves Millions

The Senate committee, March 24, juggled millions as easily as a newsboy juggles pennies. Probably they will not often again do so much business this session, and certainly they will not do big business more smoothly. No dissenting vote was heard. Most of the bills covered items approved by the Budget Board. Bills which they recommended for passage totaled $12,075,679.76. The largest item was for $10,000,000, to be obtained through a bond issue, for the purpose of creating a revolving fund to open up State land settlements similar to the one at Durham. It is covered in S. B. 246. Another million dollars was recommended for immediate appropriation under bill 221 for the same purpose. Those who have served with American armed forces are to have the preference. Forty thousand dollars was recommended for the Citrus Experiment Station. Fifty thousand dollars a year for all time to come until further action by a Legislature, was recommended for University extension work under bill 27. Two hundred thousand dollars a year as a similar continuing appropriation was put out for general University purposes under bill 28. Twenty-five thousand dollars for buildings on University Farm were likewise recommended under bill 29. Another continuing appropriation of $50,000 a year was recommended for the University Medical School under bill 31. Another continuing appropriation of $74,725 per year was passed out for University salaries under bill 37. Claim bills totaling $120,614.88 were also approved and bill 355, to co-operate with the Federal Government investigations in Siskiyou county, was recommended for $10,000.

Wasting the People's Money

To the Editor: I see that the lawmakers are about to get another $41,000,000 bond issue for the State highways. Now, I think it is time for the people to make a vigorous kick and vote it down and get some men into office that will not throw the peoples' money away. I will just mention one instance right here in Shasta county, where the State Highway Commission are surveying for a lateral. Nine men are at work here now for five or six weeks on a short piece of road of about five or six miles. Why, two men could do it in half the time. This is just throwing the people's money away, and this is no exception. This is the way it is worked all over the State. I believe in paying good wages, but I also believe that the man that works for the State at good wages should do a good day's work, or the people's authority should discharge him and get someone that will work. The people will not stand for this kind of work any more, and this $41,000,000 will be promptly voted down. There is too much stealing going on and it must be stopped.—Y. H. Schomberg, Redding, Cal.

REJUVENATED CORN BINDER.

A corn binder was discarded by field workers on University Farm, being apparently not workable any more, and a new one was asked. The machine was taken for part of the practical work in the Agricultural Engineering Division. One of the students took it apart, spent $25 for repairs, reassembled and painted it. The machine was used through last season and is ready for another. This is one kind of teaching you are asked to support by writing your legislators to use their influence in favor of Assembly bill 722.

WATER USERS

Anticipating Your Wants==

We have manufactured and stored in our factory one ordinary year's supply of Remco Tanks and will ship you a Remco Redwood Tank---any capacity from 500 gallons to 10,000 gallons, in 24 hours from receipt of your order.

If you want to connect your tank with your house and barns or irrigate your garden from it, we will ship you Remco Pipe with equal promptness, and our engineers will attend to all the details for you.

We also have in stock for shipment in one day a full supply of Standard Remco Silos, all ready to erect and fill.

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Catalogs, prices and further particulars furnished promptly.

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Redwood Tank Outlasts 4 Towers

Prior to American occupation in California (1846) a ranchman near Cayucos erected a Redwood Tank on a tower of other wood. Since that time he and his son, who succeeded him, have put four towers under this same tank, replacing towers that had decayed.

Four years ago the owner built a redwood tower under this famous old veteran tank and both are now good for many years to come.

There are hundreds and thousands of Redwood Tanks in California that are from 30 to 40 years old.

Guaranty Sale Sets High Average

A NEW Pacific Coast record was made at Sacramento, March 27, when 61 head of Holsteins, including several young bulls and calves, sold for an average of $1,045. Also it is claimed that this average is a world's record for a one-day sale.

We had reason to expect great things of this sale because we realized fully the earnest endeavor of the Californa Breeders' Sales and Pedigree Company to outdo last year's sale, when an average of $947 was made. A committee of expert judges visited nearly all of the leading herds on the Coast and selected animals that would rank with the best ever put through a sales ring anywhere in the United States. They included the highest record cow, the highest record bull and the highest record heifer ever sold in a Western sales ring; eight cows with records from 30 to 37 pounds and five cows bred to the highest priced bull of the breed.

Liberal advertising brought a large crowd—not curiosity seekers, but discriminating buyers. The rain did not dampen their enthusiasm and they bid freely, especially on animals with high records, strong breeding and outstanding individuality. Several cows started at from $400 to $600 and the bids went by big jumps to $1,000 and above before Col. Ben Rhoades began to get up speed. The Colonel was at his best and worked like a Trojan until about 8:30 at night, when the last animal was sold.

One of the big drawing cards was the yearling bull, King Abbekerk Johanna Segis, son of the world record cow in the Bridgford herd. He was started at $1,500 and was finally struk off to W. F. Mitchell of Visalia for an even $5,000. He is a wonderful individual and would have been cheap at $7,500. The 37-pound cow, Boweda, from the Bridgford herd, brought $2,400.

There was considerable speculation as to what would be bid for cows bred to the $106,000 bull, Carnation King Sylvia. There were three cows with good records and two heifers of strong backing, and the five averaged $1,415—rather low considering what the offspring should be worth.

An interesting feature of the sale, and a proof that animals bought at these sales give satisfaction, was the purchase by E. D. Barry, Jr., Daggett, of every animal in the consignment of A. W. Morris & Sons At the sale last year Mr. Barry secured two Prince Gelsche Walker heifers, one of which has since made a record of 21.94 pounds, and he was so well pleased with them that he came back for more from this same establishment. He was the heaviest buyer this year, securing a richly bred young bull and four cows and heifers, for which he paid a total of $10,400. One of the females, King Hengerveld Henriette with a 32-pound record, was the top female of the sale, bringing $4,000.

Fifty-four cows averaged $1,005 and seven bulls averaged $1,360, making the average for all animals $1,045. As will be seen by the accompanying table, the Morris consignment made the highest average, which was $2,080. Bridgford Company came second with an average of $1,887, and the consignment of Albert E. Smith, Sumas, Wash., averaged $1,359. This average would be increased to over $1,500 if a young bull calf was omitted.

The Washington consignments were favorably looked upon by the buyers, and Toyon Farms Association, Los Altos, bought five of the eight animals consigned by Mr. Smith; also one from Carnation Stock Farms. They were the second heaviest buyers, taking six head at a total price of $9,675.

The purchases of W. F. Mitchell and wife of Visalia amounted to $6,975 for four head; Carnation Stock Farms bought three head for $4,800; E. M. Morrow, Modesto, five head for $3,450; and J. E. Peck, Calexico, four head for $3,300.

Nearly all of the animals were bought by discriminating buyers who know values, and notwithstanding the high average no excessive prices were paid. The buyers are constructive breeders, who will add glory to the breed and to the sections in which they live by giving the animals good opportunities to make names for themselves or to increase records already made.

GUARANTY SALE NOTES.

Ava Model Hengerveld 2nd, a Smith cow bought by Toyon Farms Association for $2,050, has made over 1000 pounds butter in 319 days on semi-official test.

The State Legislature adjourned at 3 o'clock in the afternoon so that the members could attend the sale. Sure, a sale of this kind is more important than any legislative session.

Col. H. C. Cranke of Nezperce, Idaho, made his first appearance before a California audience, doing the ring work for Col. Rhoades. He is of the typical fat and jolly type and made a good impression.

The Burr Creamery Company of Los Angeles, who bought four head, are replacing all of their grades with purebred Holsteins. Pretty good evidence of the superior money-making value of registered stock.

It was announced that Tilly Alcartra, the world's most famous Holstein, owned by A. W. Morris & Sons, Woodland, would be sent to the Carnation Stock Farm, Seattle, to be bred to Carnation King Sylvia, the $106,000 bull.

The 30-pound cow, Stratford Segis Blanche De Kol, purchased by Carnation Stock Farms for $1,000, was bought by A. J. Stalder at the 1916 Hanford sale for $350. Who says that it doesn't pay to develop and test registered cows?

A. W. Morris & Sons brought down their young herd sire, Sir Aaggie Mead De Kol, and led him into the ring for spectators to see. They claim that he is the best bred bull in the world, according to the yearly records of his ancestors for many generations back.

E. D. Barry, Jr., the heaviest buyer at the sale, now has a herd of 14 registered Holsteins at his Todos Santos Rancho, Daggett. Watch him! He's a real live wire, and with the stock he bought this year he will be able to set a hot pace for some of the old-timers.

Albert E. Smith of Sumas, Wash., was so favorably impressed with California, and so well pleased with the way his stock sold, that he is considering seriously the locating of his herd in this State. He is a real constructive breeder and we would like mighty well to have him here.

Over 200 attended the get-together smoker and banquet held at the Travelers' Hotel the night before the sale. Fred W. Kiesel, president of the California Breeders' Association, was toastmaster, and talks

Consignors, Purchasers and Prices at Guaranty Sale

Consigned by Albert C. Smith, Sumas, Wash.

Ava Model Hengerveld 2nd, Toyon Farms Association, Los Altos	$2,050
Ava Hartog Pietertje, Toyon Farms Association, Los Altos	1,450
Korndyke Model Hartog 3rd, Toyon Farms Association, Los Altos	2,600
De Kol Butter Boy Belle 2nd, H. J. Long, Mason, Nevada	975
Unnamed bull calf, Toyon Farms Association, Los Altos	325
Princess Jonge Buckeye, Toyon Farms Association, Los Altos	1,000
Tobe Manor De Kol, E. M. Morrow, Modesto	925
Jessie Hengerveld Johanna, F. M. Helm, Modesto	1,500

Eight Head Averaged $1,359.

Consigned by Hollywood Farm, Hollywood, Wash.

Hollywood Ormsby Segis, S. G. Kounias, Modesto	$ 550
Hollywood Lilith Pontiac, W. J. Higdon, Tulare	750
Unnamed yearling heifer, J. E. Peck, Calexico	600
Pauline Fayne Hollywood Bessie, J. E. Peck, Calexico	825
Hollywood Bessie Canary, Burr Farm, Los Angeles	550
Hollywood Homestead Lilith, W. J. Higdon, Tulare	725

Six Head Averaged $666.

Consigned by Carnation Stock Farms, Seattle.

Ruby Pietertje of Forest Hill 2nd, Toyon Farms Association, Los Altos	$2,250
Carnation Skylark Segis, H. J. Long, Mason, Nevada	1,000
Gerben Colantha Parthenea, Jno. D. Patterson, Patterson	1,375
Carnation Segis De Kol, J. M. Campbell, Escalon	825
Segis Johanna Walker, R. F. Bradley, San Bernardino	425
Carnation Rag Apple De Kol, Burr Farm, Los Angeles	675
Carnation Segis Colantha, T. J. Gist, Tulare	1,125

Seven Head Averaged $1,096.

Consigned by McAlister & Son, Chino.

Miss Pontiac Nudine of Springvale, J. E. Peck, Calexico	$1,200
Georgie Pontiac 2nd, H. H. Sisson, Willits	300
It Korndyke May, Mrs. W. F. Mitchell, Visalia	700
It Tola, Gotshall & Magruder, Ripon	950
It Idyl Segis, Gotshall & Magruder, Ripon	1,450
It Meta Kuperus, W. F. Mitchell, Visalia	475
It Segis Clorinda, Burr Farm, Los Angeles	825
It Changeling Wildwood, Gotshall & Magruder, Ripon	450
Miss Johanna Woodcroft Pietje, R. F. Bradley, San Bernardino	550
It Cornucopia Wayne (male), E. J. Weldon, Sacramento	400
It Blonde Pietje (male), Geo. P. Robinson, Sacramento	425

Eleven Head Averaged $702.

Consigned by Bridgford Company, Knightsen.

Boweda, Carnation Stock Farm, Seattle	$2,400
Sarah Topsy De Kol, Carnation Stock Farm, Seattle	1,400
Jessie Fobes Burke, H. E. Cornwell, Modesto	1,175
Belle Faskie Hengerveld De Kol 2nd, E. M. Morrow, Modesto	600
Upland Zeffie Wayne, E. M. Morrow, Modesto	750
King Abberkerk Johanna Segis (male), W. F. Mitchell, Visalia	5,000

Six Head Averaged $1,887.

Consigned by A. W. Morris & Sons, Woodland.

Sir Aaggie Walker (male), E. D. Barry, Jr., Daggett	$2,400
Dictime Clyle Walker, E. D. Barry, Jr., Daggett	1,500
Princess Lint Walker Burke, E. D. Barry, Jr., Daggett	1,500
Princess Contenta Walker, E. D. Barry, Jr., Daggett	1,000
King Hengerveld Henriette, E. D. Barry, Jr., Daggett	4,000

Five Head Averaged $2,080.

Consigned by R. F. Guerin, Visalia.

S. V. K. P. Waxana of Sunnyside, R. F. Bradley, San Bernardino	$ 375
Jeanie Veeman of Sunnyside, Alex Whaley, Tulare	1,000

Two Head Averaged $687.

Consigned by Alex Whaley, Tulare.

Eldorado Winifred 2nd, W. F. Mitchell, Visalia	$ 800
Mary De Kol Pontiac Segis, R. F. Bradley, Sacramento	450
Rag Apple Alcartra, E. M. Morrow, Modesto	625

Three Head Averaged $625.

Consigned by W. F. Mitchell, Visalia.

Black Patti, E. M. Morrow, Modesto	$ 550

Consigned by W. J. Higdon, Tulare.

Miss Nudine Fobes Clothilde, J. E. Peck, Calexico	$ 675

Consigned by F. W. Kiesel, Sacramento.

Natoma Alcartra, H. M. Cross, Merced	$ 600
Dame Walker Prilly, R. F. Bradley, San Bernardino	425

Two Head Averaged $512.

Consigned by Gotshall & Magruder, Ripon.

Sir Skylark Ormsby Hengerveld Pet 2nd, W. J. Higdon, Tulare	$1,700
Karlray Pontiac Ormsby (male), R. L. Holmes, Modesto	300

Two Head Averaged $1,000.

Consigned by Toyon Farms Association, Los Altos.

Ononis Vale Kingmaster, C. A. Miller, Ripon	$ 800
Toyon Wayne Valdessa, C. C. Lester, Gilroy	675

Two Head Averaged $737.

Consigned by Rosamaines Rancho, Riverside.

Stratford Segis Blanche De Kol, Carnation Stock Farms, Seattle	$1,000
Stratford Segis Blanche De Kol 2nd, Burr Farm, Los Angeles	525
Blanche Segis Walker, R. Stevens, Stockton	475
Aileen De Kol Beet, H. H. Sisson, Willits	550
Rosawaine Starlight, W. L. Chesser, Riverdale	350

Five Head Averaged $580.

Healthy Teats and Udder

HELP THE MILK FLOW

Have you ever noticed how the milk flow falls off if a cow is troubled with a diseased or irritated condition of the teats or udder?

You can save your cows all such annoyance and keep the milk production up to normal by keeping on hand constantly a package of *Bag Balm*, the great healing ointment. Its penetrating and healing properties are so prompt and positive that you need have no udder troubles in any of your cows.

Caked Bag is quickly relieved and eliminated by applying *Bag Balm*. Be sure to have a package on hand when cows freshen. Very valuable in treating Bunches, too.

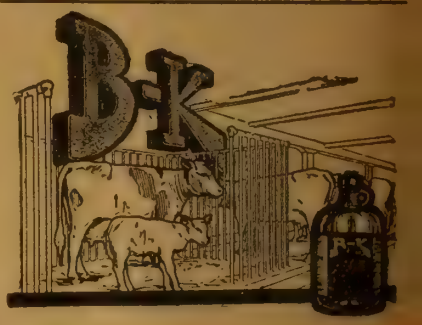
Sold in liberal 60c packages by feed dealers and druggists.

Send for free booklet, "Dairy Wrinkles"

Dairy Association Co.,
Lyndonville, Vt.



BAG BALM
MADE BY THE KOW-KURE PEOPLE



Flush Cows After Calving

Protect your herd against Contagious Abortion and Barrenness.

Barrenness or Sterility, like Abortion, Retention of After-birth and Premature Birth, is nearly always caused by infection of the reproductive organs by the germs of Contagious Abortion. Unless this infection is promptly overcome by the use of a powerful but safe antiseptic, it may permanently affect the reproductive organs so that the cow will continually fail to stick.

Every time a cow drops a calf—whether alive or dead—by premature birth or aborting, whether the after-birth is retained or not, her reproductive organs should be flushed out, because that is where the infection is developing.

B-K, the powerful non-poisonous antiseptic, is scientifically correct for this work. Used as a douche for the uterus, it quickly brings the after-birth, dissolves the slimy albuminous matter, kills the germs, stops discharges and controls the infection. B-K does not cause straining, but is soothing and heals the tissues.

Send for "evidence" and free Bulletin No. 52 "Contagious Abortion." If your dealer does not have B-K send us his name

GENERAL LABORATORIES
3456 S. Dickinson St., Madison, Wis.

B-K · B-K · B-K · B-K · B-K · B-K · B-K · B-K

We have issued a convenient little book for the keeping of breeding dates of cattle, hoping to aid the breeder and cattle owner in maintaining accurate records. We will gladly mail you a copy free if you request it.

BREEDING DATE BOOK — HERE —

California Breeders Sales & Pedigree Co.,
C. L. Hughes, Sales Manager,
SACRAMENTO, CAL.

REGISTERED HOLSTEINS

Creamcup Herd offers service bulls and bull calves of 34-lb. breeding. Females offered for foundation stock. Tuberculin tested.

M. M. Holdridge, San Jose, Cal.
E. D. "A," Box 437.
Two miles out North First Street.

were given by several of the consignors and leading breeders of the Coast.

E. C. Schroeder of Moorhead, Minn., owner of the noted bull, Sir Pietertje Ormsby Mercedes, and one of the big men among Holstein breeders, gave a short talk. He is wintering in California, and the many attractions of this State for dairymen and breeders seem to be getting in their work on him.

O. M. Plummer, the hustling manager of the Pacific International Livestock Exposition, Portland, was down to try to induce A. W. Morris to ship Tilly Alcartra up to the show next winter. Mr. Plummer is putting big things across and expects to raise $250,000 for permanent buildings and equipment.

Dairymen's Association Muddle Clearing

[Written for Pacific Rural Press by E. H. Whitten.]

"You are not even friendly to us," writes a member of one of the Milk Producers' Associations, who has been following our articles. But if he could have been in our office last Friday when President J. M. Henderson, Jr., and Secretary Ayres called, and could have seen the friendly feeling that was manifested from start to finish, we believe he would change his attitude.

In a recent editorial, Prof. Wickson stated that we could get nothing authoritative regarding the purposes and operations of the association, but we are glad to state that Mr. Henderson has now voluntarily offered us free access to all the association records in the "housecleaning," which we have declared to be our desire. Instead of attempting to block us in our investigations, he has offered to work with us.

We appreciate this attitude, for it will enable us to clear up the muddle more quickly, as well as more satisfactorily. We have two representatives out in the field making investigations which we hope will be finished within a few days, and hereafter in publishing their reports we shall be glad to include any comments or explanations that Mr. Henderson may care to make.

While Mr. Henderson was most enthusiastic over the movement, and made strong claims regarding the benefit that dairymen of the State would derive from it, he was not unreasonable. He did not claim perfection for his association. He admitted that mistakes had been made in organizing and operating, but claimed that these were no greater than should be expected in putting a plan of such magnitude into operation. He stated that an earnest effort is being made to correct all mistakes, and that in invading new territory it will be the policy of the association to take care of existing co-operative creameries.

We hope that our investigations will prove that constructive, truly co-operative work of this kind is being done, and that we may feel justified in lending a helping hand to Mr. Henderson in making a reality of his most worthy ambition, which is to see "a cow on every California acre."

Modesto Creamery Enlarging Capacity

The Modesto Creamery, now owned by the Milk Producers' Association of Central California, has just signed contracts to double its boiler capacity and its casein plant, according to Manager H. J. Faulkner, who says that the 12,000 to 15,000 pounds of butter they are making per day is more than any other plant in California puts out. This is also about the highest scoring butter in the State, having averaged 44½ for the past year. Whole milk has received in quantity for the first time last February. They are making about two tons of casein per day and a great deal of sugar of milk, which has analyzed 99.9 per cent pure, as reported by commercial chemists. Members of the association have recently been permitted to make short-time contracts with outside concerns; and the Modesto Creamery this week has turned about 50 cans per day to the Hughson condensary. These outside deliveries will be brought back to Modesto when the capacity is increased to 600 horsepower, as already contracted.

Once a cow is out of sympathy with the milker, the process of elaboration and concentration is retarded, and she "holds" up her milk. It pays to stop once in a while and pat her and say a few kind words. Sure, she understands.

$1900 Milk Check from 14 Milk Cows Pastured on Sweet Clover

Tulare, Cal.,
Route A, Box 72,
Dec. 28, 1918.

Western Soil Bacteria Co.,
440 Sansome Street,
San Francisco.

Dear Sirs:—

Your representative, Mr. C. A. Dorsey, asked me for a few facts as to results I have received from 13 acres of Sweet Clover inoculated with Westrobac. I ran 23 head of cattle on this field, 14 of which were milk cows, which gave me a cash income from the creamery of $1,900.00 for the last twelve months. We used other feed for four months during this time, the clover did the rest. This field would have furnished pasture for forty head and made a better quality of feed than it did for the twenty-three head.

(Signed) C. R. SORTOR.

HOADES & RHOADES
EXPERT LIVESTOCK AUCTIONEERS
Purebred Stock Sales a Specialty
Sales Conducted in All Parts of California
Ben A. Rhoades, Auctioneer
311-3-5 So. Main St., Los Angeles, Cal.



Calf Profits
Are you getting them? Calf profits are more to you now than ever before.
Blatchford's Calf Meal
Write for New Data
COULSON CO. - - - Petaluma, Cal.



The JER$EY DOLLAR

JERSEYS make a dollar worth more because they give the biggest yield with the least amount of feed. The only breed for the working farmer. The least expensive breed to keep, the most satisfactory breed to have. Buy one Jersey and you will want a herd. Write to Breeders for pedigrees and prices. Ask us for the facts that have changed many a cow barn from a liability to an asset.

THE AMERICAN JERSEY CATTLE CLUB, 388 West 23rd Street, New York City

N. H. LOCKE CO.
LOCKEFORD, CAL.
Choice young bulls of King's Valet Blood, backed by Records.
Call at the ranch and make selection.

VENADERA HERD REG. JERSEYS
Herd headed by Altama Interest, Grand Champion 1918 State Fair. Awarded two other championships and 10 firsts, including Aged Herd Breeders' Young Herd, and get of sire. Young bulls for sale from dams and granddams in Register of Merit.
GUY H. MILLER, Modesto, Cal.

LEONARD FARM JERSEYS
Bulls for sale from Register of Merit cows. Write for information.
W. J. HACKETT, CERES, CAL.

T. B. PURVINE & SONS
PETALUMA, CALIFORNIA.
Breeders of
Registered JERSEYS
Young bull calves for sale. Fine individuals with Register of Merit backing.

RANCHO SANTA MARGUERITA, D. F. Conant, Prop., Modesto, Cal.
Register of MERIT JERSEYS A limited number

FOR LARGE AND ECONOMICAL PRODUCTION
Get one of my young Jersey bulls from a high producing dam. They are rich in the blood of Gertie of Glynllyn and Lady Letty Lambert. Occasionally one old enough for service.
A. A. JENKINS, TULARE, CAL.

Bull Calf
Dam: 430 lbs. fat in 9 mo. 16 days on alfalfa alone, carrying calf entire time.
Grand Dam: 690 lbs. fat in one year.
Sunshine Farm E. E. GREENOUGH Merced, Calif.



Wyoming, Minn.,
The Empire Cream Separator Co.,
Bloomfield, N. J.

Gentlemen: This was our situation when the Empire Agent happened along. I was discouraged. Rheumatism had me by the arms and there was no one else to milk. Nine years of hard work had replaced a scrub herd with high grade Holsteins. Now it looked as though they must be sold; for hiring help was out of the question. In desperation we bought an Empire Milking Machine. With its installation our worries took wing.

When, one afternoon, the thrashing machine pulled into our place at 4 o'clock and stayed until 9, the cows were not left bawling until the job was finished. My wife had the milk in the tank cooling on time and can't milk a stroke by hand either. But with the Empire she had milked 11 cows and enjoyed doing it. This all happened 4 years ago. Am now buying full bloods and disposing of the grades. My 10 year old boy does the milking and makes a good job of it.

So instead of selling out, we are buying more and better cows and looking forward to a still brighter and more prosperous future, thanks to the Empire Milking Machine.

F. A. HELMUTH.

10-Year-Old Boy Milks Holstein Herd

Read Mr. Helmuth's letter and see how an Empire Milking Machine helped him out of a desperate situation. It prevented the selling of his cows and enabled him to build up his herd from grades to pure breds. His Empire proved to be so simple and easy to use that even his 10-year old boy "makes a good job of it."

That's the big point about the Empire Milking machine. *Anybody* can use it and make a good job of it. You get uniform results and equally as much milk no matter who does the milking.

It gives you greater freedom. You can delegate the milking to others and *know* that the cows will not drop off in production. Its action is gentle, soothing and regular, and always the same no matter who is operating the machine. Your herd becomes accustomed to the regularity of the milker, and even the hardest and most nervous animals give their best when an Empire Milker is used.

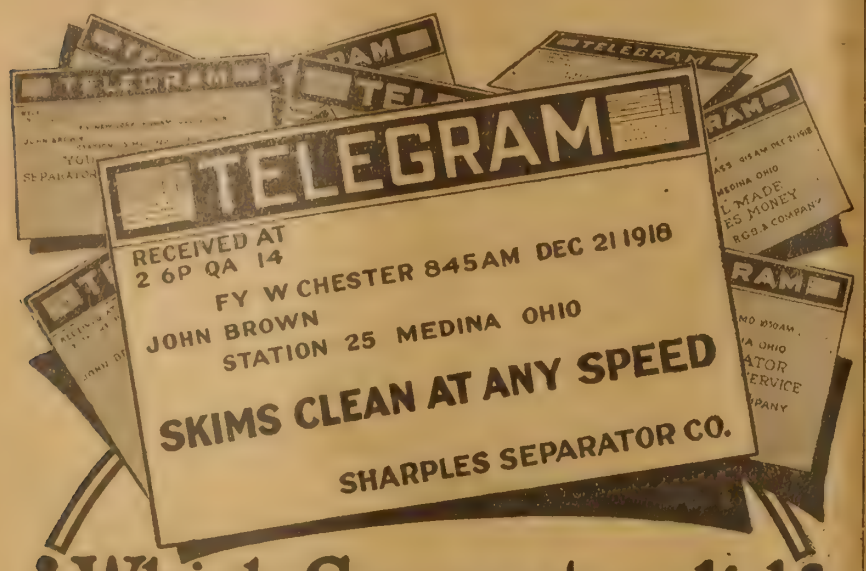
If you want to cut dairy costs, to increase milk profits, to be independent of hired help and have more freedom, investigate the Empire Milking Machine. Send for catalog No. 45 and learn more about it.

EMPIRE CREAM SEPARATOR COMPANY
Bloomfield, New Jersey

Also manufacturers of Empire Cream Separators and Gasoline Engines

Chicago, Ill.; Denver, Colo.; Atlanta, Ga. Montreal and Toronto, Canada

EMPIRE
MILKING MACHINES

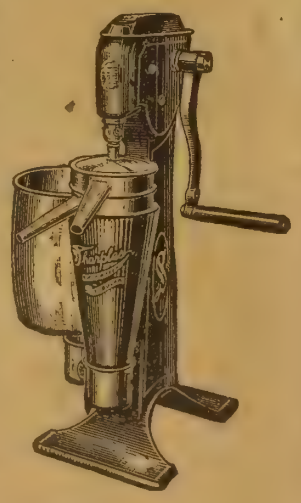


Which Separator did John Brown Buy?

Suppose you were Farmer John Brown and you wanted to buy a separator. You asked several separator manufacturers to send you a ***ten-word*** telegram, stating in the most convincing way, why their separator was the one you should buy. Sharples would only need ***five*** words: "Skims clean at any speed," and you would not have to ask for anything further.

SHARPLES
SUCTION-FEED CREAM SEPARATOR

No other separator manufacturer could put into five words or ***fifty*** words, as convincing an argument as "Skims clean at any speed." They would tell you about the durability of their separator, that it was well-known, that it cost less and everything else ***but*** the ***one*** big reason why you need a separator—to get ***all*** the butterfat out of your milk. Sharples ***also*** has the exclusive advantage of no discs in the bowl; knee-low tank; once a month oiling system; durable construction and, besides, it is the pioneer American Separator. Write for catalog to nearest office, addressing Dept. 31



"There are no substitutes for dairy foods"

THE SHARPLES SEPARATOR CO., West Chester, Pa.

Sharples Milkers—the ONLY Milker with a Squeeze

BRANCHES: CHICAGO SAN FRANCISCO TORONTO

Over 2,425,000 Sharples Separators in Daily Use DC-85

OAK KNOLL FARM

LAKEPORT CALIFORNIA

We have sold all our young boars and are now booking orders for March delivery. Highlander, the $1,000 Grand Champion Boar, heads our herd of

CHESTER WHITES

SAN FRANCISCO OFFICE, 601 BALBOA BLDG.



REGISTERED DUROC-JERSEYS

Every point the buyer demands for a profit-making hog is found intensified in the Duroc. We can supply you with weanling pigs, either sex, and gilts from 7 to 10 months. Our herd boar has the blood of Ohio Chief Defender, Crimson Wonder, Jack's Friend, Joe Orion, Etc.

THE GARDINER RANCH,

ROUTE 4, BOX 735 SACRAMENTO, CAL.

Duck the Hogs in a Dipping Vat

[Written for Pacific Rural Press.]

"Lice on hogs can be controlled in various ways, but complete eradication is best secured by the use of dipping vats. Medicated hog wallows and rubbing posts keep the number of parasites reduced so that they cause little damage, but neither of these methods destroy all the lice." That's straight goods from Uncle Sam, and it's based upon the results of experiments conducted by the Department of Agriculture.

The accompanying illustration shows a dipping vat of the type most commonly used in this State. It is 18 feet long. One end is straight up and down, and the other end is slanting and stepped so that the hogs can climb out. Sometimes the sides are made straight up and down; other times flaring. In the latter case the width is 20 inches at the bottom and 28 inches at the top. The depth is 4 feet.

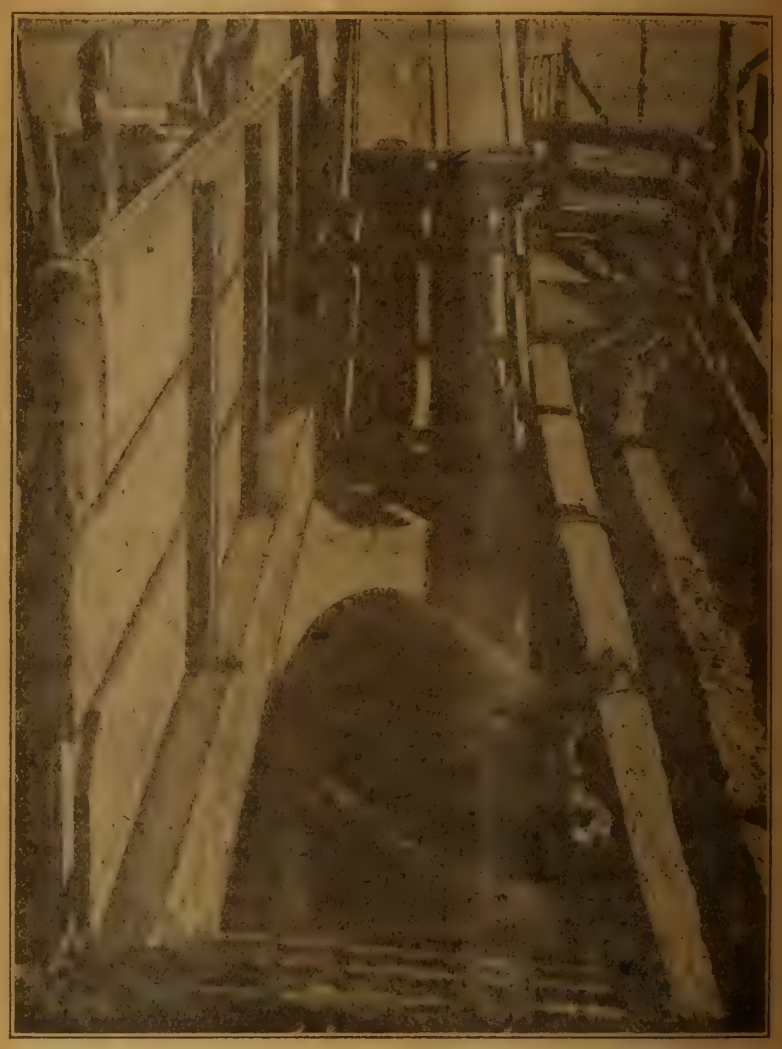
There is a drop platform at one end, balanced in the middle. Mr. Hog is driven onto this platform and when he gets beyond the middle a lever at the outer end is released, and the squealer goes kerplunk down into the dip. He swims to the other end and climbs out—a wetter but cleaner hog.

The vat, if made according to the dimensions given, will keep a hog in the dip about 30 seconds, which is sufficient for ordinary cases. If it is desired to keep animals in longer a gate can be built across the leaving end of the vat.

Begin on the concrete work in the morning, and to make the vat water-tight there should not be any great intermission between batches of concrete until after the upper water line is passed. Have the side walls extend 6 inches above the surrounding ground to prevent flood waters entering. Trowel the sides smooth so that the hogs won't scrape their hides in swimming.

If crude oil is used, one dipping will be sufficient. If one of the coal tar dips is used, hogs should be dipped again in a week or ten days, as these dips evaporate and do not kill the nits which hatch out into lice after a few days.

The time saved by a vat of this kind, together with the thoroughness of the operation, makes it a profitable investment on any ranch where 50 or more hogs are kept.



Lice will take off a hog's fat faster than good feeding will put it on. But a duck in a dipping vat will destroy the damaging little devils.

Ira Hart, the Hampshire breeder of Dos Palos, conducted a feeding experiment with six crossbred and seven purebred Hampshires, which showed an average weight for the crossbreds of 154 pounds and for the purebreds 235 pounds at the end of the experiment. All received exactly the same feed and care. Pretty good proof of the superior feeding qualities of Hampshire hogs.

Roc Stein Ranch
DUROCS

Have for sale two boars, one of GOLD MODEL and one of CRIMSON MONARCH breeding.

Both are about a year old, weighing 400 lbs. Also eight open gilts and four bred gilts. These gilts are the pick of last year's litters.

W. M. WAY & SON

Route 1, Box 320 MODESTO, CALIF.

READAKS SPECIAL

Registered Big Type **Poland-Chinas**

Bred Sows and Gilts, 25c. per lb. F. O. B. Gilroy.

W. J. HANNA, GILROY, CAL.

TAMWORTHS

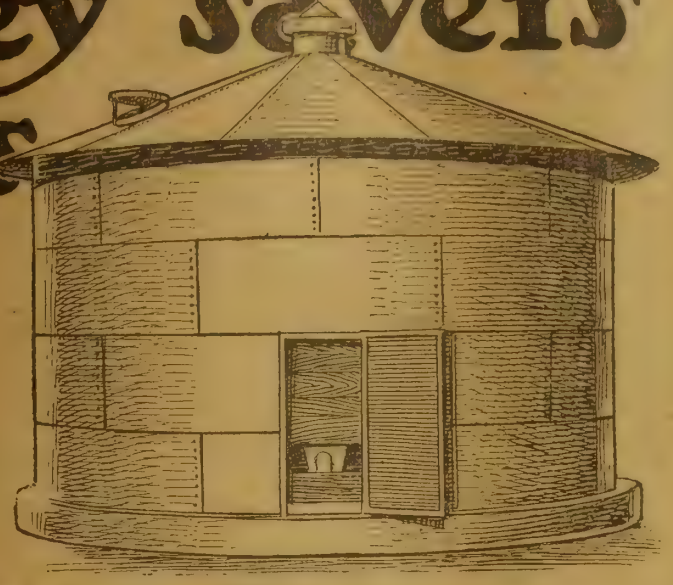
(The Bacon Hog)
Largest Herd in the State

DUROC-JERSEYS

Mature Stock and Weanlings of both sexes. Sure to please.

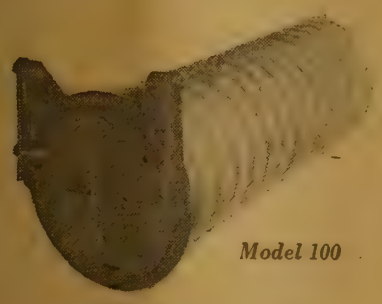
SWINELAND FARM,
W. O. Pearson, Prop. Woodland, Cal.

Metal money savers for Farmers



Calco Metal Grain Bin

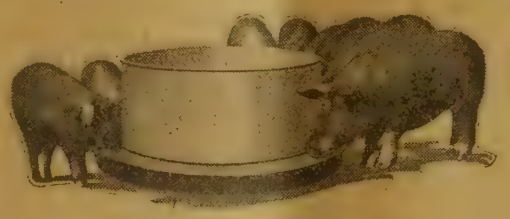
Does away with the costly jute sack for handling grain. Saves loss of grain from rats, gophers, birds, rain, sun and thieves. Built of Armco galvanized rust-resisting iron. Capacities from 600 bushels to 5450 bushels. Strong and durable. Write for the free booklet, "Calco Grain Bins." It tells you how to save money by handling your grain in bulk.



Model 100

Calco Automatic Drainage Gate

A sensitive, reliable, water-tight Cast Iron Drainage Gate, automatically controlled. It will convert your flooded land into fertile fields. Diameters from 8 to 84 inches. Write for price lists.



Model 252

Calco Automatic Hog Watering Fountain

Constant fresh water, without overflow. Connects to water supply pipe—works automatically. Built of Armco galvanized iron and cast iron. Specifications and prices on price list. Write for one.



Model 150

Armco Iron Lateral Headgates

Easily operated, durable metal gates—diameters from 8 to 36 inches. Hand or screw lift provided with either type of bulkhead. For heads of water up to 6 feet.



Model 153



Model 161

Armco Iron Irrigation Gate

An inexpensive, reliable metal irrigation gate. Diameters from 8 to 15 inches. Furnished with or without bulkhead. Write for price list.



Model 244

Calco Hog Troughs

Calco Hog Troughs help you raise healthy hogs. They are sanitary, strong and durable. Built of Armco galvanized iron with cast iron ends. Lengths from 24 to 120 inches. Get our price list



Model 101

Calco Slide Headgate

Water-tight, Cast Iron Gate for reservoir or levee work. For use under heads of water up to 20 feet. Diameters from 8 to 72 inches—gate frame any height required.



Model 251

Calco Hog Watering Tank

Gives the same service as the Calco Automatic Watering Fountain, where water must be carried or hauled. Easily moved about for your convenience. Strong, durable, sanitary. Get capacities, weights and prices from our price list.



Model 250

Calco Automatic Grain Feeder

Gives plenty of feed without waste. Clean and sanitary. Bin of galvanized iron, trough of cast iron. Capacities from 2 to 10 bushels. Write for price list.

We manufacture a complete line of irrigation gates and hog specialties. All gates are supplied with any length of Armco Corrugated pipe, when required.

California Corrugated Culvert Company

LOS ANGELES
417 Leroy Street

BERKELEY
406 Parker Street

calco products

Big Week for Stockmen

Not only cattlemen, but livestock men in general, will congregate at the University Farm, Davis, next week to attend the various sales and meetings that will be held.

The California Cattlemen's Association will hold a two-day convention, commencing Tuesday morning at 10 o'clock. Matters of the greatest importance to cattlemen will be discussed, and there will be addresses by such prominent men as Gilbert J. Waller, founder of the Hawaiian Meat Company; Frank Harding, secretary of the American Shorthorn Breeders' Association; O. M. Plummer, secretary of the Pacific International Livestock Show at Portland; W. T. Sesnon, president of the California International Livestock Show; Prof. Gordon H. True, of the University Farm, and Judge Peter J. Shields. All cattlemen will be welcomed, irrespective of their affiliation with other organizations.

The annual Shorthorn sale of the California Shorthorn Breeders' Association will be held Tuesday afternoon at 1:30 and 50 head, selected from the leading herds of the State and representing the best blood lines of the breed, will be offered.

Wednesday morning at 10 o'clock the Pacific Coast Hereford Breeders' Association will hold its annual meeting in the Animal Husbandry building.

Wednesday afternoon at 1:30 this same association will hold its second sale of Herefords. There will be 84 head of registered cows, heifers and bulls of character and breeding, all tuberculin tested and guaranteed to be breeders.

Wednesday evening at 7 o'clock the California Poland-China Breeders' Association will hold an important meeting at the Travelers' Hotel, Sacramento, and every Poland-China breeder in the State, whether a member or not, is urged to attend.

Thursday morning at 10 o'clock the annual meeting of the California Swine Breeders' Association, will be held at the University Farm. An interesting program has been prepared and important problems will be considered.

Also on Thursday morning at 9 o'clock a sale of Polled Herefords will be held at the Fair Grounds, Sacramento, by the American Polled Hereford Association. Twenty-five head of outstanding individuals are being brought out from the East to introduce the breed to Coast breeders and a great sale is expected.

Friday at 1 o'clock the Western Duroc-Jersey Association will hold a meeting at the University Farm, Davis, and in the evening a banquet will be held at the Travelers' Hotel, Sacramento. Fred De Vore of the Duroc Bulletin will show moving pictures of prominent Eastern herds; plans for the futurity will be discussed; also for holding a series of consignment sales. Every Duroc breeder in the State will find it worth while to attend.

Great Sire for Cazier Herd

As briefly announced in our beef cattle issue last week, John H. Cazier & Sons Company, owners of the Nevada Hereford Ranch, Wells, Nev., have purchased from Jesse Engle & Sons, Sheridan, Mo., the bull Beau Blanchard 76th, the price being $10,000.

This remarkable youngster is said by good judges familiar with the Engle herd to be one of the most promising breeding bulls sired by the great Beau Blanchard. In addition to being an exceptional individual, he is a full brother to the champion Belle Blanchard. A full brother, Beau Blanchard 25th, was the sire of the senior calf that stood just ahead of Beau Blanchard 76th at the Denver Show last winter. Beau Blanchard 76th was shown at the head of the Engle young herd that won second place at the American Royal last fall. His dam was Petrolea 12th by Domino, next dam Petrolea 10th by Beau Donorous, next dam Petrolea 6th by Militant, next dam Petrolea by Beau Brummel. This shows about as much Anxiety 4th blood as one pedigree could contain.

Beau Blanchard 76th had been reserved in the Engle herd to follow his famous sire, and the owners were induced to let him go only after the buyers had guaranteed to resell him to the Engles at the same price should any accident befall old Beau Blanchard.

The Cazier herd was founded in 1904 with selections from Governor John Sparks' herd, which included a number of daughters of old Precursor by Beau Brummel, one of the famous sires of that section. Harris Standard 2d has been the principal sire in service recently, and he will be retained to assist the new bull.

The service of such a sire as Beau Blanchard 76th in this large herd, where he will be given every opportunity with the best breeding cows, should do much for the Hereford interests in this section. The Caziers are to be congratulated upon securing this notable young bull, whose career in the West will be watched with more than ordinary interest.

HARVESTING THE WOOL CROP.

Sheep shearing is usually done in the spring after the lambing season. The work should be performed on a warm day, so that the ewes may not become chilled. For flocks of less than 50 head, hand-power machines are the most economical. These machines are more rapid, produce smoother work, injure the sheep less, are more easily handled, and result in a larger crop than where hand shears are used.

After the fleece has been removed, all tags and dirt should be cleaned out of it and it should be rolled up, not too tightly, the skin side out, and tied with paper twine. The value of the wool crop is often impaired by the use of binder twine in tying up fleeces. Anything is superior to binder twine, and paper twine is most satisfactory. Boxes for tying fleeces are not necessary; in fact, wool shows better if not tied too tightly.

Farmers in some sections have profited largely by co-operative marketing of their wool. Under the direction of the county agent, the clips are assembled, graded and sold in large quantities. The prices secured are materially higher than the "general" local prices obtained.

Dogs should not be used to drive cows to and from pastures if they excite the cows. It may mean getting the cows in quicker, but it will also mean a shrinkage in the cream check.

The dairyman who, by testing and culling, manages to get two pounds of butter from the same amount of feed that before produced only one, is going to get out from under the mortgage P. D. Q.

Shorthorn Bulls
FOR SALE

16 Head Three-Year Olds
14 Head Two-Year Olds

These bulls are registered Eastern bulls from the best stock in the country, and were brought to California as calves by the Leland Stanford Junior University.

JAS. H. JONES
511 2nd Street, Chico, Cal.

BRIGHTON FARM SHORTHORNS
One three-year-old bull bred by H. R. Clay.
Two outstanding yearling bulls sired by Sir Type, a son of Cumberlands Type.
A few yearling heifers of same breeding.
Also registered Berkshires of both sexes of best breeding.
H. L. & E. H. MURPHY Perkins, Sacramento Co., Cal.

HILLCREST STOCK FARM
(T. S. GLIDE)
SHORTHORN CATTLE
Shropshire & French Merino Rams DAVIS, CALIFORNIA

SECOND SPRING SALE OF SHORTHORNS
UNDER THE AUSPICES OF
California Shorthorn Breeders' Association
At University Farm, Davis, Calif., on Tuesday, April 8, 1919, at 1:30 P. M.
50 HEAD---25 BULLS---25 COWS and HEIFERS
Representing the best blood lines of the breed. Selected from the leading herds in the State.

CONSIGNORS:
HILLCREST STOCK FARM, (T. S. Glide), Davis.
ROSELAWN STOCK FARM, H. M. Elberg, Woodland.
PACHECO CATTLE CO., C. M. Hawkins, Hollister.
T. T. MILLER, Hollister.
H. L. & E. H. MURPHY, Perkins, Cal.
ORMONDALE CO., Redwood City.
JACK LONDON RANCH, Glen Ellen.
D. & H. J. BAUGHMAN, Oakdale.
CHAS. A. TROSI, Vinton.

An opportunity is afforded of securing foundation and breeding stock of exceptional quality.
For Catalog Apply to
California Shorthorn Breeders' Association
320 SHARON BUILDING, SAN FRANCISCO, CALIF.
Auctioneer FRED REPPERT, of Decatur, Indiana

Rubbing Elbows with Other Breeders

[Written for Pacific Rural Press by Thos. F. McConnell.]

SUCCESSFUL METHODS AT SIERRA

Located midway between Madera and Merced on the State highway at the postoffice of Minturn is the purebred Hereford ranch of the Sierra Vista Vineyard Co. They have about 90 head of breeding cows and the herd is headed by Frederic Fairfax, sired by Perfection Fairfax. This bull sires calves that are of the most desired blocky Hereford type, and is considered by Mr. Harris, the manager, as one of the most valuable Hereford sires on the Pacific Coast. The junior herd bull is Repeater 157th, sired by Repeater, and is a youngster of great promise as a sire and is a most excellent individual.

D. B. Harris has direct supervision of the breeding and care of the purebred stock. In order that there shall be no mistake about the breeding of the registered stock, as soon as possible after a calf is dropped its number is tattooed on the inside of its ear. As soon as the horns are large enough, this number, for convenience, is burned into the horns so that the breeding of an animal is very easily established without having to "rope" and throw it for close inspection. The metal ear tag has not proved satisfactory, according to Mr. Harris' experience.

This company is feeding two carloads of high-grade steers off their own range and with rolled barley and chopped alfalfa hay of their own raising. They certainly are commencing to look as though they might top the market even at Chicago.

Next to the lot where the beef steers are fed are the lot coming for next year, and every morning the feed racks of the older steers are cleaned out and the orts placed in the feed racks of the youngsters. Following the beef steers are hogs of a Berkshire and Mulefoot cross. In this way but very little feed actually goes to waste.

About six carloads of hogs are fed every year of the cross mentioned above and, judging from appearances and Mr. Harris' experience, they feed out very well.

The alfalfa fed on this ranch is hauled directly from the field in the summer as soon as it is fit and run through a feed cutter and blown into an old adobe winery building. About 1500 tons are handled in this way every year and it certainly makes excellent feed.

That this company believes in alfalfa and plenty of it is evidenced by the fact that they now have 700 acres of this most valued forage plant and are leveling and ditching 250 acres more for the same crop. The work of leveling and ditching is being done with tractor and giant leveler and ditcher. This work, that by the former team and "Fresno" method would take weeks to accomplish, is now done in as many days.

FULGHAM STRONG ON DUROCS.

A recent noted addition to Duroc-Jersey swine in Tulare county is a bred sow brought out by W. J. Fulgham & Sons of Visalia. This sow, Royal Critic 2nd, was purchased at the sale of Ortell Lininger, Fairfax, Mo., and is a daughter of the world's champion sow of 1917 that sold last winter for $2,600. The litter from this sow, Royal Critic 2nd, was the highest priced in the East last year. She is bred to Ideal Pathfinder and is due to farrow soon. Aside from her breeding, this sow is a great individual and would be near the top anywhere. She is certainly a great daughter of a great mother.

In talking about livestock operations, Mr. Fulgham expressed himself as unqualifiedly in favor of the auction method of selling market hogs as practiced by the Farm Bureau Co-operative Marketing Association. It tends to improvement in the quality of the offerings, as the farmer gets the benefit of any such improvement, and there is no inducement to market hogs before they are in prime condition. Mr. Fulgham is vice-president of the California Farm Bureau Marketing Association and therefore is in a position to know whereof he speaks.

The hog requires less labor, less equipment, less capital, and produces more edible meat per 100 pounds of grain than any other animal; reproduces faster and in greater numbers; giving returns on money invested more quickly than any other farm animal except poultry.

One Hundred Head of Beef Cattle on Sixty Acres of Sweet Clover

Sanger, Fresno County, Cal.,
December 5, 1918.

Western Soil Bacteria Co.,
440 Sansome Street,
San Francisco.

Dear Sirs:—

The money I invested in the inoculation and seeding of sixty acres of land to Sweet Clover has been returned to me several times the first season.

I have had as many as 100 head of beef cattle at a time in this field and the meat was of the best quality.

The outlook for another splendid growth of this clover for the coming season is good and I anticipate fully as much pasturage from it as it produced during the season just closed.

Very truly yours,

(Signed) W. D. MITCHELL.

The World's Largest Herd of Registered
HEREFORDS

The home of MISS RIALTO 2ND, NEVER defeated Grand Champion. Over 900 breeding cows, representing choicest blood lines. Great Bulls in service. Look up our records at the BIG livestock shows.
THE HEREFORD CORP. OF WYOMING, Box 876, Cheyenne, Wyo.
Wm. Cox, Herdsman. Raymond S. Husted, Vice Pres., Gen. Mgr.

ORMONDALE SHORTHORNS
Are all heavy boned, and of Scotch and Scotch-topped breeding.
Suited for either the range grower or breeder.
EVERY ANIMAL POSITIVELY GUARANTEED.
Whether you buy or not, visit our ranch, 7 miles from Palo Alto on Woodside Road. We welcome inspection. Prices and pedigrees on application.
SHORTHORN CATTLE
DUROC-JERSEY SWINE
ORMONDALE CO. REDWOOD CITY, CAL.
R. D. No. 1

Choice Registered Herefords
At Public Auction
84 REGISTERED COWS, HEIFERS AND BULLS



Lay the foundation for a herd of registered Herefords by buying some of the good breeding animals in this sale.

Present demand and future outlook makes the breeding of purebred Herefords one of the most attractive fields in American agriculture for the investment of money, effort, and brains.

Pacific Coast Hereford Breeders' Second Sale
Wednesday, April 9, 1919
University Farm, Davis, Calif.

This is more than a sale, it is something of a public benefit, for the strong demand for good registered Herefords would take every one of these animals from the contributing breeders right at their ranches. Selling them at public auction, an assembly of choice animals from several leading herds will provide an opportunity for all buyers to secure one animal or a whole herd according to their needs.

Foundation females of high excellence, both cows and heifers, will be offered with plenty of selection as to blood lines of most popular and substantial character.

High class bulls, qualified in every way to head purebred breeding herds, are among the entries, and breeders in need of such a sire should by all means see the individuals in this sale.

BULLS FOR THE RANGE

Purebred registered Hereford bulls have been the sure road to profits and fortune for thousands of cattle growers. They have time and again bred quicker maturity, greater size, better rustling ability, and uniformity in a class by itself into range herds, every single one of which means bigger profits for the owner. Bulls with the breeding, type, and hardiness to do these things will be offered in this sale from some of the best Pacific Coast herds.

Catalog of sale free on request. Please mention the Rural Press.

Sale under auspices of
PACIFIC COAST HEREFORD CATTLE BREEDERS' ASSOCIATION
W. R. Madden, Secretary, Dixon, Cal. H. H. Gable, President, Esparto, Cal.

Auctioneers
Col. Fred Reppert, Decatur, Ind.

Management
CALIFORNIA BREEDERS SALES & PEDIGREE CO.
C. L. Hughes, Sales Manager, Sacramento, Cal.

Rancho San Julian
SHORTHORNS



Some of our Senior Calves.

Our herd represents the richest blood lines and the best families of straight Scotch breeding. Last year we imported from the East a carload of the choicest heifers we could find. We won at Los Angeles last fall, first prize Junior Champion, and Reserve Grand Champion Bull, two other firsts and two seconds.

We have for sale—very choice lot of purebred range bulls, yearlings, and two-year-olds.

VISITORS AND CORRESPONDENCE INVITED.

Estate of Thos. B. Dibblee
JOHN TROUP, Supt.
LOMPOC, SANTA BARBARA, CAL.

Livestock and Dairy Notes

Livestock breeders all over the State are invited to send on postal cards, notes regarding their sales, State and County Fair intentions, new stock, etc.

Livestock Sale Dates

April 8—California Shorthorn Breeders' Association, Davis. Shorthorns.

April 9—Pacific Coast Hereford Breeders' Association, Davis. Herefords.

April 10—American Polled Hereford Breeders' Association, Sacramento. Polled Herefords.

April 26—W. Bernstein, Hanford. Poland-Chinas.

LIVESTOCK MEETINGS.

April 8 and 9—California Cattlemen's Association. Convention and barbecue luncheon at Davis.

April 10—California Swine Breeders' Association. Annual meeting at Davis at 10 a. m.

April 9—California Poland-China Breeders' Association. Meeting at Travelers Hotel Sacramento, 7 p. m.

April 11—Western Duroc-Jersey Association. Meeting at University Farm, Davis, 1 o'clock; also banquet in evening at Travelers Hotel, Sacramento.

The Dairy.

It is reported that a milk condensing plant will be located at Coburn, Monterey county, and that construction will start at once.

M. H. Tichenor of Palo Alto Stock Farm, Palo Alto, reports the recent sale of two Holstein heifers and a bull to Mr. Dixon of Modesto.

At the second Milking Shorthorn Congress show and sale, held at Erie, Pa., March 20-21, 106 head averaged $517, with a top price of $1,850 for a yearling heifer.

A. M. Bibens, Modesto, reports that Abbie De Kol Eastbank 2nd has made 30.60 pounds butter in 7 days. He has other cows on test that promise to make good records soon.

The Redwood Ayrshire Farm at La Honda has installed another Hinman milking unit. They report the pasture as not making satisfactory growth on account of the continued damp and cold weather.

Charles McDonald, manager of Toyon Farms Holstein herd at Los Altos, is in Washington and Oregon buying cows to add to their already large herd. He reports that 34 head have so far been purchased.

A. J. Welch, owner of Hidden Valley Farm, Redwood City, reports that the Guernsey cow, Imp. Bijou of Ore Hill, has made a record of 555.33 pounds butterfat in a year, which entitles her to fourth place in class BB. While making this record she was in calf 285 days.

The Ayrshire Breeders' Association was presented the sum of $2,500 by the late Miss C. A. French of Boston to commemorate her brother's interest in Ayrshires. The interest on this amount is to be used in purchasing trophies to be awarded annually to the winners in each of the seven Advanced Registry classes.

The world's Jersey record for a year's butterfat production was broken by a wide margin when Vive La France, a senior four-year-old owned by Pickard Bros., Marion, Ore., made a recent record of 1,013.50 pounds fat from 14,866.2 pounds milk. It was in this same herd that the cow, Old Man's Darling 2nd, recently broke a world's record.

Holsteins in the herd of R. L. Holmes, Modesto, have been making some excellent records. Blue Belle Carol Walker, a three-year-old, has made a record of 21.90 pounds butter in 7 days and is milking 80 pounds per day; Jane Creamelle Hengerveld, a junior three-year-old, has made 27.42 pounds butter and is milking 76 pounds per day; Lady Victoria Walker, another three-year-old, has made 24.60 pounds butter and Klondyke Beauty 2nd, a five-year-old, has made 26 pounds. All are being continued on yearly test.

A. B. Humphrey of Grapewild Farm, Escalon, has sold the Guernsey bull, Escalon Golden Jewell, to Ernest Gammon of Hood, who is establishing a herd of registered Guernseys in connection with his orchard properties in Sacramento county.

Sophie 19th of Hood Farm, at one time holder of the world's record for yearly production of butterfat, has completed her eighth official year with a record of 5,787.6 pounds fat from 100,557.2 pounds milk. This is a world's record for eight years' production of butterfat.

Beef Cattle.

At a recent sale in Scotland, 429 Shorthorn bull calves made the astounding average of $1,217. The top brought $20,400.

Geo. V. Kirkwood of Lilac Ranch, Escondido, has purchased 15 registered Aberdeen-Angus heifers and a young herd bull from Congdon & Battles, Yakima, Wash.

A cross-bred Shorthorn and Aberdeen-Angus heifer was recently sold by the Idaho Agricultural College and brought $122.50 at the block. She was 13 months old, weighed 1055 pounds and dressed 64.6 per cent.

H. H. Gable of Diamond G Ranch, Esparto, has purchased the Hereford bull, Don Perfect 2nd, a son of Point Comfort 14th, the International grand champion. This bull has been in service in the herd of C. C. Griffith, Hudson, Ia., and has made such a reputation as a sire that it required $5,000 to induce his owners to part with him.

F. L. Hall, Rosecrest Ranch, Perris, reports that the calves from his new herd sire, Avon's Glory, look like fine prospects and he is planning on showing a few junior calves at the fall shows. Orange Blossom, Minerva and Village Bird are the Scotch families represented in this herd, which consists of 24 purebred females and 7 young bulls.

Swine and Swinemen.

Fred Gatewood, Fresno, is keeping his Poland-Chinas in fine breeding shape. The young gilts from the herd boar, Fresno Sampson, are developing especially well. They have plenty of size and quality and the litters are uniformly large.

J. M. Bernstein and C. A. Vaughan of Hanford have been heavy buyers at the recent Corn Belt sales of Poland-Chinas. They bought 17 head from E. D. Frazier, Drexel, Mo., and smaller numbers from other noted herds. They took mostly young stock and bought the very best.

Marshall & Son, Poland-China breeders of Sebastopol, report that Disturber's Giantess C, the sow they purchased at the Lyden sale back in the Corn Belt at a long price, farrowed 9 corking good pigs by Repeater, the Giant Buster boar that sold for $1,750 before he was 5 months old. There are 5 boars and 4 sows in the litter, all extra large and fine. Marshall & Son have had 4 sows farrow 49 pigs during the last two weeks. Speaks well for the prolificacy of their stock.

Frederick M. Johnson, Napa, has ordered a new junior herd sire from the famous Duroc herd of McKee Bros., Versailles, Ky. He is a son of Sensational Wonder, grand champion of seven State Fairs. Two young Defender-bred sows are being shipped with the boar. Mr. Johnson is at present using Cherry Lady's Defender, a futurity winner at the last State Fair. He is by Johnson's Defender, out of Cherry Chief Lady, grand champion sow at the 1917 State Fair.

The experiment of crossing purebred Poland-Chinas on Berkshires at the James Mills Orchard Corporation, Hamilton City, will be discontinued. On this ranch are cross-breds, or scrubs of still different blood, which are over a year old and will not average 190 pounds, while there are dozens of purebreds weighing 240 pounds at six months of age. The great herd header, Ames Rival 70th,

Red Polled Cattle

15 head fine, purebred bulls and 10 heifers 8 to 12 months of age. For further information address:

F. A. MECHAM ESTATE,
Petaluma, Cal.

Easier Shearing

Shear with a machine—get more and better wool—saves you tired arms or swollen wrists. Do it quickly without scarring the sheep. Machine shearing gets 15% more wool and leaves a smooth even stubble that will increase next season's growth. Get a Stewart No. 9 Ball Bearing Shearing Machine. Price $14. Send $2—pay balance on arrival. Write for catalog.

CHICAGO FLEXIBLE SHAFT COMPANY
Dept. B103 12th St. and Central Ave., Chicago, Ill.

J. M. Bomberger's Public Sale

TEUSDAY, APRIL 8, 1919

On my GREEN GOLD RANCH, five miles northwest of Modesto, on the Beckwith Road.

I have sold my GREEN GOLD RANCH and all my mature cows, but have all my heifers left for sale.

HEIFERS—Twelve of the heifers are registered and the others are practically full-blooded Jerseys.

These Jersey Heifers are from real producing stock. Nine of their dams have won prizes in the State Dairy Cow Competition. The records of their dams run as high as 615 pounds of butterfat in one year under ordinary herd conditions.

The most valuable offering in the sale is "Pedro of Green Gold," the six-month-old bull calf of my famous old cow, Pedralida. Pedralida produced over 500 lbs. butterfat per year for 7 consecutive years; was by three years the oldest cow in State Dairy Cow Competition; is now 17½ years old, carrying her 19th calf, and produced 46.91 lbs. butterfat in March, 1919. She raised 3 pairs of twins. The bull calf carries indications of the good qualities of old Pedralida, large milk veins, large heart girth, escutcheon and hind quarters indicate the splendid udder development of old Pedralida.

BERKSHIRES—All of my BERKSHIRE hogs are registered and nearly all of them are sired by my great Boar UNIVERSITY STAR 5TH 229715.

This strain of Berkshires is noted for quick growth and early maturity, and has been very largely instrumental in our marked success in profitable pork production.

The offering includes six sows with pigs and ten open gilts ready to be bred. As foundation stock these hogs are cheap at any price.

Sale will start promptly at 11 o'clock. Farm implements will be sold first, household furniture second, Jersey heifers third, and Berkshire hogs last.

Lunch will be served at 12 o'clock.

J. M. BOMBERGER, Owner

CY N. CLARK, Auctioneer. C. N. CLARK, Jr., Clerk.

INNISFAIL DAIRY SHORTHORNS



GLENSIDE ROYAL 408155,
Grand Champion, Sacramento, 1916-1918, and at P. P. I. E.

Won at Sacramento:
ALL Championships,
Grand Championships,
Reserve Championships.

22 OTHER PRIZES, INCLUDING 15 FIRSTS.

We offer for sale a few choice young bulls sired by Glenside Royal and out of large cows of good milk production.

Entire herd tuberculin tested.

Alexander & Kellogg, Suisun, Cal.
Farm on Grisly Island.



Champion Ram, P P I. E.

SAN RAMON SHROPSHIRES

WINNINGS P. P. I. E., 1915

Aged Ram, First and Second. Yearling Ram, First. Ram Lamb, First, Second, and Third. Champion Ram. Yearling Ewe, Second. Ewe Lamb, Second and Third. Get of sire, First. Pen of three Lambs, bred by Exhibitor, First and Fourth. Pen of Four Rams, bred by Exhibitor, First and Fourth. Flock, any age, Second. Flock, any age, bred by Exhibitor, Second. Flock, one year old, First. Flock, one year old, bred by Exhibitor, First. Flock under one year, First. Flock under one year, bred by Exhibitor, First. Produce of Ewe, First, Second and Third. Premier Championship for Breeder. Premier Championship for Exhibitor. A total, including American Shropshire Specials, of 15 Firsts, 9 Seconds, and 6 Championships.

Purebred Registered Rams and Ewes.
Individuals or Carload Lots.

BISHOP BROS., Agents, SAN RAMON,
Contra Costa County, California.

DIGESTER TANKAGE

Send for Sensible Folder on Feeding Hogs

WESTERN MEAT COMPANY

Animal Food Dept. 704 Townsend St., San Francisco

HAUSER'S DIGESTER TANKAGE

Gives Greatest VALUE for LEAST MONEY. IT MAKES THEM FAT.

HAUSER PACKING CO. LOS ANGELES

still holds his splendid back and straight, strong legs. Sales are being made every day. Twenty sows recently went to one man, 6 to another, a trio to another, and so on.

Sheep.

The Imperial Valley Sheep and Wool Growers' Association will install shearing plants for the use of its members.

Sheep scabies was recently found among the sheep on the island of San Clemento, Cal., and it has been placed under Federal quarantine to prevent spread to the mainland.

F. A. Mecham Estate, Petaluma, report a great lamb crop—125 per cent in the Shropshire flock and 95 per cent in the Merinos. Feed conditions are excellent and the demand for stock is heavy.

Bullard Bros., Woodland, have sold to Samuel Moss, a wealthy sheepman of South Africa, 75 Rambouillet ewes and 25 rams. Mr. Moss came all the way from South Africa to California to visit Bullard Bros.' ranch.

Mr. Ewing of Stanislaus county has built fences on both sides of the irrigating ditches that pass through his ranch and instead of plowing the ditch banks each spring, as is the custom, he keeps his sheep there, which obviates the necessity of fighting gophers that make so much trouble during irrigating season, furnishes lots of feed for his sheep and saves a lot of hard work in plowing.

QUALITY PRICES FOR QUALITY HOGS.

That it pays to raise good hogs and turn them off properly finished has been proved to the complete satisfaction of Lea Bleakmore, owner of Oak Knoll Farm, Lakeport. Mr. Bleakmore, who raises registered Chester-Whites, now has a herd large enough so that he can market the culls in carload lots, and last week he shipped a carlot to a San Francisco packer, requesting that he be paid according to the dressing out percentage. The highest quotation at the time was 17 cents, but Mr. Bleakmore was paid 18¾ cents, thus securing a premium of 1¾ cents per pound.

As another evidence of the advantage of raising purebred hogs, Mr. Bleakmore states that the last five sows which have farrowed gave him 72 pigs, and his average for the entire spring farrow thus far is 13 plus.

And speaking of evidence, Mr. Bleakmore gives some in favor of liberal publicity. Through his advertising in the Rural Press he is already booked for practically all pigs of March farrow. He has received orders from all over California—from Medoc to Imperial—and also from Arizona. Last week he shipped two bred gilts to W. H. Metson Company, Tracy; five sow pigs to John Miller, Fresno county; a herd boar to Stephen Vivian, Modesto, and three sows to John Craig, Glendale, Arizona. Mr. Bleakmore says that it is easy to sell good breeding stock if brought to the attention of breeders through an efficient advertising medium like the Rural Press.

LIVESTOCK DIRECTORY.

Rate in this directory 3c. per word each issue.

SWINE.

Berkshires.

GRAPEWILD FARMS BERKSHIRES — A few spring boars and fall pigs by Big Leader, Grapewild Farm Leader and Majestic King.
A. B. Humphrey, Prop., Escalon, Calif.

CROLEY'S BALANCED HOG FEED—The cheapest feed to fatten hogs. Write Geo. H. Croley Co., Inc., Livestock Supplies, 8th and Townsend Sts., San Francisco, Calif.

BERKSHIRES bred at Imperial Stock Farm are the kind that satisfy. Write us or call and be convinced. R. J. Merrill & Son, Morgan Hill, California.

BERKSHIRES—Sired by Star Leader, the $1500 boar. Kounias Registered Stock Farm, Modesto, Calif.

BERKSHIRES by Ringleader 20th, greatest son of Grand Leader 2nd. Geo. M. York, Modesto, Calif.

FOR REAL GOOD BERKSHIRES write Frank B. Anderson, B. 724W., Sacramento, Cal.

CARRUTHERS FARMS BERKSHIRES — Cholera immune. Live Oak, California.

REGISTERED BERKSHIRES—Write R. D. Hume, Dos Palos, California.

CASTLEVIEW

GIANT TYPE BERKSHIRES

We are booking orders for spring pigs from Grand Champion Sows and sired by Mayfield Rookwood, sire of Champion Barrow at 1919 Western Berkshire Congress.

CASTLEVIEW RANCH, SANTA ROSA.

ANCHORAGE FARM.

MONEY-MAKING BERKSHIRES—The prolific, easy-feeding kind that make the highest priced pork from the lowest priced feed. They will increase your profits. Prices reasonable; satisfaction guaranteed. Write for free booklet, describing our worlds reserve champion, STAR LEADER. We are now making a special offering of bred sows and gilts.
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Omaha Grand National Champion
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BERKSHIRES—Fair Oaks Ranch, Willits, California.

Poland-Chinas.

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Saturday, April 26, 1919, I will sell to the highest bidder, 65 head of registered Poland-China hogs. A few bred sows and service boars. All the rest are PIGS. From weanlings up to gilts ready to breed. This is your opportunity to

BUY THEM YOUNG AND GROW THEM OUT.

W. Bernstein, Owner. Write for catalogue to W. T. Dice, Sec., Box 374, Hanford, California.

SOW BARGAINS—We are offering some exceptionally nice tried sows, bred and open gilts, at attractive prices. They are all sired by the undefeated and world's grand champion Superba and over. Investigate before buying elsewhere. Rough's Greenfields, Arlington Station, Riverside, California.

MAKE BIG MONEY with Cloverdale Farm big-type Poland-Chinas — the prolific, fast-growing, easy-feeding, money-making kind. We purchased the famous Whitten Ranch herd, including great boar Jumbo Model. High-class stock for sale—farmers' prices. Write us. Cloverdale Farm, R. F. D. 1, Escondido, Cal.

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NOW BOOKING ORDERS for spring pigs, either sex, from my prize-winning, large type Poland-China hogs. Also will book a few orders for bred gilts, February and March farrow, and a few good, serviceable, aged boars. Hale I. Marsh, Modesto, California.

THE BEST IN THE WEST — California Gerstdale and President's Equal are my herd sires. Fall and spring boars now ready to move—each one a corker. Dr. J. A. Crawshaw, Hanford, California.

I WANT TO BUY 10 big-boned Poland-China bred sows for June 1st delivery. Also any number of feeders up to fifty for May 1st delivery. J. R. Tallman, 438 15th St., Oakland, Cal.

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BARGAINS IN POLAND-CHINA SOWS — All immune. Good mothers and prolific. Registered stock. Also boars. Write for details. N. C. Hansen, Coachella, California.

BOOKING ORDERS for spring pigs sired by "Bob Big Bone," 381280, litter brother of the Junior Champion of Sacramento, 1918. P. E. Mitchell, Atwater, California.

OXBONE HERD offers March boars for sale from King's Big Bone leader, grand champion at State Fair, 1918. Write F. E. Fox, Tipton, California.

FALL BOARS by a son of Caldwell Big Bob at bargain prices. Also booking orders for spring pigs. Forest View Ranch, J. H. Cook, Paradise, Cal.

WAUKEEN HERD POLAND-CHINAS — Big type herd boar the $700 Grand Champion of California. Les McCracken, Prop., Rinon, Cal.

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BIG TYPE POLAND-CHINAS—Stock from the best herds of the Middle West. N. Houck, Alton, Humboldt County, California.

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BIG-BONED POLAND-CHINAS—From Eastern prize-winners. D. H. Forney, Route G, Fresno, California.

POLAND-CHINAS—Young stock for sale. Edward A. Hall, R. 1, Box 39, Watsonville, Calif.

POLAND-CHINA PIGS WITH RIBBONS—Prices right. Johnnie Glusing, Winton, Calif.

POLAND-CHINA PIGS — Bernstein, Trewhitt, and Ross blood. B. M. Hargis, Tulare.

POLAND-CHINAS — A few young service boars for sale. R. F. Guerin, Visalia, Calif.

REAOAKS RANCH herd of registered Poland-Chinas. W. J. Hanna, Gilroy, Calif.

BIG-BONED POLAND-CHINAS — Stock for sale. E. S. Myers, Riverdale, California.

POLAND-CHINAS — Young stock for sale. H. E. McMahan, Lemoore, California.

Chester Whites.

BILLIKEN CHESTER WHITES—One yearling boar for sale; everything else sold. Will book orders now for spring pigs. C. B. Cunningham, Mills, California.

CHESTER WHITE PUREBREDS — Weanlings, August boars, 4-month gilts. Prices low. Cedarhurst Ranches, Route 2, Sacramento, Calif.

PUREBRED CHESTER WHITES—Write for prices. Wray M. Peck, Escalon, California.

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SWEETWATER DUROCS—The most popular herd in the West. Our Durocs make money for us—they will do the same for you. Winsor Ranch, Bonita, San Diego Co. Address R. K. Walker.

DUROC-JERSEYS WANTED — Registered gilts, open and bred. Also young sows. State ages and breeding; when bred; price. Jersey Queen Farm, San Jose, California.

WE WON MORE MONEY on Durocs at the State Fair than any other exhibitor. Why not buy some of this winning stock? June Acres Stock Farm, Davis, California.

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A FEW CHOICE BRED GILTS, spring boars and gilts of the best blood lines. H. P. Slocum & Sons, Willows, California.

BOUDIER DUROCS all sold out, excepting some sow pigs weighing 100 lbs. apiece. H. E. Boudier, Napa, California.

HEAVY-BONED DUROCS — A few service boars for sale. Ormondale Co., Route 1, Redwood City, California.

DUROCS—Defender, Clinton B. and Golden Model strain; the big type. Allen Thompson, Tulare.

REGISTERED DUROCS—All from prize-winning stock. W. P. Harkey, Gridley, Calif.

REGISTERED DUROC-JERSEY GILTS for sale. D. Fricot, Angels Camp, California.

REGISTERED DUROCS—Stock for sale. W. J. Fulgham & Sons, Visalia, California.

Yorkshires.

LLOYTON HERD REGISTERED YORKSHIRES—Bred gilts and pigs from eight weeks up. Lloyd & Tointon, Llano Road, Santa Rosa, California.

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OUR 28-MONTHS OLD herd boar, sure breeder, 15c. lb. Two open and bred gilts. Weaned pigs. Write. Uneda Hampshire Swine Farm, Tom M. Bodger, Prop., Gardena, Calif.

MY HAMPSHIRES are money makers. Stock for sale. Buy now. L. A. Denker, Saugus, California.

HAMPSHIRE SWINE — Young stock for sale. Ira Hart, Dos Palos, California.

MISCELLANEOUS.

O. I. C. BREEDERS' NOTICE—I will sell Ohio Boy, two-year-old imported boar; none better. Also boar pigs ready for spring breeding (sire Ohio Boy, dam Toddler's Beauty, imported). Write for full information. Jas. Little, Wasco, California.

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MULE-FOOT HOGS — Large type. H. T. Bailey, P. O. Box 37, Lodi, California. "The Blue Gums."

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Holsteins.

A PRICE ON EVERY ANIMAL.
Herd free from tuberculosis. All sales subject to sixty days' retest. Sons of Finderne Soldene Valdessa, whose dam is not only a world record cow in seven-day division but has two sisters holding worlds records for yearly production.
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WHEN IN THE MARKET for registered bulls and females write me. My herd sire and chief bull, El Prado Wayne Columbia, is also for sale. Every animal in my herd is owned by J. W. Berrett, Route C, Modesto, California.

HIGH-CLASS HOLSTEINS—I have for sale some sons of Sir Aaggie Korndyke Pontiac from A. R. O. dams. Write for particulars or come see them. R. F. Guerin, Visalia, Calif.

SUNNYBROOK RANCH, WILLITS, CAL.—Registered Holstein bull calves, sired by a grandson of King of the Pontiacs.

PALO ALTO STOCK FARM, Palo Alto, breeders of registered Holsteins. Heifers and service bulls. Reasonable prices.

CREAMCUP HERD — Registered Holsteins. Pontiac bull calves. M. Hendridge, Rt. A, Box 127, San Jose, California.

REGISTERED HOLSTEIN BULLS with world's record backing. Kounias Registered Stock Farm, Modesto, California.

EL DORADO HERD OF HOLSTEINS — Alex Whaley, Tulare, California.

BREEDERS OF REGISTERED HOLSTEIN cattle and Berkshire pigs. Whittier State School, Whittier, California.

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REGISTERED HOLSTEINS — Best blood lines of the breed. R. L. Holmes, Modesto, Cal.

GOTSHALL & MAGRUDER — Breeders of registered Holstein-Friesians. Ripon, Calif.

CHOICE HOLSTEIN bulls for sale. No females. Millbrae Dairy, Millbrae, California.

BREEDERS OF REGISTERED HOLSTEIN cattle. McAlister & Sons, Chino, California.

HOLSTEIN BULLS and bull calves from A. R. O. cows. C. A. Miller, Ripon, California.

REGISTERED HOLSTEIN CATTLE—E. E. Freeman, Route B, Modesto, California.

Jerseys.

SUNSHINE FARM JERSEYS — Tuberculin tested. Production counts. E. B. Greenough, Merced, California.

YOUNG BULLS from Register of Merit cows. W. G. Gurnett, Orland, California.

Guernseys.

GRAPEWILD FARMS GUERNSEYS.
A 21-months-old bull out of dam with record of 615 pounds in A. A. class, and a few young bulls up to 1 year of age.
A. B. Humphrey, Escalon, California.

HIDDEN VALLEY FARM offers for sale 2 young Guernsey bulls, ready for service, out of high record advanced register dams. A. J. Welch, proprietor, Redwood City, California.

EDGEMOOR FARM GUERNSEYS — First in the show ring and in official records. Few animals of either sex for sale. Edgemoor Farms, Santee, California.

PALO ALTO STOCK FARM, Palo Alto—Breeders of registered Guernseys; both sexes; prices reasonable.

Ayrshires.

NORABEL FARM AYRSHIRES — Purebred young stock for sale at reasonable prices. Le Baron Estate Company, Valley Ford, Calif.

ELKHORN FARM AYRSHIRES — Choice young bulls at reasonable prices. J. H. Meyer, 440 Montgomery St., San Francisco, Calif.

AYRSHIRES — Registered; all ages. E. B. McFarland, 412 Claus Spreckles Building, San Francisco, California.

BULL CALF—Serviceable age. Redwoods Ayrshire Farm, La Honda, California.

MILKING SHORTHORNS.

BREEDERS OF REGISTERED SHORTHORNS—Milk strain; choice young stock for sale. John Lynch Ranch, Box 821, Petaluma.

INNISFAIL DAIRY SHORTHORNS—Registered young bulls for sale. Alexander & Kellogg, Suisun, California.

BEEF CATTLE.

AM A SPECIALIST in registered beef cattle and familiar with the best herds in the country. If you need Shorthorns or Herefords, make use of my experience, save money and be satisfied. R. M. Dunlap, Hotel Land, Sacramento, Calif.

RANCHO SAN JULIAN SHORTHORNS — Purebred range bulls, unregistered, for sale. Estate Thos. B. Dibblee, Santa Barbara or Lompoc, Calif. John Troup, Supt.

ALAMO HERD REGISTERED HEREFORDS (founded by Governor Sparks). Herd and range bulls. Reasonable prices. W. D. Duke, Likely, Modoc county, California.

REGISTERED YEARLING SHORTHORN BULLS — Heavy-boned, thick-meated, Scotch and Scotch-topped breeding. Ormondale Co., Route 1, Redwood City, California.

REGISTERED MILK AND BEEF SHORTHORNS, bulls and heifers for sale; catalogue free. Thomas Harrison, Santa Rosa Stock Farm, Santa Rosa, California.

HEREFORDS—Sierra Vista Herd, Minturn, California. Over one hundred registered animals. Fairfax and Repeater bulls head the herd. On highway.

THE NEVADA HEREFORD RANCH, Jno. H. Cazier & Son Co., Props., Wells, Nevada. Registered Hereford cattle. Breeding stock for sale.

REGISTERED SHORTHORNS—A few choice young bulls, grandsons of Fair Knight. Prices reasonable. Fair Oaks Ranch, Willits, Calif.

JACK LONDON RANCH—Breeders of prize-winning beef Shorthorns. Glenn Ellen, Calif. Eliza Shepard, Supt.

HOPLAND STOCK FARM—Registered Shorthorns. Prices on application. Hopland, Calif.

REGISTERED HEREFORDS—H. H. Gabb, Diamond G Ranch, Esparto, California.

SIMON NEWMAN CO., breeders of Registered Herefords, Newman, California.

GEORGE CALLAHAN, breeder of registered Herefords, Milton, California.

GEORGE WATTERSON—Breeder Registered Herefords, Bishop, California.

HEREFORDS—Mission Hereford Farm, Mission San Jose, California.

SHORTHORNS — **Carruthers Farms.** Live Oak, California.

SHEEP AND GOATS.

F. A. MECHAM ESTATE, Petaluma, Cal.—Breeders and importers of Shropshire Rambouillets and American Merinos, both sexes. Also Red Polled cattle. Take electric car at Petaluma or Santa Rosa for Live Oak Ranch.

DORSETS AND ROMNEYS — Dorset ram lambs for sale. John E. Marble, South Pasadena, California.

BISHOP BROS., SAN RAMON, CALIF. — Breeders and importers of Shropshires.

KAUPKE BROS., WOODLAND, CALIF. — Breeders and importers of Hampshire sheep.

CHAS. KIMBLE—Breeder and importer of Rambouillets, Hanford, California.

CALLA GROVE FARM, MANTECA, CALIF. — Breeders and importers of Hampshire sheep.

SHROPSHIRES FOR SALE—Lamb sired by C. J. L. Stonebraker, Route A, Chico, Calif.

MISCELLANEOUS.

BUTTE CITY RANCH—Shorthorns, Shropshires, Berkshires and Shetland ponies. Write for prices and descriptions before buying. Butte City Ranch, Box P, Butte City, Glenn county, California. W. T. Dwyer and W. S. Gulliford, owners.

REGISTERED HOLSTEINS and Durroc Jerseys. Sturgeon Stock Ranch, Tulare, Calif.

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Money Maker Cutters are accident proof—can't possibly get your hand in knives.

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Safety Yoke control protects the operator; shock-proof Cushion Drive protects the machine; auxiliary Feed Roll for feeding uncut bundles of corn from the wagon; springless Compression Force Feed, angle steel frame, plate steel housing, solid base—free from vibration.

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Insure your crops against frost, drought and harvesting losses. Save money by refilling silo after settling. Have your own machine. Don't wait for your neighbor and lose your feed.

Knives easily sharpened. Light running. Fills tallest silo. Send for catalog and more information.

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PRINCE RIVERSIDE WALKER.

Aaggie Acme of Riverside 2nd and Miss Valley Mead De Kol Walker, his two sisters, made the highest official yearly butter record and the highest butter record for three-year-old, respectively, for 1917-18. His get won first prize at Sacramento last year. We are breeding his daughters to King Korndyke Pontiac, our young $6,500 sire, whose great individuality, fine type, and backing of an unbroken line of great producing dams are hard to beat. Come and see the result of this breeding or write us for further particulars.

Our Entire Herd is Tuberculin Tested.

Tulare Holstein Farm

W. J. Higdon, Owner TULARE, CAL. H. L. Redd, Herdsman

Helps Your Horses—Saves You Money

The horse is a vital factor in greater farm production. To realize the best results he must be kept one hundred per cent. fit.

STUFFED COLLAR PADS
Filled with our Special Composite Stuffing
are the only guarantee against bruised, galled and chafed shoulders. They are better than other kinds, being soft, springy and absorbent. They also make possible the continued use of a horse collar long after its worn condition would otherwise compel its discontinuance.

NEW PATENTED HOOK ATTACHMENT
(Found Only on Pads Made by Us)
Consists of wire staple with felt washer. It gives hook a firmer hold and prevents pulling off, even though fabric is weakened by long usage. Life of pad is thus materially lengthened. This is the greatest improvement since we invented the hook. Ask your dealer for Tapatco Booklet.

THIRTY-SEVEN YEARS MAKING PADS
Look for the Felt Washer
SOLD BY DEALERS EVERYWHERE
The American Pad & Textile Company, Greenfield, Ohio
Canadian Branch: Chatham, Ontario



Pat. in U.S. Dec. 1, 1914
Pat. in Can. Dec. 1, 1915

LIVESTOCK QUERIES

Subscribers wishing an immediate reply should send money order for $1. No charge for questions answered through this department. Inquirer must give full name and address.

Boar Must Have Exercise.

To the Editor: I have a yearling boar that for the last six months has been in a pen 10x10 with a wooden floor. Lately he has trouble in getting up to eat, and when I put him in a small field, thinking it might improve his condition, he lies still all day, and it seems almost impossible to get him to stand on his feet. What is the trouble?—O. F., Cloverdale.

[Answered by Livestock Editor.]

You did wrong both in keeping the growing boar in such a small pen and in having a board floor. Exercise is just as necessary as feed, and while a boar may grow without exercise he will not develop the necessary constitutional vigor to sire strong, husky pigs. Do not attempt to use the boar as a breeder until he is in vigorous condition. Give him one tablespoon of codliver oil, 15 grains phosphate of lime and 3 drops fluid extract nux vomica in a little feed twice a day and continue until the trouble has been overcome. Keep him in a field and as soon as he is able to walk around make him work for his living.

After-Farrowing Trouble.

To the Editor: I have a valuable sow that has been discharging since farrowing. How can I stop this and will it be safe to breed her again? —G. C. H., Lemoore.

[Answered by Livestock Editor.]

It will be safe to breed the sow after the discharge has been stopped entirely. Use an injection of a 2 per cent Lugol's solution or a light pink permanganate of potash solution, douching her every day for a few days and then every other day. Treatment through one heat period probably will cause the discharge to cease.

Horse Has Mud Fever.

To the Editor: My young mare is lame in her hind legs. They were swelled at first and on starting to walk she raised her feet high and out from her. Now her hind fetlocks are breaking out and matter oozes from them. She was working, but has been standing in the stable for three weeks.—L. J. B., San Jose.

[Answered by Dr. E. J. Creely, San Francisco.]

Your mare has mud fever. Wash the affected parts thoroughly with castile soap and hot lysol water. Scrub well and dry. Remove the hair and scabs and then apply the following ointment, once daily: zinc ointment, 4 ounces; lanoline, 2 ounces; balsam of Peru, 4 drams; iodoform, 2 drams.

Blue Bag in Ewes.

To the Editor: Please give me treatment for ewes having blue bag. —Herder, Los Angeles.

[Answered by Dr. E. J. Creely, San Francisco.]

Blue bag is a common disease in ewes in Utah and thousands are lost annually. The disease begins shortly after lambing. Small black spots appear in the udder, which rapidly enlarge. A slough follows and gangrene develops. I have used a 20 per cent formaldehyde solution as a local application, trimming away the diseased tissue before beginning treatment and had some success in the early stages. In the latter stages I have tried complete amputation of the udder with a few good results.

Colored Pictures of Livestock.

To the Editor: Where can I get a book with colored illustrations of hogs?—J. H. L., Hollister.

[Answered by Livestock Editor.]

If you merely desire pictures and do not care for reading matter, it will not be necessary for you to purchase a book, as Armour & Company, Chicago, have recently issued a Breeders' Chart which they are offering to farmers free, and which shows in colors the packers' type of all of the prominent breeds of beef cattle, hogs and sheep. They will be glad to send you a copy.

Hog Syndicate "Gone West"

H. D. Riker of the Associated Swine Breeders, San Francisco, has left for parts unknown, according to reliable information. This concern has tried different schemes to put its game across. First it sold sows and the proposition was to carry them and their offspring on a 50-50 basis. But that plan did not seem to work, so a few months ago a permit was secured from the State corporation commissioner to sell stock, the commissioner requiring that all of the swine units be bought up or converted into stock.

Evidently the new plan did not prove successful, for it is reported not only that Riker's whereabouts are unknown, but that several attachments have been levied against the concern; that back salaries are due employees, and that the books are missing.

Let us rejoice and wax exceedingly glad. This is the second chapter in the extermination of the hog syndicates, as stockholders recently brought action against the Montezuma Company. The Rural Press was the first paper to expose the hog syndicates, and we shall continue our efforts until the very last one pulls down the blinds.

Great Program for Swine Breeders

"Each speaker the leading authority in his line," seems to have been the motto of the California Swine Breeders' Association in preparing for its annual meeting to be held at the University Farm, Davis, April 10. The program includes addresses by Dean H. E. Van Norman, Dean Thos. F. Hunt, Prof. Gordon H. True, Prof. Elwood Meade, Prof. J. I. Thompson, and Dr. F. M. Hayes of the College of Agriculture and University Farm; President C. B. Cunningham; F. M. Washburn, president of Western Meat Co.; E. E. Nichols of the Bureau of Markets; Roy M. Filcher of the Farm Bureau Auction Sale Association, and Presidents A. B. Humphrey, F. M. Johnson and W. Bernstein of the different breed associations.

Let's all go. We cannot afford to miss the interesting and instructive talks that will be given by these noted men.

SHEEP RAISING REMUNERATIVE.

It is predicted that between 50,000 and 70,000 sheep will be shipped out of Imperial Valley this year and that this will pour into the laps of the ranchers between $1,000,000 and $1,250,000. Sheep raising has become one of the greatest branches of agricultural industry in the valley. An Eastern buyer predicted that it would be possible to make premium products of milk-fed lambs from the valley that would bring up to $20 per hundred pounds this season.

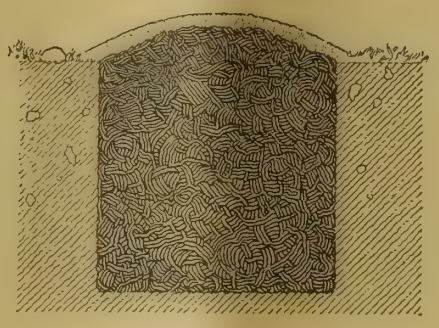
Wet Horses

Your work horse gets overheated in the spring. His long, wet coat takes hours to dry. Meanwhile, his open pores absorb the filth that has lodged in his hair all winter, and he catches cold and gets sick. Prevent this by spring clipping. Use a Stewart Machine. Only $9.75. Send $2—pay balance on arrival.

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The SILOS of Europe

The plodding farmers of Europe early recognized the value of silage. So they store their crops in deep wells dug in the soil.



Much of the silage is spoiled by this crude method. Much of the feed value escapes. Still there is some succulent feed for the stock when pastures are bare.

The European idea is good, but use of the idea is poor. Progressive American farmers are making the best possible use of many crops by storing them in **SIMPLEX SILOS.**

They Make Feeding Pay. Here are a few reasons why:

1. **Wood construction** — One-piece unspliced staves of Oregon Pine (Douglas Fir) form the silo itself. Wood is the natural preserver. It prevents the ensilage from spoiling.



SIMPLEX SILO

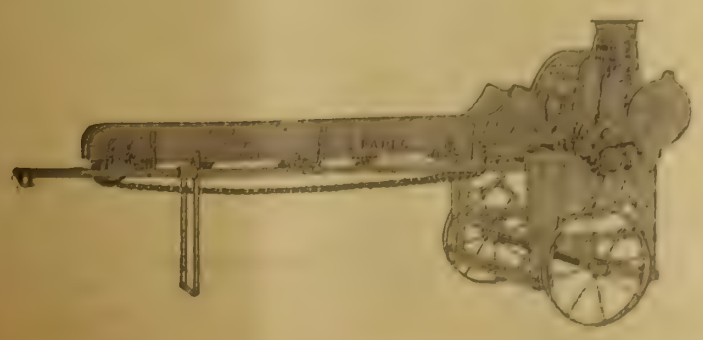
2. **Good quality steel** is used for hoops and other hardware. A double interlocking system of anchoring gives the Simplex strength to resist storms.

3. **The Crissell Tangent Top** device holds the shape always round. The top stays the same size as the bottom. Thus settling of the ensilage cannot form rotting air pockets. Simplex prevents waste.

Sooner or later you will build a silo. Find out more about the Simplex. Mail the coupon in the corner.

The PAPEC Saves, too!

Just as the Simplex saves the food in the crop, Papec Ensilage Cutter saves power and cost in filling the silo. It **throws as well as blows.** Mail the coupon that asks for more information about Papec.



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SANTA FE LUMBER COMPANY,
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Please send me folder describing Simplex Silos, also information about Papec Ensilage Cutters.

Name .....

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Poultry and Rabbits for Profit

Conducted by R. H. Whitten, Livestock Editor.

WAYS OF PRESERVING EGGS.

Unfortunately, a flock of hens cannot be made to lay the same number of eggs every day in the year, or even every month. During the spring and summer months they will shell them out at a lively clip. Consequently the price is low, and the housewife thinks it is a good plan to use lots of eggs instead of selling them. The result is that the whole family becomes tired of an egg cooked in any form. Later on, when the price is sky-high, the family craves eggs; but the hens have almost stopped laying and few are to be had.

Properly cooked and served, eggs make about the best breakfast for the average family, and it is much wiser to use them in moderation for twelve months than to serve them so often at one season that they cease to tempt the appetite. This can be done by preserving a supply of eggs for the winter months during the period when the hens are laying freely and eggs are cheap. Such eggs can be used satisfactorily for all purposes in cooking and for the table.

Fresh eggs properly preserved may be kept from eight to twelve months in excellent condition. Eggs laid during April, May and early June have been found to keep better than those laid later in the season. The eggs should be fresh and clean and, if possible, infertile. Eggs that float when placed in the solution are not fresh and therefore cannot be preserved. When an egg is only slightly soiled, a cloth dampened with vinegar can be used to remove such stains. Under no circumstances should badly soiled eggs be used for preserving; if put into the jar while dirty they will spoil, and washing removes a protective coating which prevents keeping. Such eggs should be used for immediate consumption and the clean eggs preserved. Cracked eggs or those with thin or weak shells should never be used. Not only will a cracked egg itself spoil, but it will cause many of the other eggs packed in the same crock with it to spoil as well.

WATER-GLASS METHOD.

A good method for the preservation of eggs is in the use of sodium silicate or water glass. It is a pale yellow, odorless, syrupy liquid, and may be purchased by the quart from drug or poultry supply stores. If the price is about 30c a quart, eggs may be preserved at a cost of approximately 2c a dozen. It is not desirable to use the water-glass solution a second time.

Earthenware crocks or jars make the best containers, as they have a glazed surface and are not subject to chemical action from the solution. They should be scalded so that they will be perfectly clean, and should be allowed to cool before they are used. Too large containers are not desirable, as they increase the liability of breaking some of the eggs. A five-gallon size is about right.

Use one quart of sodium silicate to nine quarts of water that has been previously boiled and cooled, and stir the mixture thoroughly. Half fill the container with the solution and place the eggs in carefully so that they will not crack. Add eggs from day to day as they are obtained, but be sure that they are always covered with at least two inches of solution.

Place the crock containing the preserved eggs in a cool, dry place, where it will not have to be moved, and cover it well to prevent evaporation. Waxed paper covered over and tied around the top of the crock will answer well. Examine from time to time, and if considerable water has been evaporated add sufficient cool boiled water to keep the eggs well covered.

When it is desired to use the eggs, remove them as needed and rinse in clean, cold water. Before boiling such eggs, prick a tiny hole in the large end with a pin or needle, to keep them from cracking. This allows the air in the eggs to escape when they are heated. As the eggs age the white becomes thinner and is harder to beat. Also the yolk membrane becomes more delicate and it is harder to separate the whites from the yolks.

USE OF LIME METHOD.

When water glass cannot be obtained, the lime method may be used instead. Many consider this method entirely satisfactory, though there are instances where eggs so preserved have tasted slightly of lime.

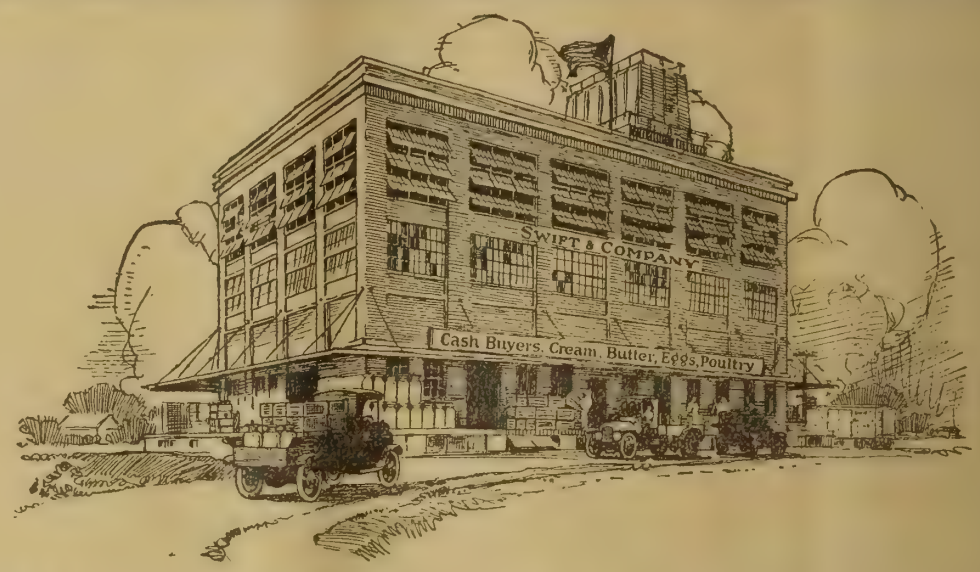
Dissolve two to three pounds of unslaked lime in five gallons of water that has previously been boiled and allowed to cool, and allow the mixture to stand until the lime settles and the liquid is clear. Place clean, fresh eggs in a clean earthenware jug or keg and pour the clear lime water into the vessel until the eggs are covered. At least two inches of the solution should cover the top layer of eggs. Sometimes a pound of salt is used with the lime, but experience has shown that in general the lime without salt is more satisfactory.

HOUSING GROWING CHICKS.

Growing chicks should be provided with a house that will give them a place to stay in bad weather and at night. No particular style of house is required, but it should be so built that it will provide ample ventilation, dryness, sunlight, freedom from drafts, and be so arranged that it can be cleaned easily and frequently.

The lumber from piano and dry goods boxes can be used in building such a house, and when covered with ordinary roofing paper so as to keep out the rain will make desirable quarters. It is well to build such houses on the colony plan so that they can be moved from place to place, thus providing the chicks with fresh ground to range over. Elevating such a house six inches above the ground will help to keep the floor dry by means of the circulation of air, and such space will also provide shade for the chicks.

In placing the chicks in their growing house for the first time, it is best to confine them for several days by erecting a temporary yard in which they can run for five or six days, until they learn where to return. Care should be taken not to crowd the chicks by placing too many in any one house. When the chickens cover the greater part of the floor at night, it is an indication that they are too crowded. At such a time they should be thinned out and part placed in another house.



Why does Swift & Company sell poultry, eggs, and butter?

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Years ago Swift & Company built up a nation-wide distributing organization, including thousands of refrigerator cars and hundreds of branch houses with refrigerator equipment, for the marketing of meats. And none of this equipment was being used to maximum capacity.

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Swift & Company, U. S. A.

Established 1868

A nation-wide organization owned by more than 25,000 stockholders

COMMON SENSE IN BUYING.

The buyer of poultry stock should exercise common sense in purchasing. Beginners are too prone to expect nearly perfect birds at bargain prices. Ideally conformed cattle or horses always bring record prices when they are offered at the auction block, and the selling of high-class poultry operates along similar lines. If buyers want valuable birds, they must be willing to pay prices for these fowl in proportion.

Common defects which occur in different breeds often cause beginners to grumble over the supposition that they are being cheated. As an example, off-colored feathers are frequently considered to be evidences of impurity of blood. The beginner has no other means of knowing what the bird should be like than by the descriptions which he can secure from a book or by attending a poultry show. In the description he finds only mention of the color of feather which is desirable, and no mention of the off-colored feathers which may and often do occur in the birds of purest blood. If he goes to a poultry show he does not find any birds with off-colored feathers, and it is the common practice of exhibitors to remove these feathers before showing.

Accordingly, it would be desirable for beginners who purchase birds which do not satisfy them to consult some experienced breeder of the same variety and ascertain his opinion regarding the quality and value of the fowls. Armed with such reliable information, the novice then has some grounds for talking about being overcharged or defrauded. Without such authentic information his best plan is to live up to the saying, "In silence there is sense."

HAVE THE BROODER READY.

Buyers of day-old chicks should have a brooder ready, warmed and regulated when the chicks arrive. If for any reason the brooder is not ready, take the chicks from the shipping box in a warm room, feed, and return to the box; repeat at intervals of three hours until the brooder is ready.

For the first few days give very close attention to regulating the brooder for the comfort of the chicks. This is the troublesome state in the operation of a brooder, and the most critical period in the life of the chick.

Poultry Breeders' Directory

BARRED ROCKS SUPREME—Eggs—Ribbons. Won first on pen Los Angeles, 1919. Special price on eggs from my prize-winning egg-laying strain, $3.50 per 15 eggs. R. T. Lyans, 5906 So. Grand, Los Angeles.

SANTA CLARA VALLEY HATCHERY has the chicks for you from six different standard breeds, all bred for egg yielders. Can furnish references from my old customers if desired. Lincoln Ave., San Jose, California.

OUR FINE FEMALES—Can supply you with eggs at 30c. each and up that will hatch just what you want in general purpose fowls. Write for mating list. O. B. Hunt, White Rock Fancier, Berkeley, California.

RHODE ISLAND REDS—Best all-purpose bird. Oakland show. First cock, second cockerel, fifth pullet on four entries. Hatching eggs. Prices for asking. John L. Reed, Route C, Box 36 B, San Jose, California.

BABY CHICKS—Hoganized White Leghorns, utility Rhode Island Reds, Barred Plymouth Rocks, Anconas, and Blue Andalusians. Free circular. McDonald Poultry Ranch, King Road, San Jose, California.

S. C. WHITE LEGHORN EGGS for sale, from heavy-laying, prize-winning strain, headed by males from 280-egg stock, range raised. Setting, $1.50. Hundred, $8.00. Mrs. Sanders Hayes, Longvale, Cal.

CROLEY'S RED STAR CHICK FEED—California's standard Baby Chick Feed for twenty-five years. Manufactured by Geo. H. Croley Company, Inc., 8th and Townsend Sts., San Francisco, Calif.

BABY CHICKS—Hatched from our S. C. White Leghorns a result of many years careful selection and breeding. San Jose Poultry Yards, Fifteenth and Margaret streets, San Jose, California.

CHICKS OR EGGS from Hoganized W. Leghorns. Also limited quantities of Barred Rocks, Buff Minorcas, Buff Leghorns, Reds, Light Brahmas. S. Martina, Rt. 2, 627, Santa Cruz.

BABY CHICKS—From Hoganized breeders, 180-egg type and up. White Orpingtons and Sicilian Buttercups. Order early for future delivery. M. S. Woodhams, San Mateo, Calif.

BABY CHIX R. I. REDS
My specialty. Bred for eggs, size, color. Hens on free range means strong chix. Price right. Denton Poultry Yards, Box 360, Campbell, Cal.

THOROUGHBRED R. I. REDS—Thompson strain heavy layers. Hatching eggs, specially selected, $2.00 per 15. 80 per cent fertility. Mrs. C. M. Hagood, Rt. 1, 504A, San Jose, Cal.

SULLIVAN'S FAMOUS BUFF ORPINGTONS — Want the best? Write Sullivans, Specialists. Oldest flock on Pacific Coast. Line bred for 20 years. Said by Walter Hogan, originator of "Hogan System," best layers of this variety he ever handled. Have won thousands gold and silver special prizes, cups and ribbons—more than all competitors combined, on the Pacific Coast. Eggs, $3.00, $5.00 per 15; $12.00 and $15.00 per 100. Breeding stock. Write for prices. Mr. & Mrs. W. S. Sullivan, 100 Market Road, Agnew, Santa Clara Co., California. Telephone San Jose 5205, Route 5.

66-EGG INCUBATOR SHIPPED TO YOU—Express prepaid—only $7.50, or for $12.75 we will send incubator and 66 hatching eggs, White, Buff or Brown Leghorns, Rhode Island Reds, Anconas or Black Minorcas. This is the Famous 66 Peerless Hatcher made and warranted by H. M. Sheer Co., Quincy, Ill. Gives universal satisfaction—thousands in use in California. Send money order or check at once, as we can only sell a limited number at this price. Poultrymen's Co-operative Hatchery, 732 So. Spring St., Los Angeles, Calif. 10 breeds of baby chicks for sale. Send for circular.

WHY SPEND MORE FOR ORDINARY CHICKS?—My 900 hens averaged over 240 eggs each last year. Why? Bred 20 years to lay 200-290 eggs yearly. White, Brown, Buff Leghorns; Reds; Anconas; Rocks, Minorcas; Orpingtons; clearing customers $5.00. Valuable circular with proof—free. Chicks: Two-thirds booked to June, yet most weeks still open for hundreds. 70,000 capacity hatcheries supplying chicks. Many repeat orders monthly, yearly. Eggs: Hatcheries overflowing; selling eggs half price, 15-1000. Breeders, pullets. J. Beeson, Pasadena, Cal.

WHITE LEGHORNS are the most profitable breed of poultry. If you are in the business for profit, you will eventually have them. Early broilers; early layers; early **profits**; we sell only **White Leghorn Baby Chix** from heavy laying **Hoganized** hens. Safe delivery of full count live chix guaranteed. Prices per 100: February, $15; March, $14; April, $12.50. The Pioneer Hatchery, 408 Sixth street, Petaluma, California.

SINGLE COMB BROWN LEGHORNS—The large, modern, heavy-laying type that won high honors for us at the National Egg-Laying Contest. No better layers, none others so hardy. For 20 years our strain has won highest prizes at New York, Boston, Chicago, San Francisco, etc. Absolutely the finest Brown Leghorns in America. Eggs, $3 and $5 per $15; $15 per 100. Williams Bros., Fullerton, California.

BARRED PLYMOUTH ROCKS—Champion prize winners and wonderful layers. Choice cockerels, hens and pullets for sale. Hatching eggs from twelve grand matings. I have made a specialty of Barred Rocks for over twenty years. That's why I win at all leading shows. "Nothing Better In Poultry" than Vodden's Barred Rocks. Catalog free. Chas. H. Vodden, Box 396, Los Gatos, California.

BABY CHICKS—We specialize this season on money-making White Leghorns—hatching from stock with high records that are unimpeachable. Also Brown Leghorns, Anconas, Minorcas, Rocks, Reds, Orpingtons, and White Wyandottes. Especially interesting circular with price list ready January 1st. B. W. Archibald, Soquel, Santa Cruz Co., Calif.

S. C. WHITE LEGHORN CHICKS—Any quantity, from A-1 Hoganized and trapnested stock, winners of 1st, 2nd and special for pullet and 1st cockerel at Pacific Coast Land Show. Booked up for March delivery; orders taken for April 18th. A. O. & P. M. Forster, 2918 Otis St., Berkeley, California.

GOLDCROFT BUFF ORPINGTONS fulfill every standard and utility requirement. Won San Jose show first, second, third, pullet and cockerel. Eggs, $5.00 and $3.00 from winning pens; $2.00 from general flock; $12.00 per hundred. Stock for sale. Samuel Abrams, Los Altos, California.

SUPER QUALITY WHITE LEGHORN CHICKS, hatched right in Jubilee machines from best strains of foundation stock. Our customers come back each season; we can refer you to them. Write at once before we are all sold out. Newton Poultry Farm, Los Gatos, California.

BABY CHICKS EVERY WEEK—Order early and get the date you want. White and Brown Leghorns, Rhode Island Reds, Barred Rocks, Anconas. Also hatching eggs. Safe delivery guaranteed. Write for circular. Stubbe Poultry Ranch and Hatchery, Palo Alto, Calif.

FINEST HATCHERY IN THE WORLD—CHICKS, White Leghorns, Rhode Island Settings—1000's—hatched right in our $60,000 brick and concrete hatchery from our Hoganized heavy layers. Stock, eggs. Pebbleside Poultry Farm, Sunnyvale, California.

RHODE ISLAND REDS—Rose and single comb Rhode Island Red hatching eggs from 220-egg record layers. Cockerels, rose and single comb. Pens. Improve your color, type, and egg capacity. Write for mating list. Wm. Larm, 3915 39th Ave., Fruitvale, Calif.

PRUSSIAN HILL POULTRY RANCH—A few fine Blue Andalusian Cockerels, $3.00 and $5.00. Hatching eggs. Rocks, Minorcas, Andalusians, $2.00 for 15; Baby chicks at 20c., 25c., and 50c. each. Geo. I. Wright, Meadowmont Hill, California.

ATKINSON'S PEERLESS ANCONAS lay more and eat less than other breeds. 50 big husky cockerels $5 and up. 200 pullets, trios and pens for sale. Hatching eggs. Catalogue free. J. W. Atkinson, Box B, 130 Willard street, San Jose, Cal.

HATCHING EGGS—White Leghorns, Light Brown Leghorns, Dark Brown Leghorns, White Rocks $2.50 per 15, $10.00 per 100. All bred to highest possible standard of health and utility. Mahood Farm, P. O. Box 90, Sacramento, California.

SLY'S RHODE ISLAND REDS. Winners and layers. Hatching eggs from [illegible] Rose comb Reds scientifically bred for exhibition and utility. Settings, $5.00, $3.50, and $2.00. Send for catalogue. Albert Sly, 1043 Michigan Place, Los Angeles.

SPRING CHIX—Rhode Island Reds, Barred Rocks, Brown and White Leghorns from trapnested stock bred to lay. Hatching eggs and safe delivery guaranteed. [illegible] Poultry Ranch, Watsonville, [illegible] Calif.

S. C. RHODE ISLAND REDS EXCLUSIVELY. Pacific Coast Association [illegible] flock. Booking orders for [illegible] and hatching eggs. Order early. [illegible] Poultry Farm, Motor A, Box 700A, [illegible] Calif.

FOR SALE—W. [illegible] and better trapnested White Leghorn [illegible] four fingered cock at head. [illegible] breed a three hundred [illegible] offers. C. B. [illegible]

WANTED—Three young [illegible] State price. Forest Martin, Ceres.

MODEL POULTRY FARM—White Leghorn specialists. Our fifteenth year. Baby chix and hatching eggs for sale. Our prices are right. W. C. Smith, Prop., Corning, Calif.

SELECTED — S. C. Leghorn and Barred Rock eggs for hatching. Hens typed to lay 200 to 260 eggs per year each, $6.00 per 100; $1.50 for 15. Jay Maxwell, Madera, Calif.

BARRED PLYMOUTH ROCK EGGS for sale. Good range flock headed by cockerels from 260 to 290-egg stock. $1.50 per setting. Mrs. J. A. Vassar, Laytonville, California.

FOR SALE—Bourbon Red turkeys and eggs for hatching, $5.00 per setting of 13 eggs. Book your orders early. Albert E. Balmer, Alhambra Valley, Martinez, California.

EGG BRED—Buff, Brown, White Leghorns, Golden Campines, Dark Cornish. Winners wherever shown. Send for circular. Percy Ward, 3142 Ward St., Fruitvale, California.

DUCKS—Mammoth Pekins and White Runner eggs, 15c. each. Poultry of all kinds. Write us your wants. Wood Poultry Yards, 632 North 3rd St., San Jose, Calif.

EASTMAN'S "BRED-TO-LAY" Hoganized and trapnested Barred Plymouth Rocks. Baby chicks. Eggs; cockerels. Fairmead Poultry Farm, Fairmead, California.

SCHMITTY'S BARRED ROCKS leading at the showrooms as well as at winter laying. Write for 1919 mating list. Geo. Schmitt, Box 263, Corcoran, California.

BABY CHICKS—Booking orders for spring deliveries. White and Brown Leghorns, Rhode Island Reds, Barred Rocks. E. W. Ohlen, Campbell, California.

WHITE WYANDOTTES—Eggs for hatching from our heavy-laying, prize-winning stock, $3.00 and $5.00 per 15. R. W. Stawetski, Rt. B, San Jose, Cal.

BABY CHICKS (White Leghorns) shipped on approval before remitting. No weak ones charged for. Schellville Hatchery, Schellville, California.

BABY CHICKS—We have the large heavy-laying S. C. White Leghorns, severely culled last year. Send for prices. Tupman Poultry Farm, Ceres, California.

THOROUGHBRED BUFF ORPINGTON EGGS—from heavy laying stock. Settings, $1.50. Mrs. M. Lopez, Lathrop, California.

CHICKENS, DUCKS, GEESE, GUINEAS, Pea Fowl, Pigeons. Wm. A. French, 545 W. Park St., Stockton, California. Stamps.

BUFF ORPINGTONS, BUFF DUCKS, BOURBON RED TURKEYS — The Ferris Ranch, Rt. 2, Box 144D, Pomona, California.

BLACK MINORCA EGGS—$1.50 per 15. Special mating, $2.00. Edward A. Hall, Rt. 1, Box 39, Watsonville, California.

PIT GAME CHICKENS that are game. Also eggs for hatching. Frank McMann, 689 32nd St., Oakland, Calif.

LIGHT BRAHMA EGGS—13, $2.00. Stock for sale. J. Dolan, 146 Wyandotte St., Stockton, Calif.

RHODE ISLAND RED EGGS for hatching. Mrs. Richard Holdridge, P. O. Box 282, Dixon, California.

BRONZE TURKEY EGGS—No more eggs till further notice. Albert M. Hart, Clements, California.

FAWN RUNNER DUCK EGGS—$1.25 per setting. Mrs. M. Lopez, Lathrop, Cal.

RABBITS.

RAISE RABBITS—Best rabbit book published and membership in the California Commercial Rabbit Association, with all back educational bulletins showing hutch plans, feeding schedules, medicine formulas, and educationals for following year, $2.50. H. A. Sanderson, Eagle Rock, Calif. Dept. C.

BOOKS YOU NEED — "Western Rabbit Book," 50c.; "Western Poultry Book," $1.00; "Making a Living on an Acre" and "Care of Rabbits, Ducks, Pheasants, etc.," 25c.; "Richey's Fur Rabbit Guide," 50c. All four for $2.00. Mrs. C. A. Richey, 616 N. Benton Way, Los Angeles, Calif.

RABBITS FOR PROFIT—We pay top prices for rabbits raised from our stock. Our pedigree and utility strains make big money for you. For full information write, L. A. Rabbitry, Dept. P, Los Angeles, Cal.

NEW ZEALAND REDS—First-class utility breeding stock and young for sale. F. R. Caldwell, Broadmoor, San Leandro, Calif.

RAISE RABBITS FOR US—We supply the breeding stock. Send stamp for particulars. H. E. Gibson Co., Arcadia, Calif.

DR. B. HEARN, VETERINARIAN—Breeder New Zealand and Flemish Giant Rabbits. R. R. 2, Porterville, Calif.

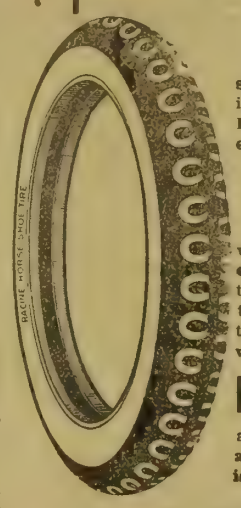
NEW ZEALAND REDS—Registered pedigreed stock from prize winners. Bred does. Fine, dark-red bucks. Write your wants. E. Peppin, 86 Cambridge, San Leandro, Cal.

LOS ALTOS RABBITRY—Choice large utility New Zealand Reds. Write your wants. Satisfaction guaranteed. F. G. Wulzen, Los Altos, California.

SAN FONG RABBITS—15-16-lb. Steel and Gray Flemish Giants. Prize winners at San Jose and San Francisco. Sanborn Young, Los Gatos, Calif.

RABBIT CULTURE AND STANDARD—Official standard description of the various breeds, 75 cents. Caldwell, Broadmoor, San Leandro.

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ITS steadily increasing demand by the RANCHER is an evidence that—

IT withstands the ceaseless attack of the worst roads—that it survives the most abusive wear and tear.

Horse Shoes are used all around by motorists who know.

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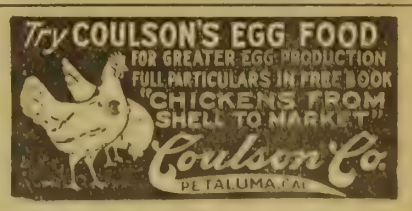
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Our book, "CARE OF BABY CHICKS," and a package of GERMOZONE are the best insurance against chick losses. Those formerly losing more than half they hatched now raise better than 90 per cent. To you who have never tried GERMOZONE, we will send postpaid, book and package as above. You pay, if satisfied, 75c; 60 days' trial. We trust you.

Druggists and seed dealers sell GERMOZONE, the best poultry remedy and preventive. For old and young,—bowel trouble, colds, roup, musty or spoiled food, limber neck, chicken pox, sour crop, skin disease, etc. Sick chicks can't wait. Do it now.

GEO. H. LEE CO., Dept. 428 Omaha, Neb.





THE HOME CIRCLE

THE PEACEFUL WARRIOR.

I have no joy in strife,
Peace is my great desire;
Yet God forbid I lose my life
Through fear to face the fire.

A peaceful man must fight
For that which peace demands—
Freedom and faith, honor and right,
Defend with heart and hands.

Farewell, my friendly books;
Farewell, ye woods and streams;
The fate that calls me forward looks
To a duty beyond dreams.

Oh, better to be dead
With a face turned to the sky,
Than live beneath a slavish dread
And serve a giant lie.

Stand up, my heart, and strive
For things most dear to thee!
Why should we care to be alive
Unless the world is free!

—Henry Van Dyke.

DOLIKINS.

"Tell us a story about some of your pets," said Mary and Ruth. "You're always having them."

"Well," said Aunt Say, as she wound up her ball of worsted, "there is Dolikins—my little dove, Dolikins. I'll tell you about that.

"A year ago last fall," she began, "a flock of pigeons used to come into the neighborhood every day, and I watched them whenever I had time. One day that old cat of Doctor Emmons' caught one of the young birds, and I ran out and took it away. The poor little thing was hurt, and lay trembling in my hand, so I brought it in and made a bed for it. I nursed it for a week, and it grew quite tame. It was very pretty—pale gray, with lovely iridescence, and it had a tiny crest.

"As it got better, it would come to my shoulder, and sit there while I moved about the house, and even when I was at work, if I permitted it to remain; and it would peck my cheek, and coo, in a soft, contented way. When it was hungry it would light on my shoulder, slide down my arm and peck my hand. Of course I loved it. Those soft feathers against my neck were so"—

"Oh, yes! Weren't they?" broke in Ruth. "I guess I know! I had a tame redbird last winter. A boy stoned him, and he fell out of the oleander, and"—

"O Ruthie, never mind that now!" said Mary. "Wait till we hear about Dolikins."

"By and by," continued aunty, "when I felt sure that it was strong enough, I carried it up to the third story, where it could see the flock on Dr. Emmons' roof, and left it on the window-edge there. Pretty soon it flew away to join the others, and I thought that was the last I should see of Dolikins. I felt quite sad. You don't know how I missed it."

"I do!" cried Ruth. "When my redbird"—

"O Ruthie!" said Mary, plaintively. "I've heard that a hundred and forty thousand times. Wait till Aunt Say gets through," she added, apologetically, "and you shall tell all about it."

"That night at dusk," the story went on, "I saw it flying toward the house. My heart leaped right up, and I ran to meet the dear thing. It lighted on the hood of the back door, and, when I called 'Dolikins!' down it came to my shoulder, and nestled up to my cheek and cooed—the darling! I was just happy. I kissed and caressed it, and brought it in and fed it.

"The next morning I put it out again, and at night it returned. It came every night for a week, and then once, when I was not on hand to receive it, it flew into grandmother's window. There was nothing the matter with the pigeon, she said, and I must stop feeding it, and then it would go away with the flock.

"So that night when it came I—pushed it away. O dear, how I felt! It tried to come back, and acted as if it couldn't believe I really meant to turn it off. My heart fairly ached." And Aunt Say looked wistful.

Ruth nodded vigorously, but did not speak this time, and Aunt Say resumed:

"It did not come to the house again, but about a week afterward I saw it with the flock on the roof across the street, and, as it was a hot, dusty day, I thought it might be thirsty. So I took a basin of water out to the sidewalk and called, 'Dolikins! Dolikins!'

"At first it did not heed, but pretty soon it flew to my shoulder, slid down my arm, and drank; and then it perched on my shoulder again, nestling and cooing so happily. Then I had to send it away, and it was so hard to force myself to do it that I never tried to call it down again, although I saw it several times."

"Oh, you poor thing!" cried Ruth. "I know just how you felt! When my redbird"—

And then Ruth told her story.—Elizabeth Hill in Youth's Companion.

EASY CAKE DESSERTS.

For a quick cake, take 2 eggs, 1 cup sugar, 2 cups flour, 2 teaspoons baking powder, ½ cup milk or water, ⅓ cup melted shortening, 1 teaspoon vanilla, 1 teaspoon lemon.

Sift dry ingredients, beat eggs very light, add sugar gradually, beating with egg beater. When creamy, add dry ingredients alternately with liquid, mixing well; add flavoring and melted shortening. Bake in two layers and put together with jelly or add ¼ cup chopped walnuts to the batter and bake in well-greased muffin tins.

For a quick coffee cake, use the quick cake foundation, pour batter into a well-greased shallow pan, sprinkle with sugar and cinnamon and bake in a moderate oven.

For apple cake, use the quick cake foundation, pour batter in a shallow, well-greased pan, cover thickly with thinly sliced apples, sprinkle with cinnamon and sugar. Bake in a moderate oven until apples are cooked. This cake is good either hot or cold and other fruits may be used, such as bananas or cooked prunes.

For cottage pudding, use the quick cake foundation, bake and cut in squares and serve with a chocolate sauce. The chocolate sauce is made with ½ cup sugar, 1 tablespoon flour, ½ cup ground chocolate, 1 tablespoon butter, 1 cup boiling water, 1 teaspoon vanilla or ½ teaspoon cinnamon. Mix all the dry ingredients, add boiling water and cook until thick, then add butter and vanilla.

DECRUSTING THE TEA KETTLE.

To the Editor: Can you tell me of something which will remove an alkali deposit from a tea kettle?—Mrs. C. G., Concord.

[Answer by Home Demonstration Division, University of California.]

Either oxalic acid or vinegar may be used for removing the lime deposit which gathers on the interior of tea kettles and other cooking vessels. Oxalic acid must be dissolved in water and one to two tablespoonfuls of the crystals (according to the size of the kettle and the thickness of the deposit) is usually sufficient when the vessel is half filled with water.

One cup or more of vinegar (according to strength) and twice as much water will have relatively the same effect.

Heat the contents of the kettle and boil slowly until no more gas is given off. No deleterious action will result with enamel ware, but when aluminum is to be treated the kettle must be emptied as soon as the deposit is loosened, else the metal itself will be affected. A specialty on the market for cleaning aluminum is a combination of pads of mineral wool and a scouring soap. This is excellent for cleaning the inside of aluminum utensils; but when the deposit is heavy it is best to use the acid first, then, if necessary, scour with the mineral wool.

[It should be remembered that oxalic acid is very poisonous and when that is used especial care must be taken in the subsequent cleaning and rinsing of vessels treated with it.—Editor.]

FASHION NOTES.

Mesh bags with very thin frames and fitted with vanity box are to be found in either gold or silver plate and are harmonious with any costume.

Net is one of the popular fabrics this spring—besides being used for gowns and blouses, it forms the trimming on dresses of taffetas and printed silks.

Some of the newest pumps and oxfords are shown in black buckskin and combinations of buckskin and satin. These are adaptable to wear with buckles. Others are a combination of kid and moire silk poplin with a little black bow behind the buckle.

The newest plaid skirts are made with but one seam—the width of the goods making sufficient fullness in the skirt. They are closed at the side with a large tuck and two or three large buttons, gathered into the waist band, with rather a wide belt, and are altogether the easiest thing possible to make.

"There is something you've noticed,
no doubt—
And it's something to think well
aboubt:
The deeper in debt that you recklessly gebt,
The harder it is to gebt oubt."

SHE WHO FEEDS US.

Mother Bruce got out of her bed at 6 o'clock in the morning and went right to work to get breakfast, for folks must eat, you know. After breakfast she put up the lunches for the boys who went to school and who always got so very hungry by recess time. Then, when the lunches had been put up, she opened the back door and there were the dog and the cats waiting for their breakfast. So she gave the dog and the cats their breakfast. Then the pet lamb came running for its milk, and she brought out the milk and fed him. The two little calves had been waiting all this time, and when they saw the lamb drinking they began to bawl and Mother Bruce took a bucket and fed them. I suppose the boys might have fed the calves, but they helped milk the cows and had to hurry to get to school in time, so Mother Bruce did it. After she had fed the calves, she began to scatter some corn for the hens. The old hens all came running as fast as they could, but some little chicks did not know what the rush was about and when their mother started to run after the other hens they cried very loudly, "Mamma! Mamma! What is it? What is it?"

Then the old mother hen answered: "Come quickly! Come quickly! It is she! It is she who feeds us," and the little chicks ran too. And by the time Mother Bruce had fed the hens and the little chicks, and put water in their drinking founts, it was time to go back into the house to attend her household tasks and get dinner.—J. C. Macy.

Keep hot water bottles and bags hanging upside down when not in use and they will last longer.

If You Buy Good
Farm Implements Why
Buy a "Cheap" Piano?

Successful farmers have long ago learned that it pays to buy good tools, implements, machinery, tractors—yes, and good automobiles. In the end they are less expensive than the "cheap" trash which did poor work and which would have had to have been replaced.

The same is true with Pianos—a good, dependable Piano which will give satisfactory life-time service cannot be made today to sell new under $300. Anything offered for less is a "near" piano, made to catch the unwary once.

It has no musical quality of tone—it gives out within a few months — it sounds tinny — the woodwork warps — the keys stick—it won't stay in tune—it is worse than no piano at all.

A good, reliable dealer carries Pianos only of true musical worth—his prices are consistent and his terms of payment are so reasonable that you can buy a good piano just as easily as you can a poor one.

We invite you to call at any of our stores—or write us asking for illustrated catalog and prices.

We are dealers in Steinway and other Pianos, Pianola Pianos, Aeolian Player Pianos, Player Music, etc.

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30x3	$ 9.85	11.90	2.35
30x3½	12.60	13.95	2.85
32x3½	13.90	16.40	3.00
31x4	18.25	21.40	3.65
32x4	18.55	21.85	3.75
33x4	19.35	22.80	3.85
34x4	19.80	23.30	3.95
34x4½	26.20	29.90	4.80
35x4½	27.00	31.20	4.95
36x4½	27.50	31.70	5.10
35x5	29.90	35.60	6.00
37x35	32.25	37.70	6.20

All other sizes in stock. Write or them or call and see them.

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into modern bathrooms to which you can conduct your guests with a feeling of pride.

The combination of beauty and simplicity contained in Pacific Plumbing Fixtures make them the most... These added convenience, and the amount of time necessary work they save, will more than compensate for their moderate cost.

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Factories at Richmond and San Pablo, Cal.



A COMMUNITY LAUNDRY.

One of the first requisites in a laundry is a washing machine, whose variety is legion. If you read the advertisements, you will find that each variety is better than all the other kinds. But the probability is that any of them are satisfactory if you provide the right sort of motive power. Some women hitch the washer to an electric motor which keeps steadily on the job. Others hitch it to a gasoline engine, which makes regular reports about its work. Still others hitch the machine to Friend Husband; and these are the women who call wash day Sunny Monday.

The more I think about it the more convinced do I become that a community laundry would be a noble institution, with many things to commend it.

The project might be a reality by each family in the community taking stock to meet the initial expense of installing the plant. A small gasoline engine could be installed for pumping water and running the machine and wringer. In case a gasoline engine is installed, the dilemma becomes two-horned—either the community must employ an engineer or every woman must become her own engineer. If the latter is the case, it would be well to have your laundry insured early in the season. A schedule could be drawn assigning each family its time for laundry service, and of course it would end, as all proper stories do—they lived happily ever afterwards.

If I was sure I could placate Henry Wadsworth Longfellow's ghost I would revise the "Psalm of Life" for the requirements of the year 1919:

Tell me not in mournful numbers
  Life is but an empty dream—
While the family clothes I'm washing,
  And the house is full of steam.

Life is real, life is earnest,
  While I'm working in the suds;
And there is no joke about it,
  As I wrestle with soiled duds.

For enjoyment do we do it?
  No, 'tis only woman's way
So to wash, that each tomorrow
  Finds her cleaner than today.

The washing's large, and time is fleeting,
And the dinner is to get—
But the neighbors will be beating,
  So a swifter pace I'll set.

Trust no weather, howe'er pleasant,
  Though the sun shines o'er your head,
Get that washing out so quickly
  It won't catch the rain that's shed.

Lives of other folks remind us
  We can whittle ours as fine,
And, departing, leave behind us
  Great big washings on the line.

Send Friend Hoover out to help us!
  Set him down among the duds,
We have Hooverized on sugar,
  Now let's Hooverize on suds.

—Mrs. Fannie E. Graham, Olathe, Kansas.

FRESHENING LAST SUMMER'S HAT.

So many of the hats are black this spring that it is quite possible to have a very fresh, good-looking hat evolved from a faded, sunburned last summer's chapeau. If the hat is white and it is desired to keep it so there are bleaches you can use to get rid of the sunburn. And if that is not entirely successful, you can then cover the hat with a thin silk or flowered crepe. But if you have a good straw and the shape is becoming it can be made to take the place of a new hat by blacking it with any of the preparations on the market. Liquid shoe polish can also be made to answer.

As for the trimming, while some hats have ostrich or other feather trimming, a good many have a broad band of ribbon terminating either in a fly-away bow or a flat tailored one, as the fancy dictates. Wreaths of small flowers are used with effect and larger flowers are applied very flatly to either crown or brim.



Call on it when friends call on you

The next time friends call on you—call on Ghirardelli's! You'll find it equal to *any* occasion. And you'll be apt to say—as many another wise hostess has said:

"It's wonderful—isn't it?—how a cup of Ghirardelli's puts people at ease—helps to make them feel 'comfy' and sociable."

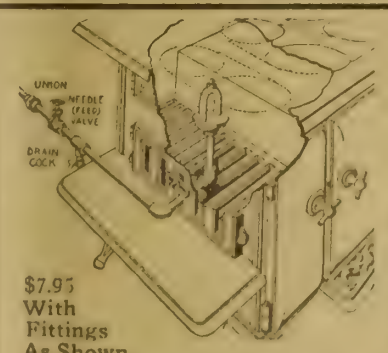
Ghirardelli's—the *original* Ground Chocolate—is not sold in bulk but *in cans only*. In ½ lb., 1 lb. and 3 lb. cans—wherever you do your trading. Look for the Ghirardelli label!

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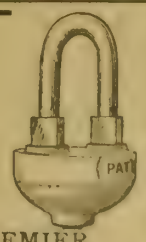


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Brighter than the brightest electric bulb. More light than 20 oil lanterns. Cheapest and best light made. Costs less than one-third of a cent per hour. Safer than the safest oil lantern. The

Coleman Quick-Lite



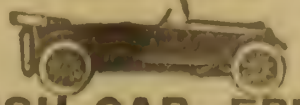
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A wire draining basket can be utilized to hold the dishes after they have been rinsed in hot water, to save wiping them.

Market Comment

The Orange Market.

Private sales markets for California oranges have been drawn on heavily the last week, but liberal offerings and accumulation of stocks eased off the auction markets. A premium of $1.50 between 126s and 250s is paid for small sizes of all grades. Navels will be cleaned up this month with the moving of about 3700 carloads. F. o. b. quotations on sizes were $3 for 80s, $3.50 for 96s, $4 for 126s, $4.50 for 150s, and $5 for 176s and smaller. Less than 3000 cars of this season's crop of navels remain unsold, and these will hardly last until the Valencia crop goes on the market. The best grades of navels are bringing $5 to $5.50 per box in San Francisco.

Cotton Market Promising.

Pima cotton in the Imperial Valley is not moving at this time, but the prospects are very promising. The market is only waiting for some one to start sales off. In New York cotton closed steady the early part of this week at a net advance of 39 to 40 points on the new and off 10 to 36 points on the old style contracts. Spot cotton quiet; middlings 28.65. Prices on options ranged as follows:

	New Basis		Old Basis	
	Open	Close	Open	Close
January	20.35	20.46	20.14	20.58
May	25.48	25.63	24.55	24.75
July	22.94	23.14	22.45	22.67
October	20.95	21.10	20.75	20.63
December	20.48	20.64	....	20.28

Prices on Dried Pears.

Fifteen cents a pound, with a strong demand, is reported for dried pears of this year's crop by the California Pear Growers' Association. Sonoma county pears are included in this offer. Lake county pears always rule higher. No prices on cannery stock have yet been established. No grower can afford to leave out a spraying operation this year. Thrips have not been bad to date (April 2), but they may show up yet, and it is a likely year for scab anyway.

Sheep Situation Strong.

According to the U. S. Bureau of Markets, the sheep and lamb trade developed much strength in February. This is due, it is said, to the shortage in receipts and the sharp advances in dressed lamb and mutton at leading distributing centers of the country. The market for fat sheep and lambs showed an average advance of $2.50 per hundred over a month ago.

High Hog Values Look Legitimate.

There was a rather sensational boom in hogdom in the East the past week, which made itself felt on this side of the continent in an advance of ½c per pound, the second for the month. Hard, grain-fed hogs are bringing 18c in San Francisco. In the East a top of $19.50@19.85 was reached. A slight rebound of 10c to 25c has occurred.

Sugar Beets Contracted at $10.

Sugar beets are being contracted for at $10 a ton. Government agricultural officials just completing a trip through the beet sections say 1919 prospects are fine. The soil conditions are better than usual and a new record for home-grown seed is expected. Southern California has an increased acreage.

Future Market on Dried Fruits.

Supplies of most of the dried fruit staples in this country are about exhausted, and bids for the coming crops indicate a somewhat limited demand on account of the exceedingly high prices asked by dealers. It is believed that the foreign demand will shrink as a result.

Outside Buyers Bid for Dried Fruits.

Buyers outside the associations, in the vicinity of Hanford, are offering for Muscats $130 per ton. Thompsons $150 per ton, peaches 12c per pound, and apricots 17c per pound, says the Hanford Weekly.

Dried Wine Grapes $125 Per Ton.

An offer is reported to have been made to Sebastopol wine-grape growers of $125 a ton for dried wine grapes. This has been figured out as equivalent to about $22.50 a ton for grapes under the old system.

THE MARKET REPORTS

Figures Given Are Independent and Reliable.
Prices Quoted as Paid to Producers.

SAN FRANCISCO

San Francisco, April 2, 1919.

WHEAT.

It is announced that the U. S. Food Administration Grain Corporation will begin to sell its surplus wheat holdings on March 15 in an effort to prevent an increase of flour prices. It is stated that the millers have been offering from 10c to 15c a bushel above the Government price and the Government will now use its surplus to stabilize flour prices. This will have no effect on the price of wheat.

The following prices were announced by the Federal Grain Corporation last ... and are still in effect. They are figured f. o. b. San Francisco, Los Angeles, Seattle, Tacoma and Portland and guarantee the grower a minimum of $2 f. o. b. shipping point:

Per bushel—	
No. 1 hard	$2.20
No. 2	2.17
No. 3	2.13
No. 1 soft	2.18
No. 2	2.15
No. 3	2.11
Club or Sonora, No. 1	2.16
do, No. 2	2.13
do, No. 3	2.09
Recleaned for seed, per ctl.—	
California Bluestem	$4.15@4.25
Early Baart	4.15@4.25

BARLEY.

Barley continues to advance steadily, and really choice feed sold at $2.35@2.37½ this week for spot. May option sold on the exchange at 2½c above this figure. The market is regarded as strong.

Choice feed, per ctl	$2.35@2.37½

OATS.

Red feed moved up in sympathy with barley, selling at $2.30 for the best. The demand, however, is not strong.

Red feed, per ctl	$2.25@2.30
Red for seed	2.50@2.70
Black for seed	Nominal
Recleaned Red or Black for seed	$3.00@3.10

CORN.

While the price of California yellow corn is quoted at the same figure as a week ago, the grain is really developing some strength in sympathy with the upward movement of barley and oats.

California	$2.25@2.35
Egyptian, choice	Nominal
Milo	Nominal

HAY.

The receipts of hay for the past week were 1635 tons, compared with 1605 tons the previous week. Trade has been very light, with the result that it has been difficult to move receipts to advantage and prices were reduced to induce buying. Choice wheat hay in light bales has been scarce, although some of this quality in heavy bales was offered. This hay is usually used in the retail trade and for this purpose the heavy bales do not meet with much favor. There has been some little demand for alfalfa from the interior and this held up the price of this commodity. Export demand has been light.

No. 1 wheat, per ton	$17.00@19.00
No. 2 wheat, per ton	13.00@16.00
Choice tame oat, per ton	18.00@20.00
Wild oat, per ton	12.00@15.00
Barley hay, per ton	12.00@15.00
Alfalfa, per ton	15.00@18.00
Stock hay, per ton	12.00@15.00
Barley straw, per bale	.50@ .80

FEEDSTUFFS.

Rolled barley advanced again this week, selling from $49 to $50. Rolled oats were strong at unchanged quotations. Alfalfa products also sold at a higher figure, from $34 to $35 being quoted. Other feedstuffs were unchanged.

POTATOES, ONIONS, ETC.

Potatoes were unchanged. A renewal of buying of onions for Eastern shipment gave strength to this commodity. Prices were maintained, but more sales were made at the top than last week, and if Eastern buying continues an advance will undoubtedly be made shortly. Some new potatoes are coming into the market and they sell from 5c to 8c a pound. A considerable quantity of poor tomatoes were on the market and sold at low prices. Good Mexican tomatoes brought from $3 to $4, with ready sale at the higher figure for the best. Summer squashes are coming in. The price is still too high to make them popular.

String beans	Nominal
Peas	7@10c
Lima beans	None
Carrots, per sack	$2.00@2.25
Asparagus	4@7c
Rhubarb, Strawberry, box	1.50@2.00
Cucumbers, hothouse, box of 30	3.00@3.50
English, per dozen	$2.50@2.75
Eggplant, per lb	None
Lettuce, per crate	$2.25@2.50
do, Watsonville	1.75@2.00
Celery, crate	Nominal
Spinach, crate	$0.50@1.00
Tomatoes, Southern, per crate	None
do, Mexican	$3.00@4.00
Sprouts, per lb.	6@8c
Summer squash	$2.50@3.00
Potatoes—	
Rivers	$1.85@2.15
Oregon	1.75@2.15
Washington	1.90@2.10
Idaho	1.90@2.15
Sweets, per sack	5.00@5.25
Onions, Warehouse Stock—	
Yellows	None
Australian Browns	$3.50@3.65
Green River	.75@1.00
Green Alameda	1.75@2.00
Garlic	50@60c

BEANS.

Quite a demand sprang up for pinks during the week and the price was advanced from 10c to 25c. While no other changes in prices are noted this week, there is a stronger feeling in the market.

Bayos, per ctl	$6.25@6.40
Blackeyes	3.25@3.40
Cranberry beans	4.50@4.90
Limas (south, recleaned)	6.75
Pinks	5.00@5.25
Mexican Reds	4.75@5.25
Tepary beans	2.50@2.75
Garbanzos	10.75@11.00
Large whites	5.40@5.60
Small whites	6.50@6.60

POULTRY.

Small broilers are the only weak spot in the poultry market. The Eastern markets are higher on hens and as a consequence only one car arrived here from the East during the week. As far as known now, no car is scheduled to arrive next week and as long as the Eastern market is so strong local hens will fetch a good price. The Jewish holidays, buying for which will begin next week, is also an element of strength in the market. Outside of hens, roosters and broilers, there were no other changes.

Turkeys, live, young spring, lb	34@36c
do, old	30@34c
do, dressed	40@42c
Broilers, 1½ to 2 lbs	50@55c
do, 1¼ lbs	43@45c
do, ¾ to 1¼ lbs	40@43c
Fryers	45@50c
Hens, extra, per lb., colored	38@39c
do, Leghorn	38@40c
Smooth young roosters, per lb. (3 lbs. and over)	42@45c
Old roosters, colored, per lb	25c
Geese, young, per lb	38@40c
do, old, per lb	38c
Squabs, per lb	65c
Ducks	38@40c
do, old	38c
Belgian hares	17@20c
Jack rabbits	$3.00@3.50

BUTTER.

Butter continues strong and shows an advance of 3c in quotations for the week. Shipments north, south and east continue, and notwithstanding increased receipts there seems no immediate prospect of lower prices. No butter is going into storage at this point and the amount in the ice house is practically the same as a week ago. On the exchange it is realized that butter is higher than it should be at this time of the year. In an effort to stabilize the price no bid was made on the floor of the exchange at the regular session today. At the informal session those who needed butter to take care of their trade bid 2c higher than exchange prices to secure it.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extra	52	53½	54½	55	55	55
Prime first	....		Nominal			
Firsts	.....		Nominal			

EGGS.

Nearly six thousand cases of eggs went into storage this week, and the amount on hand is now nearly 20,000 cases. Eggs never went into storage at present prices before, but the prospect of their being materially cheaper this season seems so unlikely that dealers are taking chances, which will spell heavy loss if the demand outside this State fails to continue. All the Eastern markets are strong and higher, and, with shipments and storage, eggs continue on their upward trend in prices.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	41½	41½	42	42½	44	43
Extra 1sts	....	Nom.	—	—	—	—
Firsts	.....		Nominal			
Extra pullets	40	39½	40	40½	41½	41

CHEESE.

Prices for cheese were generally unchanged this week, although Firsts California Flats were again traded in on the exchange. Trading has been very light throughout the week. Most of the dealers appear to have sufficient stocks on hand to take care of their trade and they are not anxious to add to their stocks at present prices. Dealers report that the demand from consumers is light.

Fancy California flats, per lb	28c
Firsts	26½c
Oregon triplets, fancy	34½c
Oregon Y. A. fancy	39c
Monterey cheese	22½@25c

FRESH FRUITS.

Apples and pears continue steady and unchanged in prices. While the demand is not active, it is constant, and each week finds the total sales about equal to those of the previous week. Loquats are now on the market in good quantities and sell by the pound at from 10c to 12½c. Imperial strawberries were received this week and brought $3.50 to $4.

California apples	$2.50@3.75
Northwest apples	3.00@4.00
Winter pears	2.00@3.50
Persimmons	None
Loquats, per lb	10@12½c

CITRUS FRUIT.

Some dealers sold small quantities of selected oranges and grapefruits at from 25c to 50c above the quotations of last week. The demand is good.

Oranges, navels	$3.50@5.00
Mandarins	3.00@3.50
Tangerines	2.50@3.50
Lemons, fancy	4.00@4.50
do, choice	3.50@4.00
do, standard	3.00@3.50
Lemonettes	2.00@3.00
Grapefruit	2.50@3.50

DRIED FRUITS.

Dealers continue to make contracts with prune growers outside of the association at 10c to 10½c a pound. So far the association, which is said to control about two-thirds of the crop, has not sold or contracted to sell any of this year's crop. Last year's apples are still being bought, although the demand has slackened.

HONEY.

Some honey was bought by local dealers this week at 12½c a pound. These dealers believe they could handle all of last year's crop remaining if the price was from 10c to 12½c. So far as known, the association has not sold any of its honey at any figure approaching these prices.

HIDES.

Stocks of hides and skins in the United States on December 31, 1918, as given by the Bureau of Markets in the first report on hides issued by the Department of Agriculture, are: Cattle hides, both domestic and foreign, amounted to 6,398,234 pieces; sheep and lamb skins totaled 14,132,229; pig skins, 260,461 pieces; and 1,440,961 pounds of strips. Horse hides, including fronts, butts and shanks, amounted to 401,613 pieces; and calf and kip skins, 2,199,266 pieces.

Wet salted—Native steers and cows, 50 lbs. up, 16@18c; 30 to 50 lbs. up, 16@18c; kips, 15 to 30 lbs., 21@22c; calf and veal, under 15 lbs., 31@32c; bulls and stags, 13@14c.

Horse hides—Wet salted, large prime, each, $5@5.50; medium prime, $4@4.50; small, $2.50@3.50; dry, large, prime, $2.50@3; dry, medium, $1.50@2.50; colts and ponies, 50c@$1.

LOS ANGELES

Los Angeles, April 1, 1919.

BUTTER.

Due to an increase in production, this market shows a decline in prices since a week ago. Receipts continue good, with strong demand. Shipments for the week were 390,100 pounds.

We quote:

California extra creamery	55½c
do, prime first	50½c
do, first	52½c

EGGS.

Prices in this market have gradually advanced since a week ago. There is a good demand and all offerings are being taken. Receipts for the week, 2861 cases.

We quote:

Fresh ranch, extras	45c
do, case count	43c
do, pullets	43c

POULTRY.

Some slight change in this market is noted. Broilers declined, while roasters advanced 2c, hens 1c and 3c. Demand holds up fairly good.

Broilers, 1 to 1¼ lbs	38c
Broilers, 1½ to 1¾ lbs	45c
Fryers, 2 to 3 lbs	42c
Roasters (soft bone), 3 lbs. and up	38c
Stags and old roosters, per lb	18c
Hens	33@36c
Turkeys	36@38c
Ducks	34@35c
Geese	28c

VEGETABLES.

This market shows advances on several quotations since a week ago. Peas improving. Potatoes continue strong. Sweet potatoes making sharp advance, while cauliflower, cabbage and onions remain firm. The sale is slow on all others quoted.

We quote from growers:

Peas, per lb	7@10c
Potatoes—	
Northern Brubank, per cwt	$3.75@3.25
Idaho Russets, per cwt	2.50@2.75
Sweet potatoes, per cwt	4.50
Garlic, per lb	5c
Onions—	
Australian Brown, per cwt	$3.75@4.00
White Globe, per cwt	3.00
Cabbage, per 100 lbs	2.25@2.50
Celery, local, per crate	4.00@5.00
Celery, northern, per crate	8.00@9.00
Cauliflower, standard crate	2.00@2.25
Hubbard squash, per cwt	2.00
Banana squash, per cwt	1.50
Pumpkins, per cwt	.75
Rhubarb, per 30-lb. box	2.25

FRUITS.

Deciduous prices continue on the advance and the demand for all choice stock is good. Only a fair stock on hand is reported.

We quote from growers:

Apples—	
Black Twigs, Northwest pack	$3.25@3.50
Baldwins, Northwest pack	3.00
White Pearmains, 4-tier	3.25@3.50
Yellow Newtown Pippins, 4-tier	3.25@3.75
Bellefleur, 4-tier	2.25
Bellefleur, 4½-tier	2.00@2.25
do, 3½-tier	2.00@2.25
Winesap, loose, per.. lb	7@7½c
Roman beauties, Northwestern per peck	$2.25@3.50
Loquats, per lb	7@15c

HAY.

Buyers are still very backward in this market. There is, however, a fair demand for choice alfalfa. But the general tone of the market is dull.

We quote f. o. b. Los Angeles:

Barley hay, per ton	$21.00@24.00
Oat hay, per ton	23.00@25.00
Alfalfa, northern, per ton	20.00@21.00
Alfalfa, local, per ton	21.00@23.00
Straw, per ton	9.00@10.00

BEANS.

This market reports limas in fair demand. On all others it is dull and quotations remain steady.

We quote from growers:

Limas, per cwt	$6.50
Large white, per cwt	5.50
Small white	5.50
Pink, per cwt	6.00
Blackeyes, per cwt	3.00
Tepary, per cwt	3.00

Special Livestock Market Report

San Francisco, April 2, 1919.

CATTLE—Beef cattle have been arriving on the market somewhat in excess of the demand, which has been curtailed owing to Lenten abstinence. Grassers are now coming, showing fairly good quality. Prices have suffered a slight decline.

Steers—
No. 1, weighing 1000@1200 lbs..12@12½c
do, weighing 1200@1400 lbs...12@12½c
do, second quality.....11@11½c
do, thin .....9@10c
Cows and heifers—
No. 1.....9@10c
do, second quality.....8@9c
do, common to thin.....4@6c
Bulls and stags—
Good .....6½@7½c
Fair .....5½@6½c
Thin .....4@5½c
Calves—
Lightweight .....11½@12½c
Medium .....10½@11½c
Heavy .....8@10c

SHEEP—The sheep market rules steady. The present has been a good season for sheep growers and the run and quality of both sheep and lambs are good. Owing to the falling wool market, sheepmen are parting more readily with the marketable parts of their flocks.

Lambs .....13@14½c
Yearlings .....12@12½c
Sheep, wethers .....11@11½c
do, ewes .....8½@9½c

HOGS—Good hogs are getting scarce. The quality, however, is only fair to good, too many soft animals still being offered. Rumors of higher prices are holding back supplies.

Hogs—
Hard, grain-fed, 100 to 150.....17½@18c
do, 150 to 250.....18c
do, 250 to 300.....17½c
do, 300 to 400.....17c

DRESSED MEATS.

STEERS—No. 1, 20@20½c; second quality, 19@19½c.
COWS AND HEIFERS—17@18½c.
CALVES—As to size, etc., 17@20c.
LAMBS—Suckling, 28@30c; yearling, 24@25c.
SHEEP—Wethers, 18@20c; ewes, 16@18c.
HOGS—26@27c.

Los Angeles, April 1, 1919.

CATTLE—This market is reported very dull. Receipts are very light and only a fair demand.

Per cwt., f. o. b. Los Angeles:
Beef steers, 1000@1100 lbs.....$11.00@13.00
Prime cows and heifers..... 9.50@10.50
Good cows and heifers..... 8.00@9.00
Canners $6.00

HOGS—Showing a sharp advance of $1, this market reports strong receipts with good demand. Offerings continue of fair quality.

Per cwt., f. o. b., Los Angeles:
Heavy, avr'ging 275@350 lbs...$16.00@17.50
Mixed, avr'ging 225@275 lbs... 17.00@18.00
Light ..... 18.00@18.50
Rough docked 20 lbs., piggy sows 40 per cent.

SHEEP—This market remains steady since one week ago. There is no change in prices to report. The demand is only fair.

Per cwt. f. o. b. Los Angeles:
Prime wethers .....$9.50@10.50
Prime ewes ..... 8.50@9.50
Yearlings .....10.00@11.00
Lambs .....14.00@15.00

Portland, March 31, 1919.

CATTLE—Steers higher, rest steady. Receipts, 1165. Steers, best, $14@14.50; good to choice, $11.50@12.50; medium to good, $10@11; fair to good, $9@10; common to fair, $8@9; good to choice cows and heifers, $10.50@12.25; medium to good, $7@8; fair to medium, $5@6; canners, $3.50@4.50; bulls, $6@8.50; calves, $9.50@13.50; stockers and feeders, $7@10.

HOGS—Steady. Receipts, 3416. Prime mixed, $18.75@19; medium mixed, $18.50@18.75; rough heavies, $16.75@17.50; pigs, $16.25@17.25; bulk, $19.

SHEEP—Steady. Receipts, 1461. Prime lambs, $16@17; fair to medium lambs, $14@15; yearlings, $11@12; wethers, $9@10; ewes, $6.50@10.50.

EASTERN.

Chicago, March 31, 1919.

HOGS—Receipts, 38,000; market closed mostly 25@30c higher than Saturday; estimated tomorrow, 30,000. Bulk of sales, $19.05@19.85; heavy weight, $19.80@19.90; medium weight, $19.60@19.85; light weight, $19.25@19.85; light, $17.85@19.50; sows, $17.50@19.25; pigs, $16.75@18.

CATTLE—Receipts, 15,000; beef steers, strong to 15c higher. Butcher stock and feeders, 15@25c higher; calves, 25@50c lower; estimated tomorrow, 13,000. Heavy beef steers, $11.75@20.40; light beef steers, $11.25@18.75; butcher cows and heifers, $7.40@15.50; canners and cutters, $5.50@10; veal calves, $13@15; stocker and feeder steers, $8.25@15.75.

SHEEP — Receipts, 11,000; fat classes strong to 25c higher; strong weight wooled lambs advancing most; feeder lambs dull, lower; estimated tomorrow, 11,000. Lambs, 84 pounds or less, $18@20.15; 85 pounds or better, $17.50@20.15; culls, $14@17.75; ewes, medium and good, $11.75@15; culls and common, $6@11.75.

WEEKLY BUTTER AVERAGES.

Cents per pound for Extras.

Week Ending		San Francisco 1918	San Francisco 1919	Los Angeles 1918	Los Angeles 1919
Jan.	2	50.40	66.10	50.16	63.16
"	9	51.08	61.50	50.00	64.00
"	16	52.33	61.70	50.50	64.16
"	23	52.50	55.83	52.00	62.16
"	30	53.00	44.91	51.83	49.00
Feb.	6	50.80	43.58	49.66	47.33
"	13	52.00	46.80	48.00	47.60
"	20	51.41	51.58	48.00	53.16
"	27	51.30	53.90	49.33	55.00
March	6	50.66	56.16	50.00	59.00
"	13	51.16	55.58	49.50	58.00
"	20	47.83	54.41	47.00	56.00
"	27	46.30	56.41	43.30	58.00
April	3	43.16	54.23	42.16	55.50
"	10	39.25	....	39.50	....
"	17	39.00	....	36.83	....
"	24	40.50	....	38.16	....
May	1	40.83	....	39.00	....
"	8	40.66	....	39.00	....
"	15	40.46	....	39.00	....
"	22	44.33	....	41.00	....
"	29	42.30	....	39.00	....
June	5	43.90	....	41.58	....
"	12	44.92	....	40.58	....
"	19	46.50	....	41.75	....
"	26	47.42	....	43.00	....
July	3	48.08	....	46.00	....
"	10	48.90	....	47.50	....
"	17	50.83	....	48.66	....
"	24	52.66	....	45.16	....
"	31	52.16	....	51.00	....
August	7	52.16	....	50.83	....
"	14	51.66	....	49.00	....
"	21	52.25	....	49.58	....
"	28	53.00	....	50.00	....
Sept.	4	53.00	....	50.00	....
"	11	54.90	....	50.33	....
"	18	57.80	....	51.67	....
"	25	61.33	....	58.17	....
October	2	64.75	....	58.00	....
"	9	64.50	....	59.33	....
"	16	62.50	....	60.00	....
"	23	61.75	....	60.00	....
"	30	60.50	....	59.50	....
Nov.	6	59.60	....	58.83	....
"	13	60.00	....	57.00	....
"	20	61.00	....	57.25	....
"	27	61.60	....	58.75	....
Dec.	4	62.60	....	60.00	....
"	11	63.00	....	60.16	....
"	18	63.50	....	61.01	....
"	26	64.60	....	62.16	....

WEEKLY EGG AVERAGES.

Cents per dozen for Extras.

Week Ending		San Francisco 1918	San Francisco 1919	Los Angeles 1918	Los Angeles 1919
Jan.	2	52.80	75.60	48.16	69.50
"	9	60.91	69.91	50.66	66.66
"	16	65.66	58.70	55.00	62.41
"	23	65.66	52.58	58.00	54.66
"	30	61.25	48.75	54.00	52.33
Feb.	6	58.50	42.00	51.66	43.00
"	13	44.40	40.90	44.33	37.80
"	20	44.75	36.41	40.83	39.33
"	27	42.40	37.46	39.58	33.60
March	6	36.83	37.58	35.00	37.00
"	13	37.91	37.16	38.00	37.00
"	20	40.66	38.16	39.63	42.00
"	27	39.50	40.41	40.00	42.00
April	3	38.19	42.41	38.33	45.00
"	10	37.58	....	36.33	....
"	17	39.16	....	36.83	....
"	24	40.50	....	39.66	....
May	1	41.66	....	39.33	....
"	8	40.08	....	37.00	....
"	15	39.16	....	38.83	....
"	22	40.50	....	39.00	....
"	29	38.66	....	37.41	....
June	5	40.80	....	38.83	....
"	12	41.00	....	33.75	....
"	19	43.33	....	33.00	....
"	26	44.32	....	39.08	....
July	3	44.91	....	41.75	....
"	10	48.30	....	45.00	....
"	17	47.66	....	45.50	....
"	24	47.01	....	45.16	....
"	31	48.83	....	46.56	....
August	7	49.50	....	46.08	....
"	14	52.08	....	48.00	....
"	21	56.33	....	50.17	....
"	28	59.20	....	53.00	....
Sept.	4	62.40	....	56.33	....
"	11	63.70	....	58.67	....
"	18	61.30	....	59.00	....
"	25	60.17	....	55.67	....
October	2	65.42	....	59.75	....
"	9	65.08	....	60.00	....
"	16	71.30	....	62.66	....
"	23	78.88	....	70.33	....
"	30	86.41	....	79.33	....
Nov.	6	87.00	....	78.00	....
"	13	88.00	....	78.00	....
"	20	77.25	....	72.00	....
"	27	79.80	....	72.33	....
Dec.	4	82.00	....	73.83	....
"	11	82.08	....	74.33	....
"	18	79.65	....	72.33	....
"	26	82.00	....	71.66	....

NOTES.

Peach growers of Sutter county have appointed a committee to confer with cannery representatives to fix the price of peaches this season.

An announcement just issued states that the total of grease, scoured, and pulled wool in the government's possession on December 31, 1918, was approximately 50,000,000 pounds.

In our issue of March 15 we published the amount of the second payments by the California Associated Raisin Co. on 1918 Thompson seedless and Sultanas (both A and B grades) as being $5 a ton. The payments were $50 a ton, the cipher being inadvertently omitted.

Word from San Quentin says that prison-made grain jute bags have again been reduced in price from 14c to 12c each. Three million bags, a season's supply, are on hand.

Classified Advertisements

Rate in this directory 3c per word each issue.

MISCELLANEOUS.

FOR SALE AT A BARGAIN—15-25 Titan Tractor in first-class mechanical shape—farming implements included. Apply D. P. Corcoran, Gridley, Calif.

SILO PERFECTION.
We have it in the Monro Perfect Silo.
Before buying, get our booklet and prices.
THE LEWIS COMPANY,
Dept. C,
First National Bank Building,
San Jose, Cal.

FOR SALE—1350 feet 11-inch slip joint galvanized iron irrigation pipe; one 8-inch centrifugal pump and 6-cylinder Winton engine; 2 three-year-old registered Holstein cows; 1 four-year-old registered Jersey bull. A. H. McHuron, 519 California St., San Francisco.

COMPLETE CREAMERY EQUIPMENT—3-ton Remington ice machine, 900-lb. churn, 200-gallon Jensen pasteurizer, 8-H. P. submerged boiler, and many other articles that go to make up a complete creamery equipment. G. W. Stone, Route 2, Byron, Calif.

REMANUFACTURED PIPE.
All sizes standard pipe and wrought iron screw casing. All kinds of fittings. Guaranteed good as new. Write for prices. Weissbaum Pipe Works, 160 Eleventh street, San Francisco.

FOR SALE—Well established wholesale dairy produce and provision business for sale; finest proposition with unlimited means of expansion; now clears $650.00 month. For further particulars address, P. O. Box 201, Oakland, Cal.

PATENT ATTORNEYS
WEBSTER, WEBSTER & BLEWETT, Savings and Loan Bldg., Stockton, California. Established 50 years. Send for free book on patents.

ALL SIZES OF PIPE and screw casing, both new and second-hand, dipped and undipped. Guaranteed. Prices right. Shecter Pipe Works, 304 Howard St., San Francisco.

FOR SALE—Fourteen 50-gal. oak wine barrels, used but once, like new. Guaranteed to be in fine condition. Price $4.25 each f. o. b. Watsonville. G. W. Cornell, Watsonville, Cal.

MADE OF REDWOOD, Hawley's Perforated wooden well casing, the best and cheapest well screen made. Send for descriptive circular. G. M. Hawley, La Mesa, California.

FULLY EQUIPPED CHEESE FACTORY at Woodbridge, Calif. Located in center of dairying district. For sale or rent. Inquire, Ralph C. Clark, Lodi, Calif.

CO-OPERATION (not operated for profit) reduces living expenses. Particulars and catalogue from Co-operative League, Commercial street, San Francisco.

COUNTRY LANDS.

FOR SALE—20 acres, 2½ miles S. W. of Orland, under Government irrigation project. 7 acres planted to a mixed orchard of carefully chosen lemons, deciduous fruit, grapes, and berries. Balance farmed. Planned for a home place. Price, $4.000. Terms to suit purchaser. Address, T. F. Fotheringhame, Orland, Glenn Co., Cal.

FOR SALE — The famous Bane Almond orchard at Orland. On account of labor conditions, as well as physical condition, I have concluded to sell my almond orchard, either in subdivisions of 10 acres, or as a whole. For particulars address P. D. Bane, Orland, Glenn Co., California.

FOR SALE—Ranch of 20 acres, well improved; 13 acres in alfalfa (excellent stand), balance in barley. Well equipped for small dairy. In one of the best farming sections and four miles from town. This place must be seen to be appreciated. Owner: R. E. Reed, Chowchilla, Cal.

158 ACRES HILL LAND—5 miles from Upper Lake. 3-room house, barn, shop, and store room. Spring water piped to house. 30 acres tillable land, 10 acres in trees and vines, the rest range land. Price $5000. A. F. Griner, Owner, Rt. 1, Box 35B, Lakeport, Calif.

ONE OF THE BEST GOING fruit ranches in California, consisting of 160 acres. Plenty of water. Ample equipment, and all in first-class condition. Good buildings. Pays $10,000 net yearly. Price, $45,000.00; easy terms. 257 Russ building, San Francisco.

VERY PROFITABLE 400-acre grain ranch, 2 miles from Stockton, for sale. No agents. C. A. Bodwell, Lakeville, Calif.

WANTED TO RENT by American man, a good dairy farm with cows and equipment. Box 1490 Pacific Rural Press.

SEEDS AND PLANTS.

PURE
SOUDAN GRASS SEED

Twenty cents per pound, delivered any place in California, in ten-pound lots or more.

G. M. HICKMAN, ORLAND, CAL.

I HAVE ABOUT 1000 LBS. of recleaned Sudan Grass seed left which I will sell at 15c a pound. Also about 1,000 lbs. of choice recleaned Black Amber sorghum which I will sell at 3½c a pound and about 200 lbs recleaned Honey sorghum at 6c a pound. Send me your order together with your check and it will go out the same day I receive it. C. F. De Witt, Box 127, Modesto, Calif.

YOUR ALFALFA SEED should meet the needs of your soil and moisture conditions. One of the seven different kinds of Green Goat brand seed will yield heaviest and live longest because they are selected for particular conditions. Our illustrated booklet tells you all about each kind. Write for it now. Bonnheyer Seed Company, Desk B, 735 Tenth street, Modesto, Calif.

GRAFTING WOOD—Willson's Wonder Walnut for sale by the originator. Never has failed a heavy crop of largest finest nuts. Youngest bearer. Also genuine Franquette wood. F. C. Willson, Original Nurseries, Temescal, Santa Clara county, Calif.

SUDAN SEED—First cross in every respect. Plump and well matured. Free from Johnson grass. Price f. o. b. Napa, 12½c a pound for 100 lbs or more, 15c a pound for less. Prices quoted on carload. T. H. Stice, M. D., Napa, California.

SUDAN GRASS SEED—Fine clean seed. A No. 1 natural reasonable. Samples sent on request. For full particulars and price J. W. Schuster & Son, Pond, Kern County, Cal.

FLORIDA SOUR AND CALIF. SWEET ORANGE seedling stock. The time to plant is approaching, order now. Southland Nurseries, 1041 E. Colo. St., Pasadena, Calif.

SOUDAN SEED—New crop, recleaned. Less than 100 lbs., 17c.; $15.00 per hundred. 500 lbs. or more, 13c. lb. f. o. b. your station. Geo. Boock, Los Molinos, Calif.

BUY YOUR SUDAN GRASS SEED early while the price is right and you can choose from a lot of tested seed. For prices write C. B. Tawney, Ripon, Calif.

WALNUT TREES, artichoke plants, and Wagner rhubarb plants for sale cheap. Mammoth Walnut Nurseries, P. O. Box 826, Watsonville, Calif.

ONION PLANTS—1,000,000 California Red, 75c. per 1000. Now is the time to plant. Monroe, The Tree Man, Orland, California.

RECLEANED SOUDAN GRASS SEED—Large or small orders filled at 16c. per lb. f. o. b. W. R. Dresser, Paso Robles, Calif.

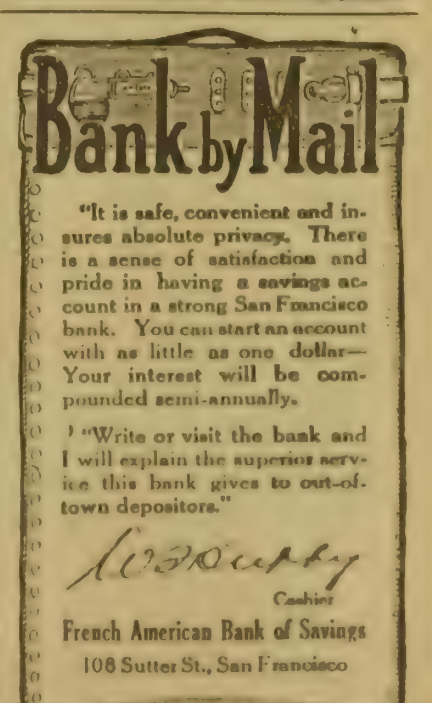
BURBANK'S THORNLESS BLACKBERRY—Plants, 5 for $1.00, postpaid. H. Glas, Madera, California.

WANTED.

EXPERIENCED ORCHARDIST — Conscientious manager, able to keep book accounts; for years employed on large fruit ranches as working foreman, wants like position. Wife experienced in poultry and cooking for ranch hands. References. F. Bertel, 1975 36th Ave., Oakland.

POSITION WANTED as manager of hog ranch or diversified farm. Experienced with registered stock, irrigated crops and deciduous fruits. Address, H. Duveneck, 1004 Paru St., Alameda, California.







-up they go and strong they grow!

"MAKES HENS HAPPY" is the title of a helpful and practical booklet we'd like you to have. Gives you the advice of poultry experts—tells you some of the things you ought to know about poultry practice—shows you how to increase your poultry-profits. A copy is yours for the asking. Simply fill in the coupon below and mail *today*—we'll see that you get your copy without delay.

AND the biggest single help you have in pulling them up the upgrade is—what? *Proper feeding!*

Take these chicks from the time they are about five weeks old until they are eight weeks old. What do they need most to effect a good, healthy growth? Do they need fat? Not especially! They need *bone and muscle.*

And the *only* way you can expect these chicks to develop into healthy, vigorous birds—the *only* way you can expect to produce a thrifty growth—is to give them the essential food units they require to build this bone and muscle.

And that's exactly what you do when you feed Sperry Suregrow. For, it gives your growing chicks just what they need to develop properly. More than that—it gives them the *physical foundation* that means good layers and good breeders—and, incidentally, *good profits.*

And—don't forget this: the money you invest in Suregrow will come back to you many times over in the increased health and vigor of your flock. It's surprising how many chick troubles—indigestion, moping, slow growth, etc.,—all disappear when you feed this balanced ration! For, Suregrow is the one feed you can depend on *absolutely* to produce a good, sturdy growth—a growth that goes a long way toward future profits!

Stock and Poultry Food Dept.
SPERRY FLOUR CO.
150 Weber Ave.,
Stockton, Calif.

Please send me, without obligation, a copy of your booklet—"Makes Hens Happy."

Name _____

Address _____

_____

STOCK AND POULTRY FOOD DEPARTMENT

SPERRY FLOUR CO.

STOCKTON, CALIFORNIA

SPERRY SUREGROW

"A Sperry Product"

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A
H. R.
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Vol. XCVII—No. 15 Forty-ninth Year

THE PACIFIC RURAL PRESS

N FRANCISCO APRIL 12, 1919 LOS ANGELES

Farmers to Speak with Authority and Power

Written for Pacific Rural Press by R. E. Hodges

LESSONS of Food Administration days, as well as a crisis just ahead of us, have generated a desire in farmers' breasts that will illuminate the proverb, "Behold, how great a matter a little fire kindleth." Never before have we really known what a suction there was on farmers' pocketbooks by he activities of our city regulators; and not until farmers became bitter ecause there were no markets for our barley, beans, the unreasonable olding of rain-damaged prunes, etc., have we known just how helpless ve are in the hands of our regulators. The desire kindled by recent ex-erience is for farmers to speak with authority in all State and Gov-rnment councils which would affect our business. With Labor and Trade each speaking in tones that are heard distinctly and heeded in State and National CAPITOLS, farmers have found themselves helpless All we could do was to send our emissaries with "pleas[e] to be good to us"; and then we have taken what the powers condescended to us.

The reason farmers have not spoken with authority in legislative and egulative councils has been that there was not a recognized power back of our "pleas[e]." The power was lacking because we had no organization for the purpose, governed in its policies by a majority of its members, with the minority submitting in a truly democratic way. We have not had the organization, partly because we have not been willing to sacrifice individual rights for the common welfare, and partly because no form of organization heretofore proposed has seemed sufficiently certain to remain under immediate control of farmers whose main interests are farming.

We commend to our readers' closest scrutiny an organization which seems to us like a thrifty young tree whose roots are in good Mother Earth and whose existence would be ended if the roots should be withdrawn therefrom. We do not urge you to join it blindly. We do urge you to investigate it carefully and intelligently. We are glad to give the organization a good introduction to our readers.

Farm Owners and Operators' Association.

"Organized capitalists control our finances. Organized professions control our laws. Organized business controls our markets, and organized labor seeks to control our employees. The object of this organization shall be to promote, develop, and protect the property rights of farm owners and operators. This organization shall not engage in politics except for the protection of agricultural interests." The last phrase quoted above from the association's literature seems to be the key that will open a door to hitherto unseen and unfelt power if the organization shall become well enough supported. It means that while the association is neither for social, marketing, or educational purposes with respect to production, its main purpose is to speak with authority and power to organized capital, organized labor, organized business, and to the makers and enforcers of law. Such an organization has been urged in editorial columns of the Pacific Rural Press for years—ever since the need has been apparent.

Control Safeguarded

But to set in motion a force of this kind without providing that only bona fide patriotic American farmers should ever hold the wheel, would be worse than submission to our present regulators. Note how the by-laws provide for permanent control by operating farmers and farm owners.

"This organization shall consist of farm owners and operators of farm, ranch, orchard, grazing, and vineyard lands who are citizens of the United States or declarants, so long as the operation of said lands shall be the principal business of the individual or corporation seeking membership in the association. Such members shall be known as active members. They shall be entitled to vote and hold office." Associate and affiliated members are provided for; but they shall have "neither voice nor vote." Affiliated members are to be farm superintendents, foremen, and laborers properly recommended by their employers.

Political Activity Safeguarded.

Now, when the organization begins to take a hand in making laws or fighting proposed laws, what is to prevent a seething turmoil of riotous factions and an explosion of the organization?

Its construction and mode of operating have been worked out to avoid any such explosion. Its sins are much more likely to be sins of omission than of commission. A look at the framework and methods of organization will make this clear.

Each county is to be divided into ten districts, each of which will elect two county trustees. Five additional county trustees will be elected at large. The twenty-five trustees will elect a county chairman from their five trustees-at-large. The State is divided into seven "regions." The county chairmen in each district elect one of their number "regional director." The seven regional directors constitute the State Board of Directors. The latter body elects from its number a State chairman, vice-chairman, and treasurer. All of the higher-ups being ex-officio officers of the local bodies, their official career is ended whenever the local people put them out of their local offices. This insures responsiveness and responsibility of the State organization to the will of local members

(Concluded on page 572)



rthplace of the Farm Owners' and Operators' National Association, organized to include farmers of all kinds and to represent them with authority and power in all attempted regulation of riculture by organized capital, organized labor, organized professions, and organized politicians. The association sprang out of the soil of San Joaquin county. Its roots require farm soil wherever it spreads, for only actual farm owners and operators may have any voice in its management.

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EDITORIALS

AGRICULTURE AT THE PEACE CONGRESS.

PERHAPS we had better get ahead with this promised discussion while the going is good. Faint hearted people are beginning to prophesy that there will be no league of nations and other people, whose hearts slip a cog or two now and then, go so far as to prophesy that there will be no nations left to make a league of. Our courage and optimism, and our faith withal, are so great that we believe that the world has been in the main right in its spiritual awakening, insight and anticipation and that the world's sufferings shall not be in vain. Mankind has pursued an upward and onward course through all its traditions and records, even though there have been temporary halts and recessions, and we shall not lose the conviction that mankind will emerge from its greatest suffering and confusion with a new and a stronger impulse than ever towards higher and better things. Thus do we confidently anticipate the demonstrations of the historian of a century hence.

THE CONFLICTS OF PEACE-MAKING.

PEACE is evidently to be made in a war-like manner. Those of us who fondly believed that when the firing ended all nations would grasp at the dove of peace with eagerness fit to endanger the tail-feathers thereof, have undergone a sad disappointment. The "wager of battle" is nothing more than a bet on what will finally come through the subsequent conflict of peace-making. This has probably always been the case since mankind ceased to slaughter or enslave the vanquished and began to "talk it over" with them. And as the recent war was greatest of all in new ways and extent of killing, so the current peace-making is greatest in ways and extent of talking—the tongue is mightier than the sword!

We are indulging in this rigmarole simply to connect the world events and situations with the particular class events and situations which we intend to discuss. To one who casually hears that agriculture has sent delegates to the peace congress there must come the impression that it is very fitting that a "peace congress" is surely the proper place for the representation of an order of existence which Tomson thus describes:

> An elegant sufficiency, content,
> Retirement, rural quiet, friendship, books,
> Ease and alternate labor, useful life,
> Progressive virtue and approving Heaven!

It cannot be denied that the poet's picture of the farmer's life would be very fitting to hang on the walls of such a peace congress as a poet might also depict, but it would be sadly out of place on the side-lines of the current contentious concern at Versailles which is battling for peace with all the latest devised oral weapons!

HER VOICE IS STILL FOR WAR!

BUT let no one apprehend that agriculture goes to Versailles as a lamb among wolves nor as a passivist to the court of Mars. Agriculture goes to France for war and she sends well-trained troops. It was not necessary to send untrained combatants, so full of morale that training could be acquired on the way over—as was the case with our American soldiers in the great emergency. Agriculture has plenty of hardened veterans trained by decades of oral controversy in this country and they go to the rostrum at Versailles with all the tear-wringing pathos, the highly explosive invectives and the barrage of sustained argument which they have so long and so effectively used against each other in this country. There is a good chance that they will give an exhibition of verbal pugilism at Versailles which, because of the superiority of their super-scrapping, will provoke the contentious representatives of other nations into crying out in all their polyglot equivalents: "Oh, what's the use!"

WHAT IS IT ALL ABOUT?

FIE, kindly constant reader, do you really not know whither our discourse is tending? Must we baldly state the fact, than which none other can in this connection be conceived, that the two great contending congeries, each of which claims to fully represent American farming, have carried their conflict to the peace congress—each planning to get from that body approval of its own self-determinated representation of the agriculture of this country and, incidentally, of the world! And what will come of it? We do not know. We do not know that anything will come from Versailles. As we write on Tuesday it is cabled from Paris that President Wilson has sounded an S. O. S. for the ship "George Washington" to stand by in case he wishes to get aboard in a hurry. It may now occur to him that if he had lain quietly in the bosom of the great father of his country, for whom the ship was named, he might have seen that this country could fight for the liberty of the world and yet also fight shy from entangling alliances in the hope of reforming the politics of Europe; that fourteen points were too many and that one point, viz., to hog-tie the pan-German and make an enduring peace, would have been quite enough. However, that is not what our contention covers.

It may matter very little, then, what our two great agricultural teams, which utterly refuse to do team-work at Washington, do at Versailles. Their foreign attitudes do, however, cast side-lights upon what they are severally, but not jointly, trying to do in this country and may help us to see if anything which either of them stands for has hope of usefulness in securing, from legislative bodies and from public opinion, what American agriculture needs. We fortunately have before us the declarations which these two bodies, each claiming to be solely representative of American agriculture, have presented to the peace congress and our readers should know the contents of these declarations. This is what it is all about!

THE FARMERS' NATIONAL COUNCIL.

AT a conference held in Washington on January 6 and 7, this collective body of representatives of farmers' organization adopted a program of reconstruction for America and for other nations and presented it to President Wilson as their declaration for the peace congress. It stands for these things, as we briefly state them:

1—Retention in public ownership of all natural resources now in the hands of the Government and re-acquisition of all which have already passed to private ownership.

2—Government ownership of all railways, express companies and pipe-lines, and Government operation of all inland water transportation.

3—Government ownership and operation of all terminal elevators, packing plants, stockyards and cars used in connection therewith.

4—Direct marketing of food products; municipal ownership and operation of abattoirs, warehouses, cold storage plants, etc.

5—Rural credit: "available and cheap to farming as to any other legitimate and responsible industry."

6—Single tax.

7—Cost of the war to be met by taxation of excess-profits, incomes and inheritances.

8—Repeal and abrogation of all espionage laws.

9—Labor claims to take precedence of the claims of property and investment in business and commerce. Living wages are a direct benefit to farmers because they increase the purchasing power of those engaged.

10—Equal suffrage.

11—Extension of rural education.

12—Opposition to military training and use of troops abroad terminated.

The Farmers' National Council submitted also a scheme for international reconstruction which covers nearly all conceivable considerations in world-statesmanship, including a league of nations and besides calls for international control of investments, trade, transportation, agriculture and labor through commissions for each of them and arranges for the support of the National Council of Agriculture at Washington to secure them from the peace congress and from all other sources of authority.

NATIONAL BOARD OF FARM ORGANIZATIONS

THIS is the official title of the more recently organized collective body of farm societies which held in Washington on February 11 and 12 its semi-annual conference at which a committee of forty-eight submitted its report upon a declaration to be made on the part of American agriculture at the peace congress and a declaration of principles to be observed in "reconstruction" in this country. From this report we select and condense as follows:

1—Conservation of natural resources in public ownership of coal, oil, gas, phosphate lands and power developed from all natural agencies is the dominant and controlling factor in the future agricultural, industrial and commercial life of the United States.

2—Any hasty solution of a great question is almost certain to be unbalanced and unjust: any plan finally adopted must be based on thorough knowledge of essential facts and should recommend no change for the sake of change nor accept an ancient wrong as constituting a vested right.

3—Control of packing plants, stockyards and their accessories, as recommended by the Federal Trade Commission, should be the permanent policy of the country.

4—Compensation of agricultural producers on the basis of cost of production plus a reasonable profit is vital to permanent agriculture, and therefore to a permanent civilization; and Congress is urged to provide for investigations from year to year into the cost of production of all farm products.

5—Recognition of the right of farmers to bargain collectively through co-operative and other associations should be recognized.

6—Gradual abolition of farm tenancy, on the theory that no land should be held permanently for renting.

7—Labor is prior in time and superior in right to accumulation of capital, and a government does better when it helps a poor man to make a living than when it helps a rich man to make more money.

8—Community of interests exists among all workers, whether on or off the farms, and it should be expressed in common action for the common good.

9—The public good comes first; pay for services not rendered is an unjust charge upon the whole community; a monopoly used for private ends is always wrong; and the whole nation suffers whenever the standard of living for any class or any family falls below the level of decency efficiency and self-respect.

10—The people in cities are fed in considerable part by the unpaid labor of the women and children on farms, and it is of the first importance to both that the country producer and the city consumer should understand each other.

11—Farming is a highly skilled profession which should be paid no worse than equal skill elsewhere.

12—Universal free education for farm children.

13—Extension of the benefits of modern civilization to the open country, in spite of the added cost, part of which should be borne by general taxation.

The National Board of Farm Organizations also has approval for international institutions in the interest of agriculture and the maintenance of the world Institute of Agriculture at Rome. It also undertakes to erect a Temple of Agriculture in Washington to become "the headquarters of organized agriculture and in keeping with the importance and dignity of the industry."

TWO HEARTS THAT BEAT AS TWO.

THUS we have briefly sketched the public declarations of these two organizations which do not agree even to disagree—both claiming to be "it." Neither is to be held fully responsible for the declarations because we, not they, have outlined them as above. It is pretty clear, however, that the "National Council" is the radical, and the "National Board" the conservative end of the business which both are contending to transact. Their political affiliations are probably similarly distinguishable. We may say that one seems to us democratically socialistic and the other republicanly individualistic. But both claim to be above all agricultural: it remains to be seen how

far such claims are true, because the times call for team-work for the current needs of agriculture, which can be plainly seen and understood. Farming needs a square deal—which it can never secure from "representatives" who think less of securing it than they do of their own personal interests or theories.

A new agricultural organization is arising strongly in California. On other pages Mr. Hodges gives the details of its preliminary methods and purposes, which we hope all will carefully consider. Will it be broad enough to be widely representative of farmers' needs: will it be unselfish enough to be wise and strong enough to be efficient? It will be, of course, whatever California farmers make it—for they can lead American agriculture to the light, if they will.

QUERIES AND REPLIES

By the Editor.

Inquirer Must Give Full Name and Address.

Shall Palms Be Trimmed Up?

To the Editor: Kindly inform me if the lower leaves of the California fan palm should be cut off when they droop. I noticed the lower leaves on the same species were never cut at the Exposition grounds, and since then we have not had ours cut.—N. L., Berkeley.

To cut the lower leaves while they are still active has the effect of making the stem or trunk spindling and less handsome. To cut away the lower leaves when they droop and are becoming less active has no effect upon the growth of the plant. Removing these dying leaves is simply a question of convenience or of good taste. In a small city door-yard this trimming-up is often necessary because people have to get around in a small space and cannot have a plant spreading too far by drooping leaves. In a small garden it may also be necessary to trim up a palm and get rid of dead leaves because they give such an ill-kept and neglected appearance to the small premises. On the other hand, a fine palm in a large garden or in a park should not have its drooping leaves removed because they are a part of it as a beautiful, natural object and the collar of silvery sheen which they interpose between the green head of the palm and the dark color of its trunk, is lovely to look upon. If the space is ample by all means let the palms take their natural form. Of course, it is bad planning to choose a free-growing palm for a small door-yard. There are species of small growth which have all the palm characters developed in miniature and they are quite at home on handkerchief lawns.

Intercropping Twelve-Year-Old Peaches.

To the Editor: I have an orchard of Tuscan and Phillip Cling peach trees about 12 years old, which evidently will bear very lightly this year. What crop can I plant between the trees to give return on the land? In previous years I have planted both Indian corn and beans, but without success.—J. H. K., Modesto.

If the soil is good and the trees have had a fair chance, they should, at 12 years old, be using about all the direct light falling on the orchard and requiring all the plant food naturally in the soil—plus reasonable fertilization. The corn and beans probably failed for lack of light or plant food or moisture and, though grabbing what they could, did not get enough to make their own growth worth having and perhaps helped to throw the peaches out of commission also. We would not grow anything in a 12-year-old orchard except winter-growing cover-crop to be plowed-in for the good of the trees. Give the trees good cultivation and the sole use of the land this summer and get a piece of open land on which to gamble for a summer crop. There would be a better chance of winning in that way.

Keep Our Home Fires Burning!

To the Editor: I have read with interest your recent replies to questions about tobacco growing. I have a young Greek on my ranch that has been very successful (I think) and I am sending you a sample under separate cover. Try it in your "makins" and give me your opinion.—S. H. R., San Diego.

We have smoked a pipe-full of what your young Demosthenes hath wrought and have to acknowledge that we are not only able to sit up and write this but to confess that we like it. It has a full, satisfying strength and still is free from rank flavor. Our consulting expert in cigarette smoking says it has a good texture in the fine-cut manufactured form your Greek has given it, holds fire well and is of good natural flavor—though lacking the artificial flavors which manufacturers impart in their doctoring processes and which smokers learn to enjoy and require. The Greek sample seems to be well cured and not merely dried—which is the common fault of California samples and is therefore promising.

Now that boughten tobacco costs 50 per cent more for half the quantity we used to get as a unit, we are quite willing to try out local samples—of course in the interest of State development!

Pollenization of Figs.

To the Editor: We have several white fig trees on our place whose crops do not mature and what do are usually sour, and I would like to know if you could tell me where to send to get some pollen, as we have heard that by using the pollen they would mature.—G. H. R., Winters.

From what you say of the behavior of your fig trees, it is probable that they are not Smyrnas, and it is doubtful, or at least not demonstrated, whether the pollenization essential to the Smyrnas will benefit also other varieties, although that view is strongly urged by some observers. As for the obtaining of pollen which you propose, it should be remembered that obtaining and using it is practically impossible without the employment of its natural agency in distribution—the fig insect (blastophaga) and they can neither live nor obtain and distribute pollen without the essential source, the capri or wild fig. Attentive readers of the Rural Press are of course familiar with these facts and conditions. Those to whom fig pollination comes as a new idea should supply themselves with such a clear exposition of the whole matter as is given in Rixford's "Smyrna Fig Culture," which is Bulletin 732 of the U. S. Department of Agriculture and can be had by sending 10 cents to the Superintendent of Documents, Government Printing Office, Washington, D. C.

Apricot Twig Blight.

To the Editor: My apricot trees bloomed heavily and then the rain came, also some fog. The blossoms rotted on the spurs and I thought the damp weather caused it, but since then I have noticed that nearly all of the fruit spurs that were loaded with blossoms have died or are dying. Many of the spurs have a gummy substance on them.—L. E. S., Aromas.

There is much such trouble this spring, as weather conditions have favored the fungi which are always hanging around watching their chance. It can be reduced by spring spraying before and just after blooming with lime-sulphur (one to thirty). It is doubtful if anything can be done as late as this, although quite a late use of atomic sulphur is believed by some growers to be effective—as stated on page 525 of last week's issue. It has proven better to get busy as soon as the fall of the jackets will let it into the stem attachments.

Red Clover Over Clay.

To the Editor: I have a small piece of land that I wish to sow to clover for green feed for chickens, etc. This land is a loamy soil of about a foot or more in depth, with clay subsoil. What kind of clover would be best adapted to this soil, and what time should it be sown?—S. E., Vacaville.

On such shallow soil over clay you need a fibrous rooted clover. Common eastern red clover will not be injured by winter standing water and will give you green growth all summer if you give it water, but may summer-kill if it gets too dry. If you do not irrigate and plan only for winter growth, bur clover is best and should be sown in the fall. Red clover should be sown now.

Home Garden Asparagus.

To the Editor: I have planted a small patch of asparagus for home use, but I know nothing about how it should be handled. The sprouts are coming through, but they are too small for much use this year. Should I cut them off any way? Should the sprouts be kept pruned back?—Subscriber, Morgan Hill.

By no means. The first two years of asparagus plants in a new place should be largely given to strengthening the roots. This is done by allowing as much top-growth as possible. Do not cut at all this year and cut only lightly next year. After that, if well handled, the roots will stand hard cutting for several years—if the late shoots are allowed to run up top-growth during the summer. Water enough in June and July to keep the tops green and vigorous and blow in sulphur if you see rust on the stems. When the tops die down next fall, clear them away and cover the bed with several inches of stable manure. Our book, "California Vegetables," gives detailed instructions for all kinds of amateur and commercial vegetable growing under California conditions.

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Wire Worms in the Garden.

To the Editor: We are trying to raise vegetables on a city lot, but find the soil full of wire worms. Can you tell us how to get rid of them?—F. F. S., Los Angeles.

It is usually wiser to run away from wire worms by choosing a piece of ground which has not recently grown things which they like and cleaning the old ground up by deep, loose digging and exposure to the sun with nothing on it for them to eat. Where no such choice can be had, the worms can be reduced by burying pieces of potato poisoned with arsenate of lead powder. If you do this a week or ten days before planting what you wish to grow, you will kill many worms. You can also escape many worms by later planting, for they will go into the pupa stage. If you wish to go ahead anyway, plant more seed than you would ordinarily and scatter nitrate of soda thinly after covering and wash it down with a hose or with a shower—if one comes handy.

Manuring Alfalfa.

To the Editor: What can I put on to advantage on alfalfa ground that has been cut for five or six years, the amount to put on and where to get it? F. C. R., Maxwell.

Early in the winter alfalfa ground should have as good a spreading of stable manure as can be found available. Either with or without this, an early spring treatment of about 250 pounds per acre of gypsum and superphosphate is desirable, to be followed after the third cutting with another application of the same amount—if irrigation water is used to carry it into the soil. Any of our fertilizer advertisers will supply you these materials.

Black Heart of Apricot.

To the Editor: Can you tell me what is the cause of black heart in apricots, and the remedy?—J. H. L., Hollister.

We are not aware that the cause has been definitely demonstrated. The treatment commended is cutting below the trouble either by removing branches back to the main stem when they show summer wilting of the foliage or by cutting below the manifestation when disclosed during winter pruning. Excessive irrigation in the case of affected trees is held to be promotive of the trouble.

Die Back of Plum Branch.

To the Editor: I am sending you a piece of a branch of a Diamond plum, the blossoms of which are dead. So far it appears only on one of the branches of a healthy, vigorous tree. Can you tell me what the trouble is?—A. I., Lincoln.

It is apparently a case of die back of the branch, from what cause we cannot tell. The blossoms have apparently failed for lack of sap, for the bark is shriveling and is quite dry on cutting. The branch should be amputated at some point low down where there is life enough to start the healing-over process. It is not unusual to have a branch failure, and if soil conditions are good the tree may not be otherwise affected.

California Weather Record

The following rainfall and temperature record is furnished the Pacific Rural Press by the United States Department of Agriculture Weather Bureau at San Francisco for the week ending at 5 p. m., April 8, 1919.

Stations	Rainfall Data: Past Week	Seasonal To Date	Normal To Date	Temperature Data: Max'm	Min'm
Eureka	1.19	35.44	39.85	58	38
Red Bluff	.08	25.99	21.96	78	38
Sacramento	.02	17.10	17.55	76	48
San Francisco	.08	25.62	20.08	68	47
San Jose	...	18.80	15.08	70	38
Fresno	...	6.74	8.41	82	42
San Luis Obispo	...	17.81	18.33	76	42
Los Angeles	...	8.22	14.31	70	50
San Diego	...	8.10	9.02	64	50

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Figs and Pears 125 Years Old

[Written for Pacific Rural Press.]

We were not hunting for relics of the past. We were not thinking of elderly figs or patriarchal pears. Our quest was orchard management, and we were headed for the orchard of A. D. Curtner. Instead we bobbed in at his brother William's and felt well rewarded for the mistake.

For this was the home place of the Curtner family, the father coming here in 1852. It was one of the old Spanish haciendas and comprised many thousands of acres. But before going into this perhaps it were better to record what I went to see.

160 ACRES IN FRUIT.

Mr. Curtner has about 160 acres in fruit here and the plowing had all been done (first week in March). The flat lies at the confluence of two small streams and is all alluvial. The house, situated on an eminence at an elevation of 160 feet, commands a view of the lower bay and Dumbarton bridge, which gives one an idea as to the aspect and climate.

Of the fruit there are 35 acres in Imperial and French prunes, which we were told turned off over 75 tons of dried fruit last year. It was all harvested and only five tons spoiled by the rain.

The six acres of apricots (Blenheims) never fail. They looked nice and clean, were well pruned and full of bloom, just getting ready to break.

Of the 60 acres in almonds, the greater part is comprised of what the owner calls Terragonas. He has found the Texas Prolific too late for this section and the I X L did not do well. He is taking out about seven acres of old Languedoes and Jordons next year, as they are not profitable. In fact, he does not consider this a good almond section, especially as it does so well with prunes and walnuts.

The 25 acres of Concord walnuts (on black) are six, seven and eight years old, are doing finely and had a respectable crop on last year. Intercropping with beans and field crops has been practised and can still continue a few years more apparently without robbing the trees too much. The walnuts were all budded nursery stock, the unions being not less than two feet above ground. Having such dense foliage as the Concord produces, no sunburn was evident that we noticed.

AN OLD QUADRANGLE.

Through a hollow to the south of the house a stream, bordered with large sycamore, alder and willow trees, runs down past the old hacienda buildings through what was once the garden. About two acres were originally enclosed by an adobe wall, some remains of which can still be seen, and outside this wall a hedge of prickly pear was planted to keep out marauders and pilferers. Some of that cactus that still remains is over 12 feet high and forms an impenetrable thicket where it stands. The old garden is now an apricot orchard, fruitful and well kept.

A VENERABLE FIG TREE.

Stands just inside the garden. It is a Black Mission and is 125 years old and looks as sound as a dollar. At the ground it is about 17 feet in circumference below the crown. Its wide spreading limbs have drooped to the ground and, taking root there, have shot up again. A good-sized picnic party can be sheltered within the periphery of the rooted branches and Mr. Curtner told us that the fruit of this tree was as large, sweet and abundant as ever it was. It was planted by Don Valentin Higuera, the alcalde of Mission San Jose. By the way, higuera is the Spanish for fig tree, so the old don perpetuated his name in a living and useful monument and doubtless many a by-gone romance has been nurtured beneath its canopy.

Mingled among the large sycamores that border the brook outside the wall are some 13 or 14 pear trees, also 125 years old. It is said that they have never been pruned and one can well believe it, for they are about the same height as the sycamores. They are winter pears, variety unknown, but they ripen late and always bear fruit. The trees appeared to be perfectly sound, though large areas of the limbs were rather bare due to overcrowding.

The old adobe house did not appeal to us, as many such do, for a superstructure had been added to it at a later period, used as they are in Mexico today, as a meson or public lodging house. A large colony of wild bees were in possession of one end of it and we were advised to walk warily here.

RELICS OF THE PAST.

A large part of the garden near the residence was evidently an old Indian crematory. Every old Californian recognizes that black, fine, flour-like earth that looks like the richest kind of garden soil and is—only if you can keep water on it every few days. For it soaks up water like a lime-basket. Dozens of pestles and mortars had been dug up here and were lying around. The most recent unearthings were lying beside the tools. They were a human jaw-bone with a splendid set of teeth in, parts of the skull broken up by the spade, and a good sound thigh bone.

Here we saw a Mesquite tree quite 20 feet high and close by were some navel orange trees with at least five boxes of good oranges to the tree.

We would fain have stayed longer and learned more regarding the history and tradition of this old place, but an hour soon slips by and we had to jog along. We have made mention of its management and have no excuses to offer for adding an account, however meager, of its history and tradition.

ALL PEAR MEN SPRAYING.

All pear men are busy spraying their pears or getting ready to, and the lime-sulphur is becoming more and more a favorite for scab spray in place of the Bordeaux because it is efficacious and is also such a fine insecticide. Probably more of this splendid material will be used this year than ever before.

It will be used as a second spray by many growers on almonds (summer strength, about 5 gallons to 200-gallon tank) against red spider and rust. The weather has made it very difficult to carry out spraying operations to the best advantage, what with rain and wind. We noticed in several orchards where the wheels had cut through deeply with a full load of material.

FIG PRICES UNANNOUNCED.

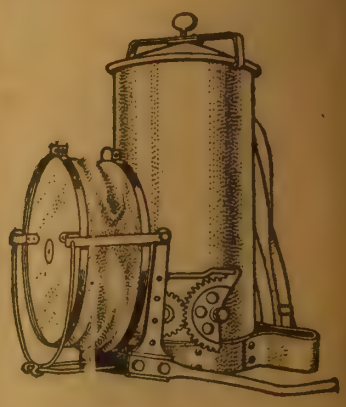
The California Fig Growers' Association announces that prices for the 1919 crop can not be fixed at this time. Any importation of figs from Smyrna will influence the price of California figs.

The California Peach Growers have decided to construct a fully equipped packing plant at Hanford, to cost about $75,000. It will be the second largest in the State owned by this company. It will probably handle products also for the Prune and Apricot Growers, Inc., for this district.

Tent Caterpillars Need Attention Now

In our issue of March 29 we warned growers to "look out for caterpillars." Well, they are here in large numbers. In the Antioch section we noticed a dozen or more tents on one tree and whole orchards are infested. In parts of other northern counties the same thing occurs. If they are not torched off now, they will soon spread over the whole tree. Just now, in the evening and early morning, they are all in the nest and at this stage it is cheaper to burn than to spray. Get after them today. In a week they will be leaving the nests in some sections for good. Every leaf counts.

American Beauty Dust Sprayers



Sulphurs vines faster and better than any other.

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Mealy Plum Plant Louse on Prunes

When this appears it will not be too late to take a shot at the mealy plum louse—the aphis that we sometimes find on our prune trees in such numbers that the honey-dew secretions drip to the ground and the sooty fungus that ensues makes the foliage and fruit black. On the side of the tree when the earliest batches appear one often finds a lot of split prunes. Anyway, their presence in such numbers weakens the vitality of the tree to a large degree. The early ones—the stem mothers—which hatch and begin work on the first leaves are the ones to get. Black leaf 40 one pint to 200 gallons can be used now, together with ten pounds of fish oil soap to 200 gallons. Or if red spider also is present use, instead of the soap, 20 pounds of atomic sulphur to the 200 gallon tank with the black leaf. To try getting them later in the season when foliage is full and they appear in numbers is a poor game. Those men who sprayed with lime sulphur or an oil spray just as the buds were breaking may likely have done the business for this aphis already.

Some Timely Reminders

[Written for Pacific Rural Press.]

SUCKER THE THOMPSON SEEDLESS GRAPES.

This variety has a tendency to send out suckers and barren shoots and the vines have to be gone over several times during the growing season after the young shoots have started so as to keep them rubbed off. They are robbers and the time employed in their removal is money in pocket. Sucker and pinch. Sulphur and train. Dame Nature does a lot for us in California, but the gods help those who help themselves.

WHAT ABOUT THAT SULPHUR?

Have you enough sulphur ordered or on hand for those grape vines? Are the blowers in good working order?

This is the time to watch closely for the almond mite and red spider. Remember what a lot of damage was done by yellow mite and red spider last year? They will be right on the job in the same prune (and other) orchards this year. Atomic sulphur is a good thing to use before they get too numerous and so is dry sulphur if you have a power blower. In a spray eight pounds of flour paste to the tank is a great aid and is cheap spreader.

PROTECT FROM SUNBURN—WHITEWASH.

Are all those young trees protected from injury by sunburn? Probably more loss is consequent on such injury than all the other woes combined. Whitewash is a great aid to protection, though on very young trees a yucca or other white protecter is an added insurance. It is on the sunburned surface that the flat-headed borer and fungus infections enter. Here is a simple formula from the university's experts: Quicklime, five pounds; salt, half a pound, and sulphur, quarter of a pound. Slake the lime slowly with water and add the salt and sulphur while boiling. Add enough more water to make a good wash.

PLANTING CITRUS TREES.

In planting citrus trees the bud-union should be kept well above ground, the soil not being allowed to pack around the trunk. In irrigating, a little bank of earth will prevent the water standing around the trunk, especially if the basin is used. Then hoe or cultivate the irrigated area as soon as it is in shape to crumble well. A pot-hole blown into the clay or hardpan will become a permanent little cesspool sooner or later. When this happens the tree either dies right out or becomes weakly and unprofitable.

PEAR BLIGHT POINTERS.

Look out for the first blight and start the fight early in "blight" regions. Keep all suckers rubbed off at the base of the tree and from around the crown. Burn all clippings as they are cut and use cyanide of mercury on both cuts and tools against infection. This is the latest recommendation of science and supersedes corrosive sublimate, formalin, crude carbolic or any other disinfectant that has been used. The mixture is one part of cyanide of mercury crystals to 500 parts of water. The solution must be kept in a glass or earthen jar and applied with a brush or swab.

No Need of Sun-Burned Trees

Colusa county trees have a much more serious tendency to sunburn in the dry heat of summer than trees in Santa Clara county, but there is no need of any sunburn in Colusa, says Horticultural Commissioner L. R. Boedefeld, commenting on his remark that this is one of the most serious problems of his fruit growers.

In days when red spider control was not so much of a certainty as now, the Boedefeld orchard was more than once partially defoliated by the insects. Whenever this happened, the sides of limbs unduly exposed became dried out and the bark cracked and peeled off. Concave sides of limbs on eastern and northeastern sides of trees which thus caught the full force of afternoon sunshine became weakened in the same way. The sun-shaded trunks of young trees also became sunburned.

But Mr. Boedefeld's young orchard ten years old has never been injured this way. The trunks and crotches have been protected by whitewash. Red spider and brown mite have been kept off by sulphuring. The sunshine has been kept from injurious contact with branches by leaving more short growth on them, filling the center of the tree so when they bend under their loads they are not exposed as they would be if pruned in the vase form. One additional protection is emphasized. A vigorous supply limb will not sunburn, if kept supplied with plenty of moisture from the soil. In the past seven years June irrigation has been practiced increasingly. At this time, the winter moisture is usually about exhausted and sunburn is imminent. But with irrigation, injurious temperatures in the trunks and branches are prevented.



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Look into the new, money-saving methods of clearing land, blasting tree beds, ditches, boulders, etc. They are all described in our up-to-the-minute book, "Better Farming with Giant Farm Powders." A post card will bring it by the first mail.

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Should return from $1,000 to $1,500 per acre first year. If interested in Rhubarb or Berries write for special prices.
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Here and There in the Fruit Business

[Written for Pacific Rural Press.]

"Some" Peach Orchard.

V. D. Whitmore of Ceres (Stanislaus county) has 80 acres of nine and ten-year-old peaches that produced an average of eleven tons to the acre last year. They are Phillips, Tuscans and Albertas. They had been contracted for at $50 a ton and that was the price paid, though $60 prevailed during the canning season. We noticed a melilotus cover-crop coming along and a gang of pruners was just finishing the pruning (the third week in February). A few trees had been left in one corner thinned out only and not headed in at all, for experimental purposes. In spite of the heavy crop of last year the trees had made plenty of new wood. These large results are obtained by extra irrigation from a supplementary pumping plant on the place after the system canals cease to run. It is only about 35 feet to water and electric power is used. The land and conditions here seem to be eminently suited to the peach. Five hundred dollars an acre gives anyway tangible results—it is a record to be proud of for any section.

Bees and Alfalfa.

A friendly-looking man in a nice new machine ranged alongside of our rather disreputable - looking "Lizzie" on the Rodeo ferry last week and with the free-masonry of dwellers on the land we had a little visit. The friendly-looking man was J. F. Poole, an alfalfa grower of Stratford (Kings county), who had had to rent his place when his boys were taken into the army, and was thus free till he could get it back again, and was taking a trip round the State with his family. He told us that he also had a bee ranch in San Diego county with a man in charge, but that owing to "European foul brood" he only had about 400 colonies left out of 1600 he owned in 1916. He said beekeeping was a good business apart from its use as a means of fertilizing fruit trees. The prices now obtaining are remunerative. In past years he had sold many a carload at three cents a pound. A cattle range where bees may also be kept and an alfalfa ranch as a feeding station are a pretty profitable combination.

Nitrates From the Air.

A Nitrogen Products and Carbide Company is to establish works at Workington (England) for the manufacture of cyanamide, a fertilizer produced by extracting carbide and nitrogen from the air and combining them, according to Commerce Reports. The scheme will render the United Kingdom independent of imported nitrates from Chile. Carbide will be an important product of the new industry, and the plant will provide for the working of all the by-products of coal, such as sulphate of ammonia, benzol, oils, pitch, etc. The works will take two and a half years to complete. If this should result in cheapening nitrate of soda to our own farmers more of it would be used.

Apricot Pits and the War.

California has an annual crop of 7000 tons of apricot pits, which were formerly sold to Germany and Denmark at about $45 a ton. According to Popular Mechanics Magazine, when the war closed this market, and the price dropped to $15, a California chemist bought a supply and started experimenting. He is now marketing a substitute for olive oil; a meal used in cooking; oil of apricot, known as bitter oil of almonds; American blue, from which Prussic acid can be made, and other by-products which give a total yield of more than $2000 for peach pits.

Distributing Gopher Poison.

The weighing out of poison for gopher mixtures has been found difficult for farmers, so Horticultural Commissioner Bremner of Sonoma county weighs it out for them. He puts it up in small pepper cans with sifter tops. Directions say: "From a pepper-box sift slowly one-eighth ounce of powdered strychnine (alkaloid) and one-tenth of this quantity of saccharine over four quarts of dampened baits." The amount—four quarts of bait—meets the needs of the average farmer, is convenient, and sells for a few cents.

Blasting to Plant Figs.

Forty acres were set to calimyrna figs a year ago by Dr. Norman S. Peck, three miles east of Merced, and he had every hole blasted before planting. The orchard was given assiduous care and cultivation throughout the year, and the young trees were wrapped in straw. Like Caesar's army, they were led into winter quarters. Mr. Peck lost very few trees, which have made rapid growth. He figures that in seven or eight years this should make him an ideal home, providing a substantial income.

Quarantine Amended to Admit Bulbs.

The quarantine governing the importation of nursery stock, etc., into the United States has been amended to permit the importation of lily bulbs, narcissus, hyacinth, tulip and crocus properly packed in accordance with methods prescribed by the Federal Horticultural Board. Dry earth is the only suitable material known for packing these bulbs and this earth is sterilized by heat so as to involve no additional risk of introduction of dangerous plant pests.

Dusting for Aphis on Walnuts.

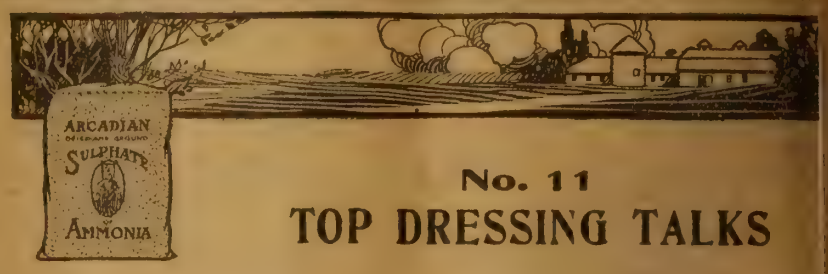
"I have an idea that some of the dust mixtures which Professor Ralph E. Smith has perfected will be particularly efficient when used upon aphis, and we are going to send out a few small samples hoping to try it out," said Horticultural Commissioner Kellogg of Santa Barbara in a recent letter.

A Profitable Servant.

There is a Black Mission fig tree on the ranch of John Wolfsen (Merced county) that produced half a ton of dried figs last year. The tree has a spread of 60 feet and a circumference of 11 feet, four feet from the ground. If he gets half a ton again this year at 12½ cents (which is today's quotation) it will pay for movies and ice cream for whole year!

Valencias vs. Lemons.

Valencia oranges seem to be co



No. 11

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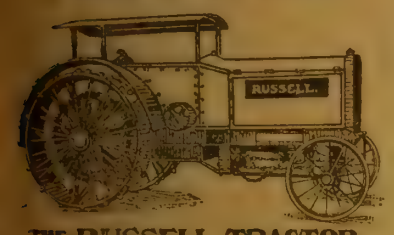
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ing into favor here (at Santa Barbara) on account of being more resistent to cold than are lemons; also on account of the fact that they ripen at a season when the market is very strong, holding on as they do until late in the season, says Prof. Ralph E. Smith.



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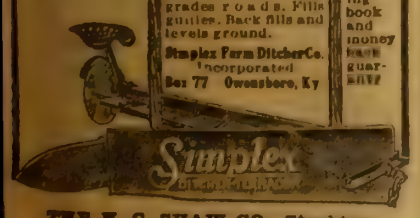
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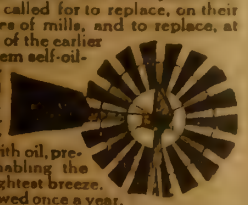
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A PROMISING SEASON FOR PEAR GROWERS.

[Written for Pacific Rural Press.]

More pears have been sold already at from 16c to 18c dry than any other price, we were told in an interview with Frank T. Swett, president of the California Pear Growers' Association. The following facts were brought forth after the meeting of the directors of the association on Monday, April 7. There is now a living, active market for dried pears in any quantity. Every single pear, windfalls or scarred or No. 2 fruit, should be dried, for it will have a substantial market value. Pears dry away an average of about five to one and cost from $10 to $15 a ton green to dry. At 18c a pound one ton dried would be $360, or about $60 a ton green—orchard run, unpacked. The association is urging all its members to purchase trays and sulphur houses or balloon hoods and general equipment for drying.

The great lesson dried pear men have received in the past four years is that markets can be and have been established where none were before. Formerly, practically all dried pears were consumed in Europe. When the embargo was placed on our shipments there, we began pushing our wares at home. Our own people have learned to eat dried pears, so now we have two markets instead of one. The directors believe that while in the past the output of dried pears has not exceeded 2000 tons a year, that a market is developing that will absorb from 6000 to 8000 tons a year. Furthermore, they believe that in spite of this vastly increased output it will, by making the dried pear a staple article of diet, result in stiffening the general market to steady, good prices. Trade papers at present do not even quote prices on dried pears, but they will when it becomes a staple.

The price of trays is going steadily up and men should buy their tray material now. Napa county growers bought (co-operatively) this spring at 48c for pine trays 3x8, but they have advanced 10c to 15c since then. At the meeting today a committee was appointed to make arrangements for a co-operative dry yard if possible, to dry from 2000 to 3000 tons of No. 2 and windfall pears in the Sacramento river district. Mr. Swett said he heard from a recent arrival that California canned pears were selling at retail in London—$1.50 per can!

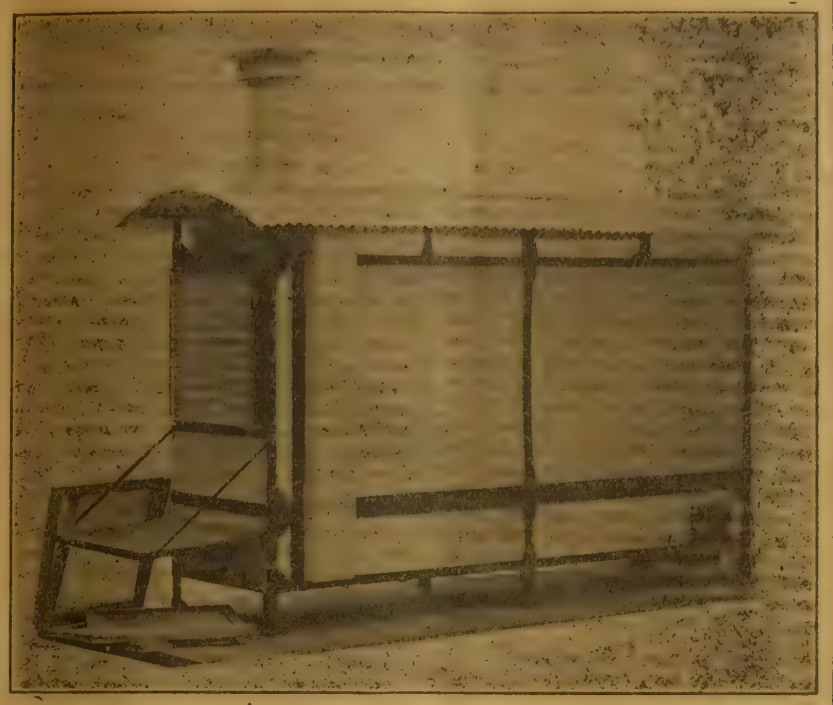
ALMONDS AND APRICOTS LIGHT.

In Contra Costa county to date (April 8) the apricot crop can be estimated at 25 per cent of a crop. The frost on March 10 was responsible for a considerable loss and the rainy, cold weather for the rest.

In the Oakley district almonds are light. We went into a number of orchards and, although it is a little early to tell positively, almonds will be about one-fourth to one-third of a crop here. John Trembath said that Lewellings were best and then the Trembath seedling. The Ne Plus makes the best showing of the Hatch varieties. B. L. Norcross finds the Texas Prolific, Drakes and Sultanas best, the latter leading, as, though this variety does not show heavy bloom, they generally all set.

We have noticed the absence of bees in all orchards this year, as it has not been favorable weather such as invites the bee of a genial spring. Also the syrphid flies are conspicuously few. That growers are taking more interest in the economic value of the bee as a pollenizer is shown in the fact of small bee associations being formed in fruit growing sections. A number of colonies have been shipped to the Santa Clara Valley from the mountains of Lake county. It is not necessary to scatter them through the orchard. They can all be put in one place. Prune conditions look very promising in Sonoma and Napa counties and in Santa Clara.

The Ripon Cantaloupe Growers' Association has already signed up 300 acres of cantaloupes for the season, with more in sight; also 100 acres each of watermelons and casabas.



Mr. Farmer—Dry Your Raisins—Prunes—Peaches—Pears—Apples—Grapes

Every year your losses run into thousands of dollars because of adverse weather conditions—over-ripe products, etc. THE SAHARA DRIER guarantees you against such losses. It is the cheapest and best insurance possible. You carry insurance on your house, your barn, your automobile, but not on your crops. Last year the California growers lost thousands of dollars because of the early rains. It may happen again this year. Can you afford to take the chance?

THE WINE GRAPES must be dried and they will then find a ready market. Most of the California growers are making ready to dry their 1919 crop. The "Sahara Drier" is the most efficient and inexpensive machine on the market. It will do the work in from 8 to 12 hours and give you a more uniform product than by the sun process. It is metal and asbestos construction—fire and fool proof. No expert help needed and fuel cost should not exceed 50c per day. Dimensions are 16 ft. x 8 ft. x 6 ft.

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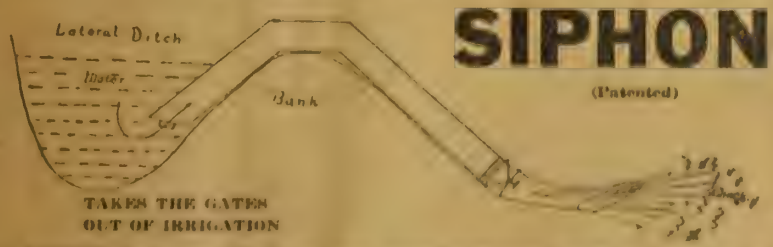
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Tell us about your local conditions, how much water you use, etc. Let us advise you about building your ditches. Reliable information will be given you.

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Field and Garden Suggestions

[Written for Pacific Rural Press.]

Tenants Sell Manure.

That alfalfa and livestock should form the principal basis of farming operations in the Imperial Valley is a conviction reached by many ranchers here. Too many do not take fully into consideration the value of fertilizer that is produced, on the ranch, by a herd of cattle or a flock of sheep. I have been informed that during this season about 1400 carloads of manure have been shipped from various valley points. The average price paid for it here is $2.50 per ton f. o. b. cars. Of course, our irrigation water brings a fertile renewing sediment that builds up the soil, but I am happy to note that land owners as a rule are not selling their barnyard manure—the sales mentioned above are mostly made by tenants. Would it not be wise for owners to specify in leases that all manure must be spread on the fields?

Limed Alfalfa Fixes Nitrogen.

Plots of alfalfa at the New Jersey Experiment Station were treated with lime in quantities from 1000 to 4000 pounds per acre. Lowest yield of alfalfa and of nitrogen (in protein) came from unlimed check plots. Highest yields of alfalfa and nitrogen came from the plot receiving most lime, and yields between were in a direct proportion to the amount of lime applied. Of the 213.41 pounds of nitrogen per acre in the crop from the 4000-pounds-per-acre plat, it is estimated that between 150 and 175 pounds came from the air.

Lime Improves Alkali.

In experiments to find the effect of lime on alkali, with special reference to its effect on ammonification (the first step in transforming nitrogen fertilizers into available form for plants), the Iowa Experiment Station found that lime (calcium carbonate) exerted a marked beneficial influence on ammonification. In every case the lime reduced the poisoning qualities of the alkalis (sodium carbonate, sodium bicarbonate, sodium sulphate, and sodium chlorid) and in some cases it even made them stimulative.

Boys Raised Peanuts.

Two large sacks of peanuts were harvested about November 1 by Jacob and Henry Boerg of Kern county. They had on May 15 planted one quart of fine, big, hum-backed, knock-kneed, double-jointed peanuts nine inches apart and three inches deep in rows two feet apart. The soil was sandy, so the boys irrigated once a week and took good care of the plants, but never covered the blossoms. Not content with their exploit, they say they would have done better by planting March 15.

Avoided Weevils in Beans.

To avoid weevils in Lady Washington beans, David Klotc of Sacramento county believes July planting works. In 1917 he planted a few in his garden late in May and got about 100 pounds, all "buggy." In 1918 he planted about July 7 and got no bugs, though a neighbor with three acres planted about June 1, 1918, harvested 21 sacks "alive with bugs." Mr. Klotc's beans matured in fine shape from the July planting, as this variety requires only about 90 days.

Must Dig Out Water Grass.

The cheapest, most practical way to get water grass out of a field of rice, according to J. V. Biard of Glenn county is to put on hip boots, wade out in the rice field, and cut it off underground with a little scythe. Rice men paid $4.75 per day for labor to do this. The grass is laid on the checks to dry so it will burn. This is cheaper than to try to screen the seed out of incoming irrigation water by any means known to Mr. Biard.

Barb Wire Close Above Woven Wire.

Ah, it looked fine! a woven wire fence with two strands of barbed wire spaced about eight inches apart above the woven wire. Bing! pop! went the staples, and the woven wire was broken down as the old horse stretched between the woven part



Always *more* miles on Ajax tires

MORE and more the farmer turns to Ajax as the tires to save him miles and money.
"More miles!" is every Ajax user's verdict.

AJAX ROAD KING

Ajax Road King yields more mileage because more mileage is built into it. The special Ajax feature—Ajax Shoulders of Strength—braces and reinforces the tread. See the picture of the Ajax Road King. Note how the Shoulders of Strength put more tread on the road—how they give more strength where strength is needed.

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Ajax tires have won the dirt track championship of America for two successive years. In 1918 at county fairs, etc., all over the United States, they smashed 9 world's records and shattered 49 track records.

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Ajax Tires Are Guaranteed In Writing 5000 Miles

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TRACKS
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There are years of study and development back of the Monarch Creeper Belt, and the highly efficient track and track-shoe construction. The patented one-piece manganese steel shoes stand up to heavy service for long periods with practically no wear. No lubrication needed because there is little friction. Monarch Tracks have two long lives—when the lug on any shoe shows wear, turn the shoe end for end and a new lug surface is ready for business. Don't be mistaken—it's a Monarch you need.

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"Originators of the Valve System of Irrigation."



and the first strand of barbed wire to get grass on the outside. Had the first strand of barbed wire been no more than three inches from the woven fence, the horse could not have nosed through.

Plowed Too Late for Corn.

A field of Egyptian corn covering the crown of a rounded hill in San Luis Obispo county showed a sadly characteristic lot of bare patches. It stood at various heights averaging a little over a foot where it ought to have been uniformly about three feet tall. Its deficiency was explained by the farmer when he said it had been plowed after the last spring rain had dried away.

Arizona Dry Farmed Indian Corn.

Hickory King corn gave the largest yield of green silage, 13,320 pounds per acre, in a test on the Arizona Experiment Station dry farm at Prescott during a season of fair rainfall a few years ago. The small Indian corns are said to appear to better advantage under less favorable rain conditions.

June Watermelons.

By planting watermelons late in January, C. L. Grimston of Imperial county generally starts shipping to Eastern and Canadian markets early in June. The January planting is protected from cold by waxed paper. Returns run from $200 to $600 per acre.

PIMA NAMES BEANS. NOT A BEAN.

To the Editor: Is the Pima bean better than the kinds we are now growing? If so, please tell us about it.—Reader, Tulare.

[Answer by Prof. G. W. Hendry, University Farm.]

Any bean variety obtained from the Pima Indian villages of southern Arizona may be properly called Pima. The white tepary of commerce was so obtained, and is occasionally referred to as the Pima bean. It may be that the Pima inquired about by the correspondent is nothing more or less than the tepary. Several varieties of beans, however, of the same species as the pink (phaseolus vulgaris) have also been obtained from the Pima Indians, and have also been known as Pima beans. In short, no one bean derived from these Indians is more entitled to the name Pima than another.

All of the dozens of tepary varieties (Phaseolus acutifolius var. latifolius), white, yellow, black, brown, and mottled are Pima beans and are therefore entitled by virtue of their origin to the name Pima.

The tepary varieties are unexcelled as to productiveness in the hot arid portions of the Southwest and have been more productive than any other species of beans in the interior districts of California. No variety of common beans, Pima or otherwise, has yet been found which will in any way equal the tepary in drought tolerance. Pima beans of the common type (Phaseolus vulgaris) are in no way superior to such well-known varieties of the same species, as the red Mexican and the pink.

The so-called blackeye bean nearly equals the tepary in drought resistance, but strictly speaking the blackeye is not a bean but is a cow-pea (Vigna sinensis) and is no more closely related to our common bean varieties than are peas, lentils, garbanzos, horsebeans, or, in fact, any other similar leguminous crop.

Of the common California bean varieties, the red Mexican is perhaps the most drought resistant, being slightly superior in this respect to the pink. So far as we are aware, no Pima varieties, except the tepary, have as yet been found which will equal either of these two varieties in productiveness in upland situations in the drier, hotter portions of California.

During the past season some twenty new varieties of beans were obtained by the Experiment Station from the Department of Agriculture in Mexico and were tested both at Davis and Fresno, under conditions of heat and drought, in comparison to common California bean varieties. In these tests no varieties were found superior to the pink or red Mexican in productiveness.

ANNOUNCEMENT!!!

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Richest and Most Productive Soil in the State of California

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Located in the Delta of the San Joaquin River, 15 Miles Below Stockton

The California Delta Farms, Inc., owners of 40,000 acres of the richest, most productive, fully improved farm land in California, is for the first time offering its lands for sale. The first unit of 5000 acres, divided into 80, 100, 160 and 200 acre farms, is now on sale at $250 per acre on twenty year payments.

These Lands Are Absolutely the Best Farm Land Buy in the State Today.

This wonderfully productive, rich, black peat soil is composed almost entirely of decomposed vegetable matter. Every acre is under cultivation. Record crops of Potatoes, Onions, Corn, Asparagus, Barley, Beans, and Celery are produced on these lands every year. 700 acres are in Asparagus.

The Real Farmer will Appreciate This Soil. If You Know Land You will Buy Here.

The Enormous Yields of These Lands will Stagger the Uninitiated.

Water, absolutely free, in unlimited quantity for irrigation is drawn by gravity flow from the San Joaquin River and tributaries. The farmer's only gamble here is the market price. The combination of deep, rich peat soil, sure unlimited water supply and long growing season assure a bumper crop.

This 5000 Acres at $250 Will Sell Fast. The Next Unit Will Go On Sale at $275 Per Acre.

If you have $5000 or more to invest, and are in the market for a real farm, write for descriptive folder, containing 26 striking photographs of these incomparable Delta Farms.

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Progress of Bills in State Legislature

[By Our Special Sacramento Correspondent.]

Ways and Means Committee.

Assembly bills of special agricultural interest which have been recommended by the Ways and Means Committee are mostly those which had been previously recommended by the State Budget Board; but several not recommended by the latter have received the former's approval. Of these, we point out the following: No. 38, by C. M. Kline, intended to appropriate $150,000 for purchase of a University Farm at Riverside, amount cut to $30,000, which by other amendments is to make the first payment on such a farm, final payments to be made by future appropriations; No. 215, by A. P. Fleming, appropriating $75,000 to liquidate the debt caused by the 1918 Los Angeles Liberty Fair, passed by the Assembly; 567, by Mrs. Elizabeth Hughes, appropriating $32,000 for the special training of rural school teachers at the Chico Normal, $10,000 of which has been approved by the Budget Board; No. 677, by Miss Esto Broughton, $25,000 for use of the State Board of Forestry in co-operation with local agencies to fight forest, brush, grass, and grain fires, passed by the Assembly. Appropriations recommended by the Budget Board and the Ways and Means Committee are mostly for support of State institutions and payment of legal claims against the State. Of special agricultural interest are the following: 319, by J. W. Johnston, $10,000 for improvement of State Fair Grounds, passed by the Assembly; 413, by A. P. Fleming, $53,000 for support of Los Angeles Exposition, passed by the Assembly; 449, by Lee Gebhart, $40,000 to complete the State Fair Agricultural Building; 450, by Gebhart, $30,000 for additional land for State Fair; 482, by F. J. Cummings, to provide for the labeling of seeds as to their purity and germination, with amendments making it stricter.

State Market Commission Bill.

The stage was all set with the highest officials of various co-operative associations and others to defend or oppose Senator W. E. Brown's bill 639, which proposes to repeal the present State Market Commission law and establish a State commission market as intended under the law of 1915, which was carried through the Senate by Senator Brown. The Senator, to show that he is not against co-operative organizations, has prepared amendments stating as one of the purposes of the bill that the State commission market is to promote co-operative associations among producers and to foster co-operation between producers and consumers. Another amendment by Senator Brown provides that the three proposed market directors shall serve without pay, but shall employ a secretary for immediate management of the business at a salary of $3,600 per year. Another amendment reduces the appropriation asked from $100,000 to $40,000, which is the same as in another bill just passed out to the Legislature. The stage was all set in the Agricultural Committee room, but the committee said "shoo" by referring it to the Finance Committee. The latter has announced that it does not want the buck passed to it and that the Agricultural Committee will have to thresh out the merits of the bill before the Finance Committee will consider it.

To Protect Dogs and Livestock.

As agreed at the big hearing on Senator B. F. Rush's bill 641 to prevent dogs from straying and worrying livestock, an entirely new bill has been substituted, which is claimed by the friends of the dogs to protect the sheep, to protect the dogs, to protect everybody. Here is a summary of its provisions: It shall be unlawful to allow dogs to run at large without a metal tag which will designate the person claiming control. It shall be unlawful to let any dog run where livestock or poultry are kept except when within reasonable call. Dogs found worrying stock or fowl within any enclosure may be killed or impounded. Dogs whose owners have complied with this act must not be killed or impounded on suspicion alone. On petition of 25 livestock owners, the county supervisors must provide for issuance of numbered license tags at a cost of $1 each. Provision is made for humane disposal of dogs taken up under the act. Stray dogs wearing tags may be impounded and fees collected. Failure of the claimant to pay pound fees is taken as abandonment. Incorporated cities and towns which provide for identification by means of tags are exempt. Violation of the act is a misdemeanor. All fines and license fees are put into a fund whose third-named purpose is to indemnify owners of dog-damaged stock. The bill as it now stands is shorter, clearer, and apparently acceptable to all parties, besides safeguarding sheep.

Senator King's Estray Bill.

The estray bill introduced by Senator L. M. King and objected to by fruit growers and small farmers has been amended in the Senate several times and is on the file ready for final passage by this house. By its terms the present law remains in full effect except in supervisorial districts which at a general or special election shall by a majority vote choose to come under the King law. The latter provides that anyone finding estrays on land entirely enclosed by a substantial fence as described in our previous notes may take up such estrays and collect for their maintenance and damage by the means provided in the old law. This is surely as fair as any law could be.

Good Dental Work on Feed Bill.

Senator E. S. Rigdon's bill, which provides for the labeling of commercial feedstuffs so that farmers may know what they are buying, has had some of its teeth knocked out in the Senate; but they were re-set by the Assembly and the bill is now on file for passage by the latter body. The "teeth" referred to are the mention of grit (hen-teeth) and mineral matter included in poultry foods, and the specific naming of all ingredients, telling also the percentage of filler. The $5,000 appropriation bill 652, by Senator Rigdon, to be used in enforcing the law has been recommended by the Finance Committee.

Seed Labeling Bills.

Beans and forage crops are included in Assembly bill 482, by F. J. Cummings, by one of several amendments. Another amendment provides that if certain noxious weed seed are included they must be named on the label. Section 3, regulating mixtures, is re-written. The bill is now ready for passage by the Assembly. This is the companion of Senator Rigdon's bill, which is still in the Senate Finance Committee.

Hay Bill Moved Along.

Assembly bill 1005, by Walter Eden, providing for dirtless hay of full weight, has been amended and is on file for passage by the Assembly. One of the amendments omits the requirement that hay must be weighed within ten days of date of sale, because it is sold so often on warehouse receipts, which as a commercial custom show deductions from actual weights when stored. The paragraph stating who shall enforce the law has been omitted, so just prepare to dig up your gold for dirt and rocks if you buy hay.

Irrigation District Electricity.

Miss Esto B. Broughton's Assembly bill 168, providing that irrigation districts may generate and sell electricity, has passed the Assembly and is now in the Senate Irrigation



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Greatest weed killer on the market. Cuts them off clean, under the surface, close down to the roots. Besides, it breaks up the ground so thoroughly that one user says he saved $200 in a single season because after cutting the weeds he did not have to plow. Cuts seven feet or less. Weighs but 230 pounds. Cut adjustable to any depth. Constructed of steel throughout. No other implement like it.

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is the Economy of Time

If you do not now own a tractor but do own land, you have thought of buying a tractor some day. See the various makes, kinds, styles and sizes actually at work in the ground.

There is no picture book equal to what you will see at the tractor demonstration by all these various machines plowing, harrowing, cultivating and doing other farm work.

Whatever anybody may have told you, whatever you may have read, or whatever conception you may have acquired about tractors, cannot equal seeing them actually doing the work you want them to do on your farm.

A day, three days, a week, spent at the tractor demonstration may save you hundreds or thousands of dollars in money and weeks or months of misunderstanding should you by any mistake buy the wrong kind of tractor for your particular purpose.

See these tractors in action. Consider your own needs, then purchase the tractor accordingly.

TRACTOR DEMONSTRATION

At Sacramento, California, May 6-11, 1919.

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HOTEL LAND SACRAMENTO

Committee. Meanwhile that committee has reported favorably Senator L. L. Dennett's bill, which is a duplicate of Miss Broughton's, though both have been amended differently.

Apple Standardization.

The new apple standardization act as proposed in bill 364 by Senator H. C. Jones has passed the Senate and is ready for the final vote in the Assembly. It defines apples that may go in the various grades and fixes the standard apple box at 10½ x 11½x18 inches inside measurement. Most of the changes from the old law are of a minor nature intended to enforce its original intent.

County Horticultural Commissioners.

Senator H. C. Jones' amendment to the county horticultural law as proposed in bill 361 has passed the Senate and is in the Assembly Agricultural Committee. The same Senator's bill, 362, providing better salaries for horticultural commissioners' deputies and inspectors, has traveled the same route.

Squirrel District Bill.

Assembly bill 409, by Carlton W. Greene, providing for squirrel extermination districts, has been amended slightly and approved by the Assembly. One of the amendments would encourage co-operation of the proposed squirrel commissioner with all other squirrel extermination agencies.

Somebody Ought to Eat Weeds.

Bill 35, by Senator L. M. King, which provided an effective way of getting roadside weeds cleaned up, was recommended by all committees concerned and passed by the Senate. The Assembly killed it and refused to bring it back to life by a reconsideration. Somebody ought to eat weeds for awhile.

Nursery Growers Register.

Penalty for failure of nursery growers to register with the State Horticultural Commissioner is provided in Senator F. H. Benson's bill 340, which has passed the Senate and been recommended by the Assembly Agricultural Committee.

Flood Storage and Distribution.

State-wide survey and construction of works for storage and distribution of flood waters is provided in Senator L. L. Dennett's bill 427, which has been passed by the Senate and is now in the Assembly Committee on Irrigation.

No Frost Insurance.

No satisfactorily workable frost insurance plan could be agreed upon with relation to Senator King's bill 687 and it will be allowed to sleep.

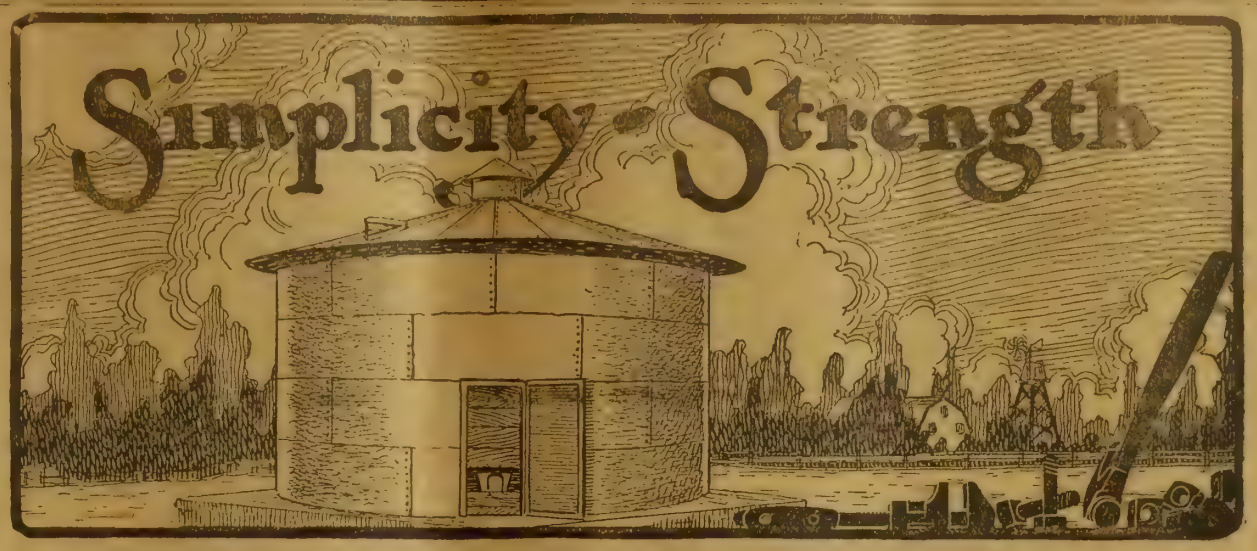
AGRICULTURAL NOTES.

Tomatoes are to be planted on land from which spinach is being cut for the canneries near Hayward, Alameda county.

About 14.1 per cent of last year's wheat crop remained on the farms March 1, as compared with 20.7 per cent for the five-year pre-war average.

There were only about 50,000 sacks of onions left in the State in the middle of March, according to H. G. Zuckerman of Stockton. A month earlier there were about 110,000 sacks. The reduction from February 15 to March 15 was due to Eastern buying for consumption. These were all cold storage holdings, the dry storage stock having been exhausted by mid-January. The crop last year was practically all grown on about 9000 acres in the delta and was chiefly Australian Brown. The crop was good in yield and quality. Planting for 1919 is over now, about 6000 acres having been put in. Plantings since March 15 stand rather doubtful show. Bermuda and Crystal Wax shipments from Coachella Valley will begin in about a month, and the recent movement has been a good omen for these Riverside county growers.

One hundred and fifty chestnut trees consigned to a grower from Japan were not allowed to enter California by the State quarantine guardian. The gentleman importing them was shown photographs of the ravages of the chestnut bark disease in the East and expressed his approval of the State's action in keeping out apparently healthy trees from a disease-breeding section.



PRINTED instructions which accompany Calco Grain Bins make it easy to erect this substantial, private storage bin without skilled labor.

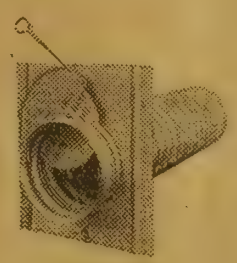
A Calco Metal Grain Bin on your farm will save you the annual cost of jute sacks, loss from rats, rain and ruin. Capacities from 600 to 5450 bushels. Write for the free booklet, "Calco Grain Bins."

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GET away from your old, expensive, leaky wooden flume. Armco Iron flume is a water-tight, semi-circular, galvanized metal flume for conveying water—durable because made from rust-resisting Armco Iron. Simple to erect without skilled labor; greatest carrying capacity due to its smooth interior. Write for our big flume catalog.





MODEL 161

Armco Iron Irrigation Gates

An inexpensive, reliable metal gate. Diameters from 8 inches to 15 inches. Furnished with or without bulkhead. Write for price list.



MODEL 150



MODEL 153

Armco Iron Lateral Headgates

Easily operated, durable metal gates; diameters 8 to 36 inches. Hand or screw lift supplied with either type of bulkhead. For use under varying heads of water to a maximum of 6 feet. Details on price list—ask for one.

Gates are supplied in connection with rust-resisting Armco Iron corrugated pipe in any length required.

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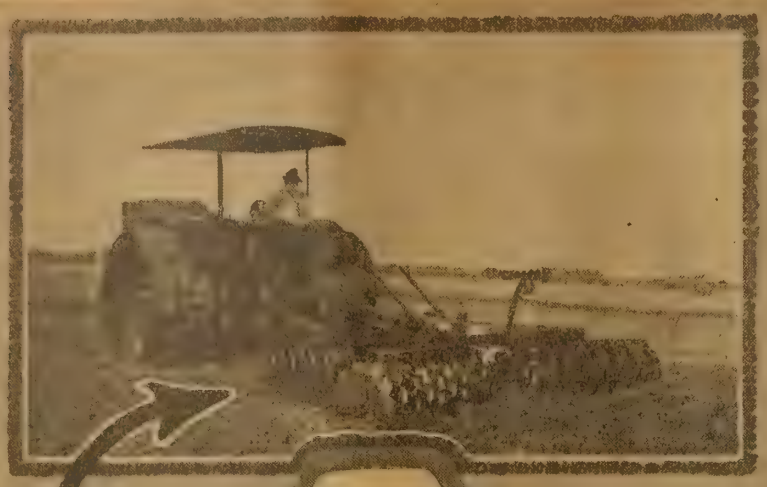
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DOUBLE ACTION

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get in deep — cut and stir every inch of ground—pay big dividends on your tractor outfit. A size and type for every tractor—small and large—proven beyond experiment by 15 years' use and development of rigid frame principle applied to tractor work.

All CLARK "CUTAWAY" Disks, both cutout and solid, are of the finest cutlery steel, *forged* sharp. The edge is the toughest part; they consequently stay sharp and cut easily and do not crack, bend or break like ordinary disks. Don't try to make an inferior disk do—you can profit by writing today for full specifications and name of nearest dealer, whether you have a tractor now or expect to buy one. Give make and size of tractor, work to be done, etc., for tillage advice.

The Cutaway Harrow Co.
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Maker of the original CLARK Disk Harrows and Plows



CLARK "CUTAWAY" double action Tractor Harrow.

Used successfully with every Tractor made.

Farmers to Speak with Authority and Power

(Continued from first page)

Whenever any county passes a resolution, it must be submitted to State headquarters for approval before being made public. No action or resolution by one county which would impair agricultural property rights in another county is permissible. But when any one wishes the State organization to foster a bill in the Legislature or nominate a farmer representative on any governmental commission, or secure any desired executive action, he must first get his county board to approve it. The measure on being submitted to State headquarters by the county board is then submitted to a referendum of the rest of the county boards in the State if it is a State matter, or in the region if it is a local regional matter. The State Board must then take action to carry out the will expressed in the referendum. Any association officer who runs for political office thereby automatically resigns from his association office.

HISTORY AND METHOD OF ORGANIZATION.

Only a few months back, seven or eight of the leading farmers of San Joaquin county got together on the idea which is sketched above in its most recent form. They put up a guarantee fund of $250 each for spread of the idea and secured membership dues on an acreage basis amounting to the neighborhood of $10,000. This latter amount was not touched until the San Joaquin county organization included over 100,000 acres. This was the goal set to be reached before any propaganda should be carried to other counties.

On February 22, 1919, a luncheon in Stockton was attended by the organizers and by representative leading farmers of Fresno, Stanislaus, San Joaquin, Sacramento, Solano, Contra Costa, Santa Clara, Monterey, and Santa Barbara counties. At this luncheon it was announced that San Joaquin county had perfected her organization with 101,435 acres and it was proposed to present the matter to the other counties with view first to make a State-wide organization and later to make it nation-wide.

NO PROFESSIONAL SOLICITORS.

Paid solicitors were recognized as almost but not quite a necessary evil in the organization of co-operative farmers' associations. In spite of the necessarily slow progress without them, it was decided best to present the matter in each community through only substantial farmers operating in that community. Thus, it is expected that misrepresentation will be avoided and the association will stand on its own merits as presented honestly and authoritatively by neighbors to neighbors.

For this purpose the San Joaquin organizers are named a committee on State organization and given all the powers of the proposed State Board of Directors until thirty counties shall have been organized, or a lesser number if the State organization committee so determines. As each county is organized, its chairman becomes ex-officio a member of the State organization committee, so that when a dozen counties shall have been organized, the outsiders will outnumber the San Joaquiners on the committee. The present State organization committee is composed of Albert Lindley (chairman) J. M. Bigger, W. Q. Wright, Ed Powers, F. H. Rindge, I. L. Borden, S. A. Shearer, Amon Swank, W. C. Ferguson, J. T. Langford, and C. C. Woodworth. They have started work in several counties and are meeting a warm response. Santa Clara is organized at this writing and has far more than the required 100 members. San Joaquin acreage in the association has increased to about 150,000.

The State organization committee system is to select five farmers in a county who would be eligible to membership and secure their co-operation by explanation in detail of the purposes and structure of the organization. These men, on paying their dues, become temporary county trustees-at-large. They divide the county into ten districts and personally convince two leaders in each district that the project is worth spending their time and money on The five and twenty become a temporary county board of trustees. It is not so great a task for each of them to average three additional members each. When these are secured, the county gets a charter from the State Association, elects its permanent officers and chairmen. The chairman meets the other county chairmen in his regional subdivision of the State and they elect their regional director, who is ex-officio one of the State Board of Directors.

ORGANIZATION NEEDED NOW.

The writer has been attending the Legislature and seeing the various attacks on agricultural interests. He has seen the relatively small proportion of the State's money which has any chance of being appropriated to purely agricultural development. He has seen the attempt to dump agriculture, the greatest and the basic industry of the State, into a pot along with mining, forestry, water resources, etc., to be administered as a department of the State government, perhaps headed by a State mineralogist. He has seen the friction between certain independent departments each of agricultural interest which should be co-ordinated into an efficient frictionless machine. He has seen the effect of putting city men politically in charge of affairs agricultural, and it is not good. Some of the wildest proposals have been made "for the good of the farmer" by well-intentioned city-bred champions. It is for such a bred-on-the-farm organization as the "Farm Owners and Operators National Association, California Division," to step up and say to the powers that be, "Gentlemen, we officially represent the farm owners and operators of California. You must give us due consideration."

Fall planting of sudan grass in alfalfa to get a balanced hay ration did not work for R. L. Harter of Yolo county; but from his experience he thinks it would be a capital thing to try in the spring. He had seen sudan live over winter, but his experiment proved such expectations undependable. Sudan seedlings need warmth.

Growing forage crops and grazing them off with hogs is an efficient method of improving soils depleted in organic matter. Also the exercise obtained in grazing has a beneficial influence on the health of the hogs.

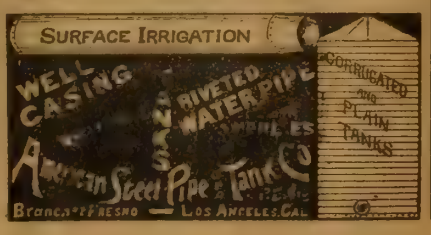
When you have to seed raisins, soak them before beginning.

SEED POTATOES

We specialize in selected SEED POTATOES: Certified White Rose, American Wonders, British Queens, Burbanks, Garnet Chills, and other varieties. Also fancy, recleaned Alfalfa Seed. Write for prices.

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REO

"Oh! You'll Get There All Right —With That Reo!"

A CERTAIN LADY—you know a large percentage of Reo owners and drivers are women—a certain Reo Lady was making a long, cross-country trip accompanied by three other ladies.

WEATHER WAS AWFUL—no other word would describe it. Roads accordingly.

AT MANY PLACES there were detours where modern roads were being built.

YOU KNOW THE KIND—a mile to the south, then a mile to the west, north a mile again to the main road.

HEAVY TRAFFIC on what was never a road, but only a trail, cut ruts hub-deep in the slippery clay and sticky mud.

AND IN THE RUTS were chuck-holes that, concealed from view by mud and slush, had to be ever guarded against.

TO HIT ONE at speed were to throw the passengers out of the seats. To drive at more than a snail's pace were to take risks.

TO MAKE MATTERS WORSE, she frequently had to drive off the road and into the ditch in order to pass other cars that were hopelessly stalled.

AT TIMES OUR LADY was dismayed by the look of things ahead, and as she plowed through, drip-pan awash and gears in low, she would stop and ask other wayfarers if it was any worse ahead.

INVARIABLY—so fond are most folk of imparting bad news!—they would say, "Oh, yes—what you have gone through is good beside that next clay hill!"

THEN, CRITICALLY LOOKING at the car, the informant would exclaim confidently, "But you'll get through all right—with that Reo!"

EVERY ONE SHE ASKED knew the Reo on sight—and every one voiced the conviction that, with her Reo, she'd get through all right regardless of how great the distance or how bad the roads.

AND SHE DID, which is merely to chronicle what every Reo owner knows and every owner of every other car concedes.

YOU'LL ALWAYS GET THROUGH—if you have a Reo.

"THERE ARE LOTS of good automobiles —but the man who owns a Reo is lucky."

Reo Motor Car Company, Lansing, Michigan



"THE GOLD STANDARD OF VALUES"

Tall Milo for Silage

[Written for Pacific Rural Press.]

Well over 4000 tons of tall milo silage were put up by the Tehachapi Cattle Co. of Kern county last season, according to a foreman in charge of the cutting on their Greenfield ranch. This was grown on five or six hundred acres and used chiefly for cattle feed. Various soils were found satisfactory, but sand could be planted sooner, though it required more water. Last season having been dry, more spring irrigation was needed. Plowing was done early in the spring and the land disk-harrowed to the best shape possible. Not until it warmed up was it planted, using a lister and about 12 pounds of seed per acre. Being in the lister trench, its roots became deeply buried by cultivation and were thus better protected from the surface heat and dryness in summer.

When the kernels were far enough past the dough stage to be brittle when cut with the thumb nail and leaf-edges were browned to some extent, the milo was mowed with a corn binder and immediately hauled on flat racks to the silo. A No. 22 silage cutter run by a tractor with a 40-horsepower motor was chopping it moderately fine at the rate of about 100 tons per day. Two men unloaded the green fodder, one man fed the machine, two men in the silo distributed the chopped stuff and tramped it, and one man played a hose on it. The cutter was jammed full, but the motor never seemed to be working hard, as it was about double the necessary capacity.

Alfalfa Growers of California Incorporated

This is an association of alfalfa growers organized for the purpose of marketing their product co-operatively. They now have a membership of about 1250 growers, representing about 43,000 acres of alfalfa, or an average of about 35 acres of alfalfa to the grower. The membership includes the majority of the growers in practically all the alfalfa-growing districts in the State. The association began marketing December 1, 1918, and since that date has marketed 838 cars of hay. The association is going into all the available markets and has recently sold 165 cars for delivery outside of the State. In a number of outside markets they find an active demand for alfalfa at prices remunerative to the growers. During February it appeared that there would be a considerable quantity of the 1918 crop left in the hands of the members when the new crop came on, but the development of outside markets opened up a new field and it now appears that very little, if any, hay will be in the hands of the growers when the new season opens. This means that the market for new hay will open up strong, with a healthy demand and at prices remunerative to the grower.

How and Why in Vegetable Growing

Every teacher of gardening in our California schools should write to Prof. O. J. Kern, University of California, Berkeley, and ask for a copy of his "Outline Studies on the School Garden, Home Garden and Vegetable Growing Projects." It is an outline of the ways in which Prof. Kern teaches vegetable growing to his own pupils and indicates the publications which he uses to enforce the points of his instruction. It is, therefore, a concrete suggestion to all other teachers of the way to interest pupils in the how and why which underlie success. In this way the publication will also be very valuable to those who are thinking about ways and reasons, not for teaching but to embody them in their own practices, either in home gardening or in commercial production. The College of Agriculture has printed an edition of Prof. Kern's synopsis for all who are interested and, so long as the supply lasts, copies will be sent free to applicants.

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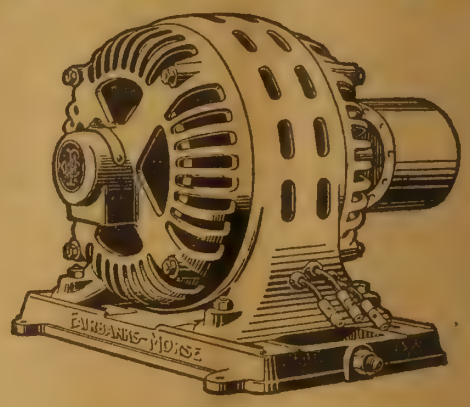
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Horticultural Jottings

It is believed that 700 or 800 acres have been set to Zante currant grapes in the San Joaquin Valley.

The export of lemons from July 1 to February 15 were 196,676 boxes, of which 180,803 boxes went to Canada.

Mrs. G. R. Upham, Alhambra Valley, Contra Costa county, has a vigorous orchard of Bartlett pears that are sixty years old.

N. J. Lund, a fruit grower of Oakdale, estimates that his trees are good for 100 per cent of a crop at present (April 1) on "condition."

Two hundred and seventy acres of fruit land belonging to the Twohy Orchard Company of Visalia have been sold to A. W. Quinn of Exeter for $90,000.

Theodore Hook of Walnut Creek is using the new long system of pruning on about 3000 pear trees. There promises to be a whale of a crop this year.

The California Peach Growers have given notice that they will exercise their option to extend their contract for two years, covering delivery for 1919 and 1920.

The foliage of stone fruits such as cherry, plum and peach is quite tender and arsenical sprays should be applied with caution. Arsenate of lead is least likely to do harm.

Sixty thousand acres of the famous Stanford ranch at Vina, Butte county, have been sold. Twenty-two thousand, just sold to sheepmen of Nevada, goes to make up the amount.

Consumers of olive oil are advised by the Bureau of Chemistry, U. S. Department of Agriculture, to read the labels of their olive oil bottles and cans to see that it is pure and not an admixture.

A machine that will peel oranges and lemons has been patented by Roland Ingram of Anaheim and F. W. Opp of Santa Ana. It will peel them as thin as paper or clear through to the pulp without mutilating the fruit.

A vigorous campaign to stamp out the grape nematode is planned by Horticultural Commissioner Fred Roullard of Fresno county. Infested vines do not thrive and, once established, the nematodes are difficult to eradicate.

The amount of loss on apricots by rolling in the jacket from the effects of rain and fog in the Santa Clara Valley is not yet determinable. The degree of injury varies in different localities, but it will be felt in the crop tonnage.

Twenty-five acres are planted to Kadota figs by M. Gibson of Waterford, Stanislaus county, who says this season's planting of this variety will be 150 acres for the colony. He thinks that 1000 acres will be set out here in the near future.

Twenty-three million four hundred and forty thousand feet of lumber were cut by the Fruit Growers' Supply Company of Los Angeles on their own lumber properties at Hilt, Siskiyou county, in 1917, for conversion into box shook and packing house supplies.

California wants good roads and is going to have the best system in the Union. Farmers and business men see it is "good business" as well as convenience. A motion to limit to $40,000,000 the amount of the proposed new State Highway bond issue has been adopted at a joint meeting of the Senate and Assembly highways committees. A constitutional permit may be granted to float the bond issue immediately instead of having to wait three years.

Adam Graham has 700 Large Jones peach trees which he says have always given him a crop. They have done their work and he will now replant with Elbertas as one of the best commercial "frees." He has also seven or eight acres of Muirs. Mr. Graham takes care of his 23 acres of mixed fruit with a team, in addition to considerable farming land. He thinks old apricots need harder cutting or more room in his section, where rainfall only is depended on for moisture.

PEAR POLLINATION—A CORRECTION.

To the Editor: In the March 29 issue of the Pacific Rural Press, I note what you have to say with regard to the pollination of the Bartlett pear. I think you misunderstood me with regard to certain of the data. The Bartlett pear, at 3000 feet irrigation in the Loma Rica orchards in Nevada county, proved to be practically self-sterile in the one season in which we carried on experiments. We expect to repeat these experiments this year. Any of the standard varieties blooming at the same time can be recommended, I think, for pollinating the Bartlett in the mountain sections. You make this statement: "One setting in 25 blooms has been obtained by this means, but perhaps 1-8 would be nearer the average." What I told you was this: that perhaps one tree of the pollinizing variety to 25 Bartlett trees would be sufficient to furnish the proper facilities for cross-pollination. But I would strongly advise orchardists to plant at least one tree of the pollinizing variety to eight Bartletts.—Warren P. Tufts, Asst. Prof. of Pomology, University Farm, Davis.

(We thank Professor Tufts for the correction of this rather cross mistake.—J. J. F.)

SEBASTOPOL APPLE CONDITIONS.

J. C. Bennett of the Molino Nurseries says the prospects this year are the best he has ever seen—even on late apples. There has been a heavy planting of Gravensteins, also of Rhode Island Greenings (for the dryers) as a close second. The planting is over the whole Gold Ridge from Sebastopol to Forestville. Mr. Bennett has 20 acres of eight-year-old Gravensteins himself from which he expects a good crop this year.

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A Clean Clip at a Fast Clip

HAYING time is hurrying time. No other crop is quite so sensitive to weather conditions. A rainy day or two, poor curing facilities—and figures that loomed big shrink to comparatively nothing. Everything hinges on equipment ample to meet all needs and emergencies promptly.

For years you have been cheerfully complying with Government request to save materials by repairing your old machines rather than making replacements. Now that the need for this has passed, would it not be the part of real economy to buy a new machine and be assured of uninterrupted and maximum service at a time when a break-down would mean serious embarrassment and loss.

Deering, McCormick and Milwaukee Mowers, Rakes and Tedders and International and Keystone Side Delivery Rakes and Loaders

are designed to remove all elements of chance from hay making. The mower lays the hay in even swaths down meadow and hayfield. The left-hand side delivery rake follows the mower closely, touching the heads first (not the stems), piling two swaths at once on the clean stubble. This insures proper and speedy curing. Every hay grower should become familiar with the combined side delivery rake and tedder, which has become one of the most popular haying tools. It can be instantly adjusted for raking or tedding.

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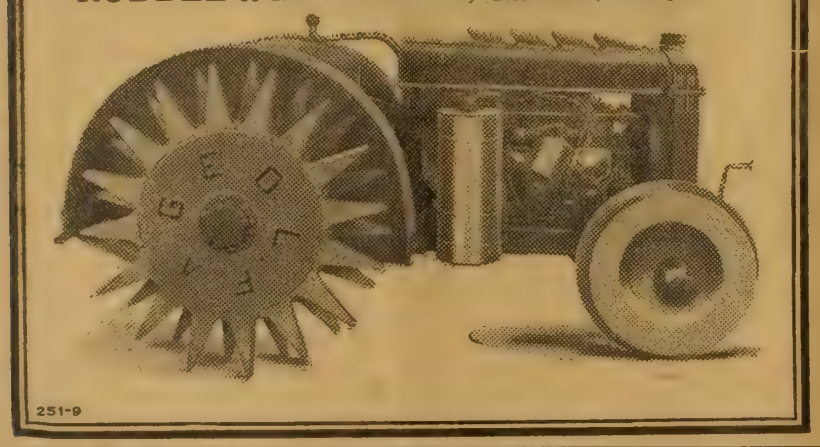
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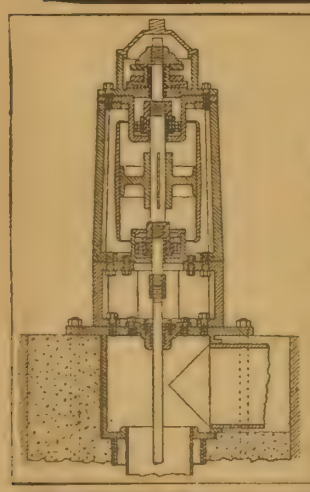
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BELT LACING.

[Written for Pacific Rural Press.]

Improper belt lacing causes lots of grief and lost time when machinery ought to be running. The value of time on such an occasion is multiplied. The service man of a large tractor company says it is the hardest thing to get ranchers to lace their belts properly. We give below a transcript of notes taken by the writer at the University Farm Agriculturing Engineering Short Course. The instructor of the belt-lacing class was L. J. Fletcher. Points brought out were a revelation to most of the students.

BELT LACES.

There are a number of patented belt laces which will not be discussed here, except to say that the only ones approved are those which do not cut much crosswise of the grain or fiber of the belt. Laces must bend easily to fit all pulley surfaces they will run over.

This discussion deals with rawhide lacing, which has several, though not all, of the advantages. It can be used repeatedly and is very light. Any heavy splice in a belt at high speed has a tendency due to centrifugal force, to break out along the line of holes. Rawhide is flexible so it fits the pulley surfaces, and it can be used where the belt is a trifle too short to make ends meet.

Provide the lacing ahead of time. Rawhide cut into strips at the factory is generally cut from backbone to belly so it gets thinner from one end to the other. Thus it stretches unevenly, and after using it, you may find the ends of the belt pulling farther apart at one side than at the other. Or where you lace through the same holes twice, you may get uneven stretching, uneven strain, and a bum job. Buy your rawhide from a harnessmaker who will cut it parallel to the backbone and thus of uniform thickness. Strips for single lacings should be five or six times as long as the belt is wide. For double lacings they must be eight times the width of the belt. Lacings may be spliced, but the splices are either likely not to hold or they are such that they will not go through proper sized holes.

A hard brittle point is easily made on a rawhide lacing by cutting the end to a point an inch long. If it is very dry, work some lubricating oil into it. Then warm it up by the heat of a match on its back side until grease fries out of it. Then hold it flat between blocks for ten minutes. You can push it through a hole, but do not pull it hard with pliers, because it is brittle.

HOLES MOST IMPORTANT.

A sharp knife and a square are essential for a good job of lacing. The ends of the belt must be cut smoothe and square. Then draw chalk lines a few inches long lengthwise of the belt from its end to divide its width into as many equal spaces as you want holes. Then make the holes in the centers of these spaces. It is more important to locate and make the holes right than to put the lacing in right. There are several styles of lacing, but in general, the row of holes nearest the end of the belt should be as far from the end as they are apart. Stating it specifically the other way, it has been found that plenty of strength with the smoothest job is obtained by having the holes ⅝ of an inch from the end of belts three to five inches wide, ¾-inch from the end of belts over five inches wide, and ½-inch from the end where belts are under three inches in width. Many ranchers figure that a lot of holes placed far enough back from the end will not pull out. This is true, but the belt is likely to break off at the row of holes.

Nine-tenths of the trouble after lacing canvas and rubber belts is due to cutting the fibers to make holes. Where holes are cut, the belt is weakened in just the proportion that the total width of holes bears to the belt width. Punch them with a smooth round awl which does not cut the fibers but separates them. Locate the awl hole ⅛-inch farther from the end than you want the edge of your hole, for it must be enlarged with a round or oval stick.

Where holes are cut for lacing in a leather belt, use an oval punch which gives the same lace capacity with only half the width that a round hole would require. Thus the minimum weakening is obtained; or twice the capacity is obtained with the same weakening.

SIDE DELIVERY BEAN RAKE AXLES LENGTHENED.

Side delivery bean rakes were used in various parts of the State last season and bean men were almost universally highly pleased with their prospects, but not with certain features of their operation which needed some changes. A major objection was that the idler wheel at the left side ran on the winrows and threshed out too many beans. To overcome this objection, A. G. Cavier of the Emigh-Winchell Hardware Co., handling International Harvester lines, lengthened the axle enough to set the wheel beyond the winrow. An extra piece of axle was spliced on by slipping a close-fitting pipe over the joint and riveting it. Proper braces were added, and the extension worked well on several rakes which they sold. But on two or three machines the braces seem not to have been put on carefully enough and a strain was put onto a casting which supported three gear pinions which operated the rakes from the right wheel. Several of these castings broke and this was not satisfactory. However, in the present season's models the rakes have a chain drive rather than the gears and consequently the occasional strain which broke the castings last year will have no castings to break this season and the extensions are expected to be entirely successful.

Lectures on tractor and machinery subjects will be given free at the Sacramento Tractor and Implement Demonstration, May 6 to 11. Prof. J. B. Davidson of University Farm will be one of the principal speakers.

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LAWRENCE AUTO POWER EQUIPMENT

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SHIP BY TRUCK.

[By Harvey S. Firestone.]

When the motor truck came into being a few years ago, few people apprehended that truck traffic was going to be a very considerable factor in the transport of the future. No one thought that the railroads could be superseded for freight hauling; least of all did the railroads and express companies. Some time later the idea entered the minds of both of them; it also entered the minds of numerous truck owners. Still none of them realized the possibilities. The truck owner did not think for a moment that he, with his trucks, could compete with the express companies and the railroad companies. It was generally considered that they had the monopoly on freight and express handling.

The war changed all that. When Verdun was saved, when the defense of the great Somme valley was accomplished, when the Chateau Thierry victory was achieved, each one made possible by a victory of allied motors over German railroads, the motor truck was put on the map to stay. In this country the railroads were simply flooded with traffic; they couldn't begin to handle the volume. They were submerged. Moreover they discovered that their short hauls were unprofitable; that the only traffic they could handle at a profit was the long distance haul. On the other hand, the truck owner, driven to it by circumstances beyond his control, began to convey both freight and express consignments by truck. He was surprised to find that he could do it at a profit, and that he could run his trucks on schedule time.

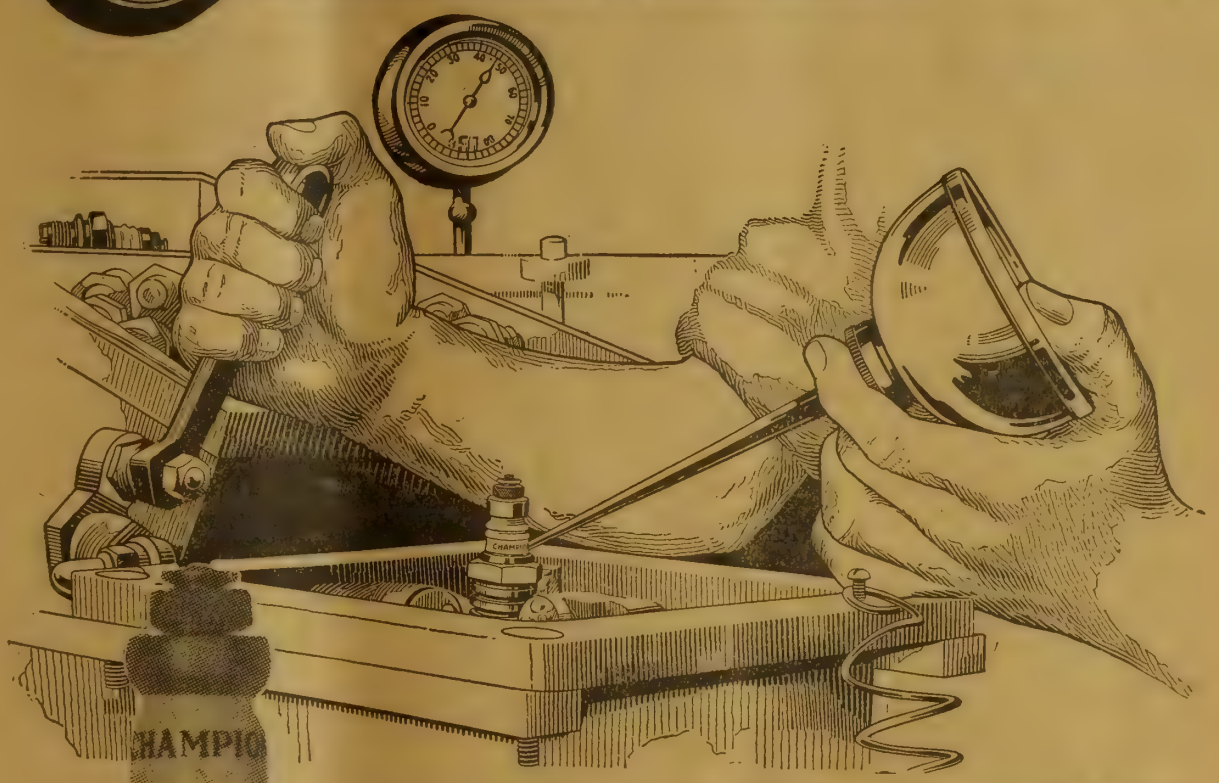
At first, of course, the truck owner expected great hostility on the part of the railroads. Possibly there was some such feeling for a while; but the truck owner presently became aware that the railroads, instead of objecting to truck traffic, were beginning to welcome it as an adjunct to their own systems. Trucks are taking away the unprofitable short haul from the railroads and making of it a profitable haul for themselves. Instead of hurting the railroads, truck traffic is helping them, by bringing huge amounts of perishable freight, which it would otherwise be impossible to ship, to a thousand junction points all over the United States.

A study made by Mr. McAdoo's administration experts has shown that it rarely, if ever, pays the railroads to handle short hauls. During the war, by co-operation and mutual consent, we have transferred much of this short haul traffic to the highways. As a result freight can, within reasonable limits, be hauled from the door of the shipper to the door of the consignee more cheaply than any railroad can carry it. As a consequence, too, the railroads will hardly build many more feeder lines; in fact, the state of Kansas has about decided not to build any more electric inter-suburban traction lines. The analysis made by the railroad administration proves that most of these feeder lines never have paid and were all the while economically unsound. The feeder lines of the future will largely be highways transport vehicles, gasoline driven, running over improved roads from the producing vendors to the shipping points of the railroads, trolleys, and inland waterways.

Another advantage of motor truck transport has to do with the rehandling of goods. The cost of rehandling is becoming one of the great problems of all transportation experts. Re-handling involves more labor, possible damage to goods, warehousing and delay. Within its sphere highway transport eliminates these factors and lends its value to the general scheme of transportation.

The policy of shipping by truck has much to recommend it. For instance, when a shipment is entrusted to one of the several thousand truck transportation companies in this country, there is ample assurance of punctual delivery. These companies dispatch their trucks on regular schedules over carefully planned routes. In addition to prompt delivery they offer you extra precaution and special care in the handling of your goods. On these trips loads are handled only two, or at most three, times. The truck backs up to the shipping platform, the consignment is loaded, the truck starts off, and on schedule time arrives at its destination. On arrival the truck goes directly to the receiving platform of the consignee and there unloaded. Breakage as a rule, is in direct ratio to the number of times one's goods are handled; thus, breakage is reduced to a minimum. By way of contrast, ask your traffic man to outline to you the course of an ordinary freight shipment from your plant to a customer. Learn from him what delays are met with in the re-handling of such a shipment. Look into the complications of transfer and re-distribution of belt road collections, freight houses, and junction points.

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Shorthorn Sales Records Smashed

[Written for Pacific Rural Press.]

All Pacific Coast records were broken at the second spring sale of the California Shorthorn Breeders' Association, held at the University Farm, Davis, April 8, when 42 head sold for an average of $659. Twenty-one females brought an average of $626, and 21 males averaged $693. Last year the females averaged $476 and the males $336.

The top of the sale was the flashy roan bull, California Model, bred and consigned by the University Farm. He is one of the most attractively bred bulls ever offered in California and the spirited bidding on him showed that the buyers appreciated his real worth. He was finally struck off to Conoway Ranch, Woodland, for $5,500, and Prof. True was heard to remark that no longer could it be said that Californians would not pay the price that good animals were worth. It is believed that the highest previous coast price was $3,000, and that $2,000 was the previous top figure for California.

The highest priced female was Village Pride 2nd, a wonderful cow of great substance, with bull calf at foot, consigned by Jack London Ranch, and purchased by Senator B. F. Rush of Suisun for $1,400. Senator Rush also bought the next highest cow, London's Choice, for $1,300.

A gratifying feature was that most of the animals went to real farmers; also, no one bought more than four head, and few more than one or two, so the animals were distributed to a large number of herds. The buyers included J. W. Salz, Bloomfield; Reginald Parsons, Hilt; Day & Rothrock, Spokane, Wash.; William Bond, Newark; J. R. M. Boyd, St. Helena; Louis Tarke, West Butte; M. H. Tichenor, Palo Alto; Mrs. Ralph Todd, Monterey; J. E. Montgomery, Davis; D. M. Loney, Grass Valley; R. H. Smith, Ferndale; T. S. Smith, Onyx; J. L. Inman, Livermore; W. C. Short, Reno; Pacheco Cattle Co., Hollister; E. O. Ingalls, La Grange; Ormondale Co., Redwood City; F. A. Ettinger, Hood; D. W. Wiley, Soledad; Mrs. Dr. Purkitt, Willows; George Merritt, Woodland; Miss Lillian Julian, Granada, and Miller & Lux.

Two head consigned by the University Farm averaged $3,250; seven by Jack London Ranch, $891; two by T. S. Glide, $825; and six by Ormondale Company, $525. The average of most of the other consignors were kept down because their consignments included several bulls, and aside from California Model the bulls did not command high prices.

A large crowd attended, taxing the quarters to the utmost, and emphasizing the need of a large sales pavilion. Col. Fred Reppert of Decatur, Ind., who cried the sale, is a whole show in himself. His genial humor has a subtle persuasive power, and he kept the bidding at the boiling point. He was ably assisted in the ring by Col. Ord L. Leachman of Sacramento.

Hereford Sale a Hummer

[Written for Pacific Rural Press.]

Following the Shorthorn sale at the University Farm, Davis, by just one day, the sale of the Pacific Coast Hereford Breeders' Association followed it closely in sales figures also. Seventy-nine head averaged $463, the males averaging $461 and the females $465. These figures, however, do not indicate the real quality of the majority of animals offered, as one herd of 26 head came right off the range without any fitting, sold at very low prices and kept the general average down. Without this herd the average would probably be $100 higher. However, last year the average for males was $350 and for females $352, so even including all animals catalogued, an increased average of over $100 was made.

The top of the sale was Brave Lad, a line-bred Beau Brummel bull, consigned by John H. Cazier & Sons Co., Wells, Nevada, and purchased by S. N. Cowell of San Francisco for $2400. Mr. Cowell purchased 11 fine females to go with the bull.

The highest priced female was the cow Beneath, also consigned by Caziers, and struck off to John A. Bunting, Mission San Jose, for $1000. Mr. Bunting purchased two other good ones.

Probably the biggest bargain of the sale was the University Farm bull, Hopeful Prince 2nd, who was snapped up by the University of Idaho for $600. For some unaccountable reason the bidders did not seem to want him, notwithstanding his breeding, individuality, show record, and record as a sire of winners.

S. N. Cowell was the heaviest buyer to the tune of $4,010. G. F. Silliman of Watsonville bought a bull and eight females for $3,715. Other heavy buyers were C. L. Silliman, Watsonville; Benjamin Quigley, Linn; E. T. Morgan, Northam, Nevada; Howard Tilton, Madrone; R. Bass, Standish; Alex Brown, Walnut Grove; A. R. Cutler, Visalia; Peter E. Fink, Reedley, and Thos. S. Smith, Onyx.

The highest average was made by Caziers, whose 28 head averaged $614. Nine head consigned by W. J. Bemmerly averaged $499; six head by H. M. Barngrover, $479; nine head by Chas. Rule, $391, and 24 head by W. D. Duke, $299. The University Farm sold one head for $600 and Mrs. D. O. Lively one head for $550.

Col. Fred Reppert of Decatur, Ind., cried the sale and impressed the audience as favorably as at the Shorthorn sale. He certainly is a crackerjack. He was ably assisted in the ring by Cols. Rhoades and Leacham.

Of the 30 buyers only 12 purchased more than one head.

POLLED HEREFORDS PULL STRONG.

[Written for Pacific Rural Press.]

The greatest auction sale surprise of the year was sprung at Sacramento, April 9, when 16 head of Polled Herefords sold for an average of $814, the males averaging $577, and the females $977. This carload of stock was brought out from the Middle West for promotion purposes and it was not expected that high prices would be secured.

G. W. Emmons of Oakland, whose stock ranch is at Danville, put himself on the map as the greatest Polled Hereford breeder in the State by buying 12 head for a total of $11,150, the top price paid being $1500 for a corking good cow. Other buyers were J. H. Fulgham, Visalia; John Morss, Alamo; G. F. Silliman, Watsonville, and H. W. McWhorter.

The Pacific Coast Hereford Breeders' Association held its election of officers at Davis April 9, and the following were elected: President, J. I. Cazier, Wells, Nevada; vice-president, H. M. Barngrover, Santa Clara; secretary-treasurer, J. A. Bunting, Mission San Jose.

BRAHMAN BULLS.

High grade Brahman bulls from our full blooded Brahman bulls, which were imported from India. Write for prices and description. Fred G. Lock, Palacios, Texas.

Rancho San Julian
SHORTHORNS



Some of our Senior Calves.

Our herd represents the richest blood lines and the best families of straight Scotch breeding. Last year we imported from the East a carload of the choicest heifers we could find. We won at Los Angeles last fall, first prize Junior Champion, and Reserve Grand Champion Bull, two other firsts and two seconds.

We have for sale—very choice lot of purebred range bulls, yearlings, and two-year-olds.

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LIVE OAK CALIFORNIA
SHORTHORNS Bulls all sold. Will sell a few choice cows and heifers.
We have on hand the best lot of young Berkshires we ever raised. Come and see them Prices reasonable



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The practical, beef-producing kind, raised under range conditions. See herd of young Bulls and Heifers at SANTA CLARA, CAL.
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One three-year-old bull bred by H. R. Clay.
Two outstanding yearling bulls sired by Sir Type, a son of Cumberlands Type.
A few yearling heifers of same breeding.
Also registered Berkshires of both sexes of best breeding.
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Sell your stock or implements at public auction. I can get big prices for you. Have cried successful sales in all parts of the State. Customers always satisfied. Write for terms and dates.
ORD L. LEACHMAN,
1004 Fifth St., Sacramento

Raise the Orphan Pigs

When a sow dies shortly after farrowing, the young pigs may be raised on cow's milk. The milk from a sow is richer than that from a cow in both sugar and butterfat, and some breeders advocate enriching a cow's milk by the addition of some cream and a little sugar, so as to make it correspond to the mother's milk. But experiments indicate that this is really a disadvantage. When cream was added to bring the fat content up to about 7 per cent, as compared with about 4 per cent in straight cow's milk, it caused the pigs to scour and they did not do



Who says I miss my mammy?

well. The addition of both sugar and cream was more satisfactory, but the unmodified whole milk gave best results.

When there are very few pigs they may be fed from a bottle, and they will take to it as readily as the pig in the accompanying illustration. But this will prove too laborious a method if there is a fair sized litter, and a pan or basin, anchored or heavy enough to remain in position of its own accord, should be used. A skillet answers well because it is shallow and the pigs cannot root it around.

Use whole cow's milk, fresh and warm. Put about a half inch in the skillet or pan, so that the pigs can push their noses down on the bottom and still breathe. It will not take them long to learn how to suck up the milk, and then the amount can be increased.

At the start feed every three hours, but gradually increase the time between feedings until at six weeks they are being fed four times a day. If the milk alone inclines the pigs to costiveness, a little oil cake meal stirred in, or a few drops of linseed oil, will regulate them.

After two weeks stir in a pinch of middlings, and gradually increase the amount, later adding ground barley, and gradually decreasing the middlings. At eight weeks feed only three times per day, and change from whole milk to skim milk. The best ration at present prices will be two-thirds ground barley and one-third middlings or sure milk, soaked in skim milk at the rate of three pounds of skim milk to one pound of the grain ration. If skim milk is not available, use one part of tankage or fish meal to ten of the grain mixture.

Of course, for proper as well as economical development the pigs should have access to alfalfa or other pasture as soon as they are able to eat the green growth. Keep everything as sanitary as possible, and avoid filth. Proper care is just as essential as proper feeding.

DOGS PREVENTED PUREBRED SHEEP.

[Written for Pacific Rural Press.]

"My son and myself bought about 50 sheep three years ago, intending to learn with them and go into purebreds as soon as possible. The first two years we lost as high as 25 per cent by dogs. Last November 11, when we returned from the celebration of the end of the war, we heard dogs growling in our scattered band of about 50 and there lay 11 dead sheep," said a San Joaquin county rancher who would be helping to reduce the high cost of wool and mutton if dogs were not protected better than sheep. He was unable to prove ownership of a dog which he knew lived with a neighbor, and therefore could not recover damages, though he had seen the dog among the sheep. "Now," said he at the hearing on Senator Benjamin F. Rush's dog bill, "if all dogs were taxed and prevented from killing sheep, you principal objectors to this bill would save enough on the price of meat you feed your dogs to more than pay the tax."

BERNSTEIN OFFERS YOUNG PIGS.

At several of the Hanford Poland-China sales W. Bernstein has offered a young pig as a "ladies' special," and always these pigs have been in great demand. So Mr. Bernstein has now decided to offer enough pigs to go around, and April 26 at the Fair Grounds, Hanford, he will hold a sale of 65 head, consisting of a few bred service boars, but mostly pigs—pigs all the way from weanlings up to gilts ready to breed.

It would be superfluous to mention the quality of Mr. Bernstein's stock; it is too well known to require any recommendation. The lucky buyers at this sale will certainly get some prize babies.

E. W. Cook of Ceres finds that gyp corn planted between his young fig trees and the stalks left standing during the winter is a protection against frost.

Bean weevils live over winter in sandy soil worse than in heavier land and that is one reason that crops are generally more weevily from sandy districts.



Roc Stein Ranch
DUROCS

Have for sale two boars, one of GOLD MODEL and one of CRIMSON MONARCH breeding.

Both are about a year old, weighing 400 lbs. Also eight open gilts and four bred gilts. These gilts are the pick of last year's litters.

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TAMWORTHS
(The Bacon Hog)
Largest Herd in the State
DUROC-JERSEYS
Mature Stock and Weanlings of both sexes. Sure to please.
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REAOAKS SPECIAL
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Registered
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A limited number of three months old weanlings for sale. Am booking orders for future delivery of youngsters by Gen. Tipton. Have a few young boars sired by Duke's Allen Grand Champion 1917, Sacramento
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UNEEDA QUEEN MODEL,
Grand Champion State Fair, 1918.

Uneeda Glenn County Herd of
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KEY HERD OF PACIFIC COAST
Won at Sacramento:
Grand Champion Sow, Senior Champion Sow, Junior Champion Boar, seven Firsts, 23 other prizes.
PIGS BY NOTED SIRES
High Orion, the world's record-breaking sire, Great Wonder, Grand Champion Iowa; King Orion Cherry, First Prize Indiana and Ohio, and other best boars of the breed. Get some of their pigs. Few bred sows and gilts left.
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Grand Champion
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FOR SALE.
Brood Sows, litters at foot. Sows bred for fall litters. Young Boars and Gilts.
Best families.
Finest individuality and clean-cut markings.
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Every point the buyer demands for a profit-making hog is found intensified in the Duroc. We can supply you with weanling pigs, either sex, and gilts from 7 to 10 months. Our herd boar has the blood of Ohio Chief Defender, Crimson Wonder, Jack's Friend, Joe Orion, Etc.
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We have sold all our young boars and are now booking orders for toppy weanlings. Highlander, the $1,000 Grand Champion Boar, heads our herd of
CHESTER WHITES
SAN FRANCISCO OFFICE, 601 BALBOA BUILDING

HAUSER'S DIGESTER TANKAGE
Gives Greatest VALUE for LEAST MONEY. IT MAKES THEM FAT.
HAUSER PACKING CO. LOS ANGELES

The Personal Element in Breeding

[Written for Pacific Rural Press by E. H. Whitten.]

There is no other factor more important in the breeding of livestock than the personal element — the characteristics of the man back of the herd. To cite a single instance, it was the genius of Bates, Cruickshank, Colling and Booth that gave us the shorthorn breed. And it has been the ideals of those who have followed the founders that have improved the breed to its present status. Every man who has had a constructive part in this progress has been a man with a vision—a man who looked beyond what he could find in his herd, or that of any co-breeder, to some ideal which he thought was better.

No man can make a lasting success of livestock raising unless he is a constructive breeder, and to be a constructive breeder he must have vision. He must create for himself an ideal toward which to breed, for without such a picture in his mind's eye he can have no means of measuring his progress.

If you have ever visited the stockyards at Chicago you have noticed how quickly a salesman will put a mixed consignment into assorted lots; also the unerring judgment with which he picks out what he wants and decides what it is worth to his employers. Some of those buyers are paid salaries of $10,000 per year, and they are worth it. They have studied cattle so closely that they not only see the living animals as they stand, but in imagination they see them dressed and can estimate the shrinkage to a nicety.

Just as long study has made the cattle buyer confident in himself because he carries an ideal in his mind, so like study of the best specimens of dairy stock will enable a man of good judgment to form an ideal for himself, and here in California we have a breeder who has exercised remarkably good judgment in this respect. We refer to that constructive breeder, W. J. Higdon, owner of the Tulare Holstein Farm, Tulare.



Paula Segis, 30.49 pounds butter from 607.4 pounds milk in 7 days, and 123.50 pounds butter from 2555 pounds milk in 30 days. One of the valuable matrons in the Tulare Holstein herd, owned by W. J. Higdon.

Too many young breeders have the idea that to establish a fine herd all that is necessary is to buy a lot of cows with high records and good breeding and mate them to a bull backed by high record ancestry. Such a herd may produce well, but it will not reproduce well unless the blood lines nick properly. To merely mate a 40-pound cow to a 40-pound bull is not constructive breeding. There are certain blood lines which nick well, and others which do not make good crosses, and a breeder will get better results from the mating of 30-pound animals of blood lines that cross well than from that of 40-pound animals whose blood lines are entirely dissimilar.

We say "dissimilar" because in a recent article we showed the advantage of scientific line breeding—of having similar blood lines on both sides of a pedigree—and this is the kind of breeding that Mr. Higdon is practicing. Our Mr. McConnell recently visited the farm, and the thing that impressed him most was that the assembling of the herd was done with a certain type in mind, and certain blood lines that seem to be reproducing that type.

Mr. Higdon is breeding the Walker strain, as he likes the constitution, the refinement and the producing ability of this line of breeding. And see how scientifically he is breeding to perpetuate the good qualities of this strain. His senior herd bull is Prince Riverside Walker, by Prince Gelsche Walker, and out of Aaggie Acme of Riverside, dam of the cow holding the world's strictly official butter record. Prince Gelsche Walker is also the sire of Miss Valley Mead De Kol Walker, the junior three-year-old making the highest yearly butter record in 1917-18.

Then, to use on the daughters of this bull, Mr. Higdon purchased King Korndyke Pontiac 20th at a cost of $6,500—the highest price ever paid for a bull in a public sale in California. His dam made over 36 pounds butter in seven days and above 1100 pounds in a year as a heifer. She is a daughter of Prince Gelsche Walker and of De Kol of Valley Mead 2nd, who formerly held the world's record for two years' product by a heifer. The sire of this junior herd bull is King Korndyke Pontiac, a son of King of the Pontiacs and out of a half-sister to Prince Gelsche Walker.

There you get the quintessence of constructive breeding — enough Walker crosses to perpetuate the good points of that strain, yet not close enough inbreeding to impair constitutional vigor. We do not emphasize the method of breeding to recommend the Walker blood lines in particular, for a breeder could accomplish equally good results with any one of the dozens of other good blood lines of the breed. The important point is that he should stick to whatever line of breeding he favors until he has bred long enough to intensify and permanently fix the good points of that strain in his herd.

The average beginner with registered stock wants to buy a bull entirely unrelated to the females in



Retained After-birth

Cows can be made to clean easily without using force.

When cows do not clean properly after calving, it indicates a germ infection which is likely to run through the entire herd and result in Abortion and Barrenness.

The after-birth should be removed at once without force by means of the B-K douche and the cow treated to prevent her becoming an aborter or sterile. Authorities state that while there is no absolute cure for abortion and sterility, nevertheless the infection can be controlled by prompt treatment and the animal saved for successful breeding.

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CREAMCUP HOLSTEIN AUCTION

We offer on April 17th, at the D. & H. Rowles Ranch, Modesto,

30 Head of Choicely Bred Young Cows, Bred Heifers & Heifer Calves

These animals have all been raised by us; furthermore, they have been raised clean, and should please the most careful buyer. They are Tuberculin Tested by Dr. Steiger.

The heifers are bred to our Junior Herd Sire, a son of our younger Tula Cow, noted for high fat percentage.

Holstein-Friesian Registry and transfer certificates and pedigrees furnished with each animal; also Tuberculin Test certificates for all over six months old.

Liberty Bonds will be taken at par. Terms given only upon special arrangement made before the sale.

COL. CY N. CLARK, Auctioneer, Modesto, Cal.

M. M. HOLDRIDGE, Owner, San Jose, Cal.

Sale just outside city limits of Modesto, on Waterford Road.

No other Silo has 'em!

Famous Trussed Steel Bracing



The Cyclone Silo is unequalled for strength and durability. Can't twist, lean or blow down. The strongest silo made. Wind proof, storm proof, twist proof.

The Famous Trussed Steel Bracing is fastened to the top of the silo and firmly anchored in the concrete foundation. Each stave is not only stapled to each hoop but also to the bracing. Every staple fits into notches pressed in each edge of the steel, so there can be no slipping, no twisting or sagging. Every stave must stand upright regardless of shrinkage or expansion.

Cyclone Hoops Need no Tightening

This is the silo for you. Write for details of Early Buyers' Discount and our Free Book on Silos and Feeding. A postal will do.

National Tank & Pipe Co.

275 D OAK ST., PORTLAND, OREGON.

"Cyclone" Silo

his herd, but he could hardly make a worse mistake. Undoubtedly progress would be made from such a mating, but it would not be as rapid as from a scientific blending of blood lines; neither would the breeding be carried on with as great certainty of results.

Constructive feeding and care must go hand in hand with constructive breeding, and in this respect nothing seems to have been overlooked by "this master builder of a dairy herd," as Mr. McConnell calls Mr. Higdon. He not only selected the best foundation animals he could buy, but engaged a herdsman, H. L. Redd, who was a master in his line. The wonderful development of the young stock, the excellent condition of the cows, and the high records that are being made are largely due to the skill and painstaking care of this efficient herdsman. Six 30-pound records and several excellent yearly records have already been made in this herd which was started only four years ago, as for 10 years previous to that time Mr. Higdon had grade stock. The heifers that are freshening are making wonderful records, and many startling announcements may be expected from this herd which now consists of over 90 registered Holsteins.

The parting thought is this: Start right—it's half the fight.

Sale of Creamcup High Testers

What's in a name? When we hear the Creamcup herd of Holsteins mentioned we naturally assume that the cows produce milk with lots of cream, and the record of Creamcup Tula Pietertje Pontiac, whose picture accompanies this article, proves



Creamcup Tula Pietertje Pontiac, dam of the Creamcup junior herd sire, to whom many of the heifers in the coming sale have been bred.

that the herd name is no misnomer.

This cow has an official record of 29.71 pounds butter in 7 days, with an average test of 4.4 per cent. This year she produced at the rate of 34 pounds, but it was impossible to secure a tester, so the record cannot be made official. Her breeding is excellent, as she was sired by a son of King of the Pontiacs and out of Tula De Kol Pietertje Netherland, a 34-pound cow.

A son of this grand cow is being used as junior herd sire in the Creamcup herd, owned by M. M. Holdridge, San Jose, the purpose being to increase the already high average fat test of this well-known herd. A number of the heifers that will be included in the sale April 17 will be bred to this young bull. The sale will be held at the D. & H. Rowles ranch, and 30 head of choicely bred young cows, heifers and heifer calves will be offered—all tuberculin tested.

Buyers who want stock from an absolutely clean herd, where constitutional vigor and high fat test are considered just as important as heavy production, will find the kind of animals they are looking for at this sale.

MITCHELL HOLSTEINS SELL WELL.

An average of $325.37 was made on 154 head of registered Holsteins at the dispersal sale of the W. F. Mitchell herd at Visalia, April 3. The animals were in fine condition and the bidding was spirited.

The top of the sale was Fayne Spring Farm Pontiac De Kol, with a record of 21.21 pounds at three and a half years. She was struck off to W. A. Walker of Ripon for $1,055. R. C. Sturgeon, Tulare, secured Sadie Mead Pontiac Segis, with a two-year-old 21-pound record, for $725, and H. E. Cornwell, Modesto, paid better than $600 each for three fine bred heifers.

Mr. Mitchell has 30 heifers by Prince Hiske Walker as the nucleus of a new herd, and these heifers will be bred to King Abbekerk Johanna Segis, the young bull recently purchased by him at the guaranty sale for $5,060.

Two thousand pounds of pork per sow,
Eight thousand pounds of milk per cow,
Big steady drafters for the plow—
Good resolutions; make them now!

Taffy was a Yankee, contrary to belief,
Who made a barrel of money raising pork and beef.
He raised pigs on alfalfa; they made a splendid gain,
He fed his steers with silage, thereby saving grain.

Have the openings through which dairy cows pass of generous dimensions. Many accidents and much trouble occur from allowing cows to crowd through narrow gates or doors.

Calf Enemies

WHITE SCOURS BLACKLEG

Your Veterinarian can stamp them out with **Cutter's** Anti-Calf Scour Serum and **Cutter's Germ Free** Blackleg Filtrate and Aggressin, or **Cutter's** Blackleg Pills.

Ask him about them. If he hasn't our literature, write to us for information on these products.

The Cutter Laboratory
Berkeley, Cal., or Chicago, Ill.
"The Laboratory That Knows How"

REGISTERED HOLSTEINS

Creamcup Herd offers service bulls and bull calves of 34-lb. breeding. Females offered for foundation stock. Tuberculin tested.

M. M. Holdridge, San Jose, Cal.
R. D. "A.," Box 437.
Two miles out North First Street.



BUTTER TESTS

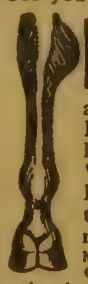
by Agricultural Societies begun in 1886

At the close of the year 1897, competitive tests between Holsteins and Jerseys were made on 73 different occasions, resulting in an excess of production of the Holsteins of 23% over the Jerseys; an average per day of 1.992 lbs. for the Holstein and 1.614 for the Jersey.

HOLSTEIN CATTLE

Send for our booklets—they contain much valuable information.
The Holstein-Friesian Assn. of America
Box 141 BRATTLEBORO, VT.

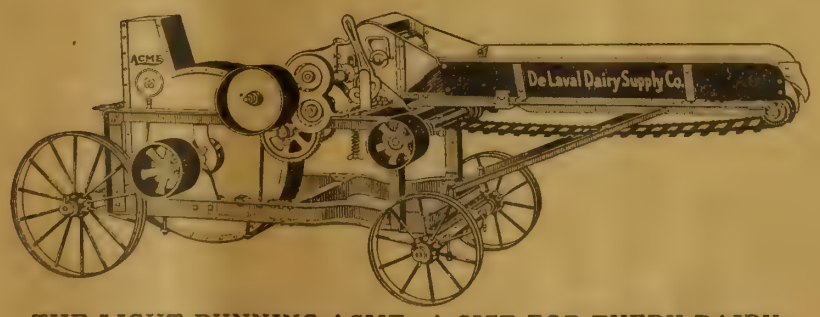
YOU CAN'T CUT OUT A BOG SPAVIN OR THOROUGHPIN but you can clean them off promptly with



ABSORBINE
TRADE MARK REG. U.S. PAT. OFF.

and you work the horse same time. **Does not blister** or remove the hair. $2.50 per bottle, delivered. Will tell you more if you write. **Book 4 R free.** ABSORBINE, JR., the antiseptic liniment for mankind, reduces Varicose Veins, Ruptured Muscles or Ligaments, Enlarged Glands, Wens, Cysts. Allays pain quickly. Price $1.25 a bottle at druggists or delivered. Made in the U. S. A. by
W. F. YOUNG, P. D. F., 86 Temple St., Springfield, Mass.

ACME Feed Cutters → **The Cylinder Cutter with the durable all-steel frame**



THE LIGHT RUNNING ACME—A SIZE FOR EVERY DAIRY.

The Combined Silo Filler, Hay Chopper and Alfalfa Meal Machine

STEEL has replaced wood in all modern machine design. It's stronger, more durable and "stays put."

The steel frame of the Acme Feed Cutter can't warp or sag. It permanently holds all bearings in rigid alignment, eliminating needless wear and vibration common to the old style wood frame cutters.

The light running qualities of the Acme are further increased by the triple frame bracing, allowing three bearings for the cutter head shaft, which reduces vibration from that source to the minimum and economizes power.

Chopped Feed will eliminate a wastage of from 15% to 25% of your hay. Chopped feed is all eaten.

THE Acme is the most efficient type of cutter—the cylinder type. Its spiral knives give greater capacity per horse power than other types and produce a cleaner cut, more uniform quality of silage. It is the only type for producing chopped hay or alfalfa meal.

OTHER VALUABLE FEATURES. Non-cloggable six-fan blower with direct drive insures elevation; positive automatic safety device; reversing gears; low feed table; steel wheel mounting.

WHY BUY A CUTTER YOU CAN USE FOR SILO FILLING ONLY?

The Acme will not only fill the silo but will pay for itself in one season by making your alfalfa meal chopping your dry feed.

CUTTER AND SILO CATALOGS UPON REQUEST

DE LAVAL DAIRY SUPPLY CO.

61 BEALE ST., SAN FRANCISCO
Exclusive Distributors of

IDEAL GREEN FEED SILOS
LEAK-PROOF PERMANENT

Livestock and Dairy Notes

Livestock breeders all over the State are invited to send on postal cards, notes regarding their sales, State and County Fair intentions, new stock, etc.

The Dairy.

The Holstein cow, Pietertje Fayne Johanna, has made a 7-day record of 47.19 pounds of butter from 724.4 pounds milk, being the forty-sixth cow to pass the 40-pound mark.

It is reported that a milk condensing plant will be established at Smith River, Del Norte county, by the Del Norte Milk Products Company. The dairying industry is showing quite an impetus in this county.

E. E. Greenough, Modesto, has sold his herd bull, Lomas Exile King, to A. L. McCulloch, Alpaugh, to head his herd of Jerseys. This bull has sired some phenomenal producers, some of them giving as high as 65 pounds of milk per day.

More than 100 head of purebred dairy cattle, selected from the best herds in the United States by Government experts, will shortly leave New York for France. There is said to be an urgent demand for milk from the war-stricken areas.

D. Chapelone, residing near Modesto, has a Holstein-Jersey cow which on April 2 had been milking 21 months and now gives three and one-half gallons per day, which makes one pound of butterfat, besides milk for ten children. She is due to calve again in seven months. Some family cow!

Many good Holsteins, both registered and grade, were offered at the E. R. Putz sale, held April 2 at the farm near Laton, and they drew a good crowd. Forty-nine head of registered stock, including a number of calves, averaged $177.90 and 20 grades averaged $89.76. Prices on the former would have been higher if testing had been conducted and the animals had been better fitted.

Beef Cattle.

Hillcrest Stock Farm, Davis, has sold to Lucas & Butler of Elk Creek a fine young registered Shorthorn bull sired by Knight Perfection.

H. M. Barngrover of Santa Clara, owner of the Veramont Stock Farm, Taylorsville, has recently sold to Evans Bros. of Nevada the 10 Hereford heifers which we mentioned having been shipped to Santa Clara He has also sold a fine young bull to Mr. Hoy of Siskiyou and 6 young bulls to A. Brown Company of Kernville.

H. M. Barngrover, Santa Clara, also reports that his young herd bull, Don Woodford 4th, is coming along nicely, weighing about 1200 pounds at 16 months. Patrician 5th is proving a wonderful breeder and several of his daughters will be bred to the new bull this summer. Mr. Barngrover looks for something exceptionally good from this cross.

Swine and Swinemen.

Donald Graham, Lancaster, recently made the first sale of a boar pig sired by Orion's King Gano, this being the young boar, Nutmeg Gano, going to L. R. Hitchcock, Van Nuys.

Fred Devore, field man for the Duroc-Jersey Bulletin, called on us a few days ago. He certainly is a live wire and undoubtedly his work while here will do much to further the interests of the breed in this State.

R. J. Merrill & Son of Imperial Stock Farm, Morgan Hill, report their Berkshire business good and the following recent sales: Sow pig to Howard Sweet, Tracy; boar pig to Sharratt Bros., Watsonville; boar pig to B. Martilla, Madrone; sow pig to J. B. Parsons, Haywards; two sow pigs to O. C. Borden & Son, Gilroy.

Clayton Slocum of H. P. Slocum & Son, Duroc breeders of Willows, writes us from Versailles, Ky., that he finds the McKee Bros.' herd the finest he has ever seen and that he is shipping a carload of registered Durocs from there to the Uneeda Glenn county herd. Also he bought 6 head in Nebraska and 6 in Iowa, Illinois and Ohio.

Lloyd & Tointon, Yorkshire breeders of Santa Rosa, report that a large feeder at Petaluma is paying $4 for grade pigs, but will pay $7.50 for their purebred Yorkshire culls. This man has tried out the feeding qualities of grades and purebreds and finds that the latter respond to feeding enough better so that he is justified in paying this difference.

W. M. Way & Son, owners of Roc Stein Ranch, Modesto, recently sold to D. J. O'Connor, Irwin City, a bred Duroc gilt and a weaned sow pig. They report great success with their spring litters and already have 75 live pigs from nine young gilts. They are feeding a mixture of one-half ground barley and one-half blackeye beans, with tankage, Lactein and alfalfa pasture.

Sheep.

Sheep rustlers have made their headquarters in the vicinity of Winters and already forty head of sheep have been herded away from the Chapman ranges. Sheepmen have been notified by sheriffs of the Sacramento Valley to beware of the gang of thieves.

Livestock Miscellaneous.

W. R. Goodwin, Naperville, Ill., one of the associate edifors of the Breeders' Gazette of Chicago, died Saturday, April 5.

Prize-winning livestock, including Glenbrook's Marvel, the great Shorthorn cow, owned and bred by the University of California Farm, will be on display during the annual Picnic Day celebration at the Farm, April 26. Dean Hunt anticipates that upward to 25,000 persons from all sections of the State will take part in the Farm celebration.

The Farmers' Turn Will Come

To the Editor: I believe that the high cost of living is caused by the high cost of labor. The man who produces the food stuffs for the laboring class cannot do it for nothing. Where a man used to receive $1.50 per day for his wages he now receives $3.00 or more; he also has to pay twice as much for a sack of flour, so he is not much ahead as a dollar only goes half as far as it used to.

Of course the war brought unlooked for changes in the prices of nearly everything, and also many high prices were laid to that cause when speculators were to blame. The Government did a great deal to suppress this and regulate prices, but it is a very difficult thing to do, with satisfaction to every one.

From now on the farmer and producer will not feel so patriotically inclined to work raising food at practically no profit. He will seek to be surer of a safe market for his products, or he will not plant them. Farming is a big game of chance at the best. When a man puts in hard labor and expense for a whole year only to see it destroyed by weather conditions, or flooded markets in the end, perhaps it is a losing game. The city laborer thinks all farmers and orchardists are getting rich when they hear of the big checks they receive at the harvest time. I know of many instances where that same check would not cover the year's expenses and one would have to ask the banks to carry them over.

While the city dweller goes to work at 8 o'clock and quits at 5, we are out at daylight and work as long as we can see at night, with almost no holidays or Saturday afternoons off. Many do not take but one or two days off in a year. They may ask, "Why do we work that way?" In many cases farmers are in debt for their homes and keep hoping next year will be better. We go without many things our city cousins think necessary in the way of clothes and theater tickets, etc., saving in every way to keep our homes and raise our families.

In the next few months I look for a change in the labor question, with all these soldier boys coming back to work to find their places filled with men who were less patriotic or else unfit for service, and also with many women doing men's work. I think these boys who have been working for Uncle Sam for $31 a month while their brothers drew down $5 a day ought to have their turn now.

I know of several of our neighbors who are going to cut down on labor this year because it is so high; planting such crops as can be handled by less men, and using tractors to do more work at a time. I do not know what the outcome will be. A man must eat to live, and in order to do that must "earn it by the sweat of his brow." Still we cannot work all year and turn all our profit over to the hired man, who has no taxes to pay.

One of our salvations will be cooperation in selling and doing away with the middlemen who profit by our hard work without earning it. Therefore I think we should stand by our associations that are mostly in their infancy. We look forward to great results from them if they continue to be operated on the same honest basis they have started on.

The world is waking up to the fact that the farmer and producer holds the winning cards and gets them by hard work and keeping at it. Our future success depends on our using more scientific methods. Farming needs brains mixed with it as well as any other vocation. Our law-making bodies are beginning to sit up and take notice, too. The labor unions may not be any stronger than the farmers' unions in the future.—Farmeress, San Juan Bautista.

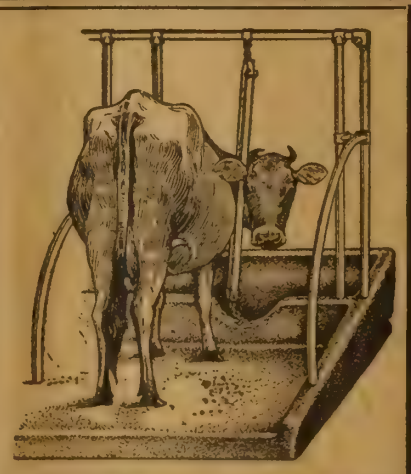
Retires From Business--

THIS is the most sensational announcement ever made to the Holstein and dairy public in California. It means that on May 21 and 22 next the nationally famed herd of

McAlister & Sons of Chino, Calif.

Comprising of about 200 head will be dispersed and every animal without a single exception sold to the highest bidder.

Watch Next Week's Ad For Further Announcement



The Louden line includes everything needed about the dairy ranch—from Stall Fittings to Gutter Drains and Feed Carriers. We are distributors for the entire line. We are also.

STATE DISTRIBUTORS FOR UNIVERSAL MILKING MACHINES.

Is This Your Cow?

Do your cows enjoy the comfort and freedom of flexibly hung swinging steel stanchions, or are they cramped and miserable in rigid, insanitary wood "stocks"?

Louden Steel Stalls and Stanchions not only keep your cows clean and healthy, but help you get maximum milk production. Cows respond to good treatment—Contented cows give the most milk.

FREE BOOK OF BARN PLANS and a copy of the big Louden catalog will be sent on request to any dairyman.

Open territory for live dealers.

California Hydraulic Engineering and Supply Co.

68 Fremont St., SAN FRANCISCO 424 E. Third St., LOS ANGELES

POLAND-CHINA BREEDERS' ASSOCIATION HOLD MEETING.

The California Poland-China Breeders' Association held an enthusiastic meeting at Sacramento April 9, and adopted important plans for breed promotion work. Several sales will be held in the near future, and it is planned to keep the breed before the public more prominently hereafter. Fred Hartsook of Lankershim donated $500 for the purpose, and a committee was appointed to canvass the breeders of the state and solicit funds.

The application of elbow grease may be disagreeable, but it insures clean separators, clean butter and, generally, a clean reputation.

LIVESTOCK DIRECTORY.

Rate in this directory 3c. per word each issue.

SWINE.

Berkshires.

CASTLEVIEW

GIANT TYPE BERKSHIRES

We are booking orders for spring pigs from Grand Champion Sows and sired by Mayfield Rookwood, sire of Champion Barrow at 1919 Western Berkshire Congress.

CASTLEVIEW RANCH, SANTA ROSA.

ANCHORAGE FARM.

MONEY-MAKING BERKSHIRES—The prolific, easy-feeding kind that make the highest priced pork from the lowest priced feed. They will increase your profits. Prices reasonable; satisfaction guaranteed. Write for free booklet, describing our worlds reserve champion, STAR LEADER. We are now making a special offering of bred sows and gilts.
Anchorage Farm, Orland, Calif.

$25.00—$35.00—$50.00
BARON DUKE 201ST
Omaha Grand National Champion
BOAR PIGS: 3, 5, and 6 months old, from 650-pound prize-winning sows. We will sell nothing that we wouldn't use ourselves.
SANDERCOCK LAND CO.,
906 K St., Sacramento.
In charge of Natomas Land sales.

GRAPEWILD FARMS BERKSHIRES
A few spring boars and fall pigs by Big Leader, Grapewild Farm Leader and Majestic Duke.
A. B. Humphrey, Prop., Escalon, Calif.

CROLEY'S BALANCED HOG FEED—The cheapest feed to fatten hogs. Write Geo. H. Croley Co., Inc., Livestock Supplies, 8th and Townsend Sts., San Francisco, Calif.

BERKSHIRES bred at Imperial Stock Farm are the kind that satisfy. Write us or call and be convinced. R. J. Merrill & Son, Morgan Hill, California.

BERKSHIRES IN PERRIS — They make money for me. Write for catalogue and prices. F. L. Hall, Perris, California.

BERKSHIRES—Sired by Star Leader, the $1500 boar. Kounias Registered Stock Farm, Modesto, Calif.

BERKSHIRES by Ringleader 20th, greatest son of Grand Leader 2nd. Geo. M. York, Modesto, Calif.

FOR REAL GOOD BERKSHIRES write Frank B. Anderson, R. 724W, Sacramento, Cal.

CARRUTHERS FARMS BERKSHIRES — Cholera immune. Live Oak, California.

REGISTERED BERKSHIRES—Write R. D. Hume, Dos Palos, California.

BERKSHIRES—Fair Oaks Ranch, Willits, California.

Poland-Chinas.

40 SOWS and daughters of Big Bone Bob and I. B. A. Wonder sows for sale. Price right. N. K. Horan, Lockeford, California.

BIG TYPE POLAND-CHINAS—Stock from the best herds of the Middle West. N. Hauck, Alton, Humboldt County, California.

20 HEAD of Big Bone Bob, Grand Model and I. B. A. Wonder stock for sale. J. W. Wakefield, Acampo, California.

LAKE SIDE STOCK FARM—Large, smooth and big boned Poland-Chinas. Geo. V. Beckman & Sons, Lodi, California.

REGISTERED POLAND-CHINA SWINE—Prize winners. Finest stock in the State. M. Bassett, Hanford, California.

POLAND-CHINAS—Quality and bone our hobby. Fall boars for sale. H. D. McCune, Lemoore, California.

BIG-BONED POLAND-CHINAS—From Eastern prize-winners. D. H. Forney, Route G, Fresno, California.

POLAND-CHINAS—Young stock for sale. Edward A. Hall, R. 1, Box 39, Watsonville, Calif.

POLAND-CHINA PIGS WITH RIBBONS—Prices right. Johnnie Gusing, Winton, Calif.

POLAND-CHINA PIGS — Bernstein, Trowbitt, and Ross blood. B. M. Hargis, Tulare.

POLAND-CHINAS — A few young service boars for sale. E. F. Guerin, Visalia, Calif.

REAOAKS RANCH herd of registered Poland-Chinas. W. J. Hanna, Gilroy, Calif.

BIG-BONED POLAND-CHINAS — Stock for sale. E. S. Myers, Riverdale, California.

"GROW THEM OUT"

BERNSTEIN'S PIG SALE.

Saturday, April 26, 1919, I will sell to the highest bidder, 65 head of registered Poland-China hogs. A few bred sows and service boars. All the rest are PIGS. From weanlings up to gilts ready to breed. This is your opportunity to

BUY THEM YOUNG AND GROW THEM OUT.

W. Bernstein, Owner. Write for catalogue to W. T. Dice, Sec., Box 374, Hanford, California.

SOW BARGAINS—We are offering some exceptionally nice tried sows, bred and open gilts, at attractive prices. They are all sired by the undefeated and world's grand champion Superba and out of big type sows, which cost me $200 and over. Investigate before buying elsewhere. Rough's Greenfields, Arlington Station, Riverside, California.

MAKE BIG MONEY with Cloverdale Farm big-type Poland-Chinas — the prolific, fast-growing, easy-feeding, money-making kind. We purchased the famous Whitten Ranch herd, including great boar Jumbo Model. High-class stock for sale—farmers' prices. Write us. Cloverdale Farm, R. F. D. 1, Escondido, Cal.

ELDERSLY FARM—We are offering some excellent tops from our fall and spring pigs at attractive prices, sired by one of America's best-bred boars, Big Black Bone Wonder, with grand championship breeding on both sides. He is a real 1000-lb. boar. J. H. Ware, Live Oak, California.

NOW BOOKING ORDERS for spring pigs, either sex, from my prize-winning, large type Poland-China hogs. Also will book a few orders for bred gilts, February and March farrow, and a few good, serviceable, aged boars. Hale I. Marsh, Modesto, California.

THE BEST IN THE WEST — California Gerstdale and President's Equal are my herd sires. Fall and spring boars now ready to move—each one a corker. Dr. J. A. Crawshaw, Hanford, California.

I WANT TO BUY 10 big-boned Poland-China bred sows for June 1st delivery. Also any number of feeders up to fifty for May 1st delivery. J. R. Tallman, 438 15th St., Oakland, Cal.

BOOKING ORDERS for spring pigs, sired by "Bob Big Bone" 281289, litter brother of the Junior Champion of Sacramento, 1918. P. E. Mitchell, Atwater, California.

OXBONE HERD offers March boars for sale from King's Big Bone leader, grand champion at State Fair, 1918. Write F. E. Fay, Tipton, California.

FALL BOARS by a son of Caldwell Big Bob at bargain prices. Also booking orders for spring pigs. Forest View Ranch, J. H. Cook, Paradise, Cal.

WAUKEEN HERD POLAND-CHINAS—Big type herd boar, the $700 Grand Champion of California. Les McCracken, Prop., Ripon, Cal.

POLAND-CHINAS — Young stock for sale. H. E. McMahan, Lemoore, California.

Chester Whites.

BILLIKEN CHESTER WHITES—One yearling boar for sale; everything else sold. Will book orders now for spring pigs. C. B. Cunningham, Mills, California.

PUREBRED CHESTER WHITES—Write for prices. Wray M. Peck, Escalon, California.

Duroc-Jerseys.

DUROC-JERSEY PIGS AND GILTS—All animals sold as breeders are from mature sows and represent the tops of closely culled litters. I keep nothing in my herd but heavy producing sows whose pigs must reach 200 lbs. at 6½ months on alfalfa and milo. Young stock for sale every month in the year. Geo. L. Horine, Winton, Cal.

DUROC-JERSEYS AT IRELAND—Home of Cherry Volunteer II., Grand Champion Boar at Riverside. Ireland's Orion Defender and Orion's King of Ireland are excellent sires in service. Booking orders for spring delivery. Ranch at Owensmouth. City office, 1219 Brockman Bldg., Los Angeles, Calif.

THE JOHNSON HERD OF DUROCS—Two yearling service boars for sale at farmers' prices. These are well grown out, rugged animals. Weaned boar pigs, $25. Frederick M. Johnson, Napa.

SWEETWATER DUROCS—The most popular herd in the West. Our Durocs make money for us—they will do the same for you. Winsor Ranch, Bonita, San Diego Co. Address R. K. Walker.

WE WON MORE MONEY on Durocs at the State Fair than any other exhibitor. Why not buy some of this winning stock? June Acres Stock Farm, Davis, California.

DUROC-JERSEYS — Burke's Good Enuff, Golden Model, King's Colonel and Pathfinder blood. Derryfield Farm, National Bank building, Sacramento.

DUROC WEANLINGS for the farmer. Easy feeders; 200 lbs. at seven months. W. W. Everett, River Bend Farm, St. Helena, Calif.

A FEW CHOICE BRED GILTS, spring boars and gilts of the best blood lines. H. P. Slocum & Sons, Willows, California.

BOUDIER DUROCS all sold out, excepting some sow pigs weighing 100 lbs. apiece. H. E. Boudier, Napa, California.

HEAVY-BONED DUROCS — A few service boars for sale. Ormondale Co., Route 1, Redwood City, California.

REGISTERED DUROCS—All from prize-winning stock. W. P. Harkey, Gridley, Calif.

REGISTERED DUROC-JERSEY GILTS for sale. D. Friedt, Angels Camp, California.

REGISTERED DUROCS—Stock for sale. W. J. Fulgham & Sons, Visalia, California.

Yorkshires.

LLOYTON HERD REGISTERED YORKSHIRES—Bred gilts and pigs from eight weeks up. Lloyd & Tointon, Llano Road, Santa Rosa, California.

Hampshires.

OUR 28-MONTHS OLD herd boar, extra breeder, 350 lb. Two open and bred gilts. Weaned pigs. Write Hooda Hampshire Swine Farm, Tom M. Bodger, Prop., Gardena, Calif.

MY HAMPSHIRES are money makers. Stock for sale. Buy now. L. A. Dennet, Saratoga, California.

HAMPSHIRE SWINE — Young stock for sale. Ira Hart, Dos Palos, California.

MISCELLANEOUS.

LARGE YORKSHIRES—The ideal hog for the progressive farmer. Young stock for sale. A. L. Tubbs Co., Calistoga, Cal.



"I'll leave my happy home for you."

BERNSTEIN'S PIG SALE

Registered Poland-Chinas

A few bred sows and gilts, but this is a sale where "Pigs is Pigs."

Sale will be held at Hanford, Calif., Saturday, April 26th, on the Kings County Fair Grounds, ½ mile west of town. Stock in place early Saturday morning for inspection.

A registered Poland-China Pork Lunch will be served at the Fair Grounds at 11:30 a. m. Sale to start at 12:30 p. m. sharp.

W. BERNSTEIN, Owner.

Write for catalogue to W. T. Dice, Secretary, Box 374, Hanford, Calif.

COL. G. W. BELL, Auctioneer, assisted by COL. T. E. COCHRANE.

O. I. C. BREEDERS' NOTICE—I will sell Ohio Boy, two-year-old imported boar; none better. Also boar pigs ready for spring breeding (sire Ohio Boy, dam Toddler's Beauty, imported). Write for full information. Jas. Little, Wasco, California.

MULE-FOOT HOGS — Large type. H. T. Bailey, P. O. Box 37, Lodi, California. "The Blue Gums."

DAIRY CATTLE.

Holsteins.

A PRICE ON EVERY ANIMAL.
Herd free from tuberculosis. All sales subject to sixty days' retest. Sons of Finderne Soldene Valdessa, whose dam is not only a world record cow in seven-day division, but has two sisters holding world's records for yearly production.
Tovon Farms Association.
679 Mills Building. San Francisco.

WHEN IN THE MARKET for young bulls and females, write me. My herd sire and show bull, El Prado Wayne Colantha, is also for sale. Every animal in my herd is priced. J. W. Benoit, Route C, Modesto, California.

HIGH-CLASS HOLSTEINS—I have for sale some sons of Sir Veeman Korndyke Pontiac from A. R. O. dams. Write for particulars or come see them. R. F. Guerin, Visalia, Calif.

PALO ALTO STOCK FARM, Palo Alto, breeders of registered Holsteins. Heifers and service bulls. Reasonable prices.

CREAMCUP HERD — Registered Holsteins, Pontiac bull calves. M. Holdridge, Rt. A, Box 437, San Jose, California.

REGISTERED HOLSTEIN BULLS with world's record backing. Kounias' Registered Stock Farm, Modesto, California.

BREEDERS OF REGISTERED HOLSTEIN cattle and Berkshire pigs. Whittier State School, Whittier, California.

F. H. STENZEL, SAN LORENZO, CALIF.—Breeder of Registered Holsteins. High test producers.

REGISTERED HOLSTEINS—A. W. Morris & Sons Corp., Importers and Breeders, Woodland, California.

REGISTERED HOLSTEINS — Best blood lines of the breed. R. L. Holmes, Modesto, Cal.

GOTSHALL & MAGRUDER — Breeders of registered Holstein-Friesians. Ripon, Calif.

CHOICE HOLSTEIN bulls for sale. No females. Millbrae Dairy, Millbrae, California.

BREEDERS OF REGISTERED HOLSTEIN cattle. McAlister & Sons, Chino, California.

HOLSTEIN BULLS and bull calves from A. R. O. cows. C. A. Miller, Ripon, California.

REGISTERED HOLSTEIN CATTLE—E. E. Freeman, Route B, Modesto, California.

EL DORADO HERD OF HOLSTEINS — Alex. Whaley, Tulare, California.

Jerseys.

SUNSHINE FARM JERSEYS — Tuberculin tested. Production counts. E. E. Greenough, Merced, California.

YOUNG BULLS from Register of Merit cows. W. G. Garnett, Orland, California.

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SIMON NEWMAN CO., breeders of Registered Herefords, Newman, California.

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GEORGE WATTERSON—Breeder Registered Herefords, Bishop, California.

HEREFORDS—Mission Hereford Farm, Mission San Jose, California.

SHORTHORNS — **Carruthers Farms.** Live Oak, California.

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F. A. MECHAM ESTATE, Petaluma, Cal.—Breeders and importers of Shropshire, Rambouillets and American Merinos, both sexes. Also Red Polled cattle. Take electric car at Petaluma or Santa Rosa for Live Oak Ranch.

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BISHOP BROS., SAN RAMON, CALIF.—Breeders and importers of Shropshires.

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CHAS. KIMBLE—Breeder and importer of Rambouillets, Hanford, California.

CALLA GROVE FARM, MANTECA, CALIF.—Breeders and importers of Hampshire sheep.

C. J. L. STONEBRAKER, Route A, Chico, Cal. Breeder of Shropshire Sheep.

MISCELLANEOUS.

BUTTE CITY RANCH—Shorthorns, Shropshires, Berkshires and Shetland ponies. Write for prices and descriptions before buying. Butte City Ranch, Box P, Butte City, Glenn county, Cal. W. P. Harker and W. J. Gridley, owners. Special Notice: Second Farm Sale, Shorthorns, Shropshires, Berkshires, Ponies, August 7, 1919.

REGISTERED HOLSTEINS and Duroc-Jersey Stock on Stock Ranch, Tulare, Calif.

10 HEAD Grade Jersey Cows. R. D. Beebe, Lemoore, Cal.

Eleven Hundred Sheep on Eighty Acres

[Written for Pacific Rural Press by Fred R. Smith, Bishop.]

In these days of conservation we must know how many sheep we can keep per acre, or how many acres will be required per sheep, and the cost.

In Inyo county—the Owens Valley region—where water, ranges and meadows are a part of our ranching, the problem has still to be solved. In the mountain ranges, where the natural meadows are supplemented and increased by sowing tame grasses and irrigating them, cattle are generally ranged and the dry brush ranges are left for the sheep. Under this method a large area is necessary for each sheep during the summer months.

Some experienced sheepmen, who have been out of the business for several years, own about 500 acres of irrigated land in the valley, which include about 160 acres of meadow set to red clover, white clover, Alsac clover, blue grass, rye, orchard grass, red top and timothy, mixed with some alfalfa and native grasses. This is a perfect meadow, with no waste land.

The owners of this property, when in the sheep business, left a few sheep on the ranch each season when the main bands were sent to the mountain ranges. These sheep did remarkably well. They sheared heavier than, and raised superior lambs to the mountain herd, and from this experience the owners concluded to try a small herd of sheep on the ranch.

A year ago last November they bought 512 bred ewes, and carried them through the winter on hay. At lambing time there were 496 ewes left, which raised 620 lambs. The cost of these ewes was only $8 per head, as a number of them were too old to do well on the rough ranges. This accounts for the loss of the parent stock during the winter.

On the 2d of March, 1918, the ewes and their lambs numbered more than 1100 head and were put on 80 acres of land to graze, the land being divided into three fields of equal size. The sheep would be run on one of these fields for about two weeks and then would be transferred to another. The one just grazed would be flooded with water and this practice was continued throughout the summer. On the 2d of May I was at the ranch and one of the fields was so rank that the foreman thought it advisable to turn 50 head of horses on it to prevent the sheep from bloating. From time to time I examined the fields and they were never scant of feed, but reminded me of great lawns that had not been mowed, even when the sheep were grazing on the field. The other fields would soon be rank in growth, and it seemed impossible for the flock to keep them cropped down. Some time in September 500 more sheep were added, and grazed about a month. In October I examined the fields and estimated that there was sufficient grass to carry the original band until December. I thought at the time that blue grass predominated, but on closer examination found all the grasses about as evenly distributed as in the spring.

Our best lands for such meadows are where the water-level will not sink to a point more than two to three feet below the surface, thereby insuring even moisture, less irrigation and constant growth of feed. This 500 acres is highly productive for corn, grain, alfalfa or meadows, and the owners contemplate stocking all of it with sheep until they will consume all the feed raised on the ranch. They will seed one part to meadow so that it will graze sheep to the extent that the other portion raises hay, silage, etc., for winter use.

I must mention the labor question. The foreman told me that he did not even corral the sheep at night, but just salted them and irrigated the fields; also that it would take two herders and a camp man to care for as many sheep in the mountains as this ranch will feed. The owners stated that each ranch sheep would shear about two pounds more wool than a mountain-ranged sheep and that the ranch lamb would be worth about one dollar more at the same age for market. They also mentioned that practically one-half of the sheep could be sold each year in September or October, thus making it necessary to carry only one-half the number through the winter.

I regret that the foreman could not give me the amount of hay fed during the winter to the original band of sheep, but very little is fed before January, and some winters it is even later before feeding is begun. Last December I visited the ranch. The sheep had been put in other fields about three weeks previously, but there was still good feed on the 80 acres, and stock could winter on it for some time.

The 600 lambs that were raised brought $6,000, and the 496 ewes sheared an average of 9 pounds of wool, which sold for 50 cents, thus bringing $2,232. The land certainly was fertilized to the extent of $5 per acre, which would amount to $400. This makes a total of $8,632 for one season, less the cost of winter hay and labor, both of which items were small.

For fear some doubting Thomas may conclude that the object of this article is to sell real estate, I will state that the land is not for sale. I simply want to point out the possibilities of some of our dormant lands. Not all of our lands are so well adapted to sheep raising as this particular place, but thousands of acres are, yet today they are growing inferior grasses and are so neglected that the grazing value is not more than one-tenth the value of the land described.

Small flocks must take the place of the old-time large range bands of sheep, and better stock and better grasses will make the small flocks exceedingly profitable.



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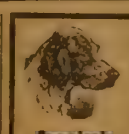
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RUBBING ELBOWS WITH OTHER BREEDERS.

[Written for Pacific Rural Press by Thos. F. McConnell.]

HARRISON'S MILKING SHORTHORNS.

To think of Thos. Harrison, formerly of Glen Ellen but now of Santa Rosa, is to think of the dual-purpose Shorthorn, or, as they are more widely known, the Milking Shorthorn. A recent visit to his farm was well repaid in seeing his two herd sires and some young heifers.

The senior herd sire is Foothills Pioneer and he by Gen. Clay out of Imp. Tassel. Gen. Clay has 30 daughters in the register of merit and Imported Tassel has never come under the necessary 10,000 pounds of milk in 365 days.

The junior herd sire is North Star, he by Bransby's Coming Star out of Imp. Blossom 23d. North Star is the image of his sire, according to Mr. Harrison, and is sure to prove of great value as a breeder. This young bull is therefore from the stock that was imported by the late James J. Hill. Mr. Hill sent the late Prof. Thos. Shaw to England to select animals, gave him free rein as to his selection and placed no limit on the cost.

Those who know Prof. Shaw's ability as a judge and what the financial support of Mr. Hill meant will realize the quality of that importation. There have been other Shorthorns bred for their milking or dual-purpose qualities in the United States, but the bringing over of this herd gave impetus and standing to this strain.

Mr. Harrison was in the employ of Mr. Hill at this time and all his life has been handling the Milking Shorthorn, as he was born and reared in their home country in England. Mr. Harrison is a firm believer in the dual-purpose Shorthorn, claiming they are the true cow for the farmer—a cow that will give a good report of herself at the bucket in milk and butterfat, and the male calves, when castrated, will grow into profitable steers, laying on an even, thick coating of well-marbled flesh. Mr. Harrison claims that the steers when fed intensively are of better quality with less patchiness than those of the beef type.

A fair sample of the young female stuff in Mr. Harrison's herd is Glen Dorothy, a yearling, and about as sweet a thing in this line as any Shorthorn lover could wish to see. A beautiful red roan with plenty of quality, straight lines, symmetrical, and an udder coming well up behind, and good size for age, she is a "sicht for sair een."

Fifteen more just like her and a sire with the blood of Bransby's Coming Star and Imp. Blossom 23d combined—what more could a believer in the "farmer's cow" want? Fortunes and international reputations have been built on less secure foundations.

BERNSTEIN'S FAITH IN HIS BOAR.

That John M. Bernstein of Hanford believes in his boar President is proved by the fact that he will not breed outside sows for a cash fee, but requires the second choice of the resulting litter at weaning time. The wisdom of his plan is proved by the fact that one pig so selected sold for $300 when a year old. Another sold for $40 a few days after it was picked out, and another was bought by the owner of the litter for $40 rather than let her go.

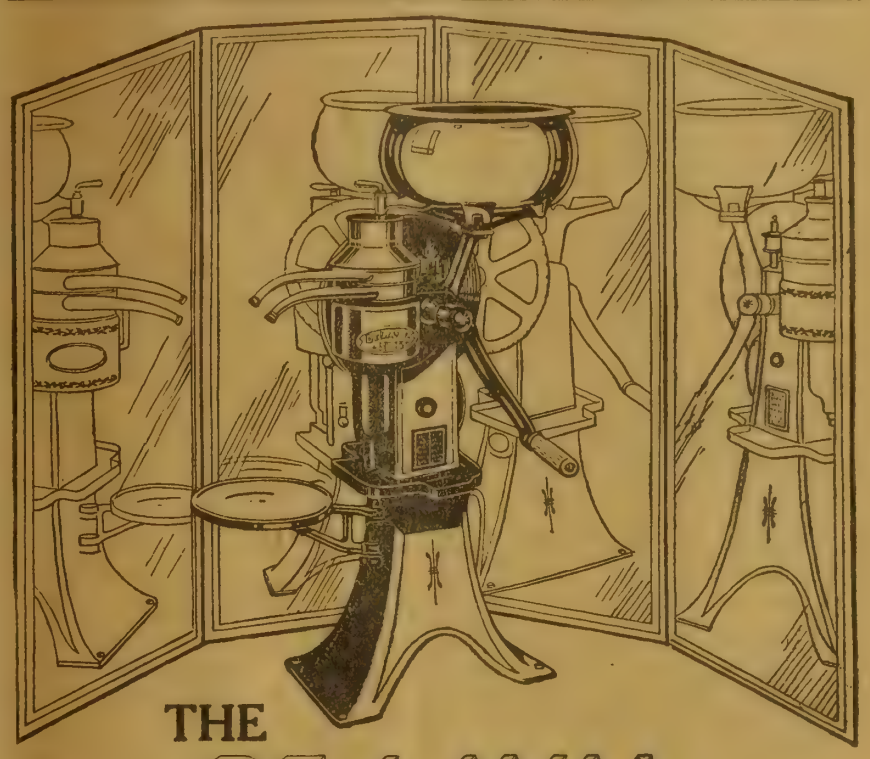
Mr. Bernstein handles his stock carefully and kindly. All are really pets, even his old boar President. This boar is over five years old and so kind that it is safe for strangers to enter the paddock where he is kept. Mr. Bernstein believes in keeping a bred sow with the boar all the time and results seem to justify the practice, for he is very tractable and quiet, although far from being dull and sluggish.

"Mix my feed with brains and give it to me at regular hours," says Bossy Buttercup. "Suppose mother fed you in the same way that you feed me. I'll bet you'd raise an awful rumpus!"

Among the necessities for the health and growth of little pigs are sunshine and exercise. They cost nothing but a little expenditure of time, and cheapen the cost of feeding.

Small leaks in dairying will soon wreck the business. Therefore, attention to details is important. By using a Babcock test and scales the cows are placed on their own merits and the robbers can soon be eliminated from the herd.

Don't condemn your milking machine hastily. Maybe you are not keeping it in good working order.



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Poultry and Rabbits for Profit

Conducted by R. H. Whitten, Livestock Editor.

WAR LESSONS ON FEEDING.

Perhaps it was a good thing, after all, that we were obliged to put our hens on war rations. At first we felt that they were much abused when we were compelled to reduce the amount of that old standby—wheat. But we went about discovering substitutes, and as a result some very good rations were evolved which did not contain wheat at all.

The poultry division of the Department of Agriculture conducted tests on substitute feeds, and found that by feeding a wheatless ration there was a considerable saving in the cost of feed, and the hens produced as many eggs as when wheat was included. Thirty leghorn pullets to which this wheatless ration was fed averaged 147.3 eggs during their first year, which compares very favorably with yields secured with wheat rations which were much more expensive. A pen of buff orpington pullets receiving this wheatless ration made the highest egg record of any of the large feeding pens in a 20-weeks' test.

The scratch mixture consisted of two pounds of cracked corn to one pound of oats; the dry mash, three pounds of corn meal to one pound of beef scraps. It required 52 pounds of feed per year per hen; one-half scratch grain and one-half dry mash. And it took 4.6 pounds of feed to produce a dozen eggs.

Now that there is no restraint on the use of wheat for poultry feed, will the majority of poultrymen go back to the old rations of pre-war days? Even if they can make a satisfactory profit when wheat forms a large part of the ration, will it not be better for them to stick to some of the emergency rations and thus make a greater profit? We notice that many California poultrymen are doing this, finding that they can get just as many eggs and at a lower cost per dozen. Others are striking a happy medium and are using wheat again, but in much lighter proportions than formerly.

Naturally, the rations used out here are different from those fed in the East. A wheatless scratch feed which has been used with good results is shelled or gyp corn, milo or kafir 10 pounds, hulled barley or oats 5 pounds. This is the amount fed to 100 hens, only one-third being given in the morning and two-thirds at night so as to keep the hens working during the day. In addition to this scratch feed the hens had access to a dry mash of bran or cornmeal 3 pounds, shorts or ground oats 3 pounds, beef scraps 1½ pounds. This was kept before birds of the light breeds all the time, and the heavy breeds after noon. One feed of green stuff was provided daily, and fresh water, grit, shell and charcoal were kept before the birds constantly.

When wheat is omitted it is very essential to use a comparatively large amount of beef scrap in the mash—or, fish meal may be substituted to reduce the cost. In one experiment it was found that during four months pullets fed a ration containing beef scrap produced an average of 41.5 eggs, while those fed the same ration with the exception of the beef scrap produced only 18.7 eggs. When wheat is not fed, the beef or fish scrap should constitute about 25 per cent of the dry mash.

Barley or oats have high feeding values. Barley has a little more protein than corn and a little less than oats. It is not well liked by hens unless hulled, but hulled barley can be obtained almost anywhere now, and if the birds are kept a little hungry instead of overfed, they will readily eat what is given them.

Oats also are liked better when hulled, but the oat groats, as they are called, generally come pretty high. However, they are relished by poultry and are excellent for producing eggs, and when they can be obtained at a reasonable price they may be fed quite heavily.

Buckwheat is quite well liked but is not very widely fed out here. It may be used to give variety to the ration. Rye is not fed largely and does not seem to be relished by poultry; also it is supposed to cause bowel trouble when fed freely.

As a rule, home-grown grains should be fed, and whether shelled corn, Gyp corn, milo or kaffir is selected should depend upon what is grown on the farm. If the grain has to be purchased the choice should vary according to the market prices.

No matter what grains are selected, don't overlook the green stuff. It is the one sort of poultry food vital to the welfare of your flock. Your hens can do without wheat, but they cannot do without succulent food. It doesn't make so much difference what kind it is—lettuce, cabbage, kale, Swiss chard, beets, alfalfa, lawn clippings—but give it to them daily and give them plenty of it.

LET MOTHER HEN ALONE.

To those poultry raisers who brood by the hen, all there is to say is to let the hen do the brooding. Keep the hen free from lice, and also keep her dry and the coop clean. It is no difficult task; all that is needed is thoughtfulness and careful attention. Baby chicks will get under the old hen whenever they feel the need of a little warmth. It is, therefore, very important that the hen should be kept dry. Do not allow the hen her liberty with her brood for at least four weeks. This will give the chicks plenty of opportunity to become strong. The first two weeks, however, are the most important in the life of the chicks, and the most important factor is brooding during that period. The hen will do that properly if given the proper place and let alone.

RABBIT HAS SCABBY EARS.

To the Editor: I have a rabbit whose ears started to get sore on the inside and they are becoming full of scabs. What should I do?—T. G., Ripon.

[Answrered by Mrs. C. A. Richey, Los Angeles.]

This is the result of a mite which works similar to the mite causing scaly legs in chickens. Dirt and neglected colds are the cause, and unless prevented by treatment ear canker will develop. The canker will eat back into the head and the animal will finally die. For treatment, take equal parts of ether, alcohol and Peru balsam and drop into the ear pocket with a medicine dropper. A few applications will usually cure. If very scabby, lift out with something not too sharp, after the first application.

REMEDY FOR ROUP.

A very easy method of treating roup in its early stages is to pour a coating of coal oil on top of the water in each crock. When the hen drinks she has to put her beak into the coal oil to reach the water, and when the beak is withdrawn after drinking, the coal oil adheres to the nostrils and beak. The hen may wipe some off on her feathers, but enough will remain to get in good work on colds or roup. Some of the oil will be taken into the crop and will act as a physic, which is just what is needed. When you notice the oil gone from a crock, add more to it and keep this up for several days, or until the fowls improve.

Santa Cruz poultrymen recently shipped 350 cases of eggs to San Francisco in one day. The express company reports that only Petaluma exceeds Santa Cruz in egg shipments.

The season is now here when almond hullers must be ordered to insure having them in time for harvest. The Schmeiser Mfg. Co. is now working on three orders already received.

Poultry Breeders' Directory

SULLIVAN'S FAMOUS BUFF ORPINGTONS — Want the best? Write Sullivans, Specialists. Oldest flock on Pacific Coast. Line bred for 20 years. Said by Walter Hogan, originator of "Hogan System," best layers of this variety he ever handled. Have won thousands gold and silver special prizes, cups and ribbons—more than all competitors combined, on the Pacific Coast. Eggs, $3.00, $5.00 per 15; $12.00 and $15.00 per 100. Breeding stock. Write for prices. Mr. & Mrs. W. S. Sullivan, 100 Market Road, Agnew, Santa Clara Co., California. Telephone San Jose 5205, Route 5.

WHY SPEND MORE FOR ORDINARY CHICKS?—My 900 hens averaged over 240 eggs each last year. Why? Bred 20 years to lay 200-290 eggs yearly. White, Brown, Buff Leghorns; Reds; Anconas; Rocks, Minorcas; Orpingtons; clearing customers $5.00. Valuable circular with proof—free. Chicks: Two-thirds booked to June, yet most weeks still open for hundreds. 70,000 capacity hatcheries supplying chicks. Many repeat orders monthly, yearly. Eggs: Hatcheries overflowing; selling eggs half price, 15-1000. Breeders, pullets. J. Beeson, Pasadena, Cal.

WHITE LEGHORNS are the most profitable breed of poultry. If you are in the business for profit, you will eventually have them. Early broilers; early layers; early profits; we sell only **White Leghorn Baby Chix** from heavy laying **Hoganized** hens. Safe delivery of full count live chix guaranteed. Prices per 100: February, $15; March, $14; April, $12.50. The Pioneer Hatchery, 408 Sixth street, Petaluma, California.

SINGLE COMB BROWN LEGHORNS—The large, modern, heavy-laying type that won high honors for us at the National Egg-Laying Contest. No better layers, none others so hardy. For 20 years our strain has won highest prizes at New York, Boston, Chicago, San Francisco, etc. Absolutely the finest Brown Leghorns in America. Eggs, $3 and $5 per $15; $15 per 100. Williams Bros., Fullerton, California.

BARRED PLYMOUTH ROCKS—Champion prize winners and wonderful layers. Choice cockerels, hens and pullets for sale. Hatching eggs from twelve grand matings. I have made a specialty of Barred Rocks for over twenty years. That's why I win at all leading shows. "Nothing Better In Poultry" than Vodden's Barred Rocks. Catalog free. Chas. H. Vodden, Box 396, Los Gatos, California.

BABY CHICKS—We specialize this season on money-making White Leghorns—hatching from stock with high records that are unimpeachable. Also Brown Leghorns, Anconas, Minorcas, Rocks, Reds, Orpingtons, and White Wyandottes. Especially interesting circular with price list ready January 1st. B. W. Archibald, Soquel, Santa Cruz Co., Calif.

S. C. WHITE LEGHORN CHICKS—Any quantity, from A-1 Hoganized and trapnested stock, winners of 1st, 2nd and special for pullet and 1st cockerel at Pacific Coast Land Show. Booked up for March delivery; orders taken for April 18th. A. O. & P. M. Forster, 2918 Otis St., Berkeley, California.

GOLDCROFT BUFF ORPINGTONS fulfill every standard and utility requirement. Won San Jose show first, second, third, pullet and cockerel. Eggs, $5.00 and $3.00 from winning pens; $2.00 from general flock; $12.00 per hundred. Stock for sale. Samuel Abrams, Los Altos, California.

PEERLESS WHITE WYANDOTTES — Our 200-egg strain, bred for years for show qualities and high egg production. 50 cockerels, 100 pullets for sale. Trios and mated yards. Eggs for hatching. Catalogue free. J. W. Atkinson, Box B, 130 Willard St., San Jose, Cal.

BABY CHICKS EVERY WEEK—Order early and get the date you want. White and Brown Leghorns, Rhode Island Reds, Barred Rocks, Anconas. Also hatching eggs. Safe delivery guaranteed. Write for circular. Stubbe Poultry Ranch and Hatchery, Palo Alto, Calif.

FINEST HATCHERY IN THE WORLD—CHICKS, White Leghorns, Rhode Island Settings—1000's—hatched right in our $60,000 brick and concrete hatchery from our Hoganized heavy layers. Stock, eggs. Pebbleside Poultry Farm, Sunnyvale, California.

RHODE ISLAND REDS—Rose and single comb Rhode Island Red hatching eggs, from 220-egg record layers. Cockerels, rose and single comb. Pens. Improve your color, type, and egg capacity. Write for mating list. Wm. Larm, 3915 39th Ave., Fruitvale, Calif.

PRUSSIAN HILL POULTRY RANCH—A few fine Blue Andalusian Cockerels, $3.00 and $5.00. Hatching eggs. Rocks, Minorcas, Andalusians, $2.00 for 15; Baby chicks at 20c., 25c., and 50c. each. Geo. I. Wright, Mokelumne Hill, California.

HATCHING EGGS—White Leghorns, Light Brown Leghorns, Dark Brown Leghorns, White Rocks, $2.50 per 15; $10.00 per 100. All bred to highest possible standard of beauty and utility. Mahajo Farm, P. O. Box 597, Sacramento, California.

SLY'S RHODE ISLAND REDS—Winners and layers. Hatching eggs from high-grade stock scientifically bred for exhibition and utility. Settings, $5.00, $3.50, and $2.00. Send for catalogue. Albert Sly, 1643 Middleton Place, Los Angeles.

OUR FINE FEMALES—Can supply you with eggs at 30c each and up that will hatch just what you want in general purpose fowls. Write for mating list. O. B. Hunt, White Rock Fancier, 1244 Burnett street, R, Berkeley, Cal.

SPRING CHIX—Rhode Island Reds, Barred Rocks, Brown and White Leghorns, from Hoganized stock, bred to lay. Satisfaction and safe delivery guaranteed. Tobener Poultry Ranch, Washington Ave., San Jose, Calif.

FOR SALE—We have a pen of six, five and better fingered White Leghorn hens and a four-fingered cock, all beauties. A chance to breed a three hundred-egg hen. Will receive offers. C. B. Atterbury, Turlock, California.

S. C. RHODE ISLAND REDS EXCLUSIVELY—"Pacific Coast Aristocrats." Hoganized flock. Booking orders for day-old chix and hatching eggs. Order early. Rosedale Poultry Farm, Motor A, Box 200A, Ceres, Calif.

BLACK MINORCA EGGS—$1.50 per 15. Special mating, $2.00. Edward A. Hall, Rt. 1, Box 39, Watsonville, California.

RHODE ISLAND RED EGGS for hatching. Mrs. Richard Holdridge, P. O. Box 282, Dixon, California.

BRONZE TURKEY EGGS—No more eggs till further notice. Albert M. Hart, Clements, California.

FAWN RUNNER DUCK EGGS—$1.25 per setting. Mrs. M. Lopez, Lathrop, Cal.

WANTED—Three young Buff Rock roosters. State price. Forest Martin, Ceres.

YOUR RARE OPPORTUNITY!! Eggs from 180-290 egg strain, trapnested White, Brown Leghorns; White Barred Rocks; Reds; Anconas; Minorcas. Settings, $1.25, $1.50, $2.00; $7.00, $8.00, $10.00 per 100. Worth twice as much. Few fine males, trios, pens, hens, pullets (near half price) clearing customers $5.00 yearly. Reason! Incubators overrun. Order direct or circular with proof—free. Chicks: Thousands reasonable 2 weeks after ordered, often at once. J. Beeson, Pasadena, Cal.

BARRED ROCKS SUPREME—Eggs—Ribbons. Won first on pen Los Angeles, 1919. Special price on eggs from my prize-winning egg-laying strain, $3.50 per 15 eggs. E. T. Lyans, 5906 So. Grand, Los Angeles.

SANTA CLARA VALLEY HATCHERY has the chicks for you from six different standard breeds, all bred for egg yielders. Can furnish references from my old customers if desired. Lincoln Ave., San Jose, California.

RHODE ISLAND REDS—Best all-purpose bird. Oakland show. First cock, second cockerel, fifth pullet on four entries. Hatching eggs. Prices for asking. John L. Reed, Route C, Box 36-B, San Jose, California.

BABY CHICKS—Hoganized White Leghorns, utility Rhode Island Reds, Barred Plymouth Rocks, Anconas, and Blue Andalusians. Free circular. McDonald Poultry Ranch, King Road, San Jose, California.

S. C. WHITE LEGHORN EGGS for sale, from heavy-laying, prize-winning strain, headed by males from 280-egg stock, range raised. Setting, $1.50. Hundred, $8.00. Mrs. Sanders Hayes, Longvale, Cal.

CROLEY'S RED STAR CHICK FEED—California's standard Baby Chick Feed for twenty-five years. Manufactured by Geo. H. Croley Company, Inc., 8th and Townsend Sts., San Francisco, Calif.

BABY CHICKS—Hatched from our S. C. White Leghorns, a result of many years' careful selection and breeding. San Jose Poultry Yards, Fifteenth and Margaret streets, San Jose, California.

BABY CHICKS—From Hoganized breeders, 180-egg type and up. White Orpingtons and Sicilian Buttercups. Order early for future delivery. M. S. Woodhams, San Mateo, Calif.

BABY CHIX R. I. REDS
My specialty. Bred for eggs, size, color. Hens on free range means strong chix. Price right. Denton Poultry Yards, Box 360, Campbell, Cal.

MODEL POULTRY FARM—White Leghorn specialists. Our fifteenth year. Baby chix and hatching eggs for sale. Our prices are right. W. C. Smith, Prop., Corning, Calif.

SELECTED — S. C. Leghorn and Barred Rock eggs for hatching. Hens typed to lay 200 to 260 eggs per year each, $6.00 per 100; $1.50 for 15. Jay Maxwell, Madera, Calif.

BARRED PLYMOUTH ROCK EGGS for sale. Good range flock headed by cockerels from 260 to 290-egg stock. $1.50 per setting. Mrs. J. A. Vassar, Laytonville, California.

FOR SALE—Bourbon Red turkeys and eggs for hatching, $5.00 per setting of 13 eggs. Book your orders early. Albert E. Balmer, Alhambra Valley, Martinez, California.

EGG BRED—Buff, Brown, White Leghorns, Golden Campines, Dark Cornish. Winners wherever shown. Send for circular. Percy Ward, 3142 Ward St., Fruitvale, California.

EASTMAN'S "BRED-TO-LAY" Hoganized and trapnested Barred Plymouth Rocks. Baby chicks. Eggs; cockerels. Fairmead Poultry Farm, Fairmead, California.

SCHMITTY'S BARRED ROCKS leading at the showrooms as well as at winter laying. Write for 1919 mating list. Geo. Schmitt, Box 263, Corcoran, California.

BABY CHICKS—Booking orders for spring deliveries. White and Brown Leghorns, Rhode Island Reds, Barred Rocks. E. W. Ohlen, Campbell, California.

BARRED ROCK, WHITE ORPINGTON hatching eggs. Cockerels bred to win and lay. Mating list. R. P. Lutzi, 1217 20th Ave., San Francisco.

WHITE WYANDOTTES—Eggs for hatching from our heavy-laying, prize-winning stock, $3.00 and $5.00 per 15. R. W. Stawetski, Rt. B, San Jose, Cal.

BABY CHICKS (White Leghorns) shipped on approval before remitting. No weak ones charged for. Schellville Hatchery, Schellville, California.

BABY CHICKS—We have the large heavy-laying S. C. White Leghorns, severely culled last year. Send for prices. Tupman Poultry Farm, Ceres, California.

HATCHING EGGS—Buff Leghorns and Buff Orpingtons, $3.00 and $1.00 per 15 from good laying stock. M. E. Sayer, Caruthers, Cal.

CHICKENS, DUCKS, GEESE, GUINEAS, Pea Fowl, Pigeons. Wm. A. French, 545 W. Park St., Stockton, California. Stamps.

BUFF ORPINGTONS, BUFF DUCKS, BOURBON RED TURKEYS — The Ferris Ranch, Rt. 2, Box 144D, Pomona, California.

RABBITS.

RAISE RABBITS—Best rabbit book published and membership in the California Commercial Rabbit Association, with all back educational bulletins showing hutch plans, feeding schedules, medicine formulas, and educationals for following year, $2.50. H. A. Sanderson, Eagle Rock, Calif. Dept. C.

RABBITS FOR PROFIT—We pay top prices for rabbits raised from our stock. Our pedigree and utility strains make big money for you. For full information write, L. A. Rabbitry, Dept. P, Los Angeles, Cal.

NEW ZEALAND REDS—Registered pedigreed stock from prize winners. Bred does. Fine, dark-red bucks. Write your wants. E. Peppin, 86 Cambridge, San Leandro, Cal.

LOS ALTOS RABBITRY—Choice large utility New Zealand Reds. Write your wants. Satisfaction guaranteed. F. G. Wulzen, Los Altos, California.

SAN FONG RABBITS—15-16-lb. Steel and Gray Flemish Giants. Prize winners at San Jose and San Francisco. Sanborn Young, Los Gatos, Calif.

I STILL HAVE a number of healthy, vigorous, well bred, young Flemish Giant bucks at prices to close. Ask particulars. S. Arma, Byron, Cal.

RABBIT CULTURE AND STANDARD—Official standard description of the various breeds, 75 cents. Caldwell, Broadmoor, San Leandro.

NEW ZEALAND REDS—First-class utility breeding stock and young for sale. F. E. Caldwell, Broadmoor, San Leandro, Calif.

RAISE RABBITS FOR US—We supply the breeding stock. Send stamp for particulars. H. E. Gibson Co., Arcadia, Calif.

DR. B. HEARN, VETERINARIAN—Breeder New Zealand and Flemish Giant Rabbits. R. R. 2, Porterville, Calif.

APRIL IN THE POULTRY YARD.

April should be a busy month in poultry raising. Future success depends on good work now. Do not handicap the chicks by unnatural restrictions. Let them hustle around. Standard-bred chicks can rough it as well as mongrels—even better. Let the chicks have plenty of liberty and keep their quarters clean.

Head lice on chicks is one of the drawbacks from now on. No letup in fighting these pests should be allowed. There are many remedies on the market, but a little lard about the size of a pea rubbed thoroughly on the back of the head and neck is sufficient to rid the chick of these pests. This should be done after dark on a dry, warm night. Previous to this the coop, hen or brooder should be thoroughly treated.

It is a wise plan to begin culling the slow-growing weaklings this month. Those with prominent physical defects, such as very crooked tails, lameness or other deformities that will tend to handicap future development and egg laying, should be culled out; also get rid of all males just as soon as possible, except those that will be needed for breeding purposes.

Another thing to be avoided is overcrowding. A coop, brooder or colony house that was large enough to hold the baby chicks is not large enough after two or more months, depending on the breed and growth. It is absolutely necessary that the growing chicks have plenty of room to grow. The flock must be culled, and cockerels that are sufficiently large should be separated and disposed of. Chicks that have not shown proper growth should also be separated and leg banded. Many of these chicks, even the pullets, should be marketed. Only the strong, vigorous specimens should be retained as breeders and layers, as these are the only ones that can return a profit.

Production of infertile eggs is strongly advised. Infertile eggs not only keep better, but keep longer. The housewife should insist upon infertile eggs for preserving. Those who raise eggs for the market are making a great mistake by not removing the males from the flock. It has been proved that hens lay fully as well without the male. The cost of keeping the males should be considered, also the fact that early hatched, vigorous cockerels of this season will give better service for breeding next season than the old males, which should be disposed of.

After removing the male, observe the following rules: Have clean and sufficient nests; gather the eggs daily; keep them in a cool, dry place; market them as often as possible; do not market stray eggs that are found in haylofts, sheds, or out-of-the-way places unless positively sure that they are absolutely fresh; keep the small and very large eggs for home consumption. In this way a profitable demand for the eggs will be created.

VALUE OF RABBIT MEAT.

In most European countries rabbit meat is a staple food, but in America it is thus far only a delicacy. Perhaps it is because our people do not realize its food value, and the following table will be read with interest:

	Water.	Nourishing qualities.
Rabbit meat	59	41
Poultry	68	32
Beef	75	25
Veal	75	25
Pork	72	28

Gradually Americans are realizing that besides being a delicacy, rabbit meat is the cheapest meat that can be raised. Hares, rabbits and sheep are more free from disease than other farm animals, the death rate among domestic rabbits being only 5 per cent in 12 months. The rabbits also have the advantage of having no natural parasites, such as lice, ticks or fleas.

Thousands of persons could cut their meat bills in half by raising rabbits. They require no more room than their hutches occupy. One doe, in kindle at the beginning of the year, will, with her offspring, produce from 96 to 100 rabbits in 12 months. This means nearly 500 pounds of meat, equal in nutritive value to 580 pounds of beef, and it can be raised at a cost of 5 cents per pound. Here is food for thought.

STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., REQUIRED BY THE ACT OF CONGRESS OF AUGUST 24, 1912,

Of Pacific Rural Press, published weekly at San Francisco, Cal., for April, 1919.

State of California, City and County of San Francisco—ss.

Before me, a Notary Public in and for the State and county aforesaid, personally appeared Frank Honeywell, who, having been duly sworn according to law, deposes and says that he is the publisher of the Pacific Rural Press, and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management (and if a daily paper, the circulation), etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, embodied in Section 443, Postal Laws and Regulations, printed on the reverse of this form, to wit:

1. That the names and addresses of the publisher, editor, managing editor, and business managers are: Publisher, Frank Honeywell, San Francisco; editor, E. J. Wickson, San Francisco; managing editor, E. J. Wickson, San Francisco; business manager, Frank Honeywell, San Francisco.

2. That the owners are: (Give names and addresses of individual owners, or, if a corporation, give its name and the names and addresses of stockholders owning or holding 1 per cent or more of the total amount of stock.) Frank Honeywell, San Francisco, Cal.

3. That the known bondholders, mortgagees, and other security holders owning or holding 1 per cent or more of total amount of bonds, mortgages, or other securities are: (If there are none, so state.) None.

4. That the two paragraphs next above, giving the names of the owners, stockholders, and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company but also, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation has any interest direct or indirect in the said stock, bonds, or other securities than as so stated by him.

5. That the average number of copies of each issue of this publication sold or distributed, through the mails or otherwise, to paid subscribers during the six months preceding the date shown above is ..... (This information is required from daily publications only.) FRANK HONEYWELL.

Sworn to and subscribed before me this 3d day of April, 1919.

(Seal) H. F. HOBSON

Notary Public in and for the City and County of San Francisco and State of California.

(My commission expires June 26, 1922.)



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Then send for the latest KRESKY catalogue, 20. Our latest development of the Liberty Stove has 'em all beaten.

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Most poor layers are "OUT OF CONDITION" or have Colds, Roup, Bowel trouble, Sore head, Chicken pox, etc. GERMOZONE is the best remedy for all these disorders. At dealers or postpaid 75c, with 5 book Poultry Library. GEO. H. LEE CO., Dept. 428 OMAHA, NEB.

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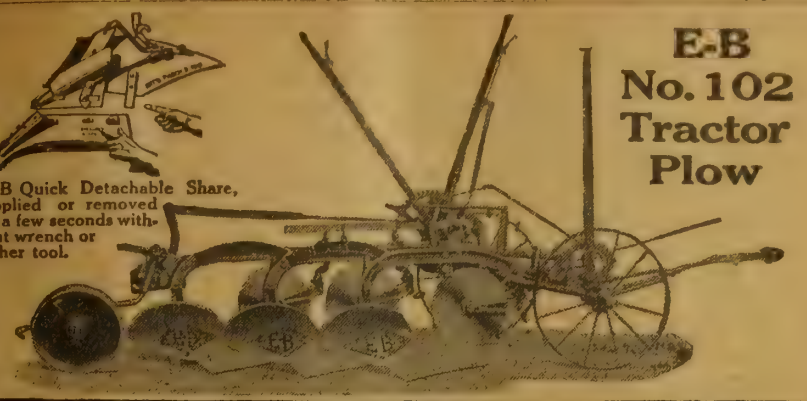
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E-B Sharp-Share Plowing means more soil turned, easier pull for the horses and, most important of all, *better crops*. It also assures more soil turned with less work on your part because of easy handling. No land side friction—lubricated bearings. Furthermore, E-B Sharp-Share Plowing allows free air circulation through the soil arteries, eliminates poisons, increases available plant food.

E-B No. 102 Tractor Plows, equipped with E-B Quick Detachable Shares, have yet to be equalled for quick, easy, profitable plowing. One pull of the lever locks or unlocks the E-B Share. It's a matter of five seconds to remove or replace a share. *Ask your dealer to explain the advantages of E-B Sharp-Share Plowing.*

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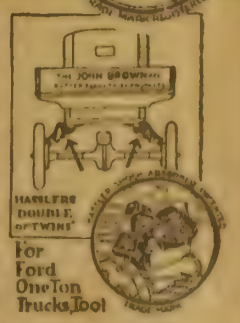
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FOUR whole months of driving at no expense to you for repairs or tires. Four whole months in which there will be no depreciation in your car. This is exactly what will happen when you equip your Ford Car or Ford One Ton Truck with Hassler Shock Absorbers. They mean a saving of at least 30% - in all of these costs - the equivalent of four months of driving. Hasslers accomplish these things so easily because they protect the vital parts of the machine from road shocks and vibrations. It doesn't seem like the same car—and you'll say that Hassler Shock Absorbers far more than pay for themselves in improving the riding qualities. They will convert your Ford into an easy-riding, comfortable car for any purpose, more satisfactory, more economical - a machine that will last two or three years longer. You can satisfy yourself regarding the value of Hasslers without risking a penny.



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Don't ride without Hasslers because someone tries to discourage you. They are a quality product worth their price. The Hassler dealer in your vicinity will put them on for 10 days' trial. Your money refunded if you say so. Write for name of dealer and Trial Blank.

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THE HOME CIRCLE

SONG.

Stay, stay at home, my heart and rest;
Home-keeping hearts are happiest;
For those that wander they know not where
Are full of trouble and full of care;
To stay at home is best.

Weary and homesick and distressed,
They wander east, they wander west,
And are baffled and beaten and blown about
By the winds of the wilderness of doubt;
To stay at home is best.

Then stay at home, my heart, and rest;
The bird is safest in its nest;
O'er all that flutter their wings and fly
A hawk is hovering in the sky;
To stay at home is best.

—Longfellow.

REST ROOMS FOR COUNTRY WOMEN.

A very much needed comfort for country women are rest rooms in the towns in which they shop. Merchants who cater to country trade have been very lax in providing the conveniences for their patrons that all city stores consider necessary for the comfort of the shopping public.

The members of the Farm Home Department of the Farm Bureau of San Joaquin county have been deliberating upon the advisability of providing rest rooms to be under the supervision of the Farm Bureau.

Rest rooms have been established in over three hundred counties in the United States to meet the needs of the country woman in town on business. Their financial support has been accomplished through the co-operation of city and county officials, chambers of commerce and the merchants of the city.

Mrs. D. O. Castle, chairman Farm Home Department of San Joaquin county makes a plea for support in the following words: "May we have the warm hand-clasp of the city that we may become united in a common purpose for the good of all the people of San Joaquin county."

"It ain't the guns nor armament, nor fund that they can pay,
But the close co-operation that makes them win the day.
It ain't the individual, nor the army as a whole,
But the everlastin' team-work of every bloomin' soul."

—Kipling.

PROTECT GOOD CLOTHING.

At this time of year, when many of us are discarding heavy clothing, it needs to be carefully looked over if it is going to be free from moth holes next fall.

Moths flourish in darkness and undisturbed spots, so the first thing to do is to get all woolen garments out on the line on a sunny and preferably windy day. Winter coats, furs, woolen blankets, heavy underwear must all be well aired before putting away.

The closet or boxes to which these garments are to be returned must be thoroughly cleaned, washed with carbolic water, or sprayed with benzine or gasoline.

All spots must be cleaned, for even if not attacked by moths there is danger of rotting out the goods.

Many people have cedar chests either built into the house or a separate piece of furniture for storing woolens, and others use drawers and trunks, with a plentiful supply of moth balls. But a very good modern idea is to have separate bags or compartments lined with tar or cedar paper. These bags may be purchased in varying sizes and each bag has a hanger, so the garments are kept in shape.

An ordinary bureau may have some of its drawers lined with camphor or cedar paper to make them insect proof. This paper should be cut to fit the drawer, with plenty of room to lap by and then be well pasted.

If you own valuable furs, it pays to take the best of care of them and if you are not sure you can do it at home they should be sent to one of the professional furriers, where the furs are kept in cold storage, and their safe return to you guaranteed.

TO WASH CORDUROY.

Corduroy skirts can be made to look like new if, after washing in luke-warm water and a white soap solution, you do not wring the skirt but hang it up to dry inside out. After the skirt is thoroughly dry, put on the ironing board and with a very stiff whisk broom brush both with and against the nap. This brushing restores the corduroy to its original velvet appearance. This method may be successfully used on children's coats and suits.

LEMON CUSTARD PIE.

Grate the yellow rind from a large lemon, mix it and a tablespoon of flour with one cupful of sugar, squeeze on the juice of the lemon, add the well-beaten yolks of three eggs, one cupful of milk. Pour into a pastry-lined pie plate and bake. When done, whip the whites of the eggs stiff wth a little sugar, spread over the top and brown lightly.

REFINISHING FIXTURES.

Those of you who have brass or brass-finished lighting fixtures and have been annoyed at their tarnished appearance, will be glad to know that at any good fixture house you may have these shabby fixtures refinished to look as good as new. The charge for this is quite moderate and the work can be done rather quickly.

AFTER OILING THE MACHINE.

If necessary to use the sewing machine immediately after oiling it, even though it is thoroughly wiped, there is danger of the oil feeding down on the material. To overcome this, tie a narrow strip of absorbent cotton tightly around the needle bar just above the needle flank. This will absorb all the oil and will not interfere with the sewing.



How the Wonderful New KEROGAS Burner Makes an Oil Stove Act Like a Gas Range

A large number of reliable makes of oil stoves are now equipped with the new patented KEROGAS Burner.

You will find that oil stoves using the KEROGAS Burner give the same cooking results and are subject to practically the same heat control as a gas range.

Burning common kerosene or coal oil, vaporized and combined with air, the KEROGAS Burner produces a clean, powerful, double flame concentrated directly on the cooking vessel. And by simply turning a little control wheel you get just the degree of heat you want—quick—slow—intense or simmering. And all with a very small fuel expense.

There are enough different makes and styles of oil stoves now equipped with KEROGAS Burners to make it unnecessary for you to put up with one which lacks this marvelous new device.

Cutting Cooking Time—Saves Fuel

By having the heat under perfect control you can cook meals quicker and better. This insures cooking results. And because the KEROGAS Burner combines a high percentage of air with the vapor from common kerosene or coal oil, it is clean fuel and its cost is surprisingly low.

Built Strong to Last Long

Durability is the true test of economy and the KEROGAS Burner is built to endure. It is made from one piece of genuine brass, rust-proof and no-leak, its mechanism is simple. There are no complicated parts to get out of order or require adjustment. It should last as long as the stove itself.

Look for the Word "KEROGAS" on the Burner. It is An Evidence of Quality In the Stove That Carries It

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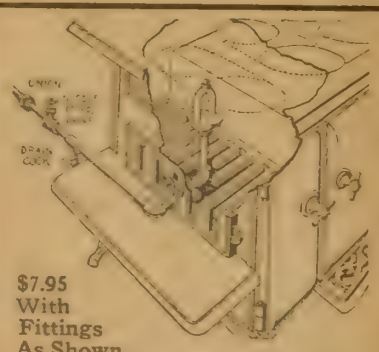
A Thousand Miles Away

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COMPLETE HOME FURNISHERS
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LOS ANGELES, CAL.

Our store comprises five adjoining buildings,—35 floors—exclusive of warehousing and manufacturing industries,—mattress-making, upholstering, carpet, window-shade and drapery work-rooms. An entire factory is required to supply demand for our famous "Quality-Reed" furniture.



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PREMIER BURNER $5.00

"Simplest thing in the world" for Home, Office, Factory, Brooder House, etc. Fits any stove. A boy can place it—lights in a minute. Heats, Bakes perfectly. Send for Circular "B".

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PREMIER BURNER CO., 246 SO. SPRING STREET LOS ANGELES, CAL.

THE DIFFICULT OMELET.

Many housewives never attempt to make an omelet, for they consider them so difficult. However, if the foundation formula is mastered, there need be no fear as to results, even in the more fancy kinds.

The first essential is a perfectly smooth pan, and a careful cook will have a pan which is kept exclusively for this purpose.

The second essential is proper cooking; if the pan is too hot, the mixture will scorch, which will spoil the flavor.

The beaten omelet should not be made in too large quantities; four eggs are enough to use at one time. Beat the egg whites until stiff and dry, then the yolks until creamy; add one tablespoonful of cold water for each egg used to the yolks, season with salt and pepper and fold the stiffly beaten whites into this mixture. Melt two tablespoons butter or butter substitute in the heated pan and pour in the omelet.

Cook over a low fire until the omelet is full of bubbles and is delicately browned on the under side. Then place on the top grate of a moderate oven and bake until dry on top. A too hot oven will make the omelet tough. Remove from the oven, cut partly through the center, fold over and place on a warm platter. Serve at once.

If a sweet omelet is desired, add a tablespoon of sugar to the egg yolks. All kinds of left-overs may be added to an omelet or a cheese sauce may be poured over for greater food value or a tomato sauce for variety.

For dessert, fold half a glass of jelly into the omelet, sprinkling the top with powdered sugar or add strawberry preserves or the fresh fruit in season. Pour the liquid of the fruit around the omelet.

FASHION NOTES.

Silk cable stitching is one of the preferred modes of trimming.

The smartest suit coats have narrow shoulders and tight sleeves.

Floating panels of light material are weighted down with velvet ribbon.

Many of the afternoon dresses have little aprons of silk or taffeta as a decoration.

White silk jersey is shown for evening gowns and is very effective trimmed in jet.

Frillings of taffeta are used for trimmings on simple dancing frocks of chiffon or voile.

Afternoon dresses of organdie must have hats, bags and parasols to match to be very smart.

Suit skirts are straight and narrow, but the skirts of dresses grow narrower toward the ankles.

Short sleeves are beginning to make their appearance again, both in frocks and separate blouses.

Sleeves on dressy suits are mostly long, loose and bell-shaped—finished with a piquot edge or a bit of beading.

Capes and dolman wraps maintain their popularity and can be found in dressy materials or practical serges.

Ribbon hats are just as popular this spring as ever—they are sometimes combined with straw very effectively.

One of the new fabrics is a mercerized tricolette, a copy of the real silk tricolette. This has a lustrous, silky finish and drapes gracefully at a very moderate price.

A new silk sport skirt model has the upper third of the skirt of georgette crepe of the same color as the silk. This would be a good style to use with a narrower silk, having the silk run around instead of up and down.

SIMPLE SCHOOL DRESSING.

In the bay section some of the women's clubs have taken up the matter of dress reform for girls in high school. They are proclaiming that frilly furbelows, silk stockings, low-necked dresses and powder have no place in the school room and that these must all give way to girlish modes of simple designs, minus frills and fancies.

Too great an admiration of moving picture artists and too little supervision of school clothes on the part of the mothers is considered the cause of the prevalent over-dressing.

OLD SILVER.

Silver is so high in price now that many jewelers are offering to pay the market price for old sterling ware of any sort. This affords one an excellent opportunity to turn in discarded silver for new articles.

KEROSENE FOR CLEANSING.

For porcelain ware, such as bath tubs and wash bowls, kerosene is excellent, giving a bright, glossy finish. It is also good for cleaning nickel-plate, but for that purpose the cloth should only be slightly dampened with it. Squares of cheese cloth or other soft cloths may be made into dustless dusters by dipping in kerosene, wringing out very dry, and then hanging in the air until perfectly dry.

Kill All Flies! THEY SPREAD DISEASE

Place I anywhere. DAISY FLY KILLER attracts and kills all flies. Neat, ele.n, ornamental, convenient and cheap. Lasts all season. Made of metal, can't spill or tip over; will not soil or injure anything. Guaranteed.



DAISY FLY KILLER at your dealer or 5 by EXPRESS, prepaid, $1.25.

HAROLD SOMERS, 150 De Kalb Ave., Brooklyn, N. Y.

MORE LIGHT THAN 20 OIL LAMPS

AT LAST—the light of lights—A beautiful lamp that lights with common matches just like oil lamp, but makes and burns its own gas from common gasoline, giving a brilliant, steady, restful, white light of 300 candle power.

MOST BRILLIANT LIGHT MADE

Brighter than the brightest electricity. More light than 20 oil lamps. Cheapest and best light made. Costs less than one-third of a cent per hour. Safer than the safest oil lamp. The



COLEMAN QUICK-LITE

No wicks to trim—no globes to wash. No dirt, no grease, no glare or flicker. Absolutely safe. Fuel can't spill—no danger even if tipped over. —will last a lifetime.

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216-18-20 East 41st St.
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Los Angeles.

The Chi-Namel GRAINING PROCESS



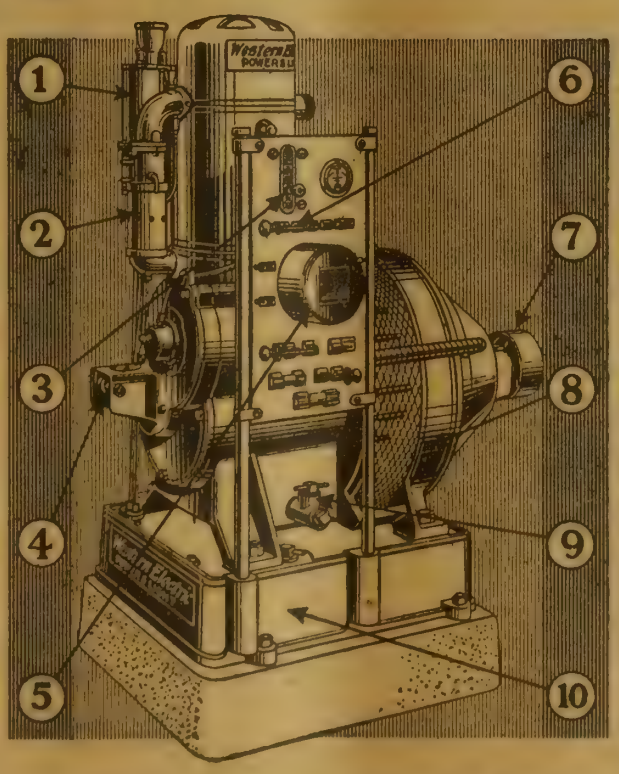
By these simple operations anyone can apply beautiful hardwood effects over old soft wood or previously finished floors, doors, woodwork and furniture. Washable; heelproof; looks and wears like real hardwood finish. Costs about 3 cents per square foot. Directions on each can. Learn to grain in 5 minutes at

THE CHI-NAMEL STORE IN YOUR LOCALITY

where you are assured courteous interest and will find Chi-Namel quality-finishes for everything in the home, all made of self-leveling, water-proof, Chinese Oil by our secret process. Guaranteed for service and easiest for amateurs to apply.

THE OHIO VARNISH COMPANY, CLEVELAND, O.

Western Electric POWER and LIGHT



Ten Features that Make This Plant Dependable

1. Vacuum feed system; same as on high grade automobiles.
2. Air preheater; completely vaporizes the kerosene.
3. Pushing this switch down starts the engine.
4. Throttling governor; keeps the engine speed practically constant at all loads.
5. This device automatically stops engine when battery is fully charged.
6. Moving this switch makes all the engine power available for operating other machinery.
7. Pulley; for operating other machinery.
8. 1500 watt generator direct connected to engine.
9. Oil for splash-lubricating system supplied here.
10. Kerosene supply kept in this tank. Entire plant stands about 4½ feet high. Storage battery consists of 16 cells.

A fine piece of machinery

Fine quality is evident in every part of this Western Electric Direct Connected Plant. Its ten important features are outlined in this advertisement.

If you are any judge of machinery

—be sure to read these ten points. They will mean much to you: you will want us to tell you more about them and all about several others that make this plant distinctive in many ways.

If you buy machinery solely by name

—then consider that the Western Electric Plant is guaranteed by an organization of nearly fifty years electrical experience; one with unlimited resources for making you entirely satisfied long after the sale.

A Western Electric man near you will demonstrate this plant and explain how easy it is to have the safety and convenience of electric light and the dollars-and-cents help of electrical power for farm work.



Write for booklet No. PRR 15, giving full details

WESTERN ELECTRIC COMPANY
INCORPORATED

680 Folsom St., San Francisco, Cal.
301 East Eighth St., Los Angeles, Cal.

SAN FRANCISCO

San Francisco, April 9, 1919.

WHEAT.

The estimates of the condition of the winter wheat crop of the nation on April 1, just issued by the Department of Agriculture, indicates the enormous yield of 837,000,000 bushels, which at the Government price of $2.26 places the crop's value at $1,891,620,000. This crop, if no unfavorable condition develops between now and harvesting, will be 152,000,000 bushels greater than the previous record crop of 1914.

The following prices were announced by the Federal Grain Corporation last year and are still in effect. They are figured f. o. b. San Francisco, Los Angeles, Seattle, Tacoma and Portland and guarantee the grower a minimum of $2 f. o. b. shipping point:

Per bushel—	
No. 1 hard	$2.20
No. 2	2.17
No. 3	2.13
No. 1 soft	2.18
No. 2	2.15
No. 3	2.11
Club or Sonora, No. 1	2.16
do, No. 2	2.13
do, No. 3	2.09
Recleaned for seed, per ctl.—	
California Bluestem	$4.15@4.25
Early Baart	4.15@4.25

BARLEY.

Barley continues strong at unchanged quotations for spot. May option is quoted at $2.51 to $2.52, while December ranges from $2.20 to $2.25. Local demand continues light.

Choice feed, per ctl.....$2.35@2.37½

OATS.

There was no change in oats this week. Prices are maintained by the strength of the barley market, but local demand appears to be at low ebb.

Red feed, per ctl	$2.25@2.30
Red for seed	2.50@2.70
Black for seed	Nominal
Recleaned Red or Black for seed	$3.00@3.10

CORN.

California yellow corn was quoted somewhat higher this week for the best. For not thoroughly dried or rain damaged corn prices range much lower.

California	$2.25@2.45
Egyptian, choice	Nominal
Milo	Nominal

HAY.

Receipts of hay for the past week were 1612 tons, which is about the same as last week. The market is extremely dull. Trade continues light in the city and receipts are moved with difficulty. There has been some demand for alfalfa in the interior, which caused a firmer price for alfalfa hay which has not been damaged. If the present pleasant weather prevails, it is predicted that the first cutting of the new crop of alfalfa will be on this market by the end of the present month.

No. 1 wheat, per ton	$17.00@19.00
No. 2 wheat, per ton	13.00@16.00
Choice tame oat, per ton	17.00@19.00
Wild oat, per ton	12.00@15.00
Barley hay, per ton	12.00@15.00
Alfalfa, per ton	16.00@20.00
Stock hay, per ton	12.00@14.00
Barley straw, per bale	.50@ .80

FEEDSTUFFS.

Cracked corn advanced a dollar to $59@61 this week. Otherwise there were no changes in millstuffs.

Cracked corn .....$59.00@61.00

POTATOES, ONIONS, ETC.

Potatoes and onions advanced early in the week and maintained their higher quotations, notwithstanding some falling off in the demand for shipping. It is believed that this demand will return and both may go higher. Asparagus was higher for the best, although receipts show a constant increase. Canners are bidding against the local market for asparagus and it is expected that present prices will be well maintained throughout the season. Rhubarb is in plentiful supply and is selling at a lower level. Select lettuce maintained last week's prices. Summer squash and tomatoes are both more plentiful and sold at lower prices. Green onions were higher this week, selling at $1 to $1.25 for the River and $2 to $2.25 for the Bay description. Sweet potatoes were lower on a falling off in demand.

String beans	Nominal
Peas	7@10c
Lima beans	None
Carrots, per sack	$2.00@2.25
Asparagus	6@12½c
Rhubarb, Strawberry, box	$1.00@1.50
Cucumbers, hothouse, box of 30	3.00@3.50
English, per dozen	$2.50@2.75
Eggplant, per lb	None
Lettuce, per crate	$2.25@2.50
do, Watsonville	1.00@1.50
Celery, crate	Nominal
Spinach, crate	$0.50@1.00
Tomatoes, Southern, per crate	None
do, Mexican	$1.75@3.00
Sprouts	Nominal
Summer squash	$2.00@2.50
Potatoes—	
Rivers	$2.00@2.75
Oregon	2.25@2.90
Washington	1.95@2.25
Idaho	2.25@2.65
Sweets, per sack	4.50@5.00
Onions, Warehouse Stock—	
Yellows	None
Australian Browns	$3.50@4.00
Green River	1.00@1.25
Green Alameda	2.00@2.25
Garlic	.50@60c

BEANS.

The Food Administration Grain Corporation announces that a considerable improvement in the bean situation is looked for as it is expected that foreign buyers will soon be in this market. The dealers found an increase in the demand, especially for whites, pinks and garbanzos, and as a consequence the prices of these varieties were advanced slightly. There was no change in the prices of the others.

Bayos, per ctl	$6.25@6.40
Blackeyes	3.25@3.40
Cranberry beans	4.50@4.90
Limas (south, recleaned)	6.75
Pinks	5.25@5.40
Mexican Reds	4.75@5.25
Tepary beans	2.50@2.75
Garbanzos	11.00@11.25
Large whites	5.50@5.75
Small whites	6.60@6.75

POULTRY.

As predicted last week, no car of Eastern poultry came in during the past week. One car is in sight for next week, but if the high prices now prevailing in the New York market continue there is little likelihood that it will reach this market. The Jewish holidays next week will be followed immediately by the Easter celebration, for which there will be a good demand for poultry, especially hens and young roosters, and it is anticipated that prices will not be materially lower until after the latter holiday. Turkeys were marked up this week, with few arrivals. Small broilers were not in demand and were the only description which sold at a lower figure than the preceding week.

Turkeys, live, young spring, lb	36@38c
do, old	34@36c
do, dressed	42@44c
Broilers, 1½ to 2 lbs	50@55c
do, 1¼ lbs	43@45c
do, ¾ to 1¼ lbs	38@40c
Fryers	50@52c
Hens, extra, per lb., colored	42@45c
do, Leghorn	42@45c
Smooth young roosters, per lb. (3 lbs. and over)	45@48c
Old roosters, colored, per lb	25c
Geese, young, per lb	38@40c
do, old, per lb	38c
Squabs, per lb	65c
Ducks	38@40c
do, old	38c
Belgian hares	17@20c
Jack rabbits	$3.00@3.50

BUTTER.

Butter has been somewhat erratic this week, jumping up 3c at the opening and then dropping to 1c below the last week's close. It is reported that two cars of butter were shipped to New York during the week, but unless the New York market becomes steadier such shipments are generally regarded as risky. The falling off in price Tuesday and Wednesday is said to be due to the uncertain condition of the Eastern market, which makes shippers hesitate to take the risk of shipping, although the differential in prices seems to warrant it. Some 1200 or 1500 pounds of butter went into local storage this week, but it is stated that this is not to be left in the ice for any length of time and was mainly for the purpose of chilling the butter. The warm weather of the past few days has made the local dealers anxious to clear their floors and this had its effect in lowering prices.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extra	58	58½	58½	58½	55½	54
Prime firsts	Nominal					
Firsts	Nominal					

EGGS.

Eggs continue strong and even at present high prices about a thousand cases of eggs per day are going into storage. This would indicate that dealers are anticipating a continuation of high prices during the rest of the year. However, it is stated that about 160,000 pullets are being brought off weekly from the incubators and that they will be ready to produce eggs this fall in competition with fresh and storage hens' eggs. Some of the poultrymen, however, contend that few hens were sold on the market last year and that this year a large number of them will have to be thrown on the market, as they are getting too old for the best production of eggs. This, they say, will mean fewer hens' eggs and a firm and higher market.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	42½	43	43	43	43	43
Extra 1sts	Nom.	—	—	—	—	—
Firsts	Nominal					
Extra pullets	41	41	40	40½	41½	42

CHEESE.

There was little interest in cheese this week and small changes in quotations. Fancy California flats advanced 1c and the Firsts receded ½c. The Oregon product showed no change.

Fancy California flats, per lb	29c
First	26c
Oregon triplets, fancy	34½c
Oregon Y. A. fancy	39c
Monterey cheese	22½@25c

FRESH FRUITS.

Apples continue unchanged, while winter pears are somewhat higher. Loquats were higher. Not enough strawberries are yet coming in to make a market, although some of the Los Angeles product is beginning to arrive. It brought from $3 to $3.50.

California apples	$2.50@3.75
Northwest apples	3.00@4.00
Winter pears	2.50@4.00
Persimmons	None
Loquats, per lb	12½@15c

CITRUS FRUIT.

Oranges were a little higher for the best this week, selling at $5.50. Otherwise there were no changes in citrus fruits.

Oranges, navels	$3.50@5.50
Mandarins	3.00@3.50
Tangerines	2.50@3.50
Lemons, fancy	4.00@4.50
do, choice	3.50@4.00
do, standard	3.00@3.50
Lemonettes	2.00@3.00
Grapefruit	2.50@3.50

DRIED FRUITS.

It is stated that the prospects for the 1919 prune crop are that it will be about 50 per cent greater than last year. The buyers are still in the field and are tying up the crop wherever possible. While the bulk of sales this week was made at 11½c, some are reported as high as 12c. Buyers are now offering 13c for peaches and are reported to have contracted for a considerable amount at that price. There has not been much bidding on the apricot crop as yet, although it is said that about 200 tons of the Ventura crop has been contracted for at 15c.

RICE.

It is estimated that this year's crop of rice will break all records, as 140,000 acres have been planted. There are some 400,000 sacks of last year's crop damaged by rain in the various warehouses, and an effort is being made to dispose of it in Europe. The 1917 California crop, nominal; 1918 crop, when harvested, per 100 lbs.: Paddy rice, Nos. 1 and 2, $4.32; 3d and 4th grades, $4.16; clean, fancy Japan, 7½c per lb.; choice Japan, 7¾c per lb.; fancy second heads, 6⅞c per lb.; screenings, 5⅝c per lb.; brewers, 5¼c per lb.; rice polish, $50 per ton, car lots; rice bran, $30 per ton, car lots; early prolific, $4.47.

HONEY.

The honey situation shows no change from last week, except that local dealers say they would not pay more than 10c for last year's crop. No sales at this price are noted, however.

HIDES.

Stocks of hides and skins in the United States on December 31, 1918, as given by the Bureau of Markets in the first report on hides issued by the Department of Agriculture, are: Cattle hides, both domestic and foreign, amounted to 6,398,234 pieces; sheep and lamb skins totaled 14,132,229; pig skins, 260,461 pieces; and 1,440,961 pounds of strips. Horse hides, including fronts, butts and shanks, amounted to 401,613 pieces; and calf and kip skins, 2,199,266 pieces.

Wet salted—Native steers and cows, 50 lbs. up, 16@18c; 30 to 50 lbs. up, 16@18c; kips, 15 to 30 lbs., 21@22c; calf and veal, under 15 lbs., 31@32c; bulls and stags, 13@14c.

Horse hides—Wet salted, large prime, each, $5@5.50; medium prime, $4@4.50; small, $2.50@3.50; dry, large, prime, $2.50@3; dry, medium, $1.50@2.50; colts and ponies, 50c@$1.

WOOL.

The stocks of wool in Government hands are being sold out as fast as buyers can be found. There are no established local quotations, but the following figures are those of scattered sales:

Mendocino	30@35c
Humboldt	40@42½c
California valley	20@25c
San Joaquin	18@20c

COTTON.

The New York cotton market closed at the opening of this week with moderate reactions at a net advance of 25 to 30 points. Cotton futures opened steady.

May, old	24.90c
do, new	26.40c
July, old	23.40c
do, new	24.25c
October, old	21.75c
do, new	22.25c
January, new	21.70c

THE MARKET REPORTS

Figures Given Are Independent and Reliable.
Prices Quoted as Paid to Producers.

Special Livestock Market Report

San Francisco, April 9, 1919.

In contrast with the fluctuating market in the East, the livestock trade runs along with almost a monotonous evenness. The demand for medium grade stock is good, but not strong, and indications point to another decline in price.

Steers—
- No. 1, weighing 1000@1200 lbs..12@12½c
- do, weighing 1200@1400 lbs...12@12½c
- do, second quality.....11@11½c
- do, thin .....9@10c

Cows and heifers—
- No. 1.....9@10c
- do, second quality.....8@9c
- do, common to thin.....4@6c

Bulls and stags—
- Good .....6½@7½c
- Fair .....5½@6½c
- Thin .....4@5½c

Calves—
- Lightweight .....11½@12½c
- Medium .....10½@11½c
- Heavy .....8@10c

SHEEP—Sheep and lambs are not a strong feature of the livestock market, the equation of supply and demand being little disturbed for some time past. The lambs offered are in good condition and bring the top figures.

Lambs	13@14½c
Yearlings	12@12½c
Sheep, wethers	11@11½c
do, ewes	8½@9½c

HOGS—Good hogs are not coming forward as fast as butchers and packers would like, and the prevailing high market is strongly held.

Hogs—
- Hard, grain-fed, 100 to 150.....17½c
- do, 150 to 250.....18c
- do, 250 to 300.....17½c
- do, 300 to 400.....17c

Los Angeles, April 8, 1919.

CATTLE—All quotations remain the same as a week ago. This market is reported very dull. Demand is fair.

Per cwt, f. o. b. Los Angeles.

Beef steers, 1000@1100 lbs	$11.00@13.00
Prime cows and heifers	9.50@10.50
Good cows and heifers	8.00@9.00
Canners	$6.00

HOGS—This market remains firm. Prices the same as a week ago, and the demand fair.

Per cwt., f. o. b., Los Angeles:

Heavy, avr'ging 275@350 lbs	$16.00@17.50
Mixed, avr'ging 225@275 lbs	17.00@18.00
Light	18.00@18.50

Rough docked 20 lbs., piggy sows 40 per cent.

SHEEP—There is no change of prices to report in this market since last week. The quality is fair and sales good.

Per cwt. f. o. b. Los Angeles:

Prime wethers	$9.50@10.50
Prime ewes	8.50@9.50
Yearlings	10.00@11.00
Lambs	14.00@15.00

DRESSED MEATS.

STEERS—No. 1, 20@20½c; second quality, 10@19½c.
COWS AND HEIFERS—17@18½c.
CALVES—As to size, etc., 17@20c.
LAMBS—Suckling, 28@30c; yearling, 24@25c.
SHEEP—Wethers, 18@20c; ewes, 16@18c.
HOGS—26@27c.

Portland, April 7, 1919.

CATTLE—Strong; receipts, 1328. Steers, best, $13@14.50; good to choice, $11.50@12.50; medium to good, $10@11; fair to good, $9@10; common to fair, $8@9; good to choice cows and heifers, $10.50@12.25; medium to good, $7@8; fair to medium, $5@6; canners, $3.50@4.50; bulls, $6@8.50; calves, $9.50@13.50; stockers and feeders, $7@10.

HOGS—Higher; receipts, 2682. Prime mixed, $19@19.25; medium mixed, $18.75@19; rough heavies, $17@17.25; pigs, $16.25@17.25; bulk, $18.85@19.

SHEEP—Steady; receipts, 435. Prime lambs, $16@17; fair to medium, $14@15; yearlings, $11@12; wethers, $9@10; ewes, $6.50@10.50.

EASTERN.

Chicago, April 7, 1919.

HOGS—Receipts, 44,000; opened unevenly, 5c to 15c higher; closed with advance lost. Early top, $20.50; quotable top, late, $20.35; estimated tomorrow, 25,000. Bulk of sales, $20.10@20.30; heavy-weight, $20.20@20.35; medium-weight, $20.10@20.35; light-weight, $19.75@20.30; light lights, $18.40@20; sows, $18@19.75; pigs, $17.50@18.50.

CATTLE—Receipts, 16,000; beef steers, mostly 15c to 25c lower. She stock, bid, 25c lower; bulls and feeders, steady; calves, 25c to $2.50 higher; estimated tomorrow, 14,000. Heavy beef steers, $11.50@20.40; light beef steers, $10@18.50. Butcher cows and heifers, $7.40@15; canners and cutters, $5.55@10; veal calves, $14@16.50; stocker and feeder steers, $8.25@15.50.

SHEEP—Receipts, 18,000; shorn lambs, 25c lower; wooled lambs, 25c to 50c lower. Sheep, steady; yearlings, 25c lower; estimated tomorrow, 12,000. Lambs, 84 pounds or less, $18.25@20; 85 lbs. or better, $17.75@20; culls, $14@17.75. Ewes: Medium and good, $12.25@15.75; culls and common, $6@12.25.

WEEKLY BUTTER AVERAGES.

Cents per pound for Extras.

Week Ending		San Francisco 1918	San Francisco 1919	Los Angeles 1918	Los Angeles 1919
Jan.	2	50.40	66.10	50.16	63.16
"	9	51.08	61.50	50.00	64.00
"	16	52.33	61.70	50.50	64.16
"	23	52.50	55.83	52.00	62.16
"	30	53.00	44.91	51.33	49.00
Feb.	6	50.80	43.58	49.66	47.33
"	13	52.00	46.80	48.00	47.66
"	20	51.41	51.58	48.00	53.16
"	27	51.30	53.90	49.33	55.00
March	6	50.66	56.16	50.00	59.00
"	13	51.16	55.58	49.50	58.00
"	20	47.83	54.41	47.00	56.00
"	27	46.30	56.41	43.50	58.00
April	3	43.16	54.23	42.16	55.50
"	10	39.25	57.16	39.50	56.00
"	17	39.00	....	36.83	....
"	24	40.50	....	38.16	....
May	1	40.83	....	39.00	....
"	8	40.66	....	39.00	....
"	15	40.46	....	39.00	....
"	22	44.33	....	41.00	....
"	29	42.30	....	39.00	....
June	5	43.90	....	41.50	....
"	12	44.92	....	40.83	....
"	19	46.50	....	41.75	....
"	26	47.42	....	43.00	....

WEEKLY EGG AVERAGES.

Cents per dozen for Extras.

Week Ending		San Francisco 1918	San Francisco 1919	Los Angeles 1918	Los Angeles 1919
Jan.	2	52.80	75.60	48.16	69.50
"	9	60.91	69.91	50.66	66.66
"	16	65.66	58.70	55.00	62.41
"	23	65.66	52.58	58.00	54.66
"	30	61.25	48.75	54.00	52.33
Feb.	6	58.50	42.00	51.66	43.00
"	13	44.40	40.90	44.83	37.80
"	20	44.75	36.41	40.83	39.33
"	27	42.40	37.40	39.58	38.00
March	6	36.83	37.58	35.00	37.00
"	13	37.91	37.16	38.00	37.00
"	20	40.66	38.16	39.03	42.00
"	27	39.50	40.41	40.00	42.00
"	10	37.58	42.91	36.33	45.00
"	10	37.58	....	36.33	....
"	17	39.16	....	36.83	....
"	24	40.50	....	39.00	....
May	1	41.66	....	39.33	....
"	8	40.08	....	37.00	....
"	15	39.16	....	38.83	....
"	22	40.50	....	39.00	....
"	29	38.66	....	37.41	....
June	5	40.80	....	38.83	....
"	12	41.00	....	33.75	....
"	19	43.33	....	33.00	....
"	26	44.32	....	39.66	....

LOS ANGELES

Los Angeles, April 8, 1919.

BUTTER.

An advance in prices is reported in this market since a week ago. Receipts are heavier. Demand is holding up strong. Shipments for the week, 422,900.

We quote:

California extra creamery	56c
do, prime first	54c
do, first	53c

EGGS.

Prices in this market remain about the same as a week ago. There is a good demand and all offerings are being taken. Receipts for the week, 2813 cases.

We quote:

Fresh ranch, extras	45c
do, case count	44c
do, pullets	43c

POULTRY.

Broilers declined 3c since last week's quotations. Hens advanced 3c and 4c. Turkeys also made an advance of from 1c to 3c. Other prices remain the same. A very good demand is reported.

Broilers, 1 to 1¼ lbs	38c
Broilers, 1½ to 1¾ lbs	42c
Fryers, 2 to 3 lbs	42c
Roasters (soft bone), 3 lbs. and up	36c
Stags and old roosters, per lb	18c
Hens	37@39c
Turkeys	39@40c
Ducks	34@35c
Geese	28c

VEGETABLES.

This market continues to show advances. Since last week onions, potatoes and sweet potatoes have all improved. Peas firm at 8c. All other quotations remain unchanged and selling fairly well.

We quote from growers:

Peas, per lb	8c
Potatoes—	
Northern Burbank, per cwt	$3.00@3.50
Idaho Russets, per cwt	2.75@3.00
Sweet potatoes, per cwt	4.50@4.75
Garlic, per lb	50c
Onions—	
Australian Brown, per cwt	$4.00@4.25
White Globe, per cwt	8.00
Cabbage, per 100 lbs	2.25@2.50
Celery, local, per crate	4.00@7.00
Celery, northern, per crate	8.00@9.00
Cauliflower, standard crate	2.00@2.25
Rhubarb, per 30-lb. box	2.25

FRUITS.

The deciduous market remains about the same as last week. Winesaps only showing an advance. The demand holds up strong with fair sales reported.

We quote from growers:

Apples—	
Black Twigs, Northwest pack	$3.25@3.50
Baldwins, Northwest pack	3.00
White Pearmains, 4-tier	3.25@3.50
Yellow Newtown Pippins, 4-tier	3.25@3.75
Bellefleur, 4-tier	2.25
Bellefleur, 4½-tier	2.00@2.25
do, 3½-tier	2.00@2.25
Winesap, loose, per lb	7@8c
Roman beauties, Northwestern, per peck	$3.25@3.50
Loquats, per lb	7@15c

HAY.

This market still continues very dull. All prices remain the same as a week ago. Choice alfalfa is meeting with fair sales.

We quote f. o. b. Los Angeles:

Barley hay, per ton	$21.00@24.00
Oat hay, per ton	23.00@25.00
Alfalfa, northern, per ton	20.00@21.00
Alfalfa, local, per ton	21.00@23.00
Straw, per ton	9.00@10.00

BEANS.

There is no change in prices reported in the bean market since a week ago, and the tone of this market is very dull.

We quote from growers:

Limas, per cwt	$6.50
Large white, per cwt	5.50
Small white	5.50
Pink, per cwt	6.00
Blackeyes, per cwt	3.00
Tepary, per cwt	3.00

Classified Advertisements

Rate in this directory 3c. per word each issue.

MISCELLANEOUS.

SILO PERFECTION.
We have it in the Monro Perfect Silo. Before buying, get our booklet and prices.
THE LEWIS COMPANY,
Dept. C,
First National Bank Building,
San Jose, Cal.

FOR SALE—1350 feet 11-inch slip joint galvanized iron irrigation pipe; one 8-inch centrifugal pump and 6-cylinder Winton engine; three-year-old registered Holstein cows; 1 four-year-old registered Jersey bull. A. H. DeHuron, 519 California St., San Francisco.

COMPLETE CREAMERY EQUIPMENT—3-ton Remington ice machine, 900-lb. churn, 200-gallon Jensen pasteurizer, 8-H. P. submerged boiler, and many other articles that go to make up a complete creamery equipment. G. W. Stone, Route 2, Byron, Calif.

BLASTO, TREE DOCTOR—Nitrogen gathering bacteria cannot survive under plowsole or rootbound soil. Aeration is essential. Air, moisture and food are necessary. Use "Blasto" ammite, associated with fertilizer. A. J. Worrell, Medford, Ore.

REMANUFACTURED PIPE.
All sizes standard pipe and wrought iron new casing. All kinds of fittings. Guaranteed good as new. Write for prices. Welsbach Pipe Works, 160 Eleventh street, San Francisco.

PRICES WANTED ON GRAIN, viz.: Wheat, barley, milo maize, Egyptian corn, in car load lots. Reply to J. S. Simpson, Secy. of Belle Vue Local, care Poultry Producers of Central California, Inc., Route 1, Box 285, Santa Rosa, Cal.

FOR SALE—Well established wholesale dairy produce and provision business for sale; finest proposition with unlimited means of expansion; now clears $650.00 month. For further particulars address, P. O. Box 201, Oakland, Cal.

PATENT ATTORNEYS

WEBSTER, WEBSTER & BLEWETT, Savings and Loan Bldg., Stockton, California. Established 50 years. Send for free book on patents.

ALL SIZES OF PIPE and screw casing, both new and second-hand, dipped and undipped. Guaranteed. Prices right. Sheeter Pipe Works, 304 Howard St., San Francisco.

MADE OF REDWOOD, Hawley's Perforated wooden well casing, the best and cheapest well screen made. Send for descriptive circular. G. M. Hawley, La Mesa, California.

FULLY EQUIPPED CHEESE FACTORY at Woodbridge, Calif. Located in center of dairying district. For sale or rent. Inquire, Ralph C. Clark, Lodi, Calif.

CO-OPERATION (not operated for profit) reduces living expenses. Particulars and catalogue from Co-operative League, Commercial street, San Francisco.

FOR SALE AT A BARGAIN—18-35 Yuba Tractor in first-class mechanical shape—farming implements included. Apply D. P. Corcoran, Gridley, Calif

FOR SALE—9 H. P. Waterloo Boy gas engine, used but a short time. Demonstrate any time. Price $200.00. L. H. Mueller, Niles, Cal.

SAMSON SIEVE-GRIP TRACTOR—10-25 H. P. and 5-disc plow, $1150. Nearly new, Apt. 205, 116 Lake St., Oakland, Cal.

COUNTRY LANDS.

FOR SALE—440-acre stock and grain ranch, 5 miles R. R. station, Mariposa Co., California. 60 acres cleared and tillable, part in grain now. Good 6-room house, large barn and outbuildings; 6 miles hog-tight fence; large springs, pipe line and concrete reservoir for irrigation. Full bearing English walnuts, oranges, figs, peaches, pears, apples, berries, etc. Average rainfall, 29.88 inches. Lots of free range adjoining. Large oaks and pine trees in pastures. Price only $12,000, includes 34 hogs, 8 head cattle, 4 horses, 50 goats, and all farm implements. Terms. Fred B. Palmer, 131 W. First St., Long Beach, Cal.

FOR SALE — The famous Bane Almond orchard at Orland. On account of labor conditions, as well as physical condition, I have concluded to sell my almond orchard, either in subdivisions of 10 acres, or as a whole. For particulars address P. D. Bane, Orland, Glenn Co., California.

FOR SALE—Ranch of 20 acres, well improved; 13 acres in alfalfa (excellent stand), balance in barley. Well equipped for small dairy. In one of the best farming sections and four miles from town. This place must be seen to be appreciated. Owner: R. E. Reed, Chowchilla, Cal.

158 ACRES HILL LAND—5 miles from Upper Lake. 3-room house, barn, shop, and store room. Spring water piped to house. 30 acres tillable land, 10 acres in trees and vines, the rest range land. Price $5000. A. F. Griner, Owner, Rt. 1, Box 35B, Lakeport, Calif.

FOR SALE—AT A BARGAIN—5 acres, 3 miles east of Oregon City, Oregon. Five-room house, barn, other buildings. Write E. F. Ball, Chilcoot, Cal.

VERY PROFITABLE 400-acre grain ranch, 2 miles from Stockton, for sale. No agents. C. A. Bodwell, Lakeville, Calif.

WANTED TO RENT by American man, a good dairy farm with cows and equipment. Box 1490, Pacific Rural Press.

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PURE

SOUDAN GRASS SEED

Twenty cents per pound, delivered any place in California, in ten-pound lots or more.

G. M. HICKMAN. ORLAND, CAL.

I HAVE ABOUT 1000 LBS. of recleaned Sudan Grass seed left which I will sell at 15c a pound. Also about 1200 lbs. of choice recleaned Black Amber sorghum which I will sell at 3½c. a pound, and about 200 lbs. recleaned Honey sorghum at 6c. a pound. Send me your order together with your check and it will go out the same day I receive it. C. F. De Witt, Box 427, Modesto, Calif.

GRAFTING WOOD—Willson's Wonder Walnut for sale by the originator. Never has failed a heavy crop of largest, finest nuts. Youngest bearer. Also genuine Franquette wood. F. C. Willson, Encinal Nurseries, Sunnyvale, Santa Clara county, Calif.

SOUDAN SEED—First class in every respect. Plump and well matured. Free from Johnson grass. Price f. o. b. Napa, 12½c. a pound for 100 lbs. or more; 15c. a pound for less. Prices quoted on carload. T. H. Stice, M. D., Napa California.

SOUDAN GRASS SEED—Fine, clean seed—A No. 1—priced reasonable. Samples sent on request. For full particulars and price, J. W. Schuster & Son, Pond, Kern County, Cal

FLORIDA SOUR AND CALIF. SWEET ORANGE seed-bed stock. The time to plant is propitious; order now. Southland Nurseries, 1941 E. Colo St., Pasadena Calif

SOUDAN SEED—New crop, recleaned. Less than 100 lbs., 17c.; $15.00 per hundred. 500 lbs. or more, 13c. lb. f. o. b. your station. Geo Boock, Los Molinos, Calif.

BUY YOUR SUDAN GRASS SEED early while the price is right and you can choose from a lot of tested seed. For prices write, C. B. Tawney, Ripon, Calif.

FOR SALE—Fancy Dwarf Milo Maize seed. Small lots, 7c. per lb. Sack lots, $5.25 per hundred. f. o. b. Earlimart. W. L. Norris, Earlimart, Cal

ONION PLANTS—1,000,000 California Red, 75c. per 1000. Now is the time to plant. Monroe, The Tree Man, Orland, California

RECLEANED SOUDAN GRASS SEED—Large or small orders filled at 16c. per lb. f. o. b. W. R. Dresser, Paso Robles, Calif

WANTED.

POSITION WANTED as manager of hog ranch or diversified farm. Experienced with registered stock, irrigated crops and deciduous fruits. Address, H. Duveneck, 1004 Paru St., Alameda, California

POSITION AS FOREMAN desired by young man experienced in fruit and general farming. Graduate College of Agriculture. Box 1500, Pacific Rural Press.

Every Member of the Family Can Wear

Lee Union-Alls

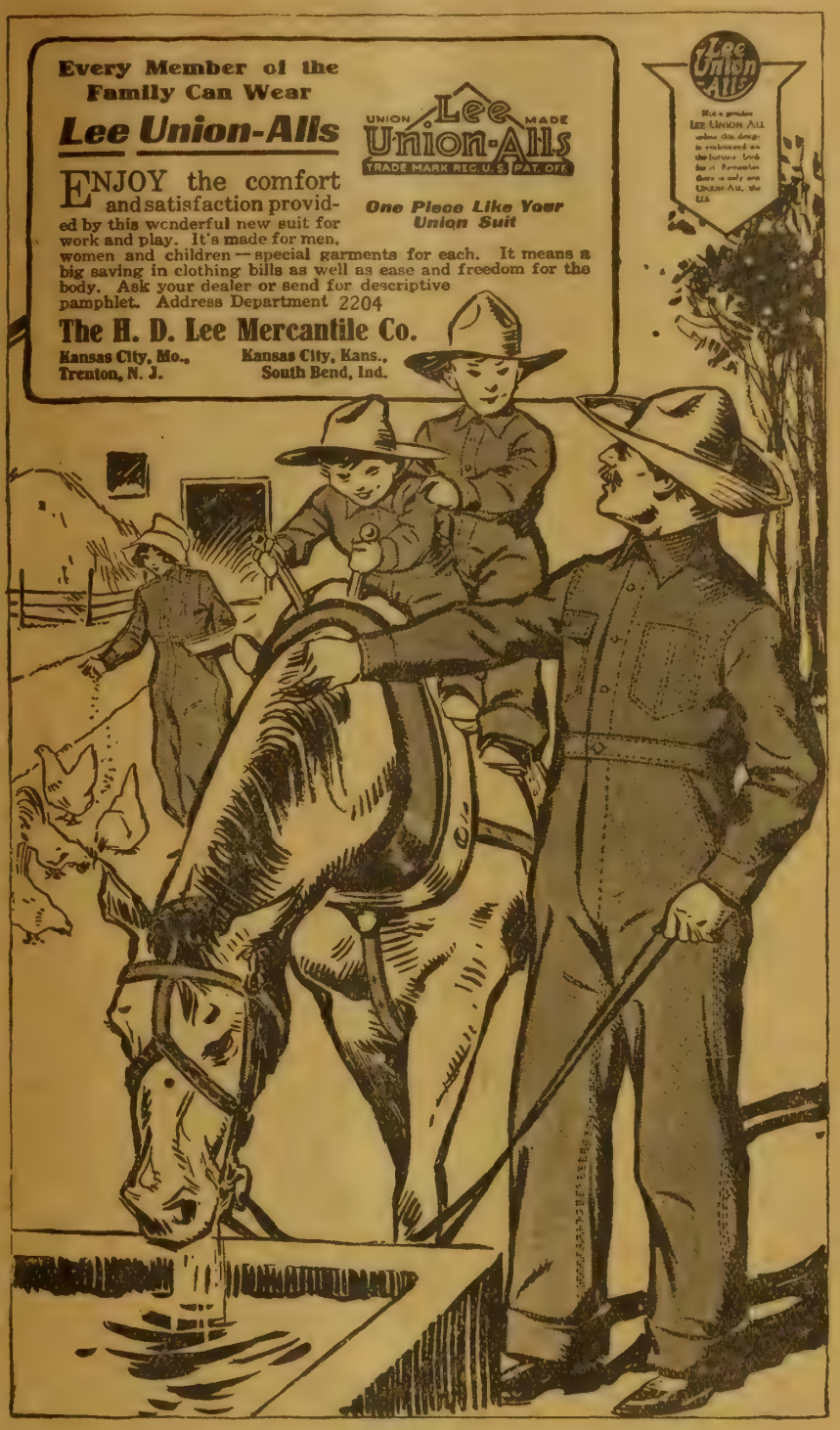
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ENJOY the comfort and satisfaction provided by this wonderful new suit for work and play. It's made for men, women and children—special garments for each. It means a big saving in clothing bills as well as ease and freedom for the body. Ask your dealer or send for descriptive pamphlet. Address Department 2204

One Piece Like Your Union Suit

The H. D. Lee Mercantile Co.

Kansas City, Mo., Trenton, N. J. Kansas City, Kans., South Bend, Ind.



Irrigate through this pipe—

Water the high spots You can't reach with an open ditch

Your ranch doesn't have to be level if you use Western Surface Pipe. You can carry your stream of water across depressions and onto the high ground you can't reach with an open ditch. There's no waste, either, from seepage or gopher holes.

Western Surface Irrigation Pipe is made from a single sheet of heavy galvanized steel. The seam, riveted and soldered, absolutely prevents breaking of the galvanizing. Write for price list and illustrative booklet today.

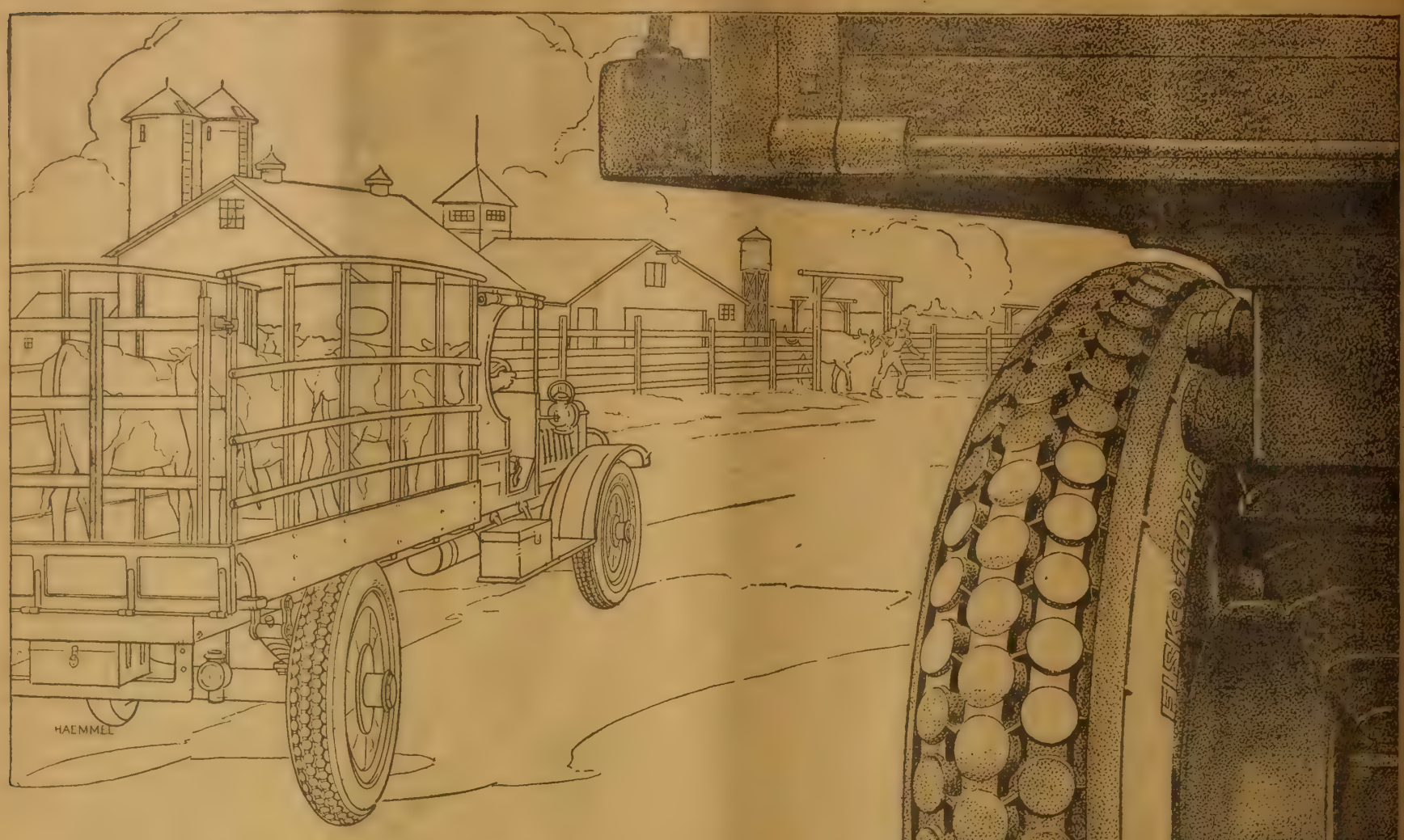
Write also for prices on: Riveted Steel Pipe, Riveted Well Casing, and other Irrigation Supplies.

Western Pipe & Steel Co.

444 Market Street, San Francisco

Fresno Bakersfield Los Angeles

Deliver your water where you want it



Take the Case of Milk for Instance



ONE glass may contain pure, sweet and clean milk — the other may be filled with milk that is impure. To all appearances both might contain the same milk.

It's the same with tires — the difference is comparatively slight, to the eye. Yet you can buy Fisk Tires with absolute confidence that you get exactly what you pay for, in mileage, safety and quality.

Why? Because your purchase is backed by the honor and integrity of one of the country's largest manufacturers, whose name has come to stand for quality of the certified Grade A kind. The happy and entirely satisfactory experiences of hundreds of thousands of users of Fisk Tires, in all parts of the world, and under all conceivable road conditions, are that many more reasons for the universal confidence in Fisk.

Fisk Cord Truck Tires fill a long-felt want on the farm. Their great resiliency absorbs the road shocks, keeps the load from shifting and makes faster delivery possible. They make a substantial reduction in fuel and repair bills. The tread is a most important feature — every Fisk Cord Truck Tire is built with the famous Fisk Non-Skid tread, insuring the greatest possible safety and a surer grip of the road for the pull forward. They are the ideal truck tire equipment for the quick, heavy haul.

"There is now a Fisk Tire for every motor vehicle that rolls"



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For sale by dealers everywhere

Forty-ninth Year

THE PACIFIC RURAL PRESS

Vol. XCVII—No. 16

SAN FRANCISCO APRIL 19, 1919 LOS ANGELES

Picking Producers for the Dairy Herd

Written for the Pacific Rural Press by R. H. Whitten.

"SHE'S AN AWFUL GOOD COW. Our whole family thinks the world of her. You'll like her immensely."

"And how much milk does she give?"

"Don't know exactly, but she's a nice cow—first class."

"Well, you must have some idea—does she give five gallons a day?"

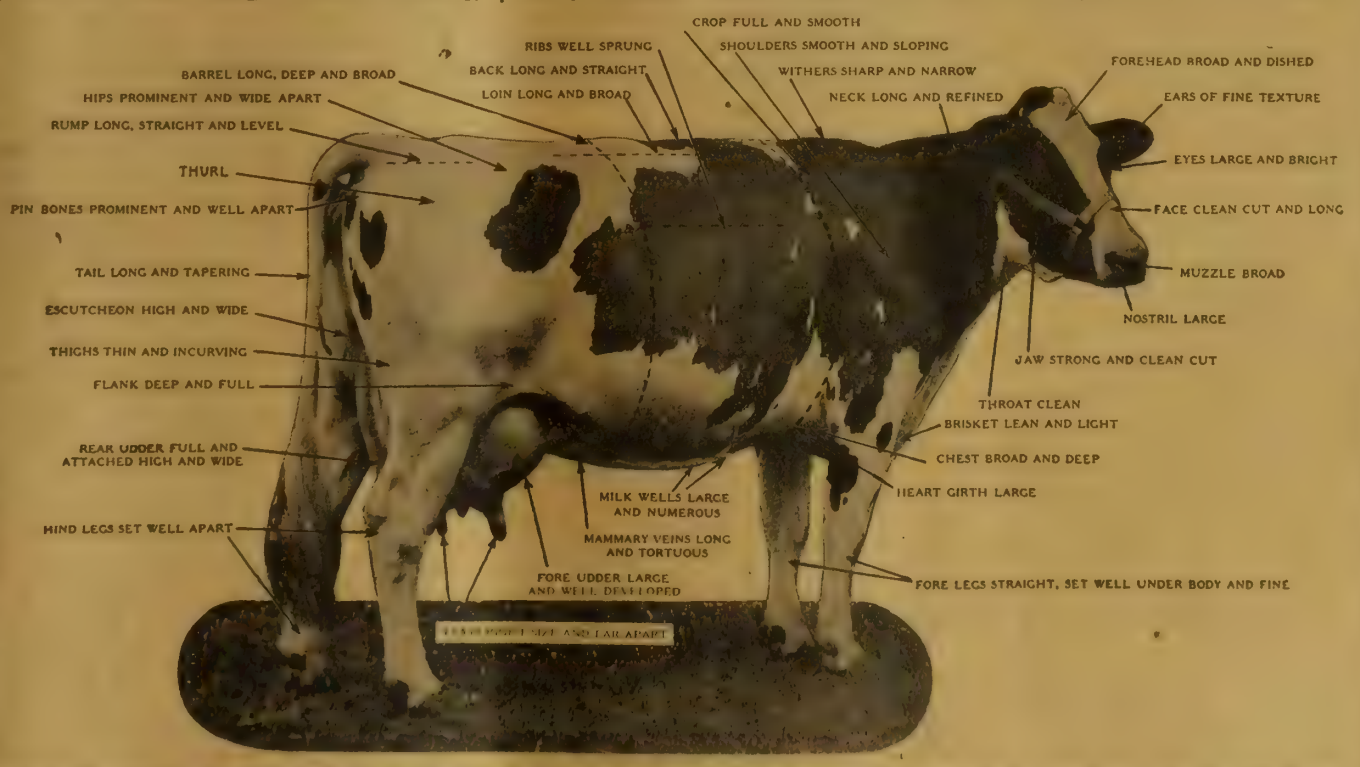
"Never kept close track."

"But you must have some notion. Does she half-fill a pail at a milking?"

"Couldn't say definitely, mister. She's an awful good cow, though. She'll give you all the milk she's got."

That's about as definite information as can generally be secured by the man who starts out to buy a gradé cow. The owner does not belong to a cow-testing association; neither has he done any private testing. Consequently, even if he should venture an estimate as to the cow's production, it would not be safe to accept his figures, for the testing associations have proved that owners themselves, who have been doing their own milking, have not even reasonably accurate knowledge of what their cows are giving.

How, then, can a farmer know what to buy? Fortunately, form goes with function to a large degree, and there are certain points of outward appearance that indicate the inward characteristics—certain points of conformation that are reasonable assurances of milking qualities. Notice that I do not mention these as positive guarantees of heavy production. There are no infallible rules by which, with tape line, staff, hand and eye, a buyer can measure a cow's ability to produce milk and butter-fat. But in considering thousands of cows that have made high official records, it is found that there are certain characteristics common to all of them, and an acquaintance with those points will help a dairyman to select good producers. The chief essentials of a good dairy cow are found to be constitutional vigor, digestive capacity, dairy temperament, good blood circulation, and producing ability. Let us consider each one of these qualities separately and see just how it is associated with heavy producing ability.



Dutchess Skylark Ormsby, who produced 1,205.09 pounds butter fat from 27,761.7 pounds milk in one year. Every part of her body pointed out in this chart bears some relationship to one or more of the essentials of a good dairy cow. The first wedge is the most important.—Courtesy of Wisconsin Experiment Station.

Constitutional Vigor.

The cow is a hard-working animal. She gives milk ten or twelve months every year, produces a calf yearly, digests large quantities of food, and often lives in an environment that is decidedly unfavorable. To perform her work of production and reproduction efficiently for many years, she must have a strong constitution and plenty of reserve force. Constitution, in a large measure, depends upon the cavity in which the heart and lungs are located. It should be roomy, as they are the vital organs. The milk is made by the blood, and the blood is purified by the amount of oxygen the lungs pump from the air. Consequently, the heart and lungs should have plenty of room in which to perform their functions. The cow receives her constitutional capacity more through depth of chest than through width, although extreme narrowness is undesirable.

Large distended nostrils and a prominent windpipe go hand-in-hand with vitality, as they control the amount of air which passes into the lungs, and therefore the amount of oxygen available for purifying the blood.

The idea of extreme angularity of the body is not as prevalent as formerly, for cows of this make-up often lack constitutional vigor, and when put to the test of large production they lack sufficient stamina to carry them through. Nowadays breeders like to see cows in fair flesh, but with no tendency toward beefiness.

Digestive Capacity.

A cow can make milk only from the feed she eats, and a good share of that feed must go to a body maintenance and the development of the unborn calf. Consequently, the big producer must be a big eater, and she must be provided with a storage room for consuming immense quantities of feed and water.

Large digestive capacity is shown by a deep abdominal cavity, a long barrel, and long ribs, placed well apart and well sprung. You can size up the length and depth from the side, and the width from the rear. Depth of barrel should increase with the age of a cow.

The dairy cow should be an animal of wedge shapes. If you stand in front and look toward her you should see a wedge shape extending from face to hind quarters. If you stand at one side and look at the side of the cow another wedge should be apparent extending from neck to hind portion of body. If you get up high in front of the cow and look down upon her you should find her withers thin and the body getting thicker farther down, thus making a third wedge. The first wedge is the most important.

A broad muzzle and a strong lower jaw indicate the ability to graze well and to consume large quantities of feed with the minimum effort.

Notice a cow's handling qualities, for the hide and the digestive tract are developed from the same source, and the character of the hide is a good indicator of the efficiency of the digestive tract. It should be loose, mellow, pliable, of medium thickness, and covered with a soft, silky coat.

Dairy Temperament.

The good dairy cow possesses in a marked degree the ability to turn feed into milk instead of flesh. She does not fatten easily when milking, and the heaviest of feeding increases her weight very little. This tendency is commonly called the nervous temperament, but I call it the dairy temperament because when the former term is used it is often confused with nervousness and excitability. It isn't meant that she ought to be fretful and hard to manage. On the contrary, she should show a disposition to work under almost any condition. She should convert into milk all food consumed except what is absolutely necessary for body maintenance and the development of the calf she is carrying, and she should have that persistency which is just as necessary as heavy milking right after freshening.

The good judge takes this in at a glance. He sees her large, full, bright eyes, expressing activity and intelligence; her clean, slightly dished face, and head with width between the eyes and length between the eyes and the poll of the head, giving ample room for brain development; her neat throat and long, slender neck that is smoothly jointed to the shoulders; her sharp

(Continued on page 620.)

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EDITORIAL.

OUR SIGNIFICANT SYMBOL.

IN THE selection of the golden poppy for their state flower it is doubtful if Californians grasped the full significance of its symbolry. They admired its beauty; they enjoyed its all-Californianism and also a certain exclusiveness in its original possession, because we share only with our sister, Oregon, the natural endowment of it. Other attributes of the lovely plant were also noted, but we do not remember the laying of emphasis upon the stalwart, almost human individualism of it. How it maintains its distinctive plant-hood in the face of all external conditions and how it will remain every inch a golden poppy—maintaining its characters through hardship and affluence; sacrificing size and depth of color through adversity, but never yielding essentials of identity; regaining size, hue and florifer ousness with the unfolding of opportunity, but always our poppy. No matter how poverty may narrow or prosperity may broaden its phylacteries, it never tries to obscure its parentage by assumption of new attitudes or pretense of other relationships. It never Bolshevikes or plutocrats itself. It makes good with what it has: never trying to grab it all: never insisting that everything belongs to everybody: never trying to destroy that none may possess, for it does not try to dispossess other plants by underrunning them with marauding roots: it drives its tap-root into the sub-soil of opportunity for all, delves therein for such degree of individual success as it may secure therefrom and is therewith content. Thus the golden poppy becomes the symbol significant of fair play for all to possess as they deserve: thus it shines forth in its beauty a symbol of the California spirit—symbol of the richness of the land for those who efficiently seek it, which has been the California way ever since the Americans came.

THE POPPY AS A SIGN OF PLENTY.

Incidentally, and still very significantly, the golden poppy becomes, in its best development, the symbol of abundance and of freedom to possess it by good endeavor—and this also is California's spiritual and material endowment. Resembling in this our greatest introduced field-plant, alfalfa, the poppy draws from unappropriated wealth below through its stalwart, single root, the force and material which it spreads out above in a great mat of succulence and bloom, as though extending a welcome to all others, each for himself, to delve deep and to spread wide the product of deserved possession under the sun of patriotic appreciation of individual endeavor. This, too, is symbolic of the characteristic California admiration for her men and women who play fair and achieve success. And the golden poppy is also a new embodiment of the truth of the old proverb: "Make hay while the sun shines," for her exemplar signifies: "Make growth and bloom while the rain falls," and thus the plant becomes the token of abundance. It is just as plain as though some one had written: as the poppies are in April so shall the crops be all the rest of the year!

And from this homily comes the concrete inquiry: How great can our poppy become in growth and bloom in a good year? If we can learn to read her language better we may care less for the inscriptions of prophetical statisticians. Therefore, we appeal to our readers to apply a parody and consider the poppies how they grow! We exalt a standard that all may seek to surpass it. Last week a California poppy plant, containing 191 full-sized, abnormally large, velvety yellow blossoms, was placed on exhibition in the Board of Trade at Woodland by Miss E. Schmeiser, who plucked the root in an almond orchard at Davis, near the University Farm. Who will find and send us the facts about a golden poppy which is still more glad that 1919 will be a good year for California?

POPPIES BEGET VISIONS.

Although our golden poppy does not play such deadly pranks wth mankind as does her naughty sleep-bringing cousin, still she has some of the virtues or vices of the great papaver family. In this way also she may reflect California quality of vision-seeing. While the sedate farming-folk may gain from the grand growth of poppies this year only assurance of ample produce, the city people evidently draw from poppy profusion visions of great urban activity. For example, John S. Willis, traffic director of the Chamber of Commerce, has seen the great poppies of 1919 for he declares that the supremacy of San Francisco as the leading Pacific port will be definitely established when ships return in sufficient numbers to create competition among themselves between San Francisco and Atlantic ports, through the Panama canal, because competition among ocean carriers will eventually be established, and when it is, San Francisco will become the distributing point for merchandise to the interior as far as Salt Lake City.

But this is rather a mild vision as compared with that of the Maritime Navigation Company of New York and San Francisco and W. Carnes Harper of Sydney—for they have not only seen the poppy but have chewed the stem. They will establish a line of refrigerator steamships to carry frozen meats and a great tonnage of hemp, hides, tallow, copra, rabbit skins, wool and other products from Australia and New Zealand to San Francisco, and expect to push "most of the future business between the United States and Australia through the port of San Francisco"—whether re-shipping hence eastward through the canal or overland by rail deponent saith not, but, either way justifying the prophesies of the pioneers that all the Pacific world would reach the United States through the front door—the Golden Gate.

IS THIS VISION OR DREAM?

And if the foregoing may be counted a reasonable vision based upon clearer insight and broader application of what is seen therewith, a part of it really seems to be "such stuff as dreams are made of." Why, for instance, should our Australian friends dream of loading their frozen meat in any considerable quantity two or three thousand miles from the dense American population which might consume it, on a coast which will seek the same distant markets for its great coming surplus meat-production? Besides, why should they count upon a market in the United States which is itself a great meat-product exporter? Why should they expect access to a country which will continue to protect its home producers with a tariff against cheaper products from distant parts?

But if the foregoing may be counted a vision, surely this is a dream. W. Carnes Harper of Sydney is credited by a daily interviewer with this picture:

Harper & Company own and operate five big manufacturing plants and have seven distributing establishments. Australia does not understand why it is necessary to send all that wool to Bradford, England, or Boston, to have it made into woolen goods. "We believe that you should have a big textile mill at San Francisco. And you are going to have just this sort of a plant."

And that, too, is a dream which will not startle the pioneers of our first two decades as they now lie, rolled in their famous "California blankets," upon the summits of the celestial mountains! For they built woolen mills in their time and were proud of the products thereof, which stood unrivalled in the world of half a century ago. But they built woolen mills to use California wool, which, but for the tariff-mongering in the interest of Eastern manufacturers, would never have lapsed into unprofitability. And now the Australian seems to count upon building such a woolen mill, as California has never known, to manufacture woolens from Australian wool for sale in American markets! He does not seem to know that the war has knocked the Underwood tariff of 1913 flatter than the Hun and that one of the chief American "results of the war" will be a more resolute and generous protection to American industry.

AGRICULTURE SET FREE!

We find some satisfaction in the apparent fact that we helped to fish farming out of the chowder of fish and game and mineral constituents into which the theorists in reorganization of the State government planned to plunge it. Of course, it would be ridiculous to run the chances of placing our great agricultural industries under the direction of a king-fisher whose qualification would be his ability to throw a fly a thousand yards or to have these great surface industries in the custodianship of a miner who had sunk a shaft a mile deep—and yet those were just the dangers which were invited by the "natural resources and agriculture" grouping of the governor's "committee on economy and efficiency," which marched up one side of the mountain of statesmanship and then fell down the other! Of course, it was, perhaps, just as ridiculous to place fishing and gaming under the guidance of a farmer, who is apt to look upon both as trespassing, or to subject mining to the cuddling of agriculture, which naturally rebels at an industry a part of whose activity is to ruin farming lands for all time—but such grotesque humor is not in our line to exploit. It is fortunate that the whole combination of things, unlike and often hostile, has passed from present view and there is reason to hope that it is dead as a mackerel with no chance for resurrection to a piscatorial paradise. As we write on Tuesday about the only thing likely to survive from the effort of executive reformers is the reorganization of state work for agriculture and we are not sure of the life-chances even of that.

On the last day for the introduction of bills Mr. Prendergast proposed this measure:

To create a state department of agriculture with a director at a salary of $5000 to replace these state agencies: The board of agriculture, commissioner of horticulture, board of horticultural examiners, dairy bureau, state veterinarian, stallion registration board, viticultural commission, citrus fruit shipments board and the cattle protection board. The director would be authorized to appoint the heads of three proposed divisions of the department, plant industry, animal industry and the state board of agriculture.

On another page Mr. Hodges gives an outline of a bill introduced by Mr. Prendergast to reorganize the state work for agriculture into a department without entangling alliances with other executive activities.

This proposition is rational from the point of view of providing executive authority for agriculture after freeing it from the extraneous and often antagonistic suggestion and transaction, but the question still remains; why should the non-agricultural and political mind undertake to do this? Nine-tenths of these self-constituted reorganizers know no more about farming than a cow does about music. It looks as though they proposed to reorganize agriculture because the farmers are the only bunch of interested parties having no legislative muscles. Every other group of friends of the existing order of commissions has kicked so hard that it was obviously impossible politically to get hobbles on them. The farmers are in no shape to kick—therefore the reforming outfit resolves to corral them to save its political face! There are just two things we desire to say about the performance:

First, our farming specalties are so great and so diverse that no man can know the points of view and experience of all of them. If the general "director" knows only one he is liable to be unfair to another and if he knows none of them he is apt to be unfair or pig-headed to each of them in turn. As it now is each branch is provided with funds and expert direction, and all of them go straight to the Governor as they should and he has no moral right to shunt them to a sub-governor, who, to play the intended game, must be more of a politician than any kind of a farmer! This is the way it is

Washington and there is no reason to expect anything better in Sacramento.

Second, this reorganization has not, so far as we know, been asked for by any farmers' organization nor by any single man who is not more of something else than he is a farmer. It seems to be another turn of the wheel which has been crunching and grinding agriculture so long, viz.: regulation without representation of farmers in the process. We presume this will proceed just as long as farmers do not organize with wisdom and force enough to command representation.

THE FARMER MUST HAVE PROFITS.

It seems strange that some people cannot realize that farmers must have a living from their production or they cannot continue to produce, and they must have a fair profit above their living or they will not continue. It is true of all other producers, of course, but it makes less difference to the world whether the others continue or not—for the world can get along without almost everything but food and clothing. And yet, some people seem to have an idea that the farmers can be prevented by law from having either a living or a profit and can be restrained by law from taking the only steps which will insure these to them. However, these other people do not seem to be making much headway. It is telegraphed that Governor Allen of Kansas is trying to get the supreme court of the United States to prosecute the Southern Cotton Growers' association under the Sherman anti-trust law, on the charge that the cotton growers have combined to reduce the acreage of this year's cotton crop and raise the price. Why cannot Governor Allen see that if there was any profit in cotton as grown in the South, the growers could not possibly get the acreage reduced and the only reason their proposition is worth a moment's consideration, though desperately difficult to achieve, is because the growers are not recovering the cost of production. But fortunately, the law itself stands in the way of prosecuting the cotton growers. Assistant Attorney General Todd is credited by an interviewer with this statement:

Cotton growers cannot be reached under the Sherman law, because the law specifically exempts associations of farmers in two instances. One mentions farmers' unions in connection with labor unions, which also are exempted when organized as non-profit associations. The other clause states that no part of the annual appropriation for administration of the Sherman law "shall be expended for the prosecution of producers of farm products and associations of producers."

If, then, Govenor Allen needs a new nightshirt, he must have it made shorter or dig up money enough to pay the cotton grower for the flaps. The law cannot help him and it should not.

QUERIES AND REPLIES

By the Editor.

Inquirer Must Give Full Name and Address.

High Dilution in Fertilizing.

To the Editor: Regarding the value of liquid manure on an orchard. I hear that if a trench four feet wide, four feet deep and 30 feet long were dug and faced with concrete so there would be no leakage, this trench would be sufficient to give an application of liquid manure for thirty acres. The method of procedure was to take a wheelbarrow full of chicken manure and then fill the trench with water and let stand until same had fermented, which would probably be in about four weeks, depending of course upon the season, the cooler the weather the longer the time. It strikes me that for such a large quantity of water a wheelbarrow full of manure is a very small quantity. What has been your experience in making and applying liquid manure to an orchard?—B. P. M., Stockton.

The cement tank would hold 3,600 gallons; thirty acres would hold 2,400 trees at an average of 80 trees to the acre—therefore the application would be 1½ gallons per tree. This might have some effect upon a tree at the time of planting, but would be too little to have any appreciable effect upon an older tree. Besides, the amount of chicken manure prescribed is ridiculously insufficient. One or two wagon loads should be used to such a tank full of water. Again, the soluble plant food in the manure is extracted by the water by the ordinary process of solution, not by fermentation, and a few days' soaking will do that. Liquid manure is a vigorous plant pusher, but the labor cost of preparation and application is too high. It is therefore better to apply the material to the soil in field work and let nature do the rest. In the garden and greenhouse, liquid manure is worth all it costs.

When to Irrigate.

To the Editor: Please give me some information as to irrigating Thompson's seedless vines. Most of my vines were planted in February and got a good share of rain. Others put in later have not got any rain. How soon, also how many times per year, do they require to be irrigated.—W. A., Hanford.

It is impossible to irrigate anything intelligently and successfully by following any set of rules or observing any points on the calendar. The time to irrigate anything is just before the plant needs water, because if it is allowed to feel the need its growth will be checked. How soon the particular vines you mention will need irrigation depends upon how moist the soil is now and how long it will keep moist, and the latter depends upon whether it is heavy or light—that is clayey or sandy. Our judgment is that the vines which have had no rain should be irrigated immediately and probably should have been watered as soon as planted to settle the ground and insure moisture. The earlier planting will need it very soon if they do not already. Try the under soil by squeezing in your hand. If it makes a ball which holds together there is no hurry; if it cracks and falls apart in your palm, get water on as quickly as you can.

Waist-High Weeds in Orchard.

To the Editor: What do you think is likely to be the result in orchards with weeds and grass nearly waist high not having been plowed yet, in case we do not get another rain? It seems to me exceedingly improbable that there will be left enough moisture to give proper thrift in growth.—S. L., Santa Cruz.

Waist-high growth in the orchard (which, of course, should have been prevented by earlier plowing under if it had been possible) ought to be mown and plowed in as soon as the land will turn well. It is pumping out water which the trees will need next summer. Even if not plowed in now it ought to be cut and made into a mulch which would reduce the moisture loss.

Breaking the Crust.

To the Editor: Some vegetable land was seeded just before the last hard rain, and some of the seed had come up and some had not, but it was crusting badly. I put on a spike-toothed harrow and harrowed it thoroughly, breaking up the crust, and of course destroying some of the carrots, turnips, spinach and cabbage, but I believe we shall get a good stand with very much better results than if it had not been harrowed, as it was thickly seeded and could spare a loss of fifty to seventy-five per cent., and the harrow did not destroy such a proportion. Is that the right view of it?—R. B., Hollister.

Your crust-breaking over the seeding was surely excellent practice and ought to increase the product.

Almonds Dropping.

To the Editor: What makes the almonds drop off after they are formed. I send sample. The trees are about 25 years old, grown on river bottom land, and there are five varieties in the orchard.—H. D. H., Linden.

The little almonds still have their jackets partly on. On cross-cutting the magnifier shows that the embryo kernel is assuming a reddish-brown color—presumably the beginning of the dying process, which results in a dry, shriveled mummy of the kernel, which is seen inside the shell when the nut holds on longer before dropping. Our observation is that kernels hit by frost have a smoky-black ring around the kernel and not this reddish-brown affair. If these observations are correct the conclusion must be that almonds dropped for lack of pollination—perhaps because of direct effect of rain on the bloom or because stormy weather prevented the bees from working. It is, of course, necessary to have not only pollen-yielding varieties but pollen-carrying agencies at work.

Stack-Drying Apricots.

To the Editor: Please let me know if apricots can be dried in this part of the valley by stacking as soon as taken out of the bleacher instead of being spread in the sun. If so, how far apart should the stacks be for proper ventilation? And how long will it take them to dry?—R. S., Grangeville.

Yes; apricots are often dried in the stack—sometimes wholly, sometimes largely. Under favoring conditions of dry, hot air at the time, they can be stacked as you propose. Testing the fruit is more important than counting the days, because evaporation depends more upon the condition of the air than upon length of exposure. One grower describes the necessary condition as "a feel like chamois skin and refusal to slip through the fingers when pressing." Another grower squeezes a double handful of the fruits and if they fall apart on opening the hands he considers it safe to put in the bins. There is no need of more distance between the stacks than is necessary for convenience in getting around, if the sun exposure is good, but it is desirable to facilitate evaporation by allowing the tray ends to extend alternately so as to increase ventilation.

GOOD POSITIONS STILL OPEN

During the past year several of our readers have taken up our work of attending to renewals and securing new subscriptions. They have done well—many making more than they had ever earned before.

We can use a few more ambitious, energetic men. Experience not necessary, as we give you proper training. But you must have an automobile and should be able to devote your entire time to the work.

Straight salary; permanent work. Write for particulars and tell us a little about yourself. You'll be glad you investigated this money-making opportunity.

Why Bunchy Growth of Barley?

To the Editor: In many of the fields of barley round about, very vigorous bunches of barley are found, evidently the product of barley heads left on the field last year. Of course, these did not germinate until after the first rain. The rest of the barley in these fields is not looking well at all, having hardly started its upward growth, although it was seeded soon after the first rain. I am wondering if there is any way to get the field in general to grow as well as these scattered bunches of barley. This is not a case of bunches of barley made larger by special droppings from stock and therefore adding nitrogen to the soil.—A. R., Templeton.

Your guess about the causes which produced those precocious bunches would be as good as ours. We can only observe that our lawn is streaked with ridges of grass several inches higher than the rest of the surface, and we recognize the ridges as following mole uplifts which were rolled down flat last year. We think that the burrow, only partly closed by rolling, carried away surplus cold water and made the land right over it warmer and better for the grass roots to become active. Possibly the barley spots may be over some condition caused by rodents or otherwise, which rid the surface soil of surplus cold water, warmed it and caused the grain to jump, while the surrounding plants, in excess of water and deficiency of heat, have not been sure yet whether they wished to grow or not.

Hold-Over Apricot Trees.

To the Editor: I have some apricot trees in nursery that I intended to dig and plant this past winter, but the weather did not allow. I would like to know how to save them for next season's planting. They are nice big trees. Could I save them by cutting back as if planted, or should I leave them as they are? The question is can they make good trees for next winter?—L. J. B., San Jose.

If you could have foreseen this situation a month ago, the trees should have been dug in the regular way, pruned as for planting in orchard and re-set in nursery row. As the trees are now probably too active for that we would root-prune them as they stand by cutting obliquely with a sharp spade and cut back the top so as to get a good second-summer form from this season's growth. Keep the soil right for fair growth without pushing. In this way you are likely to get a two-year old tree which will transplant well—though in ordinary California experience, less desirable than a well-grown yearling. If allowed to grow at will the second year in nursery row they would be of questionable value for planting out.

California Weather Record.

The following rainfall and temperature record is furnished the Pacific Rural Press by the United States Department of Agriculture Weather Bureau at San Francisco for the week ending at 5 p. m. April 15, 1919.

Stations—	Rainfall: Past Week	Rainfall: Seasonal To Date	Rainfall: Normal To Date	Temperature: Highest	Temperature: Lowest
Eureka	1.00	36.44	40.82	56	38
Red Bluff	...	25.99	22.40	76	42
Sacramento	.04	17.14	18.04	74	42
San Francisco	.03	25.64	20.59	70	48
San Jose	.02	18.82	15.48	78	36
Fresno	...	6.74	8.48	84	42
San Luis Obispo	...	17.81	18.51	78	42
Los Angeles	...	8.22	14.64	82	50
San Diego	...	8.10	9.23	76	48
Winnemucca	.04	6.05	6.28	..	20
Reno	...	8.31	9.18	..	26

Die-Back, or Winter-Killing, of Walnuts

[Written for Pacific Rural Press by L. D. Batchelor and H. S. Reed, Citrus Experiment Station, Riverside.]

MANY WALNUT TREES which entered the winter in good condition fail to start growth in the following spring. Upon examination it appears that more or less of the tops are dead. The dead portion consists mainly of the smaller branches, though in some cases, nearly the entire tree is affected. Young trees are especially liable to show the trouble, though trees of all ages are found to suffer at times. Since much of this injury is first noticeable in the early spring when the twig growth of the tree should be starting, the term winter injury is often applied to trees in the condition under discussion. Winter injury has been regarded as an injury caused primarily by a low temperature. Observation has shown that such an interpretation may often be erroneous. Winter injury or dieback may be produced without extremes of temperature. Apparently more depends upon the condition of the twig growth and soil moisture than upon low temperature in determining the degree of injury which may be manifested.

The tips of the branches are naturally the least mature, and therefore most tender portion of the tree. This is the first part of the tree to die if unfavorable conditions threaten the life of the tree.

We believe, therefore, that die-back should be looked upon as the final effect of any one or perhaps several of the following causes, which will be discussed:

1. **Early Fall Frosts.**—Needless to say this injury is more apparent in the low lands, and more likely to be experienced by young trees from 1 to 6 years old which are usually later in completing the seasonal growth than mature bearing trees. Walnut foliage which is still green and shows no sign of its normal autumn color, is apparently as subject to frost injury as tender vegetables like beans or squashes. Such injured foliage drops prematurely leaving the green, tender, unripened twig fully exposed to the following hot fall days. In many cases the twigs themselves, are not actually injured by the frost, but rather are killed by the rapid drying out following the dropping of the leaves. This is substantiated by the fact that such twigs usually begin to show sunburn injury about the middle of January. By early spring, more or less of the new growth is dead. In occasional instances, however, a portion of the north side of twigs thus injured may send forth normal growth in the spring following the frost injury; thus indicating that the sunburning or drying out of the immature twigs in such cases, is the real cause of their death, rather than the extreme temperature at the time of the early frost.

In many cases, however, it is very apparent from the blackened condition of the twigs, especially the tips, that they have been actually killed by the frost at the time of the foliage injury.

2. **Winter Drouth.**—We have every reason to believe that trees which may enter the dormant period in the fall in a perfectly normal and healthy condition may suffer from die-back due primarily to a lack of sufficient soil moisture during the winter months. During the winter trees give off moisture through the limbs and twigs as well as the foliage. If for a prolonged period there is not sufficient soil moisture available to the roots so that its passage into the upper portion of the tree balances up the loss for that given off; then the more tender portions may dry out to such a degree that they are actually killed by this process. Thus we have the sudden appearance of die-back in mature, and otherwise normal healthy trees.

The prime factors of course which brings about such a condition are dry winters like the present (1918-19) and the lack of winter irrigation. At such a time orchards which have not been winter irrigated have little or no soil moisture available for the walnut roots below the surface foot of soil, and even this area does not contain an optimum amount. The winter of 1917-18 was followed by a great deal of die-back injury to bearing trees. An examination of walnut orchards during this winter



Five-year-old Placentia trees killed back for the first season. The ground water in this orchard has been high for the past two years.

showed that the soils in many of them were very dry. In certain cases the moisture in the first four feet of soil was below the wilting point. This



Ten-year-old seedling Walnut. This grove has lacked winter irrigation, and for the past two seasons the soil has been below the wilting point from October until March.

means that the roots were unable to acquire sufficient moisture to replenish the lost from the trees, and explains why the tips were killed by loss of moisture.

The growth of a winter inter-crop of barley ha during a normal season may bring about the sam adverse soil condition that the dry winter does, i great pains are not taken to irrigate the walnut thoroughly, entirely apart from the demands of th barley. If the barley alone is considered the soi may become excessively dry about the last of Feb ruary to the middle of March when the hay is ma turing and when the walnuts should be startin into active growth.

A sandy subsoil may be conducive to this winte drouth. This type of soil gives up its moistur more rapiidly than the loams and silts, and ma reach a critical dryness before the latter soi types. Sandy subsoils demand closer observatio and possibly more winter irrigation than the heav ier soils.

3. **A high water table may be a contributin factor** to the die-back of walnuts. When such condition exists it is usually impossible for th farmer to bring about the early maturity of hi walnuts by withholding the late summer and fal irrigations. On the other hand, in the absence o this moisture from the water table it may be pos sible to induce the maturity of the current growt of young trees by the middle of October or th first of November if they are growing on low lan subject to early frosts. In the presence of the hig water table, however, the twigs and foliage usuall remain green and succulent until December if no frosted earlier.

The foregoing refers to a high, more or less sta tionary water level. Another condition which i equally critical and as apt to injure old trees a well as young ones, is the occurrence of a fluctu ating water table. A fluctuating water table, es pecially the sudden rise, kills that portion of th root system which is submerged. In severe case this may actually kill the major portion of the en tire root system. This might be compared to severe root pruning. This sudden death of a por tion of the roots is usually followed by a dyin back of the twigs and young limbs of the tre Here we seem to have a set of contradictory con ditions,—the top of the tree drying out and dyin with an abundance, in fact excessive amount o soil moisture present,—the key to the situatio however, is this; the death of the major portion o the roots, makes it impossible for the top to re ceive the necessary moisture to sustain life. Thu we have famine so to speak, in the midst of plenty Such sudden rises in the water table more ofte occur during the winter seasons of very heav rainfall, and with the failure of the tree to leaf ou fully in the spring we are again confronted wit a case of so-called winter injury, with too muc water in the soil, and again a lack of moisture i the tree.

In some cases witnessed where floods hav raised the water table practically to the surface o the soil, the entire trees have been killed.

4. **Extreme summer heat** may so injure th young twig growth in the tops of even matu trees, that they will fail to leaf out fully the fo lowing year; and such injury may be credited t "winter injury" when in reality the chief contri uting cause occurred eight to ten months previou to the observed effect.

5. **Alkali injury** to walnut trees may produc the final eflect of die-back in tops. Where the so contains alkali in harmful amounts the leaves o walnut trees often burn around the edges. Thi condition may often be seen as early as July o August. This is followed by the shedding of th leaves in September and early October. This suc den and premature exposure of the twigs an limbs to the drying effect of the hot fall sunligh may be somewhat akin to the loss of the leaves b frost injury. A further effect of this alkali injur is seen in the re-leafing out of the terminal buc after abnormal early dropping of the leaves. Suc late growth usually continues until stopped b frost. As in the typical frost injury the twigs sun burn during the winter and die back from on third to all of the current year's growth.

Objections to Farmers' Organizations

TO the Editor: I am very much interested in your editorials and comments on organizing farmers. It is a very important subject and it would help the good cause if every farmer would form an opinion and express it.

Mine is that the farmer would join an organization if it seemed suited to his needs. He cannot be organized on the labor union plan because although he is the hardest worked man in the world he cannot be denied the right to work unless he belongs to the union. Neither can he be organized as the laborers (?) are, as a class against another class. Nor can he be brought to approve labor methods.

Without at all disparaging the work of the Raisin, Peach Growers, Prune and similar associations, it is not clear why we should approve of some groups of citizens engaged in producing raisins, etc., combining to set a price on their products, while we threaten others producing steel or furnishing transportation with imprisonment if they combine for a similar purpose. Nevertheless, he will have to organize and quickly.

The farmers of the nation recognized their duty to the cause of liberty and, in spite of the shortage of labor and the increased cost of labor and materials, raised sufficient food to feed the world. While the war raged we comforted ourselves with the thought that this pouring out of blood and money would not all be wasted, that after it was over the world would be made a better place for the ordinary citizen and that many things would be done quickly to improve social conditions that without such a world upheaval would have been long delayed.

Now it is over, the crowded warehouses demonstrated the efficiency of the farmers' efforts, prove that he can feed more than this nation; a grateful government says, "Thanks for your good work, it was really wonderful, but conditions have changed, we don't need all this food, you are free to sell it if, as and when you can." Also it proposes, the Rural Press apparently approving, to invest public money in giving employment to a part of the returned or returning soldiers in preparing more land so that more crops can b raised.

Just why should we try to increas our food supply in the face of th demonstration that it is over-abun dant now? Why not produce a fe of the things the present farme need and try to make their livin conditions so attractive that the children will prefer the farm to job in the city?

Considering these things, do yo think it would be altogether desi able for the farmer to organize some other people have and join th movement to maintain a lobby whe ever it would seem possible to pr mote his special interests regardle of the general welfare?

Would we be better off if we coul threaten the nation with starvatio unless they granted certain demand

(Continued on page 602.)

"We Are Afraid to Buy Your Pump."

[Written for Pacific Rural Press by R. E. Hodges.]

To the Ranchers of Madera County:

"Everybody will get equal electric service regardless of what pump you use. Everybody is at liberty at any time to consult the records of applications for electric service and to consult the original carbon copies of the applications whenever you find the San Joaquin Light & Power Corporation Madera District Manager P. B. Wilson." These are the emphatic statements which Mr. Wilson has authorized us to publish. It is the common impression throughout those districts of Madera County which use or hope to use electricity for pump irrigation, that in order to get the earliest and most continuously satisfactory electric service, they must not buy any of half a dozen different pumps which are offered, but must buy a certain one. A large number of ranchers are actually afraid to have their names published under a statement of their conditions, because they must have water promptly or lose their all. They fear, that if they antagonize the Power Company's representatives various technical but more or less legal delays will be encountered until their crops are gone for the year. Many farmers believe that they have suffered just such delay because they did not purchase the pump most highly recommended by the Power Company's representatives. Many ranchers have bought the pump mentioned because they feared the delays which their neighbors believed they had encountered. In so doing, they have often paid a higher price than they would otherwise have paid.

Be it known to all of our readers that such a fear need not influence your choice of a pump. Under rulings of the Railroad Commission, electricity must be installed ready for your use strictly in the order of your proper application. The Railroad Commission cannot take action if you only fear that you may be hurt, but when you begin to be hurt by the Power Company's transgression of this rule, the Railroad Commission will act if you will furnish proper evidence. Similar conditions are said to exist in other counties; and we invite all power users or prospective power users, whether or not you are our subscribers, to write the Pacific Rural Press whenever you observe any discrimination. We are ready to fight such battles for our readers provided you advise us as to actual conditions in your locality.

A SERIOUS CONDITION is indicated in Madera county by the omplaints of numerous subscribrs of Pacific Rural Press. Our first otice of such a condition came in he form of a letter from one subcriber whose experience is related elow as "No. 1." The Pacific Rural ress sent a representative to search ut the facts of the case, and the first omplaint was corroborated with ractical unanimity by the many anchers visited. The representative f a certain pump concern is seen ith remarkable frequency in comany with the Madera representative f the San Joaquin Light and Power ompany, P. B. Wilson. Mr. Wilson, well as other district managers of ie Power company and the General lanager, A. G. Wishon, himself, rankly recommend this particular oncern's pump above all others, lausibly on the ground of more certainly proper installation and more rompt service later in case of break own. They are earnestly striving to e that their power consumers shall et a good pump, although their reponsibility ceases at the meter.

We are utterly unable to trace to source the well-nigh universal beef that unless the rancher yields to is favored pump company's salesen, they are likely to lose their rops because the Power company ill find means of delaying the delivry of electricity. Power company fficials and the Pump company ofials accuse representatives of other ump concerns with circulating this umor, which actually does induce nchers to buy the one pump rather an any of the others. In different ords, the other pump men are circlating a rumor which kills their wn sales! Regardless of its source, is having an intimidating effect on ir readers and is preventing them om buying pumps made by those of ir advertisers who are not the "most vored" concern.

To show the basis of our conclusons, we print below the statements made to the writer by various nchers whose names are omitted r obvious reasons, but who are numbered here and in our notebook so we ay quickly refer to the names if ey are called for. In order to avoid nfusion and to distinguish the vaous pumps mentioned, we will call e one favored by the Power comny the "F pump," although that is t its name. For brevity also we will ll the Power company's representae "W" and the favored pump comny's representative "S."

Pump Users' Statements.

No. 1. A neighbor who installed a airbanks-Morse plant had a lot of lay and trouble getting electricity and has repeatedly warned me that if I want electric service I had better get a F pump. I went to the Power company's office about 3 months ago to see about electricity, and W came out with S a few days later. S priced a 7½ by 4 inch outfit for this job at $700, but I did not sign up.

A month ago wife went to see W, and he came out the same day again with S. I told them I already had a motor not of the kind handled by S. W suggested that I should send the motor back to the party I got it from so that I could get a F outfit complete. He asked S to give me figures on the F outfit which he did, this time making it $675 and allowing me $200 for the motor. W said I would pay more for an outfit buying it in parts than I would buying it altogether, and he told me that if I would give him the address of the man I got the motor from, he would write to that man and try to get him to take it back so I could buy an economical outfit. I have ordered a Jackson Rotary pump and intend to use my own motor, but I don't want you to print my name. My electric power hasn't come yet, but that is probably because I am late on the priority list.

No. 2. On March 8th, W and S came to my place and W stated that my application for power had been sent in, but so far he had not received any reply and did not know whether the application had been approved, but would know some time in April. S then asked me what size pumping plant I wanted, and I told him a 10 h. p. motor and 5 inch pump. He then wrote out a contract which I signed, thinking I was buying a complete electric pump from the Power company through a higher official of that company. I now find that I have signed an order for a F pump. I prefer to buy a pump from Mr. ——, as his price is less and I prefer to do business with him.

No. 3. On or about March 8, 1918, W and S called at my ranch and W stated that my application for power had been accepted. S then endeavored to sell me a pumping plant. I had about decided to buy a Pelton pump, but when S stated that it was a new pump and had not been tested out [a Pelton pump had been running on a ranch close to town with entire satisfaction for about a year], and that it was liable to overload and burn out the motor and W stated that a Pelton pump owned by —— was "overloaded but not to hurt anything," my confidence in the pump was shaken and I practically agreed to buy a F pump.

No. 4. When I put in my pumping plant four or five years ago I had made up my mind to have a Krogh

(Continued on page 601.)

MOLINE HAY TOOLS

The Moline Line of Implements
Plows (steel and chilled)
Harrows
Planters
Cultivators
Grain Drills
Lime Sowers
Mowers
Hay Rakes
Hay Loaders
Hay Stackers
Grain Binders
Corn Binders
Pitless Scales
Spreaders
Wagons
Moline-Universal Tractors
Stephens Salient Six Automobiles

Put up your big hay crops with Moline Sweep Rakes and Stackers.

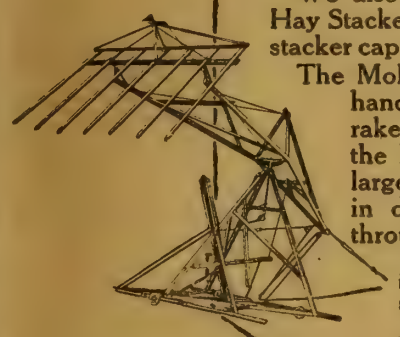
They enable you to do your work speedily, handle your hay crops without damage by breaking or shattering, stack it lightly to prevent packing, and top off the stack with a high crown to shed rain.

Moline Hay Tools are light, strong and durable. With them the fewest number of men do the most work and put up hay so that it remains good until used.

The Moline Swinging Hay Stacker offers the most speedy, economical and practical method for stacking big hay crops. Two men and one horse can stack 25 tons a day with it. Builds a stack 25 feet high. Loads from either side and is easily transported from place to place. It is entirely automatic in its action.

We also build the Moline Overshot Hay Stacker, which is an adjustable arm stacker capable of making a 20-foot stack.

The Moline Power Lift Sweep Rake handles hay with greatest care, rakes clean, and automatically lifts the load for carrying. Has extra large size steel axle 2 7-16 inches in diameter, and is extra strong throughout.

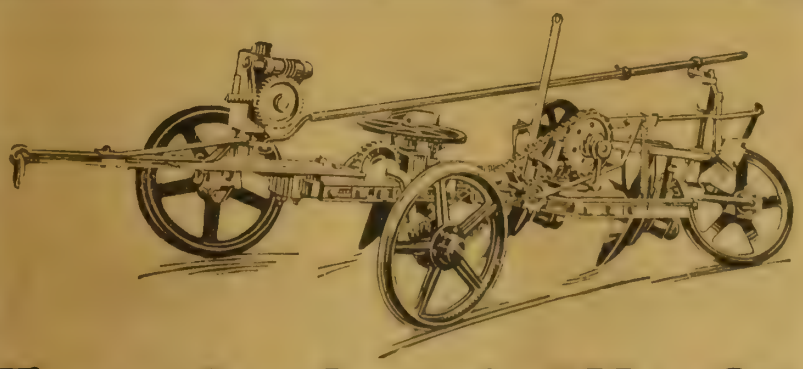


The Moline Pipe Axle Sweep Rake is another, extra strong, serviceable sweep rake which we manufacture.

Your Moline Dealer will gladly tell you about Moline Hay Tools. Ask him or address us for complete information.



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MANUFACTURERS OF QUALITY FARM IMPLEMENTS SINCE 1865



For Orchard Work!

—this is the only power lift plow that actually does the work! it goes right up close to the trees—to within eight inches even when throwing the soil away. Your tractor isn't complete without a

KNAPP TRACTOR DISC PLOW

behind it. It has a real Power lift, too. A slight tug at the rope and up comes the plow CLEAR of the ground. No drag!

Why were so many Knapps used by tractor demonstrators at the recent demonstration? Because the operators on the tractors knew that a good tractor deserves a good plow.

Send for New Folder

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PROCTOR TRACTOR & IMPLEMENT CO., Santa Rosa, California.
C. E. WEIKERT TRACTOR CO., Sacramento, California.
GEO. P. AKERLY, Vacaville, California.
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Progress of Farm Bills in the Legislature

[By our Special Sacramento Correspondent, April 14.]

Estray Bills.

The King estray bill has passed the Senate, amended as noted in last week's issue, and is now in the Assembly Committee on Livestock and Dairies. The Kasch estray bill still sleeps in the Livestock and Dairies committee.

Feed Control Bill.

The bill providing labeling of feedstuffs to show their ingredients has passed the Senate and has been on file in the Assembly for the final reading since March 31. The Assembly has been so pushed with matters preceding this on file that it has not arrived at Senate bill 93. The appropriation of $5,000 as proposed in Senate bill 652 to enforce the feed law has passed the Senate and is in the Assembly Ways and Means committee.

Seed Labeling.

The Assembly and Senate bills to compel the labeling of seeds were the same at the start, but have been amended differently by each house and passed as amended by each house. The Assembly bill is in the Senate Agricultural committee and the Senate bill is in the Assembly Agricultural committee.

Beneficial Insects.

The Senate bill appropriating money to search for insects to control the mealy bug has passed the Senate and was sent to the Assembly Ways and Means committee April 11.

Deciduous Fruit Experiments.

The Senate bill proposing to appropriate $150,000 for deciduous fruit experiments was amended in the Finance committee on motion of one of its authors, Senator Benson, to provide $100,000. Mr. Benson did this because while it might have passed the Legislature for the original sum, the Governor could hardly approve it in view of the large appropriations which seem likely to be approved. It is now in the Assembly Ways and Means committee.

Apple Standardization.

The new apple standardization bill has passed both houses and is ready for the Governor's signature.

Vacuum Nursery Fumigator.

Senator Jones' bill 490 to appropriate $15,000 for the State Horticultural Commissioner to use investigating better methods of disinfecting nursery stock with special reference to vacuum fumigation, was passed by the Senate Monday night, April 14.

Fruit and Vegetable Standardization.

The new fruit and vegetable standardization bill has been approved by the committees on Agriculture and Finance with certain amendments, part of which are to include nuts. One amendment states specifically that "substantially colored" oranges shall be at least 70 per cent color. It is on file for third reading and vote on its passage.

Rice Water-Grass Control.

Senate bill 625 to combat rice weeds has been passed by the Senate and is in the Assembly committee on Agriculture.

State Commission Markets.

Senator Brown's state commission market bill is on file for third reading in the Senate, amended as per our notice last week. Assemblyman Baker's bill 46 to repeal the present State Market Director's law still slumbers in the committee on Agriculture.

Liberty Fair Deficit.

The bill to pay the Liberty Fair deficit has been passed by the Assembly and is now in the Senate Finance committee.

Dog Control Bill.

Senator Rush's new bill to prevent dogs from worrying sheep, as outlined last week has been passed by the Senate, and is now in the Assembly Agricultural committee. It has received approval of the Humane Society officers and of the Senators and most of the Assemblymen who were formerly against it.

More Land for State Fair.

The appropriation bill for purchase of certain land for the State Fair has been passed by the Senate and is in the Assembly Ways and Means committee.

Purebred Bulls for Ranges.

Senator Rigdon's skeleton bill defining purebred bulls for range purposes has been amended by making it unlawful for any one to cause or permit to run on any open range any bull over eight months old unless it has been "bred in a herd of one of the recognized beef breeds, the sires of which must have been registered bulls of the same breed for at least three generations and the dams of which must have been cows of the same breed of good quality." For 1920 not over 25 per cent of range bulls need be such purebreds; for 1921, not over 50 per cent; for 1922, not over 75 per cent. Violators will be guilty of misdemeanor.

Potato Guardian.

The seed potato certification bill has been amended to provide that the State Commissioner of Horticulture shall be empowered to promote and protect the potato industry of California. Otherwise it stands as previously sketched. It has been passed by the Senate and is now in the Assembly Agricultural committee.

Irrigation District Electricity.

The Senate bill to enable irrigation districts to use their waterpower to generate electricity for sale has been amended and on the unfinished business file since April 11. The chief amendment restricts water used for electric generation to that used by the district for irrigation, wherever other water rights control the remainder. The Assembly bill introduced for the same purpose has been passed by the Assembly and is ready for third reading in the Senate as amended.

Flood Storage Surveys.

State surveys for the purpose of locating and constructing flood storage reservoirs are provided in Senate bill 427. This has passed the Senate and is recommended with an amendment by the Assembly Irrigation committee.

Riverside University Farm.

Assembly bill 38, providing an appropriation for a University Farm at Riverside, has been passed by the Assembly and recommended by the Senate committee on Universities, and is now in the Senate Finance committee.

Ground Squirrels.

The ground squirrel district bill has been approved by the Assembly and amended in the Senate. It was amended again April 8 and is now ready for final passage.

Walnut Codling Moth.

Though the bill providing for experiments to learn control of the walnut codling moth has been supported by personal visits of Manager Carlyle Thorp of the California Walnut Growers' Association, it is not yet ready for third reading in the Assembly. It has been amended to double the appropriation so it would now provide $10,000 a year. Another amendment gives the State Horticultural Commissioner authority to prescribe rules regarding movement of sacks, trays, etc., from infected districts, and provides that disinfection shall be at the expense of owners of such equipment.

Oleo Quiet.

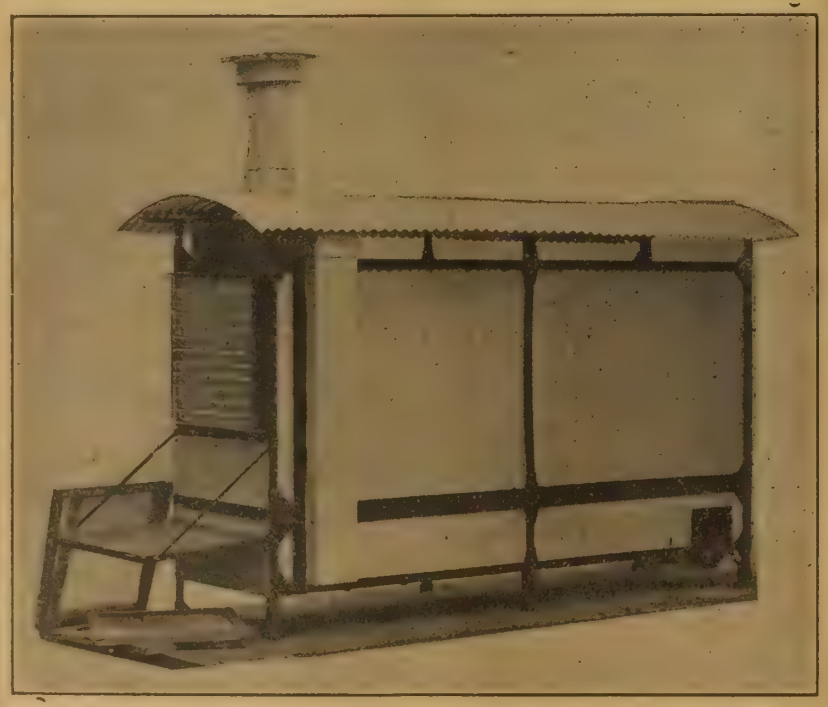
Nothing has been done with the Prendergast oleo bill.

Hay Bill Moving.

The pure hay bill has been passed by the Assembly, which refused to vote for reconsideration as moved by Assemblyman W. A. Doran of San Diego county, so it is now ready for the Senate.

Raised Bottom Berry Baskets.

The net container bill, A. B. 172, into which the State Superintendent of Weights and Measures was enabled to get an amendment in the Assembly which would have prevented use of raised bottom berry baskets, passed the Assembly that way. But this provision has been omitted by the Senate, chiefly due to the defense of these baskets by the berry growers themselves. It is now about ready for third reading and passage by the Senate. The Weights and Measures Department contended that raised bottoms are deceptive. The berry growers showed that nothing else is used in their principal markets in the middle west and that nowhere are they considered deceptive where they are commonly used.



MR. FARMER: If you grow Raisins—Prunes—Peaches—Pears Apples—Apricots—Grapes or Vegetables you need a

SAHARA DRIER

You work hard for months to perfect your crops—a rain, just as last year—can come and in 24 hours make your year's work an entire loss. Can you afford to take the chance when SAHARA DRIERS are offered you at such low prices—the cost of your trays for sun drying this year in many instances is more than the cost of our Drier and it gives you absolute protection regardless of weather conditions. No machine in years has received as much favorable comment and ready sale among the Farmers as has the Sahara Drier. Get your order in now and you won't be disappointed. See our Representatives for particulars.

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HOME OFFICE: 149 CALIFORNIA STREET.

Example Better Than Precept

[Written for Pacific Rural Press.]

That is one of the trite little proverbs that the budding statesman and the embryo housewife used to write in their copy-books about twelve times a generation or so ago. And it is brought to mind very forcibly when some live successful man buys property in a tumbledown neighborhood and begins to spray and prune his trees, cultivate and fertilize according to modern, up-to-date methods and—get substantial returns. We will not adorn this idea with a concrete example, but in discussing the matter with a grower the other day he said: "It is like the poor little boy who lived in very indigent circumstances on a starvation farm in the South. One day he took his shoes to be resoled and the cobbler gave them a dab of blacking. They looked so improved that he felt he had to give his legs a wash. Sister didn't want to be outdone and she blacked her shoes and donned cleaner linen. And so the leaven of the blacked shoes worked till dad felt he had to mend the picket fence, whitewash the barn and chop down the jimpson weeds, while mother washed the windows and made the red stove black. Whether this story is true or not, the principles of it will live forever. A good, clean farmer makes his slovenly neighbors perk up for very shame Then, they, too, spray and cultivate and everybody is benefited."

DELTA FARMS ON THE MARKET.

The California Delta Farms Company has decided to offer for sale in subdivision, forty thousand acres in the San Joaquin river delta below Stockton, comprising the tracts known as Webb, Orwood, Holland, Empire, King, Bishop, Mandeville Island, Bacon Island, MacDonald Island and Medford Island.

The reclamation and development of this tract began in 1912. Huge permanent levees have been constructed around each of the tracts. Electric drainage pumps have been installed to keep the water table at the level best suited to growing crops. The land has been under a high state of cultivation for several years. The principal crops have been potatoes, onions, corn, asparagus, celery, beans, barley and hemp, also garden truck.

The location is particularly advantageous for cheap transportation. Each tract is accessible to the San Joaquin river or its tributary canals and sloughs.

The Southern Pacific, Santa Fe, Western Pacific, Central California Traction, Tidewater and Southern Railway furnish prompt and efficient railway transportation. Paved highways offer an oportunity for transportation by auto and truck.

GETTING RID OF MOLES.

Some time ago one of your subscribers asked for information regarding the poisoning of moles. Your answer was that as a mole lived mostly on worms, grubs, etc., he could not be poisoned in a way that a gopher or ground squirrel could be—that is, by poisoned grain, etc. True enough, but let him dig up a lot of earth worms, put them in a can and add a little strychnine and then put a worm or two in each runway. Moles won't bother him any more.—Thos. Stamper, Artois.

A. P. Wright of Vine Hill, Contra Costa county, who grows a variety of fruit and vines, makes a business of home canning for the market and also puts up jellies, fruit syrup and grape juice.

The CALCO BIN is easy to erect



ILLUSTRATED above are pages from the folder, "Instructions For Erection of a Calco Grain Bin." From the first operation, laying out the guide stakes, to fitting on the roof—every step in the erection of the durable Calco Bin is simplicity itself. Every piece is punched and shaped to fit—exactly. They go together—and fit—as naturally as putting a wheel on your wagon. No skilled labor is needed to erect a Calco.

Calco Bins are made of Armco Iron—strong and durable. Write for the free "Calco Grain Bin" booklet.

A complete line of products for the farm and for irrigation are manufactured by this company. Ask us to supply you with catalogs or price lists.



Model 101

Calco Slide Headgate

A WATER-TIGHT, cast iron gate for reservoir or levee work—for use under varying heads of water up to 20 feet. Diameters from 8 to 72 inches. Gate frame made any height required. Write for price list.

Armco Iron Lateral Headgates

EASILY operated, durable metal gates, Diameters from 8 to 36 inches. Hand or screw lift. Supplied with either type of bulkhead. For use under varying heads of water to a maximum of 6 feet.



Model 150

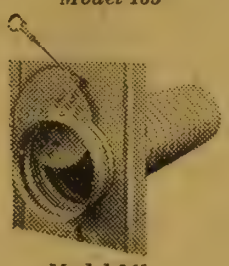


Model 153



Model 100

AMERICAN ARMCO INGOT IRON



Model 161

Calco Automatic Drainage Gate

WATER-TIGHT, sensitive, reliable Cast Iron Drainage Gate, automatically operated. Diameters from 8 to 84 inches. Write for a circular showing how gate is operated.



Lyman Irrigation Meter

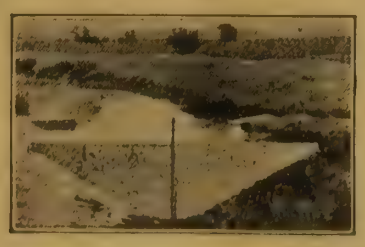
WILL give accurate measurement of any head of water that can be measured over weirs. Requires no attention after installation. Complete details in our circular. Send for one.



Ready to Insert

Armco Iron Irrigation Gate

THIS metal irrigation gate is both inexpensive and reliable. Made in diameters from 8 to 15 inches. Furnished with or without bulkhead. Replace your old wooden check with this metal irrigation gate.



How the Dam is Used

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UNIVERSITY FARM PICNIC APRIL 26.

The boys in charge of the arrangements for the annual picnic to be held at Davis, April 26th, are anticipating an attendance of 30,000 this year. Besides the program of athletic sports, speaking, dancing and live stock parade, there are many interesting departments at the farm to be investigated, and eight hours devoted to their study will well repay any farmer. Besides live stock there is a fine poultry department, a large farm power and tractor section; the new methods of spraying and pruning fruit trees, the cereal propagation plots, the vegetable gardens—all will appeal and afford educational value to visitors. Load your family and dinner into the auto early next Saturday morning and enjoy a day at the State Farm.



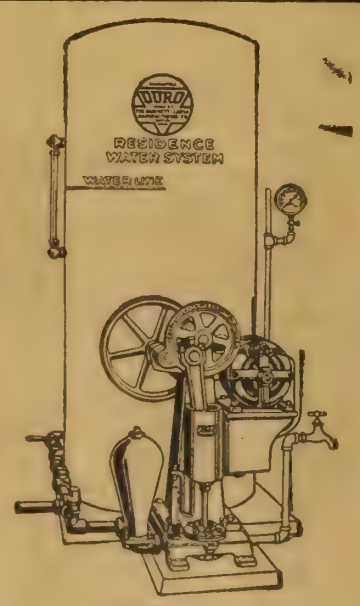
SAN JOAQUIN VALLEY FIELD CROPS.

Probably never had grain in the east side of the San Joaquin Valley looked better than it did previous to the recent several days of north wind. Much of the wheat and rye was already headed out. It is true that in some places the stand was thin owing to scant or poor seed, bad weather shortly after planting, or insufficient stooling. But all of the early sown grain still has a fine color, and only in part of Fresno county have we seen much of the late sown grain absolutely drying out, though it is suffering some in the more northern counties. In some places the soil has baked hard, very fine for evaporation of moisture unless it is promptly and outrageously harrowed.

Some alfalfa hay is already being made, and irrigation is in full blast from Merced southward. There is a grand rush for pump installations, especially in Madera county, where applicants for electric power previous to March 15 have recently been assured that they would get it. Others are installing gas engines. The electric power is coming too late to save a lot of spring sown alfalfa, but will help the older stands and summer crops. We have noticed several fields already planted to early row crops and some transplants protected by box shook or paper caps.

Much acreage in Merced and Madera counties lies idle and unplowed. A number of gang plows are still in operation, but rain will be necessary soon if this is to continue.

The hog is the most intelligent animal on the farm, except the dog. Horses are next, then cattle. Sheep have the least sense.



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Deep Well Systems

JUST the thing to bring suburban or country home right up to date.

Pumps water from wells, where depth to water level ranges from 22 to 150 feet, and supply it under pressure for all purposes about the house or grounds.

"Built like a battleship," economical and entirely automatic in operation.

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PLANT THE RIGHT SEED AT THE RIGHT TIME

Plant the right variety for your purpose, whether you are growing for home or market, or whether you are growing for cattle, horses, hogs, goats, rabbits, or poultry.

See the 1919 Catalog of the

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POTATO MAGAZINE

A subscription to this magazine entitl you to membership in The POTATO ASS CIATION OF AMERICA. *Write for sample copy.*

THE POTATO MAGAZINE Dept. G, 139 North Clark Street, Chicago, I

We Are Afraid to Buy Your Pump

(Continued from page 597.)

pump, but had also figured with the Fairbanks-Morse people. W said the latter's installation had been giving trouble and advised me to put in a F pump because he knew their installations would be put in right and more satisfactory than anyone else. S was with W, as he very frequently is when on electric pumping business. W frankly admitted that he was working with S.

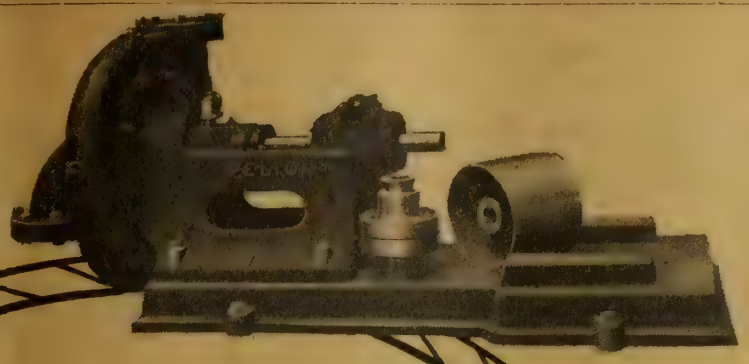
No. 5 The reason I bought an F pump, about September, 1918, was because practically all of the farmers around here understand that electric power will not be so promptly furnished if they buy other makes of pumps.

No. 6. I applied for power about March 1, 1918, and was told I could get it in May or June. About mid-June S came out and said I was about due to get my power now. I said I'd had no notice. S wanted an order for his pump, but I didn't want it and didn't order. A few days later W came out, but meauwhile I had changed the proposed location of the well to a higher point which would make the extension a little longer. W noticed the change but said we had better go up to his car to sign the contract. On the way to the car W asked if I had bought a pumping plant. I said, "Yes." He asked if it was from —— (the local F pump man). I said I had bought a Fairbanks-Morse motor and Byron Jackson pump. We discussed pumps until we reached the car. W did not knock the Byron Jackson pump, but said most of those in the county were F pumps. We had walked a quarter mile to sign the contract after W had noticed the change of location, but he decided that we had better not sign the contract just yet because the change of location might make a difference. Along in July W came back and offered a contract if I would put up $125 (as provided in Railroad Commission rules for certain cases). I did not sign up then, but applied again last December. The extension to my place has not been made, but I do not know of anybody getting ahead of me on the priority list.

No. 7. I took care of a Pelton pump for a neighbor for two years, using some of the water for myself. It was entirely satisfactory in every way and never gave any trouble. I applied for power for myself last October or November and would have bought a Pelton pump, for the Pelton dealer is handy and I have traded with him in other ways ever since I have been here, always with satisfaction. I am a poor man. I have a family to take care of. I must get the water in time to save my crop. People told me that I could get electricity more surely and promptly if I bought a F pump. I applied for power in the afternoon. Before nine o'clock the next morning W and S called on me and I signed up for a F pump. S did practically all of the talking. I was an easy mark. I should have been at liberty to buy a pump where I wanted to, but I was afraid to antagonize the electric company. I might not get power at all if I signed such a statement against the power company. The alfalfa might dry up while I'd be waiting for the Railroad Commission to investigate. W said the last time he came out that he would do all he could to get power as soon as possible.

No. 8. I went to W last June and he said he could not accommodate me. I said I was going out of his office the saddest man that had ever been here. I would have to go home and kill my 50 acres of fine alfalfa, for I couldn't run a gas engine big enough to water the whole place. He looked sympathetic and three or four weeks later came out saying he believed he could supply the power and asked if I was ready. I signed the application late in July or early in August. I said I had the money ready as soon as the job should be done. He went away and came back later saying I would have to guarantee to use $1,000 worth of electricity in three years. S came out soon and I told him I meant business, but I wasn't going to take my engine out until he got his outfit already to install and I would charge him $25 a day for every day over 48 hours that he kept my well idle. W got his crew out and built the extension just one mile and 50 feet to connect to my well. He did it in two days; and while his men were finishing the last pole in my yard S drove in with a F pump outfit. I stopped the engine and by nine o'clock in the morning of August 9 the new motor and pump were working. One or two of my neighbors had been six weeks getting their connections made, but I had gone to W and S in a business way. I told them I had the money to do business with and I didn't want any dilly dallying. But I was not coerced in any way into buying the F pump, and while I had talked with S about it some time before I signed up for power, I made no contract with him until I paid him half of the money down on August 1st.

THE ULTIMATE PUMP



Every article in this world is divided into three grades—poor, medium and good. Each grade has its users, but not all of them satisfy. One grade is bought on price, one on experiment and one for service, and the last grade usually wins.

Just so with pumps. There are dozens of makes of pumps, of every degree of price and quality, but there is only one that can be considered the absolute best. This is the "ULTIMATE PUMP"—the pump which has the best design, the best material and manufacture and which gives true satisfaction when put in operation. It is the pump that must ultimately be used to get thorough pumping service. Investigate the PELTON Pump—Bulletin No. 11

The Pelton Water Wheel Co.

1990 Harrison Street, San Francisco, Calif.

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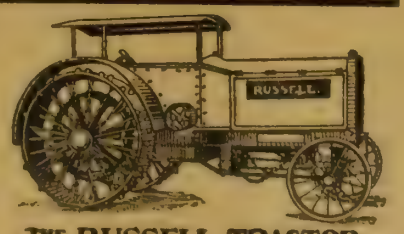
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It describes the entire American line and contains much valuable information for the irrigator.

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BUILT IN ALL SIZES



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The Threshing Problem Solved Threshes cowpeas and soy beans from the mown vines, wheat, oats, rye and barley. A perfect combination machine. Nothing like it. "The machine I have been looking for for 20 years." W. F. Massey. "It will meet every demand." H. A. Morgan, Director Tenn. Exp. Station. Booklet 27 free.
ROGER PEA & BEAN THRESHER CO.
Morristown, Tenn.

Sacramento

Tractor Demonstration

May 6 to 11
1919

BRING THE WIFE

Do you realize what a tractor on the farm means to the wife?

It means saving her drudgery. It means fewer men to cook for, shorter hours, less household care.

It means saving her drudgery

It means more freedom to give to her children, more time to enjoy life, more relaxation.

To you the tractor on the farm means economy of money, time and effort. It means plowing and cultivating when the soil is in the right condition.

It means solving the labor problem. It means fewer chores, because one tractor saves many horses.

Bring the Wife

She will be interested in seeing the half a hundred tractors of all makes actually doing the same work they would do on your farm. They will be many thousands of men, and hundreds who will bring their wives to see the great

Tractor Demonstration
Sacramento, May 6-11, 1919

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FREE CAMPING GROUNDS NEARBY.
EXCELLENT RESTAURANT FULLY EQUIPPED.

Additional Information Upon Request.

California Tractor and Implement Association

Membership: 77 Tractor and Implement Manufacturers and Dealers.

HOTEL LAND, SACRAMENTO, CALIFORNIA

Field and Garden Suggestions.

Grain and Beans in Warehouses.

Receipts of wheat in San Francisco during March were more than five times as great as during March, 1918. Barley receipts more than doubled, bean receipts were reduced from 104,634 sacks in March 1918 to 77,784 in March, 1919. More hay was received but less oats and corn. On April 1 there were 15,580 tons of wheat in Port Costa warehouses, 5,604 in Stockton, and 144 in San Francisco. On the same date there were 20,232 tons of barley in Port Costa, 10,364 in Stockton, and 731 in San Francisco. The accumulation of beans was 289,746 sacks as against 164,170 a year ago and 137,389 two years ago.

Moved Surface Pipes Too Much.

Twenty acres of alfalfa on one side of the road, and thirty acres on the other are irrigated from the same pump and surface pipe by S. P. Hale of Fairmead. All last summer, he carried several hundred feet of surface irrigation pipe back and forth across the road to get water to the proper high points in the two fields. This spring he has laid a line of surface pipe along the fence in the home field to a point opposite the highest point in the other field. At a cost of $18 he has laid concrete pipe across the road and now the surface pipe empties into the concrete and the water bounces merrily out on the other side with never any need of moving the surface pipe across the road.

Tractor Demonstration .

The second annual tractor demonstration of the California Implement Association to be held in Sacramento May 6 to 11 is causing wide interest. Enquiries have been received from the Netherlands government, Dutch East Indies, China and several South American countries. Every tractor and implement manufacturer on the coast has applied for exhibit space, and the best known factories of the East and Canada will show, too. Accessories, trucks and trailers will be well exhibited.

Brief Comment.

Canteloupes in the Imperial Valley are generally late, but there was difficulty getting a start this year, which with delayed hot weather accounts for only 10 per cent of the fields in blossom. The condition of the vines is variable, but some of the extra early fields show up well.

Car lot shipments of peas began March 9 and closed April 2 in the Imperial Valley. Small lots are still moving but the fields are turning yellow and growers are plowing under. Thirty carloads were shipped this year and 22 last year. Peas in Central California total 500 acres for shipment, and about 1,000 more acres for canning. The early peas were only 30 per cent of a crop, due to too much rain, but the canning crop looks well.

California leads the seven chief asparagus producing states of the United States, and 90 per cent of the California output is grown in the Delta regions of the San Joaquin and Sacramento rivers. Production for this district is expected to be over 56,146,150 pounds, as this was the last year's crop grown under unfavorable circumstances. The major portion of this crop is canned, there being eight canneries in the region who began work a week ago.

Kern county's cotton crop is estimated at 100,000 pounds. The cotton gin is running at top speed at Bakersfield, baling an average weight 500-pound bale. Several thousand acres of cotton will be planted in Kern county this month.

The Pingree sugar mill of Visalia is to be moved to Ogden, Utah, due to inability to secure sufficient beet acreage in the district. The beet crop around Visalia will be handled by the Corcoran mill which is owned by the same company.

The big Tagus Ranch near Tulare has shipped $25,000 worth of alfalfa hay, at 20 carloads a day, to various army camps for the Government. This hay was raised on the ranch during the past year.

Rice land around Marysville is being prepared for planting. The wet spring has delayed plowing and disking, but representatives of rice companies say that the ground is now working fine, and despite the late start will be practically seeded by May 1.

Graders are being sent throughout the country by the California rice committee to sort out the rice worth less than $2.25 a hundred and which is not acceptable as hog feed. Much of the 300,000 bags of rice remaining unsold now is damaged so that it cannot be milled, and to avoid the shipment of such rice these graders are at work.

Julius Barnes has been named as head of the organization for handling the 1919 wheat crop under the congressional guarantee, by President Wilson. He will become responsible directly to the President July 1 when Herbert Hoover leaves as chairman of the grain corporation. Hoover will remain as director-general of relief work on behalf of the allies and American government until after next summer's harvest in Europe.

The northernmost cotton gin in the world ginned its first cotton April 11 at Durham. The product of 1,000 acres of cotton will be milled this year. Butte county lies between latitudes 39 and 40, the great cotton belt being around 34. The short staple variety is grown.

Following offers of the Food Administration Grain Corporation to buy 150 carloads of California beans, offers totaled nearly 2,000,000 bags. The purchases will be on the basis of 5 per cent on the offers, or about 90,000 bags, divided according to the proportion of the different varieties remaining on hand in the various bean growing districts. The beans will be taken as quickly as the lots are inspected. Delivery will be made in the regular public warehouses wherever the beans are stored.

The acreage in Gyp corn around Turlock will be about the same as the 1918 season, 13,000 acres.

The Lathrop Hay company of Hollister has applied to the Railroad Commission for authority to raise its hay storage rates from $1.25 a ton for the first season and $1 for the second season, to $1.50 and $1.25 respectively.

OBJECTIONS TO FARMERS' ORGANIZATIONS.

(Continued from page 596.)

in the same way the railroad employees threaten occasionally to tie up transportation?

I don't think the farmer quite deserves severe criticism for not organizing to do as the others are doing; that he does not organize may be because he does not approve of the purposes or methods of organizations so far effected in other industries. That he cannot organize and carry out the purpose of his organization no one can assert who has had any experience with the organization and conduct of the rural schools. That he cannot accomplish a desired result without an organization through individual, voluntary response to a recognized need, the crops of 1918 prove.

I apologize for taking up so much of your time, and I cannot even hope that you will get benefit from my letter, which is one-sided, as I surely get pleasure and profit from your paper, whether I agree with all you say or not. K. LOVICK.

Irwin:

[So long as other interests are organized in their own behalf the farmers' interest must organize in its own behalf. The devil must be fought with fire. You probably have the idea that the farmers' competitor must be de-organized and that all should go into universal brotherhood. It is an enchanting dream.—Editor.]

$1475

F. O. B. Racine

Mitchell Sixes

Wheelbase 120 inches
Long-stroke Six motor
Cylinders 3¼x5.
Tires 34x4

The New-Standard Six

Over 100 Betterments--50% Added Strength

The car we present now is a new model, built to new standards by new Mitchell specialists. It brings out for the first time all our new conceptions of how good a car should be.

War-time gave us our great opportunity. The great Mitchell factory was devoted to truck building. So our engineers and experts had 18 months to perfect this ideal Six.

They have added 50 per cent to the strength, 75 per cent to endurance, 25 per cent to economy and 20 per cent to beauty and comfort. Not in ten years has so great an advance been made at one step in this field.

Standards Too Low

Two years ago we concluded that all existing standards in Light Sixes were too low. The cars were too light. Most of them were too small. There was too much skimping to meet price competition.

Makers did not know requirements. What they called overstrength proved under-strength too often. Hundreds of thousands of Light Sixes in use showed to us that standards needed raising.

Mitchell Sixes had been enormously successful. We were pioneers in Sixes. Our cars had won a world-wide reputation. Some had run over 200,000 miles. But we realized then that Mitchells also could and should be vastly bettered. And we resolved to do it, regardless of all rivals.

New Specials

We added to the Mitchell staff many new specialists. Each was a man who had made his mark in high-grade car construction.

Then came the war, and we entered truck building. That gave these new men 18 months to design and perfect this new Mitchell.

They worked out more than 100 improvements. They spent over $250,000.00 on new equipment for better workmanship and accurate tests. They created a staff of 135 inspectors. Part by part they revised our standards, until they had added 50 per cent to the strength and 75 per cent to endurance.

Some Major Changes

Your Mitchell dealer will show you countless improvements. But the best are shown only by tests. The gears, for instance, are made 25 per cent stronger. A new hardening process insures complete uniformity.

Rear axle strength is increased 50 per cent. Brake efficiency is increased 75 per cent. The steel frame is 1½ inches deeper, adding 50 per cent to the strength.

The steering gear is 10 per cent stronger, and it has two ball bearings. The crank shafts show a tensile strength of 150,000 pounds per square inch.

There's a new type of disc clutch. There are 123 drop forgings. Chrome-Vanadium and Chrome-Nickel steel are used in abundance.

But our long cantilever rear springs are unchanged. They could not be improved. They have made the Mitchell the most comfortable car in its class. And not a spring has broken out of 40,000 pairs.

Less Operating Cost

Gasoline and oil consumption are reduced 25 per cent. This partly comes through perfect-fitting cylinders. It largely comes through a thermostat which regulates the water system to maintain an even heat.

We use body frame material costing twice the usual to make the bodies staunch. We use interlaced hair in the upholstery, so it stays in place. We use four coats of varnish instead of the usual two, so the finish is enduring.

Our wheelbase is 120 inches to give ample room. Compare that with other five-passenger Sixes. We employ 135 inspectors and testers to insure that every part is right.

The Lowest Price

Still this new Mitchell, with all its improvements, undersells all rivals. It remains, as always, the lowest-priced Six of its size and power and class.

This new car forms the supreme example of what factory efficiency means. We build the complete car, chassis and body, in a plant that is famed for its scientific methods. As a result, we continue to offer a value unapproached in this class.

Write us for further details. Then see this new car at your nearest Mitchell showroom. See for yourself what these new standards mean. You will find no other car this spring with so many new attractions.

Mitchell E-40

Price, $1,475, f. o. b. Racine
Wheelbase, 120 inches.
Long-stroke Six motor with Cylinders 3¼ x 5
Tires 34 x 4
3-Passenger Roadster, same price

7 Passenger Touring Car
127 inch wheelbase—48 Horsepower Motor
$1675 F. O. B. Factory.
We also make a Touring Sedan

MITCHELL MOTORS COMPANY, INC., RACINE, WISCONSIN

Mechanical Power on the Farm

Users of tractors, engines, pumping plants, motor trucks, automobiles, electric motors, and other mechanical farm power are invited to make this department an exchange of their experiences and troubles.

DOES YOUR AUTO WOBBLE?

To the Editor: The best money the writer ever spent on repairs for his Ford was that spent to correct a condition which had repeatedly endangered not only his own life but also the lives of all persons who rode with him or who drove on the same highways. It had become impossible to hold the front wheels steady. They wobbled out of control repeatedly. On one occasion they took him thirty miles an hour into an alfalfa patch, almost locking first on one side, then on the other, as the driver tried to straighten them ahead. On several occasions they locked temporarily in turning a corner and nearly landed him on the wrong street or on the wrong side up. All this time he was driving with his family on all kinds of shortly curved mountain grades. On one occasion he passed another machine on the highway but ran a front wheel into the sand. In trying to steady the steering gear straight ahead, he wobbled all over the road in front of the machine he had just passed and narrowly avoided turning over. Life became one continuous dread of meeting other automobiles, and the strain of rigid muscles whenever steady driving was necessary made him think he was losing his nerve. Frequently he examined every part of the steering apparatus and kept it all tight. He took all wobble out of the front wheels on their own axles. Still the wobbling of the machine continued and he gave up that he couldn't fix it.

The garage man took just one look.

"Your front axle," said he, "is canted back under the car because you have hit too many bumps. The ends of the radius rods had to bend to permit this condition. We can take a long-handled wrench and twist the axle back so its lower edge will be directly under the upper edge on the same side of the axle. That will straighten the ends of the radius rods, but they will bend again under the road work you give it. The only way to prevent that is to have 'sub-radius' rods extend parallel to the radius rods from the under side of the axle."

"Go ahead," said the writer.

For a few days afterwards he almost never turned a short corner. That machine insisted on going straight ahead. Only by a considerable pull on the steering wheel would it turn at all; and on releasing the wheel, it would turn back to a straight line. Our nerve has returned, we enjoy driving, and we have a profound sympathy for our fellow men whose cars we occasionally see wobbling out of control or locking dangerously on a turn.—H. E. R., Lomita Park.

POWER USERS' ASSOCIATION.

Electric power users put up a loose-jointed, unorganized, losing argument at the hearing a few weeks ago in Tulare county before the Railroad Commission which was considering the addition of a 5 per cent surcharge to all rates of the Mt. Whitney Light and Power Co. They went to lunch expecting a decision adverse to their interests. But they got together during that noon hour and decided that it was a poor way for individuals to maintain their rights as against large corporations. They decided that they could all pull more together than they could separately. A permanent Electric Power Users' Association seemed the logical course. They secured postponement of the final hearing until April 12, and sent out a call for the Farm Bureau of each county in the San Joaquin Valley from Merced south to send three delegates who were farm users of electricity to an organization meeting to be held at Tulare not long after the middle of March. These delegates (except from Fresno and Merced, which were not then represented) effected a temporary organization and outlined a permanent form. They widened its scope to include patrons of all public utilities. They asked each county to organize by inducing any local organization which should desire to appoint a member of the county board. This county board is to take all local action necessary and elect three delegates to a general executive board which is to represent the valley. The general executive board met April 2 and took up the matter of employing an attorney and engineer to get all data possible and present it adequately at the April 12 hearing. This takes money, which is supplied by the $1 membership fee and such assessments as the executive board may levy. These assessments will be paid pro rata on the basis of horsepower used. When other industries affected by other public utilities require funds for a fight, they will be equitably assessed pro rata. N. E. Saunders of Chowchilla was elected president; Mr. Feemster, an attorney of Visalia, became vice-president, and Mr. Ely of Lemoore is secretary.

CENTRIFUGAL PUMP RUNS BUT THROWS NO WATER.

A pump user tried almost every way to find out why his centrifugal pump would run along all right but wouldn't throw water. "Does it get air through the suction pipe," said the pump doctor. "No, that has no holes in it except under water," said the farmer. "Is it drawing air through the packing around the shaft?" "No." "Then the runner is stopped up. Probably some gravel has fallen into the well or been drawn up from the bottom. I have known of frogs clogging the runner of a centrifugal pump. We even found the remains of a jackrabbit in one which had refused to throw water. But it is more common to find rocks or rags in them. It is best to take the suction pipe and elbow loose so you can get directly to the runner and clean it out."

FLOW OF NEW WELL TO INCREASE.

The newly installed centrifugal pump was not throwing as much water as M. L. Garman of Madera county had been led to expect. It was designed and guaranteed to throw

THE BEST RUBBER BELT EVER MADE
TEST SPECIAL

Special booklet, mailed free upon application, describing construction of Test Special Belt. Sample also sent. Tell us your belt troubles.

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10,000 Miles Guaranteed and No Punctures

After ten years test by thousands of car users, Bricteon Pneumatic Tires have solved pneumatic tire problem. Easy riding, absolutely proof against punctures, blow-outs, ruts, rim cut, skidding, oil, gasoline. In short trouble proof. Written 10,000 mile guarantee. Some go 15 to 20,000.

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Sizes 2 to 30 H-P.--Select Your Own Terms -- Direct-from-Factory Prices. Write your own order--Save $15 to $200. Prompt shipment. Big new catalog. How to Judge Engines" free -- by return mail. Postcard.

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THE LAST WORD IN ORCHARD TRACTOR



There is not another tractor selling at under $1,000.00 that has the complete and up-to-date equipment that the little Avery 5-10 H.P. Orchard Tractor has.

SUCH FEATURES AS—

K. W. Magneto with impulse starter.
Enclosed Governor.
Sand Guard and Exhaust.
Hyatt Roller Bearings.
Swing Draw-bar, etc.

The Avery 5-10 H. P. Tractor will plow up to and away from the trees better than horses—it will handle the tools ordinarily drawn by a 4-horse team. It is low and turns short.

If you will write we will gladly give you the names of hundreds of satisfied Avery owners.

AVERY COMPANY
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237 SO. LOS ANGELES ST., - LOS ANGELES.
Distributors in 24 cities in California.

about 460 gallons per minute with a lift of 55 to 60 feet. The pump man pointed out two reasons for the disappointment which he said would prove only temporary. The water had pulled down to the limit and this had increased the lift above that for which the capacity was guaranteed. The reason it had pulled down was that the little channels by which water flows into the well were at first in a more or less clogged condition. After a few days' flow at most, these would have worked themselves into clear passages and the water would flow in more freely. This would raise the waterlevel in the well, reducing the lift, and enabling the pump to throw its guaranteed capacity.

SACRAMENTO TRACTOR DEMONSTRATION.

We have just looked over the plans of the Motor Demonstration in the office of R. M. O'Neill, manager of the association, and feel no hesitancy in predicting that the coming demonstration and exhibit will be the largest and most successful ever held on this Coast.

The list of entries includes every tractor and power farming machine manufactured here as well as the entries by the leading manufacturers of the East and of Canada.

Of equal interest to farmer, orchardist and housewife, will be an exhibit of a great variety of power accessories.

When a farmer buys a tractor and sells his horses, he is interested in trucks and tractors. There will be large exhibits of both. The big aim of the Demonstration, May 6 to 11, is to be educational. At the daily demonstration will be seen tractors plowing, harrowing, sub-soiling, leveling and checking,—in short doing all the things that tractors are best adapted in the aid of successful and economic farming.

There will be daily lectures by Prof. J. B. Davidson, head of the Engineering Dept. at Davis, and a corps of experts, on subjects of vital interest to the farmer, rancher and orchardist, such as More and Better Wheat, Deep Tillage, Humus in the Soil, Ignition, Lubrication, and care and upkeep of Tractors.

Admission to everything is free, including auto parking space and camping grounds. Round trip tickets at one and one- half fares will be sold on the Oakland, Antioch and Eastern and Sacramento Northern railways.

PAY WAGES OR BUY REPAIRS.

"It pays to pay wages enough to get a tractor driver who knows his business," said J. W. Clendenin of the Madera Hardware Co., who supply repair parts for various tractors in Madera and Fresno counties. W. S. Crowder of Madera county bought a 75 horse-power tractor a year ago this winter in time to plow 1600 acres and then pulled the combined harvester on 1200 acres of his own grain and 1000 acres on the outside. Last winter and this spring he plowed 3400 acres including his own. For outside work the pay was $2.25 to $2.50 per acre and it cleared him about $900. This man has had careful drivers and has done a lot of night plowing. His repair parts have cost not over $500 to date. On the other side of town another 75 horse-power tractor was bought at the same time and abused by its drivers. The repair bill has amounted to the neighborhood of $2,500 on that machine. The extra $2,000 would have paid a pretty good driver and would have saved a lot of lost time.

TRACTORS DIAGONALLY ACROSS IRRIGATION BORDERS.

Monarch tractors at the Sacramento Tractor and Implement Demonstration, May 6 to 11, will dig a ditch, throw up borders and run diagonally across them to show their efficient system of preventing a twist in the frame on uneven ground. One of the oldest Monarchs in the State will be at the Demonstration labeled with the number of acres it has plowed, along with other data, as planned by Frank Walker of Walker & Thompson.

The Economical Way Of Handling Grain Adopted By Thousands Of Western Farmers



Bulk handling of grain, elevating it into bins, granaries or cars with John Deere Elevators, is saving Western grain-growers thousands of dollars. Sack expense and cost of sacking are entirely eliminated. The crop is handled in less time, with less waste and with less help.

John Deere Elevators are used to empty grain bins also, when the grain is marketed

JOHN DEERE
TUBULAR STEEL ELEVATOR

Fifteen to twenty bushels of grain per minute—that is the capacity of the John Deere Elevator with a three to six-horse-power farm engine. You can control the capacity, by means of an adjustable gate in the hopper, to adapt the elevator to the power applied—a big advantage.

The hopper folds up out of the way—you drive up the load and lower the hopper—no backing of the load.

Built of steel almost entirely, there is no warping or decaying—the John Deere will last almost a lifetime. The elevator, built of 3/16-inch steel well casing into which fit round flights, handles without wasting or cracking, all kinds of small grains.

John Deere Tubular Steel Elevators are furnished in two types—the John Deere Portable—a 23-foot mounted outfit—and the John Deere Pony—a 17-foot unmounted outfit. Your selection depends upon individual needs.

Get Your Share of This Big Saving

Adopt the bulk method of grain handling. Get a John Deere Elevator and let it continue to save you money for years to come. We have a booklet that tells all about John Deere Elevators. Write for it today. Ask for Package T-2 25

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GET QUALITY AND SERVICE — JOHN DEERE DEALERS GIVE BOTH

No. 35-N Black Hawk Planter

AN UNFAILING PRODUCER

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Accuracy
Sight Feed
Large Hoppers
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26-in. to 44-in. Rows
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Nine Speeds
Quick Detachable Runners



Plants

Beans
Beet Seed
Broom Corn
Feterita
"Gyp" Corn
Indian Corn
Kaffir Corn
Milo Maize
Peas
Sudan Grass
Etc.

Los Angeles — **Oliver Chilled Plow Works** — San Francisco

NO CAUSE FOR COMPLAINT.

"See here!" exclaimed the stranger as he stumbled into his 20th puddle, "I thought you said you knew where all the bad places were on this road?"

"Well," replied the native, who had volunteered to guide him through the dark, "we're a-findin' them, ain't we?"—Edinburgh Scotsman.

Orchard Conditions in Yolo County

[Written for Pacific Rural Press.]

Generally speaking, Yolo county has good prospects for the coming year. Following is a reply to questions we asked William Gould, the County Horticultural Commissioner:

Almonds.—April 15th: "The almond crop which is showing up in our county at the present time is not all that could be desired. My guess at the present time is about a 60 per cent. crop. The Nonpareils, Drakes and Texas are showing up the best of all and in the Woodland section I am sure that the crop is about normal, but in the Esparto section, where they had a good crop last year, the almonds are dropping badly and there will only be about a 50 per cent. crop in that section.

Red Spider.—Our people are making great preparations to fight the red spider this year, the majority of them using the dry sulphur. I, myself, used two applications of dry sulphur and one of Atomic.

Prunes.—It is a little early to predict the prune crop, some of my Imperials are showing up fine and there was an unusual heavy blossom all over the county. I believe that if the weather continues to stay favorable as it is now we will have a good crop of prunes.

Apricots.—I think apricots will be about an 80 per cent crop for Yolo county.

Plowing.—There are a great many orchardists that are behind with their plowing and with the heavy cover crop (which we all got due to the September rains) and several days' hard north wind it has taken the moisture out of the soil very fast and a great many of them are unable to plow until we get a rain or until they can irrigate. I have just paid one of my neighbors $171.00 for 171 tons of good cow manure hauled and spread on my land at $1.00 per ton."

Mr. Gould is to be congratulated on living so near to a manure pile that can be tapped.

HORTICULTURAL REPORT FROM NAPA.

"Prunes came into full blossom in Napa between the first and fifth of April, pears between the tenth and fifteenth. Cherries were in bloom on the first. Prospects were never better for a prune, pear and cherry crop" says Horticultural Commissioner W. D. Butler in a report of April 15. Continuing, he says:

"Thrips bothered in some places but sprayers have been at work as never before. The tent caterpillars, both the common orchard and the forest, are appearing in large quantities but we are ready for them and no damage will result. The apricot crop is completely gone from blight. Peaches are somewhat affected with same organism but the crop will be normal. Nothing but forst can prevent an historical fruit crop in this county. The bee increase campaign carried on by the Farm Bureau has been a success and a great many swarms have been placed in the orchards. The weather has been favorable and their work in the blossoms certainly cannot be without result. All these bees are being well tended. Mr. Dickerson, of St. Helena, has been engaged by the bee keepers to give expert assistance and instruction in the care of an apiary. As to grain and pasture the conditions are excellent.

After thinking over this year's possibilities I am reminded of an expression made by a Jap in my presence several years ago. He was buying a cherry crop on the trees while it was still in the bloom. When asked if he was not taking a long chance he squinted at the sky and said, "Oh I tink God he good this year."

STATE WALNUT CONDITIONS.

From North to South of the State conditions are so far favorable for a good walnut season. We have seen no tree so far touched with frosts and reports from the South state that the setting of nuts is uniformly good there. There is every reason to anticipate a record year for tonnage, for a large area of young acreage is coming into bearing in the North as well as in the South. In the Northern walnut growing sections the season has been unusually favorable. The rainfall has been ample and well distributed. There has been no frost damage (April 16), and the bloom is strong and well set. The ground is well supplied with moisture and the trees in extra thrifty condition to face the summer. In the South, although rainfall has been very short, most of the orchards are under irrigation systems and many have already had a good watering. It looks like a "banner year," and growers are prepared for any eventuality. A number of new dusting machines and spray outfits are reported from Santa Barbara and Santa Ana.

TONS TELL THE STORY

MORE of THESE Presses in use in California than all others combined

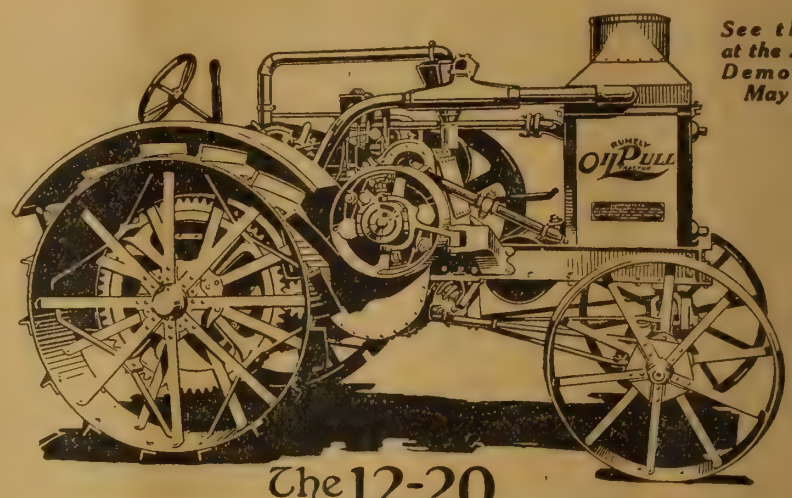


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See the OilPull at the Sacramento Demonstration May 6th-11th

The 12-20

Capacity—Pulls three plows—operates 22-inch thresher.

Fuel—Guaranteed to burn kerosene successfully under all conditions.

Cooling—Oil cooled—no evaporation—non-freezing.

Motor—Heavy duty, 2 cylinder 6 in. x 8 in.—560 R. P. M.

Crankshaft—Built to U. S. Naval Specifications.

Frame—Hot riveted steel members—no bends—no splices.

Transmission—Cut steel gears, enclosed and running in oil.

Bearings—Hyatt roller bearings in transmission and rear axle.

Governor—Fly ball throttling type—automatic speed regulation.

Belt Pulley—19 inch diameter—running directly off crankshaft—no intermediate gears.

Lubrication—Force feed and splash.

Speeds—Two forward—one reverse.

Drawbar—Adjustable spring drawbar.

BACKED BY WRITTEN GUARANTEE ADVANCE-RUMELY

A New OilPull in a 3 Plow Size

"Build us an OilPull in a 3-plow size."

That was the call from farmers everywhere—and the 12-20 is our answer—the latest and smallest of the OilPull line, an all purpose outfit built on the proved OilPull design and construction.

Into the 12-20 are built all the features that during the past ten years have established the unequalled OilPull record for economical, dependable operation and long life—plus those improvements that only long experience can teach.

Like all sizes of the OilPull the 12-20 is backed by a written guarantee to burn successfully all grades of Kerosene under all conditions, at all loads to its full rated brake horsepower.

In the 12-20 the weight distribution is absolutely correct—no danger of turning over, or the front wheels raising off the ground. The 12-20 "stays put" on rolling land as well as level.

The 12-20 is a light weight, big power outfit—its rating based upon only 80% of its maximum efficiency—a 20% reserve power when you need it.

The 12-20 is oil cooled, which means that the radiator will not freeze in the coldest weather nor boil in the hottest—that it will go indefinitely without refilling—that instead of clogging the circulating system with sediment it keeps it always open—that instead of rusting the cooling system parts, the oil preserves the metal. The OilPull cooling system eliminates a cooling fan—it keeps the motor at the right temperature at all loads. The harder the OilPull works—the cooler it runs.

All transmission gears are cut gears—all shafting and parts such as the cylinder, piston, rings, etc., are ground to the thousandth part of an inch—a guarantee of a perfect fit and greatest efficiency. The OilPull is built complete in Advance-Rumely shops.

The 12-20 is as efficient on the belt as on the drawbar. The belt pulley is just where it ought to be, on the right hand side, up within full view of the operator. The 12-20 can be lined up with a belt machine, backed into the belt and the belt started and stopped from the platform. The belt pulley is driven direct off the crankshaft—no loss of power. The band wheel is extra large and by driving through a cross belt allows the use of a looser belt.

The 12-20 will pull three 14-inch bottoms under average conditions, operate a 22-inch thresher fully equipped, and handle all the various drawbar and belt power jobs.

All OilPull tractors are not only backed by a guarantee that assures you the most economical operation—they are also backed by an organization big enough to guarantee you efficient service at all times. Advance-Rumely maintains 27 branch offices and warehouses.

Ask for the catalog describing this new 3-plow OilPull.

ADVANCE-RUMELY THRESHER COMPANY, *Inc.*
La Porte, Indiana

17-19 Main St., San Francisco, Cal.

ADVANCE-RUMELY

PEAR BLIGHT POINTERS.

In our issue of April 12 under the above heading we mentioned the new disinfectant for pear blight recommended by Dr. F. C. Reimer as being cyanide of mercury. But he says that this disinfectant is not a safe one to use on tools. That corrosive sublimate (bichloride of mercury) must still be used for this purpose. In a recent article of Dr. Reimer's he gives this summary: "Cyanide of mercury 1-500 is effective on the wounds but not effective on metal tools; and corrosive sublimate is not effective on the wounds but effective on the tools." But he says further that if cyanide of mercury is applied to every wound—whether a wound from which blight has been cut or simply a wound made in healthy bark in probing for blight—it will prove effective. In other words it will destroy blight bacteria left on the surface of the wound by the tools." Therefore if the blight cutter wants to disinfect his tools as well he must carry a bottle of corrosive sublimate too.

RECENT IMPORTS OF DRY BEANS

San Francisco from the Orient.

December .....23,450 sacks
January..... .....None
February .....53,398 sacks
March .....29,706 sacks

Seattle from the Orient.

January .....3984 tons
February .....3522 tons
March .....3032 tons

New York from So. America and So. Pacific Ports.

January .....31,950 sacks
February ..... 7,227 sacks
March ..... 7,112 sacks

ASSOCIATION SUPPLIES MEMBERS

The California Prune and Apricot Growers' Association is purchasing box shook, tray shook and sulphur for members and it is urging them to place their orders as early as possible so that the best prices may be given on carload lots. This will help many growers who are not served locally. Also it is pointed out that apricot growers must use Louisiana or Tennessee sulphurs such as the "Anchor" brand for sulphuring their fruit, such as the Association is handling. Other grades have such a large arsenic content as to make the dried fruit condemnable under the pure food law.

THE ASSOCIATED RAISIN COMPANY.

On February 25 approved a budget of $440,000 for all advertising and sales purposes for the fiscal year beginning June 1, 1919. This appropriation will cover all domestic and foreign advertising and sales. Last year about $385,000 was voted. There will be somewhat more national advertising in Standard magazines and some new advertising in the trade press.

A fund was set aside to be used in foreign advertising if this were found necessary to dispose of a part of the coming crop.

Much late grain has been sown in Imperial county where farmers decided late not to plant cotton. Small yields are expected from such fields, in some cases the grain is being used as a nurse crop for alfalfa. About a half of last year's cotton acreage is being put to alfalfa and corn this year.

Watermelons around Heber are being offered at contract for $40.00 a ton.

QUALIFIED

ORCHARD FOREMAN

Deciduous fruit expert, University graduate, trained at University Farm, Davis. Age 30, alert, ambitious, experienced, seeks bigger opportunity and will be at liberty about July 15. Unusual references.

This party is thoroughly posted in the upto-date pruning methods recommended by the Pomology Division of the State University. He wants to handle the practical working end of a well-managed orchard. $125 per mo. Address, Discharged Army officer, Care Pacific Rural Press, 525 Market St., San Francisco.

NASH



QUICK AND ECONOMICAL TRANSPORTATION

TWO trips a day instead of one at the busy time of year mean actual money in the pocket of the farmer. The Nash Quad, which drives and brakes on all four wheels, will not only carry its own load of two tons but with proper trailer equipment will haul two and even four tons under favorable road conditions besides.

Its automatic locking differentials which prevent spinning of the driving wheels, assure traction in ploughed ground and stubble fields.

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NASH TRUCKS

One-Ton Chassis, $1875 Two-Ton Chassis, $2440 Nash Quad Chassis, $3600

Pacific Coast Points.

Selecting Los Angeles as the point of distribution for the entire Coast, the Pacific-Whitney Tractor Corp., have opened up sales rooms, and are now completing their selling organization for the sale of the Whitney Tractor. The Whitney is rated 9-18 H.P. and pulls two 14-inch plows. It is made in Upper Sandusky, Ohio. While new on the Coast, it has gone through several successful seasons in the Eastern States.

Members of the California Tractor and Implement Association met in Sacramento last week and drew lots for their fields of operation at the coming demonstration.

Lettuce shipments are about ended in the Imperial valley. One grower hauling to Heber, gets 50 cents per dozen heads, 5 dozen heads to a crate. A Japanese neighbor is packing some running 18 heads to a crate.

The Wheat Tractor is the latest arrival in the tractor line to make its appearance on this Coast. The drawbar rating is 12-24 H.P. and it is claimed that it will pull three 14-inch plows with ease under normal working conditions. This tractor has an extra equipment, wheels with solid rubber tires which are easily and quickly converted from tractor for the use of heavy hauling. It is capable of hauling several tons, using trailer or wagons, at a speed of 10 miles an hour. This tractor will be distributed in California by Mr. F. L. Sullivan, representing the factory in Buffalo. Los Angeles will be headquarters.

Go down to Riverside to the Horticultural Convention from May 26 to 31. Hear and take part in the fruit growers' discussions. Learn what to plant and where and how to ship your produce. Learn what there is to be learnt about cover crops and grafting stock, about blight, little leaf, and other plant diseases and pests and the best way to get by.

HORTICULTURAL JOTTINGS

The non-bearing acreage of lemons is now 75 per cent as large as the bearing acreage.

In the Sebastopol district present conditions warrant the estimate of a 100 per cent crop of bush berries.

Thirteen cents a pound for dried peaches is still the top-notch reported being offered by independent packers.

It is rumored that $70 a ton has been offered for cannery peaches, but it is too early to report definite prices.

A report from Sonoma states that offers of 31 cents a pound have been refused by growers for the 1919 crop of hops.

The United States Food Survey gives 1,762,125 barrels of apples in storage to Mar. 1, 1919—544 storages reported.

Watsonville strawberry gardens are now dotted with chests and everybody is busy getting ready for the harvest now begun.

It is reported from Georgia that the early peach crop has been seriously damaged by frost. Late peaches are believed to be safe.

The Valencia orange crop, which is now normally half that of the Washington Navel, is likely to equal the latter in a few years.

The coming season's crop on four acres of figs at Hughson (Stanislaus county) is reported to have been sold for $3,000 on the tree, cash in advance!

It is estimated that $2,500,000 is paid annually in California for insecticides used in spraying. The cost of application and expenses will amount to as much more.

The cherry crop has a very favorable outlook everywhere (Apl. 12). A good strong bloom is showing, and so far thrips' injury has been slight. Much spraying was done.

A shortage of teams for plowing is reported from many quarters and the spring work has been bunched by weather conditions, and horses were soft from forced inactivity.

The highest average price for oranges of the Butte County Citrus Association was obtained during the past season, being $4.16 a box, according to their annual report.

The City of Pomona, by public vote, has adopted an ordinance prohibiting orchard smudging. This prohibits smudging on 300 acres of citrus—chiefly oranges—in the City of Pomona.

"Wormy applies and pears cannot be sold legally except for by-product uses. No grower therefore should allow the codling moth pest to multiply in his orchard," says the State Commissioner of Horticulture.

The Sutter County Prune Growers met at Yuba City on Monday afternoon for the purpose of effecting a local organization which will be affiliated with the State Association. A local packing house is being considered.

"Just now it might interest you to hear that there is an unprecedented local demand for Bartlett pears," says Horticultural Commissioner Fred G. Stokes of Lake County. "Prices have gone up from $45 a ton, 'orchard run,' to $60 a ton."

Los Angeles has been complaining of the dumping of off-quality and frost-injured oranges on her local market, and the City Council has requested the city prosecutor to stop the sale of such fruit, which can go to the by-products factories.

The English Board of Agriculture has been investigating the pay of farm labor there. They found little evidence of unfriendly relations between employers and agricultural workers and that the average wage has nearly doubled in the last four years.

Prune members of the California Prune and Apricot Growers' Association will get from one-half cent to a cent and a half a pound above the prices set by the Government last fall when full settlement is made. All the 1918 crop has been packed an dsold it is said.

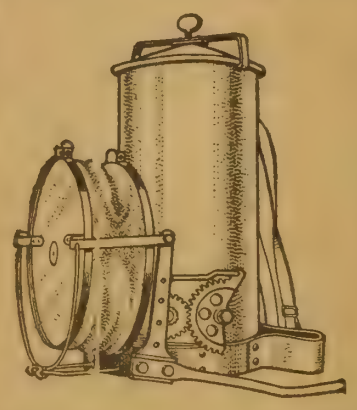
Peach growers in the interior valleys are now reported to be receiving offers of thirteen cents a pound for this season's dried peaches. The greater proportion of them belong to the Association and will obtain the utmost that the market affords anyway. And that price promises to make up for some of their very lean years.

Landholders in certain districts have been warned by the Inspectors for the State Commission of Horticulture that unless prompt action is taken by them in the extermination of ground squirrels the State will do the work for them. Very few regions are now left in the State where actual coercion is any longer necessary.

Canners are reported to be paying twelve cents for strawberries to the grower. The Central California Strawberry Growers' Association is said to control practically all the commercial acreage of the state and is very solidly entrenched. It is estimated that 90 per cent of the growers are Japanese who realize the value of a strong organization. The strong demand of the canners will probably send the price of strawberries to the consumer up to $10 or more per chest if it is maintained.

Sutter County Farm Bureau has established a committee of their members who will have charge of marketing the crops for members c

American Beauty Dust Sprayers



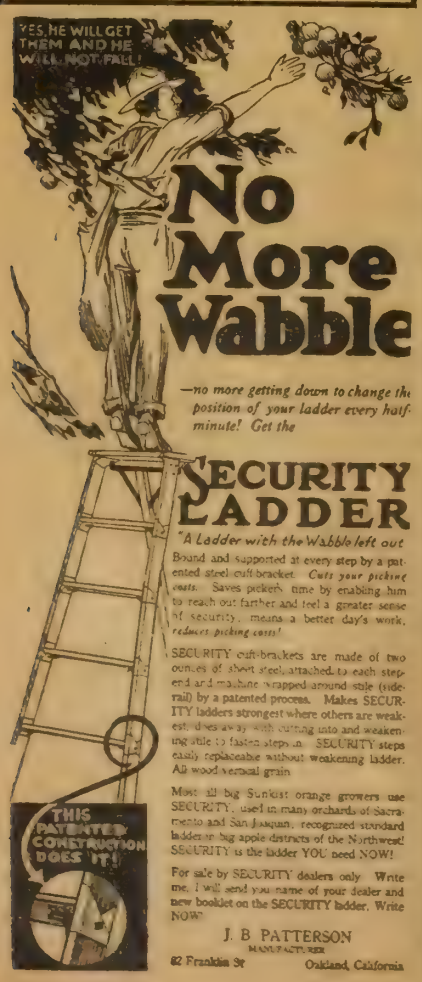
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Vineyard Size $16.00

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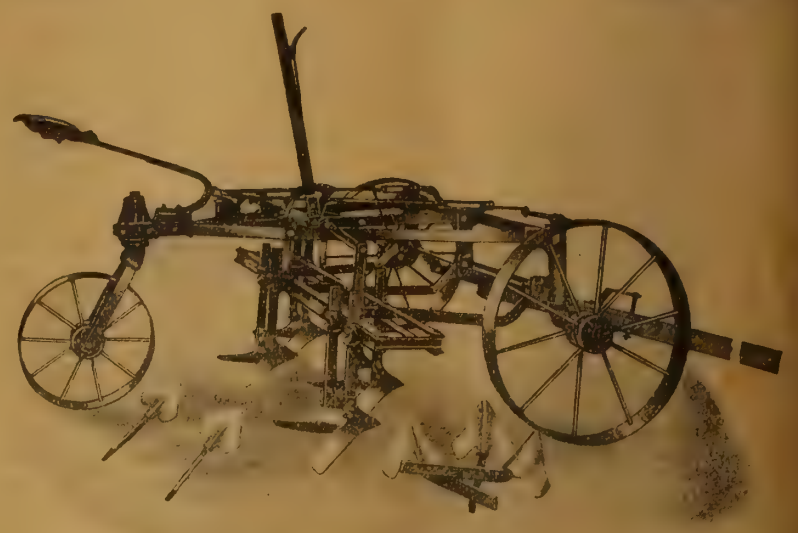


BEET CULTIVATOR

(Catalog No. 260)

KILLEFER QUALITY

KILLEFER EFFICIENCY



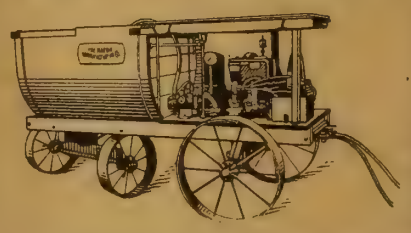
The frame of this Cultivator is made of one continuous piece of high carbon steel with a truss connecting it to the main castings, supporting the the two steering wheels. This construction makes a cultivator that is almost impossible to break down in the center and in consequence the wheels are always in line and under easy control.

The lower frame or tooth bar is from the same quality of steel with a strong arm at each end which connects with the lifting rod allowing no chance for the frame to dip or run deeper at the ends. The seat is set back far enough to give an unobstructed view of the rows. The foot control of the front wheels is adjustable with a turnbuckle for taking up wear and is very easy on the operator. A lock is provided for the rear wheel that holds it rigidly in line except on the turns. An important item for the beet grower is that the sweeps, hoe steels, chisel points and all repair parts are carried in stock. You do not have to wait for them to be sent from the Eastern manufacturer.

THE KILLEFER MANUFACTURING CO.

2209-21 SANTA FE AVE., (Box. 156 Arcade P. O.) LOS ANGELES, CAL.

THE FAMOUS HARDIE JUNIOR



The **FAMOUS HARDIE JUNIOR** is a real power sprayer. It has sufficient capacity for two lines of hose. It has plenty of power for **high-pressure effective spraying.** It is little in first cost, weight and upkeep. It is big in real value, engine power, pump capacity and ability to do **successful spraying.** We believe this is the **greatest small power sprayer** ever manufactured and placed on the market with phenomenal success in every fruit section in **United States** and vouched by thousands who own the **FAMOUS HARDIE JUNIOR.** Equipped with 1½ h.p. engine, battery ignition. 150-gallon tank with mechanical agitator, capacity of 4 gallons per minute with a steady working pressure of 200 pounds, and two 25-ft. of the best spray hose, fitted with spray rods and nozzles; 4-inch tire truck with pole or shaft.

ALL FOR $300. Delivered Anywhere In This State

If truck is not needed, deduct $55.00.

These prices are subject to change without notice. The wise buyer will place his order now.

This low price is made possible by big production.

If you are interested in other types and sizes of the **HARDIE POWER SPRAYER,** write us for the big spray catalog, and learn why we can offer more spray pump value than any other spray pump manufacturer.

The **HARDIE ORCHARD GUN** is now $12.00, none better. All guns are guaranteed to satisfy the user, or his money refunded.

The **Hardie Spray Hose** is the safest hose to buy.

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Apricots in Santa Clara and San Benito.

[Written for Pacific Rural Press.]

Apricots through Haywards, Niles and Pleasanton, as in the Santa Clara Valley, generally make a poor showing—the brown rot having been something fierce, as we reported in the Suisun and Vacaville sections, in spots. Many orchards are very badly shot with it and in these the crop will be very slight. These trees look as though a fire had been through them. It is not only the loss of so much fruit-wood and fruit this year as the fact that it is bound to effect next year's crop too. There are many new shoots showing up back of the diseased areas of fruiting twigs. They are already strong enough to prove they will be watersprouts and it may pay to pinch some of them next month to make new fruit wood. Going out through Santa Clara, Meridian and Cupertino with H. C. Cody, the Horticultural Commissioner, we figured that 25 per cent would be an average crop for the lower land, though the crops are so spotted that it is hard to estimate. Also a lot of the later bloom sets look as though they might stick—which would help some.

Spraying at Mountain View.

We went into the Joe Seitz orchard here to learn how far the spraying of lime-sulphur, while the fruit was in the jacket, had served to arrest the brown rot. Mr. Seitz had used 6 gallons of commercial lime-sulphur to the tank (200 gallons) and had saved perhaps one-quarter of a crop. A few of the leaves had been scorched, but nothing to amount to anything, and even this slight injury might have been obviated by the addition of say ten pounds of lime to the tank—strained, of course. The adjoining orchard—same age—which had not been sprayed had no fruit and most of the fruit twigs were gone from brown rot or were affected. The contrast in the vigor of the new foliage was marked, though in this respect judgment must be qualified by the fact that the trees in the unsprayed fruitless orchard had not been cut back. New fruit wood here will be assisted by manipulation. We did not happen on a single man this trip who had sprayed his apricots with lime-sulphur winter strength just as the buds were bursting.

At Cupertino we went into A. C. Halsey's orchard of Blenheims (worked over from Hemskirks) and found a fair crop. In this neighborhood we found some orchards with a fair crop, and some with scarcely any fruit. At Meridian many cot orchards are badly shot up with die back. T. Oldham of Saratoga has a full crop of cots and Blower Bros. (Dan Rogers Manager) also have a good crop on 80 acres of old trees. This place had all been plowed early and the trees are fine condition—all Blenheims top-worked on Royals. These were the first real good crops we had seen. We also went up into the hills in the Montebello direction and found fair to good crops up there. R. V. Garrett's fruit was a fair set and so were others up this road. The Los Gatos district and Campbell is spotted as in other sections. The Santa Cruz mountain section has some fair crops of apricots, though the acreage here is small.

In the Watsonville Section.

In the Corralitos country conditions seem fair though uneven. For instance, Chas. Gallelty has 45 acres in bearing trees and 35 acres of young ones—chiefly Royals. On the bottom land they show a good crop while on the hill side there is only about half a crop. H. B. Hopkins, Horticultural Inspector, says there are some second blossoms set, but one cannot tell yet whether they will amount to anything or not. In both Brown Valley and Green Valley there is perhaps 75 per cent or more of a crop and in the Railroad district perhaps 50 per cent. In the Aromes Section there is from 30 to 50 per cent of a crop—rather uneven setting, but fair in spite of damage.

In the Hollister Country we took a run round with L. H. Day, the Horticultural Commissioner. Found some orchards, especially on heavier ground badly affected with brown rot and others with full crops of apricots on. In W. A. Johnson's orchard the Blenheims were quite badly shot up and the Hemskirks were gone, though Tiltons were fair. He would have had a $10,000 crop but for the brown rot.

Through the Fairview and Ausaymas districts to the foot of Pacheco Pass, orchards showed "some and some." The estimate for this country Mr. Day places at 75 per cent of a crop of apricots. Those who have them will not need to worry about the price this year from present indications. We tried to get under the $80 a ton report but failed to come across any man who had sold.

We have now been over a large portion of the important apricot growing section and, though the uneven conditions make a definite estimate impossible, the State's crop will be light, perhaps not 50 per cent, but the quality ought to be good. Inside of a week those who have them will be at it. We noticed some trees where the crop was light which had clusters that will need thinning, while other branches had a very sparse set. New buds are putting forth and the injured trees will doubtless soon hide their scars in a mass of foliage which shows now (April 10) by its pallor the extent of the injury to the trees' vitality where they were in bad shape. The ground is full of moisture and, though the season upset all our plans with regard to plowing and working, we shall get through somehow, though it is going to be a hard graft—for some men who have a heavy over growth, particularly of burr clover. Anyhow there's no need to worry.

Protection Against Rabbits and Deer.

[Written for Pacific Rural Press.]

A mixture that has proven efficacious against the destruction of young trees by rabbits and deer has been in use by William Moulton of Napa and other foothill farmers for some years. Dried blood or even blood-meal is used and enough of it stirred up in a tub to make a good rich soupy mixture and let it stand overnight. It is then taken out in a wide-mouthed bucket and flipped into the young growth and trunks with a whitewash brush. Spraying is slower and more wasteful on small newly planted trees and the nozzles get stopped up unless they are very coarse. This will keep the deer or rabbits off for two or three weeks, when the operation must be repeated. During the next two months when length growth is taking place so rapidly it is very exasperating to lose a single shoot and it pays to take pains to prevent if possible. The blood mixture flipped on in this way will not injure the tender young growth but it cannot be brushed on.

GIANT LUPINES FOR COVER CROP.

To the Editor: Have any Pacific Rural Press readers used giant lupin for cover crop? Scattering plants show rank growth, large nodules on root and a fine characteristic of early maturing. If a start could be made with reasonably priced seed it would seed itself.—Subscriber, Saratoga.

This probably refers to the white lupin which is a splendid legume as our correspondent says. It has been used for this purpose in Europe for centuries. The only place we have seen areas of it planted is in the neighborhood of Watsonville and the seed is not on the market. We do not believe in the practice of depending upon any cover crop to seed itself.



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Thrips and profits don't grow on the same trees. Thousands of dollars worth of damage is done every year by thrips—**but you can control them by spraying now.** And it's never too late! As long as thrips are present, kill them. It's a mistaken notion that you can't spray after your trees are in fruit. You can spray anytime if you use

MISCIBLE OIL NO. 2
FOR THRIPS

This is a high gravity oil that kills thrips in any stage, adult, larvae, or egg. And properly applied, it does it without spotting fruit or leaves. It penetrates into the thickest clusters and hairy pubescence that covers young fruit. Miscible Oily No. 2 is a specially prepared spray for controlling pests during the growing season.

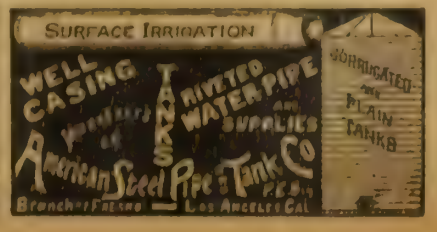
Our entomologist, Paul R. Jones, is a thrips specialist with years of experience. He will help you fight thrips—write to him today. His services are valuable—and there're free.

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This Five Passenger 37 H. P. car, 116 in. whl. base. All bearings Timken. Delco ign.—Dyneto Stg. and Ltg. Write at once for our great Free Offer and 48 page catalog. Agents wanted to drive and demonstrate. Territory open. Prompt shipments. Big money. Cars guaranteed or money back. 1919 cars ready. Address J. H. Bush, President. Dept. 1110
BUSH MOTOR CO., Bush Temple, Chicago, Illinois



Winters Boasts an Influx of New Blood.

[Written for Pacific Rural Press.]

In a recent talk with R. L. Niemann, manager of the Winters Dried Fruit Company, he said, "We have quite a lot of new blood in Winters now, including a number of young fellows, keen as mustard, men ready to learn and apply new methods in management." Our quest through this section was to observe and report on orchard conditions, but we went to see some of the new men and first of all steered "Lizzie" up to

The Kahn-Furth Orchard Company.

Just east of town, bought by Kahn and Furth just over a year ago and comprising at present 160 acres set to fruit. In approaching a new place a farmer always takes a glance at the buildings and homestead unconsciously trying to get a line on the owner, just as one looks a stranger in the eyes first in an endeavor to "size him up." Sometimes a close estimate is accurately formed at the first shot and sometimes the appraisal is "away off." On this ranch our interest was at once attracted by a neat and artistic but unpretentious bungalow for the owners and a range of well-built cottages for the help, three of which contained married couples. These cottages were all fixed up with running water and modern sanitation and with a well-gravelled road in front. There should never be much trouble in the help question where such consideration is given to the comfort of the help. At the house is a high pressure automatic water system with a pump capable of supplying 1500 gallois of water an hour. This is for the use of houses and stock only. The situation is taken care of by an Ashley sewage system with automatic pump to dispose of liquor as it comes from the septic tank. All the main buildings are of concrete. In the

Packing and Processing House

The owners have done themselves proud. A large building of reinforced concrete with concrete floors and receiving sheds, fitted within with bins, tables, rails for trucks, washing places, drinking fountains and store-rooms; also toilets and dressing rooms. "Elaborate" is the word—elaborate and substantial. The strong walls are reinforced with buttressed piers. The sulphuring houses are fireproof and about the end of the main building, and are laid with steel truck rails on the concrete floors. It is the finest packing house on any farm or (for its size) anywhere else and it would take a Black Maria shell to destroy it. It will take care of all the fruit this ranch will ever raise without being crowded.

Mr. Furth, Senior, told us that his son, who is manager, was away with the Farm advisers on their annual excursion and convention—always a highly educational tour so we took a walk through the orchards anyway. The first one was 25 acres of Black Mission figs, about 22 years old—large healthy trees that ought to be good for 100 years. Adjoining this is 50 acres of farming land, which is to be levelled and checked this summer and planted to Black Mission figs next season. A pump-house stands between the two blocks with a 58-foot deep concrete pit—clear to water, which will supply irrigation water. A 30-H. P. motor provides the power and water is raised through a ten-inch discharge pipe by a centrifugal pump. The next orchards to the figs are Royal apricots; French prunes, Clyman and Tragedy plums; Nonpareil, IXL and Ne Plus Ultra almonds of varying age. This large place is run entirely by a Fordson tractor (pulling two 12-inch plows or their equivalent in other work) and four horses. Mr. Furth said his son was well pleased with the work his tractor was doing on this sandy loam soil.

The large level areas of orchard around Winters lie well for the use of tractors and large tools and in driving around the main fruit block south of the river, we noticed various machines at work (March 28), or waiting for the ground to dry out a bit before starting again. For there had been light rains the day before.

We spoke to one man who was running a Fordson and another with a Samson, who were plowing, and they both said in effect: "Yes, the ground is a little wetter than we would like to plow, but with this cover crop and being so late, it would be getting too dry on us in a week if a north wind started up"—which seemed like good sound judgment. Young Graham—Adam Graham's son—said he always harrowed down the previous day's work every morning anyway. We notice some land here disked to hold it—the first in Ham Boyce's orchard.

By the time this appears all plowing of orchards and vineyards there will have been finished probably—the long period of being held up by the rains in plowing is always followed by a feverish activity. And after last year's experience nobody here is going to take any chance of losing moisture by deferring the plowing.

Youth and Experience.

They say, "You can't teach an old dog new tricks." Like all proverbs this one contains a grain of truth. It is hard to teach an old dog new tricks but it can be done. Within one-half mile we saw a father plowing with a well-kept team and a son plowing with a new tractor. But we noticed that the father's system of pruning and spraying was very much up to date and he gets results. He has the team, is used to it, likes its company, and the habitual association. He believes in tractors all right but hasn't enough work to hire a man and it is too much of a chore to learn how to take care of a machine at his age though he would if he had to. And there you are. Young blood wants to be up to date. Therefore, he takes a tractor course. Then, if he or the old man has the price. a tractor comes on the place and comes to stay. Good luck to young blood. We glory in his life and spirit. But we also have a sneaking affection for the old dog who has borne the burden and heat of the day but who has tolerance and kindly consideration for the exuberance of youth.

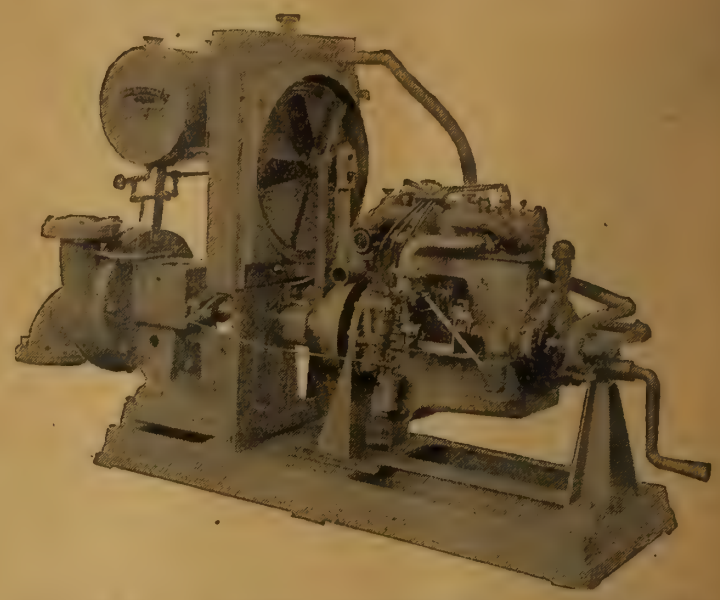
The Use of Barley as a Cover Crop.

[Written for Pacific Rural Press.]

To the Editor: The writer has noticed a number of comments recently on the use of barley for a cover crop. After having used largely barley and vetch for that purpose for nine years, we feel sure that any unfavorable condition noted in orchard trees must have been due to some other cause than plowing under barley. At this writing (March 22), we have a fine stand of barley vetch and bur clover, ready to turn under as soon as danger from thrips is over. 2. The moisture problem is, of course, a gamble on later rains, but of one thing you may be sure—soil bare of vegetation and crusted by winter rain will lose more moisture by capillary attraction and evaporation than a cover crop will transpire through its leaves.—H. A. C., Saratoga.

In an article of March 8 we said: "The writer has used barley as a green cover crop, always turning it under green and early and has never noticed any ill effects, etc.," and we are glad to notice Mr. Clark's approval for the only good cover crops in some sections this year were from barley. We also said "that the yellowing does take place in orchard foliage where growth has been rank and allowed to mature, has been demonstrated to the writer's satisfaction." 2. To rely on late rains to replace moisture evaporated through a late cover crop is of course a gamble if one likes to take a chance, but it is not a safe bet. One of the chief reasons for creating and maintaining a mulch is to keep the capillaries broken off and reduce the temperature at the break to lower the rate of evaporation and the finer the mulch the better the result is obtained. Our correspondent makes a positive assertion on a new issue on which we have nothing to say. We hhope, however, that he will low a couple of rows of his bary cover crop to mature before turnin under.

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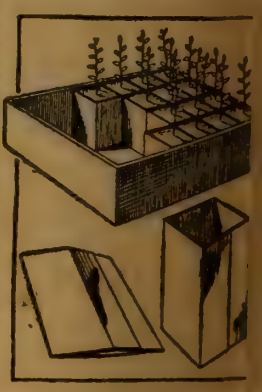


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FIG SEEDLINGS AND PISTILLIERE

To the Editor: I notice that G. P. Rixford states in his excellent bulletin that seeds of the Smyrna (Calimyrna) fig will produce partly capri figs and partly Smyrna figs. Breeding experiments with other forms of life suggest the possibility that capri fig seeds might produce only Symrna figs. If so it might be a good way to produce new and valuable varieties of Smyrna figs. Do you know if the experiment has been tried? Mr. Rixford also states on the authority of Dr. Eisen that the Pistilliere seems superior to the Black Mission as adried black fig. In spite of great success with Smyrnas in this vicinity many growers are favoring the Black Mission. If the Pistilliere is superior fig they may be overlooking a bet. Can you give details about this variety?—Rancher, Exeter.

[Answered by E. P. Rixford, U. S. Dept. of Agriculture.]

Experience has demonstrated that trees grown from fig seeds result in about equal numbers of capri and female trees. This is what we might expect, since the seeds are hybrids of the male and female varieties. The writer has crossed many varieties of Smyrna and other figs and the U. S. Introduction Garden at Chico has grown thousands of seedlings from these combinations which have been widely distributed in fig growing regions in this and other states. As these seedlings have come into bearing, a considerable number of excellent varieties have developed. One or two purple varieties are superior in size and flavor to the Mission and a number of white rank well up to the Lob Ingir (Turkish name for the Smyrna) and several capris far exceeding in size and good qualities most of the capris now in general cultivation.

This brings up the question of the possibilitiy of increasing the size of Smyrna and other figs by the use of large capris. I may mention that I arranged with three growers at the recent fig institute at Fresno to set aside certain trees to be caprified with the largest capris which I am to furnish. These capris will be three or four times as large as those in common use. I wish others would try the experiment.

As to Pistilliere. Little is known regarding the variety, except what is said about it by Dr. Eisen in his bulletin. He praises it very highly from his experience at Niles. At the Chico Introduction Garden it is a shapely, thrifty tree, but has not been studied sufficiently to justify an opinion regarding the fruit.

1813 Pierce St., San Francisco.

BACTERIUM TUMEFACIENS.

To the Editor: Is there a cure for black root in peach trees. If the old trees are dug out and young ones planted will they also have blackroot?—Mrs. I. Simpson, Fresno.

"What is known as "black knot," root knot," or "crown gall" on peach trees will result in their more or less rapid weakening and death. When these growths appear at the union they are sometimes cleanly cut off and scraped back to sound bark and the wound plastered with bordeaux paste. This sometimes prolongs the profitable life of the tree. Neither bi-sulphide of carbon, lime, salt or anything else that has been so far tried has been known to disinfect the soil of these bacteria which will probably infect a clean tree planted in the same hole. If you must plant in the same hole, a large one should be dug and left over till next planting season and then, on replanting, fill the hole with surface soil only.

The great desirability of keeping insects reduced by modern orchard practice, as fertilization, through cultivation, and atention to pruning and other operations, can not be emphasized too strongly and is well appreciated by most progressive and successful growers.

The foliage of stone fruits, as cherry, plum, and peach, is on the whole quite tender, and the arsenical sprays should be employed with caution. Arsenate of lead is least likely to do harm, though more than two applications, especially to peach, may cause shotholing and dropping of leaves, and burning of fruit.



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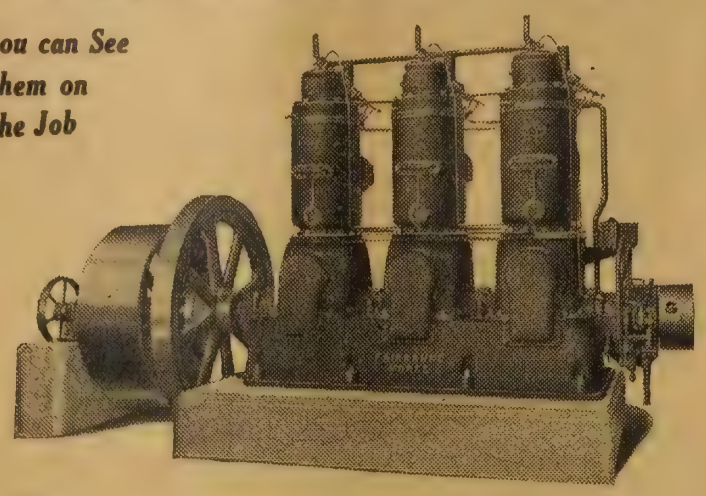
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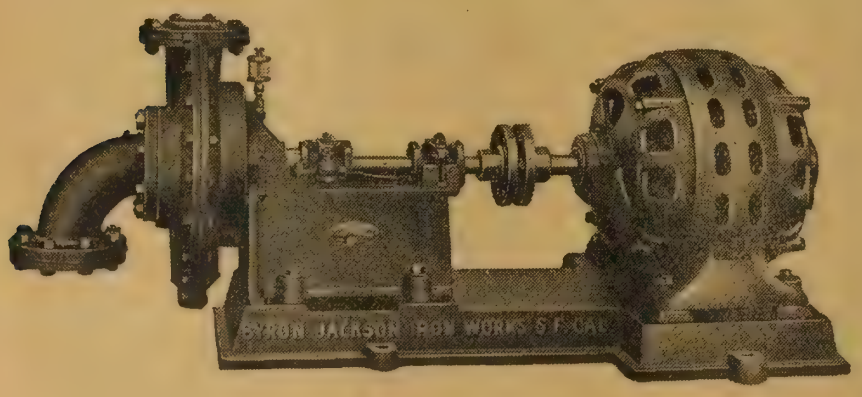
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Here and There in the Fruit Business

[Written for Pacific Rural Press.]

Grafting Over Old Vines.

Quite an acreage of wine grapes has been worked over to the table varieties and will continue for several weeks yet. Where scions have been saved and properly kept, grafting is likely to continue for another month or more, particularly on heavy adobe ground in the northern counties.

The Federal Land Bank

Of Berkeley paid off its entire impairment of capital, amounting to some $80,000, on March 31. This impairment was made in the expenses connected with the organization of the institution, furniture, stationery, printing and general overhead. Of course no dividends on stock could be paid until this impairment had been disposed of. Though more than $11,000,000 worth of loans have been closed, not a single foreclosure has been necessary and deferred payments have been negligible—a good showing for the management and for the associations of farmers who have become stockholders.

Use Dry Lead Arsenate.

"I have used the dry lead arsenate —four pounds to the 200 gallon tank —for two years on my 90 acres of pears and am well pleased with it. No, never had any russeting from it. What I like about it is that it is not only easier to mix but if I have any left over I can keep it and mix it just as easily next spring." This is what Theodore Hook of Walnut Creek told us.

The Second Sulphuring of Vines

Should be done in the bloom or as the vines come into bloom. This is next in importance to the first spray and a large number of Italian vineyardists claim that it keeps the "set" of fruit. A good blower saves half the sulphur and shoots the fine specks into every cranny of the cluster and on every portion of the leaves. Success means that a grower has infinite capacity for taking pains.

Pears Worked Over.

Mrs. S. M. Blake of Pleasant Valley (Solano County) has 60 acres of Bartlett Pears on Keiffer which are regular bearers, but she is having four or five acres worked over to Wilder Early to furnish a moderate demand for these succulent little pears. Amongst other fruits on this ranch is a ten-acre orchard of Wickson plums that are said to bear well. The large ones are shipped as Eurekas and the smaller ones as Wicksons. Black Diamond plums do well here and promise a fine crop in this valley. The 20 acres of apricots are all Royals. As in other sections the cots here were injured by rain, though quite a good crop seemed still assured when we were there the end of the month of March.

The Sultanina Rosea—Arbor Grapes

Makes a good arbor grape. It is seedless, has long clusters, well sugared and can be kept late on the vines without spoiling. The Black Hamburg, Malvasia, Lampasis, Cornichon and Black Muscats all train well. The Isabella Regia is perhaps one of the finest, largest and sweetest of the American varieties and covers an arbor very rapidly. All these varieties can have their fruit doubled in size and the clusters made square-shouldered and shapely by thinning out the grapes with a pair of pointed scissors—a fascinating occupation for ladies who have the time and are interested in obtaining perfect fruit.

Kings County Sells Muscats.

A recent advice reports fresh grape buyers active in Kings County buying up muscats for shipping next fall. One company claims to have contracts for 7,000 tons and there are half a dozen buyers in the field. It is estimated that Kings County has between 12,000 and 13,000 acres of muscat vines, with a probable crop of 50,000 tons of green grapes. Easterners not only appreciate this well sugared fruit as a dessert, but the expressed juice makes a very refreshing beverage. "What is one man's meat is another man's poison," as the saying is.

The California Fruit Growers' Exchange.

In the last fifteen years the Exchange has transacted a business of $262,000,000 on which losses from bad debts and all other causes have been less than $8,000 (to August 31, 1918) or 3-1000 of one per cent! The operating cost of the Central Exchange was 5¼ cents per box. The total marketing cost amounting to 1¼ per cent of the gross sales. In addition there was expended for advertising two cents per box of oranges and four cents per box of lemons. Total shipments for the State amounted to 19,506 carloads of oranges and grape fruit and 5,823 carloads of lemons. Exchange members forwarded 6,452,-896 boxes of oranges and grape fruit and 2,191,281 boxes of lemons or 76 per cent of the State's shipments. Returns f. o. b. California on Exchange fruit approximated $36,422,-200.

Plant Quarantine is Necessary.

Says the United States Department of Agriculture. Data gathered shows that from Holland 1,051 infested shipments were received, involving 148 kinds of insect pests; from Belgium 1,306 infested shipments with 64 kinds of insects; from France 347 with 89 kinds of insects; from England 154 infested with 62 kinds of insects; from Japan 291 involving 108 kinds of insects and from Germany 12 infested shipments with 15 kinds of insect pests. Many of these intercepted insects are not known in this country and numbers of them if established would become important farm, garden or forest pests. The gypsy moth was 20 years in Massachusetts before it was known through the infestation started in a thickly populated suburb of Boston. And though only a small portion of the New England States is invaded by this and the Brown tail moth (another foreigner) the clean-up and control work alone amounts to more than a million dollars a year by the States concerned in addition to over $300,000 a year appropriated by the Federal Government for this purpose.

Mendocino County Prune Growers.

These growers recently organized and will become a unit of the great (State) California Prune and Apricot Growers' Association, in so doing taking another important step in the march of progress. By joining the Pear Growers' Association last year, they saved, it is estimated, about $20,000; but, more than that, they have, by uniting, formed a power that can make itself heard in council. Ukiah has a flourishing Farmers' Club and a strong Federal Farm Loan Association as well as a Farmers' Mutual Fire Insurance Company.

Weed Drive in Stanislaus.

A steady drive against noxious weeds is being carried out in Stanislaus county by Horticultural Commissioner A. L. Rutherford, who invites the co-operation of farmers and fruit growers in weed control. He points out very pertinently that the yellow star thistle and morning glory have become so strongly established in some centers that land values have diminished and farming has become more expensive, and that Johnson grass has entirely taken some vineyards and rendered orchards unproductive.

A Reason Why Fig Prices Soared.

In fig circles, prices recently offered for the coming crop have evoked as much comment as does the appearance of a mouse at a quilting party. During the war, importations of figs from Smyrna were entirely cut off and the high prices prevailing were due in no small measure to the fact that United States and European markets had to depend largely on the California crop. Prices will not be stabilized till it is known what importations may be—if any.

WORDS, WORDS, WORDS! —SHAKESPEARE.

To the Editor: I am truly grateful as I realize that, along with the Saturday Evening Post, I get more for my money in the Pacific Rural Press than for any other thing on earth I buy.

Your editorial staff is A-No. 1. I read all of your editorials. Editors who do not make claims of knowing it all are really great men, as well as rather scarce. The editorials of the Press are deep without being narrow. They are broad without being shallow. Yet you do not hesitate in knowing that two and two make four. You see I am throwing the bouquets now. They look so dinged dreary in the graveyard.

Now, dear sir, you have asked for criticisms. Here is one worth a thousand "bucks" to your up-to-date paper in part payment of the good that the paper brings me.

The university, college, and high school faculties of today mournfully bewail and concede the fact that the students' vocabulary and general knowledge of the English language is woefully limited. There is such a thing as professors becoming too professional. They speak to the public with their pens as if they were trying out the language limitations of their fellow dons at a long-haired faculty meeting.

Here's the meat. I know my neighbors for miles around me. Only two families have an enclycopedia. Many of them have not an up-to-date dictionary. I know that four of them who would be called fairly successful ranchers have not any kind of a dictionary. Get me right. These men are not dudes. But if you asked them, "What is a proprietary interest? What kind of a shrub is a Mesopotamian Eden? If psychology is not the particular line of the Pacific Rural Press, what is a psychology? Is it a new tractor?" They would be apt to say, "Damfino," and grin.

Great documents have been written in very simple English. God knows, I can't even use American pidgin—but that should be no reason why I should not long for the simple language.

An editorial of great merit in your paper some months ago had a flow of attenuated words that would make Dr. Prof. Woodrow Wilson want to take a big drink.—W. T. H., Ontario.

[We do not get all our long words out of the dictionary; sometimes we make a few. You do not seem to have any difficulty in knowing what they mean. As for other readers understanding them, you do not need to worry. We can tell from their letters that they often get more out of the words than we put into them—therefore why worry? When we were younger we did wonder whether we might not be writing over the heads of our readers. We stopped that long ago because we had sense enough to realize that Rural readers carry their heads mighty high, and if one tries to "write down" to them, he will land his blows below the belt. Nothing is too high for our readers—not even the price of the paper, which is only $1 per year in advance.—Editor.]

POISON FOR CUTWORMS IN THE VINEYARD.

Written for the Pacific Rural Press by Prof. Fred. T. Bioletti.]

As soon as cultivation has destroyed the grass and weeds in the vineyard, the cutworms, having nothing else to eat, attack the vine-buds and shoots. Every bud attacked represents a loss of at least one bunch of grapes. The cutworms can be destroyed by poison baits. Several formulas have given good results and one of the best is the following:

A—White arsenic, one pound.
Sal soda, two pounds.
Water, one gallon.

Boil in a large iron or enamel pot until dissolved.

B—Syrup or molasses (cheap), one pint.
Water, one gallon.
Two chopped lemons.

C—Bran, twenty pounds.

Mix A and B thoroughly and then add bran (C) with enough water to make a soft mash. Place two or three small lumps as large as peas near the base of each vine. On large, old vines covered with rough bark a small lump should be placed also on the head of the stump. The bait should not be allowed to touch small vines or they may be killed. The bait should be distributed late in the afternoon so that the cutworms will get it on their way to or from the vine at night and before it dries up.

Bait 2.—

White arsenic, one pound; sal soda, two pounds, and water, one gallon. Boil until dissolved, then add and mix syrup, one quart; water, 20 gallons. Chop alfalfa, dip in the solution and distribute in the vineyard as with the first bait. This bait is said to succeed in some cases where the other fails to attract the cutworms.

SPRAYING DELICATE FOLIAGE.

Arsenate of lime may be used in place of the more expensive arsenate of lead, but should not be used on plants with delicate foliage, such as the stone fruits.

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Wormy Apples and Pears Don't Pay.

[Written for Pacific Rural Press.]

A crop of clean good pears and apples this year is as good as wheat. A crop of wormy scabby stuff may be taken to the cider or vinegar works (if there happens to be one in the neighborhood), but it will be a financial failure.

Men who are successful and versed in the matter of spraying are never troubled to any appreciable extent with the codling moth except when they are perhaps adjacent to a man who never sprays. Because the business grower knows just when to carry out these operations against the codling moth and scab and he does the work very thoroughly.

This little article is just by way of a reminder to men who have other interests, that the little acre or two of apples and pears he has constitute a pay-streak and will pan out well if they are "washed" with care. It is also an outline for new men of what California conditions demand and the methods most in use by successful men. Spraying for codling moth and scab has been carried out in California for 30 years. Now, under the spread of plant diseases and noxious insects by huge acreages, and especially because of our new standardization laws and the public taste, the demand for spraying has become imperative. With the exception of a few isolated districts so far free from scab and codling moth, it is necessary for the apple and pear grower to spray or fail at his own business.

When to Spray and What to Use.

The codling moths are about and ready to lay their eggs at blooming time, and it is estimated that from 75 per cent to 95 per cent of the first brood are laid right in this bloom or calyx. It is then necessary to spray apples when say three-fourths or more of the bloom petals have fallen and a very thorough job of spraying must be done so that a drop enters each bloom cup or calyx. Then when the little worm hatches out and goes to nibble his way into the tiny apple he gets enough arsenate to curl him up for good. Pears should also be sprayed after the bloom petals have fallen.

The spray most generally used and that is most satisfactory is arsenate of lead, which is sold in both paste and powder form. The paste is most in favor so far, though the powder is easier to mix. We have seen no russetting from its use that could be directly traced to it. About four pounds of the paste or two pounds of the powdered acid lead arsenate is used at the first spraying, together with a Bordeaux mixture of 10-10-100 strength, or Atonic Sulphur, 10 pounds to 100 gallons, or Lime Sulphur, 3 gallons to 100 gallons water, against scab. In the Watsonville section we understand that the acid lead arsenate is used at the first spraying and neutral or basic lead arsenate at any subsequent spraying to avoid injury to foliage or russetting of fruit. In parts of the Santa Clara valley, neutral lead arsenate only is used at first, second or any subsequent spray, when five to six pounds to 100 gallons are used.

The second spraying should be applied generally about three weeks after the first. The neutral arsenate of lead may be increased to five pounds of paste or two and a half pounds of powder to 100 gallons plus ten pounds of atomic sulphur, or three gallons of lime-sulphur. If Bordeaux is used instead of atomic sulphur for scab the strength may be reduced to 3-4.50 especially if it is dull weather, though we prefer one of the sulphurs in most sections. The third spraying is often carried out to insure clean work and takes place (without the sulphur) about two weeks after the second spray. This usually controls the moth except where very bad infestations are present. Many late apple growers make a practice of spraying again in August and sometimes even in September.

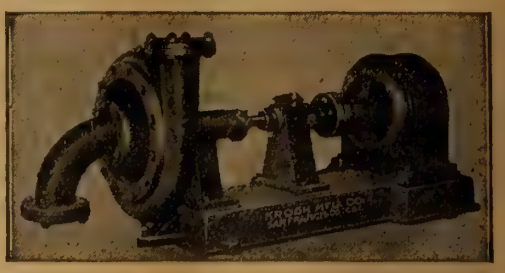
Paris Green.

A good many old-fashioned apple men still stick to the use of Paris Green instead of arsenate of lead. The Chinese, many of them prefer this, using from one and a half to two pounds to 200 gallons of water. To avoid injury to foliage their custom is to use one pound of lime to every ounce of Paris green—an amount not necessary. Thus to one and a half pounds of this poison, 24 pounds of slaked lime would be used. Weldon recommends only 10 pounds milk of lime to 1½ pounds of green. Paris green cannot be used without the lime as it would burn up the foliage.

If the prospective home orchardist prepares the soil where his fruits are to stand as thoroughly as he does his garden before planting vegetable seeds, the subsequent rapid growth of his fruit trees will amply repay him.

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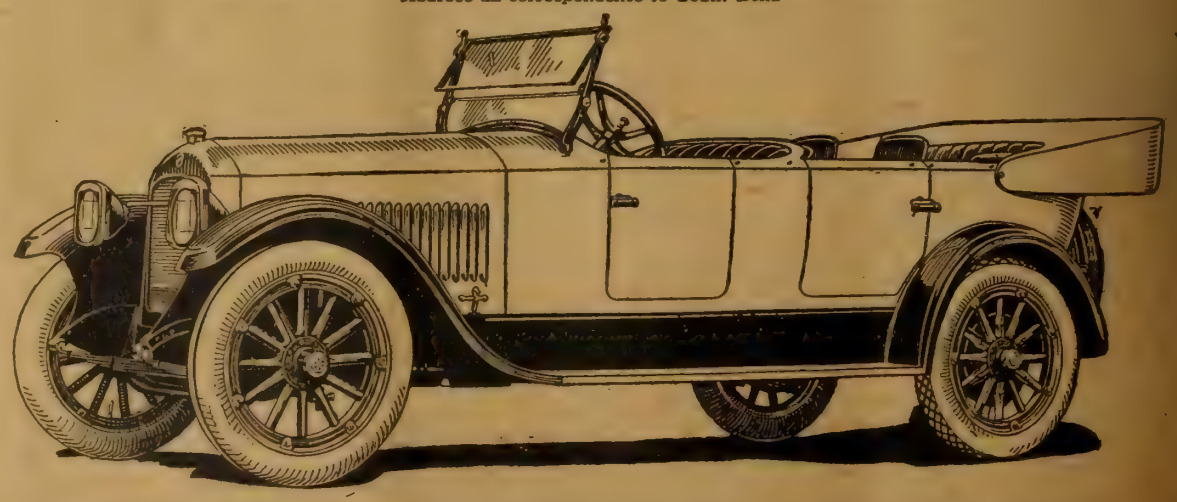
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Late Pruning and the Prune Crop.

[Written for Pacific Rural Press by John J. Fox.]

A prune grower said to the writer a short time ago, "Quite a number of prune men have remarked that certain men (naming four different growers) are always late with their plowing and yet they practically always get good crops." These four particular orchards are all heavy loamy clays or clay loams with a sub-stratum of clay (of good quality) within a few feet of the surface. The theoretical explanation is that of a wet year the cover-crop helps to rid the soil of a surplus moisture, and if a dry year the texture of the surface and subsoil helps to retain what moisture there is. Thrips scarring of the fruit is just as common here as in other orchards, but in at least two of them there is a very large amount of dead wood every year. That it is not due to a drowning out of the roots is evident from the fact that last year there was more dead wood in them than ever before to our knowledge. The writer lived near enough to observe these two for 15 years. Nevertheless, under conditions of a very wet winter no man can impeach the owner's judgment if he plows late, especially if he disks to keep it from turning up in blocks big enough to break a man's leg if they fall back into the furrow.

A good clay subsoil at a depth of five or six feet beneath any loamy surface is pretty hard to beat for a prune tree. And if the clay is of good quality and not impervious "gumbo," they seem to do pretty well even with only three feet of soil over, though they cannot be expected to make such large trees. The poor attention and poor pruning given the two orchards named above have always irritated the writer because the results in fruit with such poor attention (one light plowing and then the pulverizer to make it look nice, next to no spraying and rough pruning) was a bad example to new men with young orchards which would not respond to such haphazard methods. One could only say, "Well, if due care had been exercised, increased results might have accrued, and anyway the trees could be sound and vigorous today instead of being hacked, stubbed and decrepit." But that kind of answer is not always reassuring. It is like the reply to a man who boasted that his father was 90 years of age and going strong, though he used liquor and tobacco all his life. "Yes," said Sweetness, "but if he had never used liquor or tobacco he might be 100 now!"

Who Is Going to Spray for Thrips Larvae?

After the prune petals have fallen it is usual to find on the backs of the leaves of a thrip's infested orchard many tiny thrips' larvae wandering about. They gnaw the leafbuds, perforating the leaves and scar the stems of the fruit and the fruit itself, which shows up later in rusty patches. They seem to do more damage on Imperial prunes and cherries than any other trees and some prune men spray for the larvae more than any other time. A good mixture to use is one pint of black leaf 40 degrees to 200 gallons of water together with eight pounds of flour paste. This latter not only acts as a spreader but in the case of tiny mites it sticks them. The paste is mixed by using eight pounds of flour to eight gallons of water and then shooting it into the spray tank after it has been well worked fine.

WHO KNOWS BEANS?

There seems to be surely more in beans than most people know. For example the Optimist, a bright journal published in Camden, N. J., has some striking things in beanology, to wit:

During the hard winter of 1917-18, the Michigan bean growers, jobbers and elevator men stood aside politely and held the umbrella while the Japanese and California crops were unloaded at a tremendous profit. The native sons of California have ever been loath to yield the palm for courteous self-suppression, especially to anything so, shall we say "Mid-Western," as Michigan. So this year they bravely raised the justly famous umbrella and courageously held it while Michigan and Japan gradually disposed of their holdings. Would it not be possible to so co-ordinate California and Michigan that Japan would not always win?

Why did the Grain Corporation during the last half of February buy, for shipment during February and March, 350 cars of Michigan C. H. P. Beans at $9.25 per cwt., f. o. b. elevators—and 150 cars in California at that time? Michigan quotations were, $7.00 to $8.00; and California, $6.50 to $7.50.

APRICOT CONDITIONS — WATCH CLOSELY.

In our issue last week under the above heading a recommendation to spray cots against brown-rot and shot-hole, reads: "A spraying (now) with atomic sulphur of 20 vounds to 100 gallons" should read "20 pounds to 200 gallons."

Drain tile covered in a trench are cheaper than open ditches—they don't waste land.



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The point is, many tires will stand up well under *favorable* conditions—city pavements, for example. But Mohawk tires yield big mileage—*always*—on good roads or bad.

And the reason is the plain, logical reason that makes any product superior—more and better quality.

In the first place, we don't claim any secret or mysterious processes. We don't find these necessary. We have found, however, that by using only the finest rubber, the toughest Sea Island Cotton for fabric and more generous quantities of material, we can produce a stronger, longer wearing tire.

We believe in expert workmanship—so each Mohawk builder is a veteran and experienced tire maker.

One other important factor—and you have the reason complete. Without watered stock or bonded encumbrance of any kind we are able to operate a healthy plant on a reasonable return, without worry about extra large profits, at the expense of quality.

Think it over. And remember that Mohawk tires actually represent more value for your money.

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MOHAWK
"Qualify" TIRES

Mohawk tires yield big mileage on good roads or bad. But Mohawks, and every other tire would yield an extremely higher mileage if there were good roads.

Are you doing all you can to improve the roads YOUR tires must travel?

Specialization Satisfies Dairymen.

[Written for Pacific Rural Press by J. A. Robson, Eureka.]

The first creamery in the State of California was built in the late eighties at Ferndale, Humboldt county, by a number of the enterprising dairymen and business men of the Eel River section. That was the beginning of a leadership in the handling as well as the production of milk and milk products, maintained until the last four or five years by the northern California section over the other counties of the State. The inauguration of vast irrigation systems in Stanislaus county gave great impetus to the dairy industry in that district, and first place went to that county a few years ago—a position it still holds. Irrigation also brought similar advantages to the Imperial Valley section and in 1916-1917 Humboldt county dropped to third place. However, the report of the State Dairy Bureau for the year ending September 30, 1918, again accords second place in butter production to Humboldt county, and that with a cheese output almost four times as great as 1917.

This big increase in dairy products is attributable to the modern and highly specialized methods in vogue in the handling of the herds, and also in the conduct of the plants which take care of the raw product rather than to any increase in number of acres devoted to the dairy business. Unlike Stanislaus county and Imperial Valley, there has been no vast agricultural project to suddenly open up new fields to the dairy business; Humboldt dairy district is confined to practically the same area that it has occupied for many years. That this district is again able to "come back" is, accordingly, to be attributed to the far-seeing methods of the dairymen and creamery men of Humboldt county, who, through a long experience, have learned the advantages of specialization.

Time was when the dairymen sought to provide their own market by the establishment of a whole regiment of small creameries, each working independently and taking care of the output of one small section. A dozen or more sprang up after the building of the first creamery at Ferndale, including the Grizzley Bluff Creamery, Ferndale Creamery, Alton Creamery, Scotia Creamery, Loleta Creamery, Redpole Creamery, Seaside Creamery, Elk River Creamery, Pine Creamery and three small plants in Arcata. The creamery operators, who generally were also dairymen, soon found that the system not only entailed a great deal of labor and confusion but gobbled up the profits as well. The cost of manufacture in a small plant was greater than that of the large plants, and the products were so scattered that marketing became a bothersome problem. The butter for the most part was handled by commission men in San Francisco.

Under these conditions the dairymen began to scramble from under the load and devote their entire attention to their herds. Some of the plants were consolidated and others were bought up by large creamery concerns, until today the Humboldt section has four large creamery and milk condensing plants, each equipped with all the latest devices and best machinery obtainable in turning out butter and other milk products. It has been the dairyman's business to increase his output; not by buying more cows, but by weeding out the poor ones and replacing them with producers. It has been the creameryman's business to systematize and specialize his plant so that no part of the milk is wasted, or utilized as hog feed as in the old days. It is a common saying that eastern pork packer's save everything but the squeal; it may truthfully be said that the big creamery establishments of Humboldt county utilize everything but the "bawl."

The four most important creamery establishments in the Humboldt district are the Libby, McNeil & Libby plant at Loleta, handling large amounts of condensed, evaporated and powdered milk in addition to a big butter output; the California Central Creameries, with plants at Ferndale, Eureka and Arcata, handling butter, powdered milk, milk sugar, cheese and Swiss cheese, casein and albumen; the plant of the United Creameries at Arcata, handling butter and casein; the Valley Flower Creamery at Ferndale, equipped for the first time this season with a condensing plant in addition to its butter department. In addition to these there is the old Grizzley Bluff Creamery still operating and turning out in the neighborhood of 4,000 pounds of butter daily, which is bought by the California Central Creameries; the old Ferndale Creamery, and the plant of the Orick Dairy Association owned by the dairymen of Orick but operated by the California Central Creameries as a cheese factory under a lease.

The California Central Creameries is the only concern yet to enter the cheese field in Humboldt, the report of the State Dairy Bureau giving a total of 898,880 pounds for the past year as against 253,602 pounds for the previous year. This organization has already achieved national recognition for its output of Golden State "Swiss" Cheese, an old-world product that will doubtless be supplied Americans hereafter from this side of the Atlantic.

An interesting light is thrown on the dairy and creamery industry in northern California by a study of the accompanying tables, covering the prices paid for butterfat by the four leading creamery plants in Humboldt. It will be noted that the increase in rates has been steady during the four years just ending, the average price for 1918 being about twice what it was in 1915. Analysis shows that, contrary to popular belief that the creameries were amassing fortunes out of the high prices asked for butter during the war period, the greater part of the wealth brought by the sale of butter and other milk products was turned over to the dairymen for their butterfat, and the dairymen, in turn, were forced to use most of it for the enormous feed bills brought about through the increase in prices of hay and concentrates.

BUTTERFAT PRICES PAID BY LEADING HUMBOLDT COUNTY CREAMERIES

	1915	1916	1917	1918	1919 (2 mos.)
California Central Creameries	30	34	47¾	59	64¼
Libby, McNeil & Libby.....	29½	34	48	59¼	64½
United Creameries	30¼	34½	46½	59	64
Valley Flower Creamery	29¾	33¾	47½	59	63¾

Barley Did Not Dry Up Cows.

[Written for Pacific Rural Press.]

There is a prejudice against the use of barley for milk cows held by many dairymen who believe that it has a tendency to dry up the cows. To prove the truth or fallacy of this belief and to determine the value of barley as a feed for dairy cows, Professors F. W. Woll and E. C. Voorhies of the University Farm, Davis, have been conducting experiments for several years, and the results are now given in a new bulletin, "The Influence of Barley on the Milk Secretion of Cows," issued by the College of Agriculture, Berkeley.

It was decided to feed barley as the sole concentrate to a good type of a dairy cow for several lactation periods, in addition to alfalfa hay or alfalfa and silage, and to use barley heavily—up to the limit of the cows' acceptance. She ate as much as 15 pounds daily, but 10 pounds was ordinarily her limit, and the average for these periods was 8.5 pounds per day.

Results show that during three years when barley was fed as the sole concentrate she produced an average of 2,533 pounds, or 28.5 per cent, more milk than when fed mixed grain, and her average production of butter fat was increased by seventy-five pounds, or 25.3 per cent. Her lactation periods were 31 days (10 per cent)



Why Does Farmer Brown Make More Dairy Profits Than Farmer Smith?

Both get about the same quality and quantity of milk each month from the herd. But Brown's butterfat checks are considerably more than Smith's. Mysterious? No.

Farmer Brown uses the Sharples Suction-feed Separator—the only separator that *skims clean at any speed,* while Farmer Smith uses a fixed-feed separator.

Farmer Brown *knows* that he is skimming clean with his Sharples. Farmer Smith *thinks* he is turning the separator handle at the fixed, normal speed all the time.

Official tests prove that 95% of all separators are turned below speed and that a fixed-feed separator wastes $7 to $10 of butterfat per cow every year. (Send for Official Bulletin.)

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Our Entire Herd is Tuberculin Tested.

TULARE HOLSTEIN FARM

W. J. HIGDON, Owner TULARE, CAL. H. L. REDD, Herdsman

longer when on barley, and she weighed an average of 29 pounds heavier.

There is nothing in the results obtained to indicate that an exclusive or even a heavy, long-continued feeding of barley had any deleterious influence on the milk secretion of the cow. On the contrary, her production was greatly increased, her lactation periods lengthened, she weighed heavier, was in perfect health and maintained an excellent appetite. Similar results were obtained in feeding two pure-bred cows through three lactation periods, and in feeding a number of cows through brief periods.

However, the data secured should not be interpreted to show that barley is a better feed than a mixed ration, for experience has proved that variety is a very desirable factor. Still, barley is shown to be a most valuable dairy feed, and as it is sound dairy economics to feed crops grown on the farm as far as possible, if barley is raised it may be fed without fear that it will dry up the cows.

When the price has not been artificially raised through a demand for other purposes than stock feeding, barley is to be recommended for dairy cows—not barley hay or stubble as a sole feed, but the grain, hay or stubble with alfalfa hay; or better still, with alfalfa and some succulent feed, such as silage or roots.

McGILLIVRAY DISPERSAL SALE.

When a man has been breeding both registered cows and grades, and decides to sell off the grades, it affords a wonderful opportunity to buy high-class stock. He has a valuable bull for use on his pure-breds, and generally breeds up his grade herd with his same bull.

That is just what James Mc Gilliray of Sacramento has been doing for many years, and the result is one of the best herds of grade Holsteins in the state—young cows of good size, well marked, and with fine udders.

Hereafter Mr. Mc Gillivray will keep only registered stock and the entire herd of grade Holsteins will be sold Tuesday, April 29, at the farm two miles south of the Sacramento city limits. A good chance to pick fine plums.

MILKING SHORTHORN CONGRESS SALE.

The sale of Milking Shorthorns held at Erie, Pa., last month demonstrates that the closing up of the western ranges is compelling farmers to look to the dual purpose cow as one of their salvations. Two heavy buyers were Colorado men who went way back East to get the stock which they considered best for their needs. In fact, the demand for Milking Shorthorns is so heavy throughout the Rocky Mountains and Pacific Coast states now that the Otis herd maintains a branch herd at Colorado Springs and has a representative in this state—Thomas Harrison of Santa Rosa. At the Milking Shorthorn sale 96 head averaged $516 with a top cow at $1,850 and a top bull at $750.

The first day of the congress was given over to judging and a great improvement was noticed in the quality of the cattle. Animals from the Otis herd carried off the honors in almost all classes.

NAPA HOSPITAL HOLSTEIN SALE.

The mere fact that last year the 117 cows and heifers in the Napa State Hospital herd averaged 11,503.6 pounds of milk should be sufficient to attract buyers of high-class Holsteins to the sale to be held at the Hospital, Napa, May 3. Hereafter only registered Holsteins will be kept, and 100 grades will be offered at this sale. The herd is the result of fourteen years of careful breeding and selecting, and has been tested regularly for tuberculosis for ten years. There will be heavy producing cows and heifers bred to noted bulls, also young bulls good enough to head purebred herds.

Removing the hot, sweaty harness from the horses while they are at rest at noon is the proper thing to do.

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natural milker
Alternates, Like Milking With Hands



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Once installed it goes on twice a day saving time and adding profits. Cows like its easy alteranting action and give more milk.

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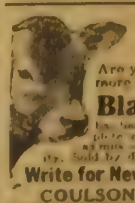
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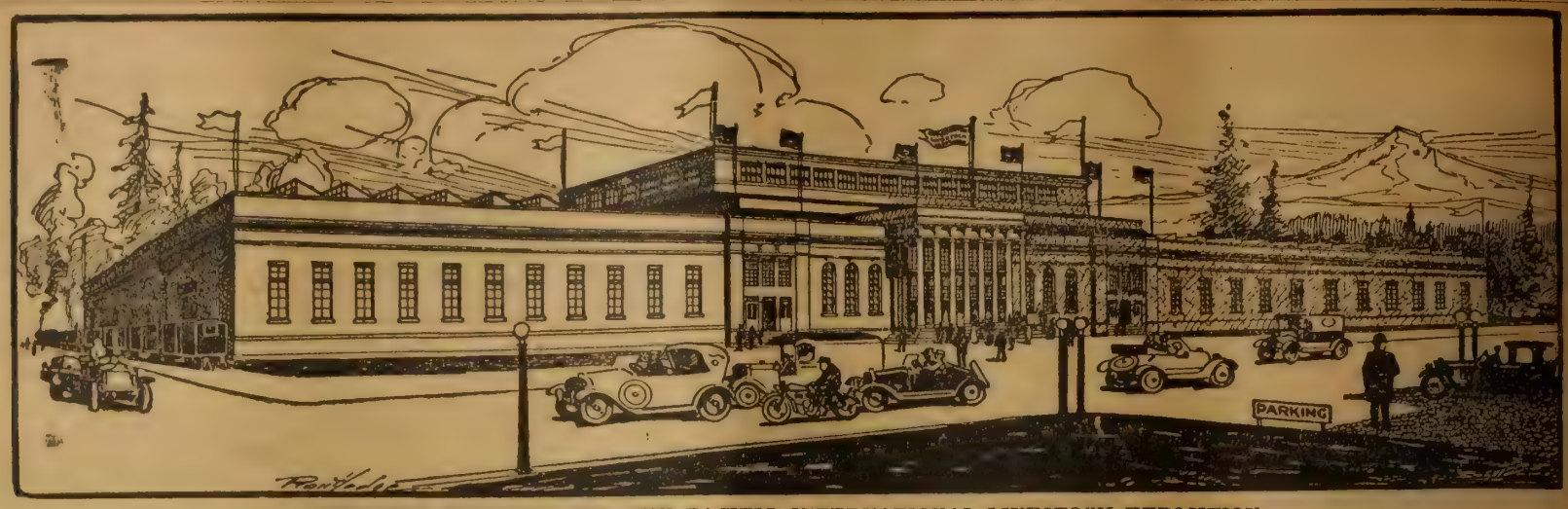
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Write for New Data See actual figures showing you how to increase your calf profits
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SUPERIOR COMPANY TO SELL SUPERIOR BERKSHIRES.

Here is a sale of tops. The Superior California Farm Lands Company sells all but the very best of its registered Berkshires for pork, and on May 1 will offer 75 head selected from the younger animals in its immense herd of over 500 hogs. This insures buyers of supreme quality. The animals are sired by some of the greatest boars of the breed, yet an opportunity is afforded to buy them at farmers' prices. The sale will be held at the Monroeville Orchard at Rotavele Station, five miles south of Hamilton City.



PROPOSED BUILDING FOR THE PACIFIC INTERNATIONAL LIVESTOCK EXPOSITION.

A campaign is now in progress to put the Pacific International Livestock Show at Portland on a permanent basis, and if successful this building will be erected. It will be the largest of its kind in the United States, covering 7½ acres of a 15-acre site, and costing about $250,000. It will accommodate 1,000 dairy cattle, 800 beef cattle, 4,000 hogs, 4,000 sheep and goats, and 400 horses. In the center will be a stadium seating 8,000 people, with a ring for night horse shows and judging purposes. Frank Brown, the well-known president, and C. M. Plummer, the live-wire manager, have been spending some time in ou state, attending the sales and conventions at Davis and taking in other livestoc meetings.

Rubbing Elbows With Other Breeders

[Written for Pacific Rural Press by Thos. F. McConnell.]

Cleanliness the Watchword.

At the John Lynch Ranch, Petaluma, an excellent herd of milking Shorthorns was found, indicating clearly that the owners believe in keeping only the best. A bunch of heifers that were close in showed excellent type, and while all were good, one in particular, Millie Richardson 6th, would show up well in the best of company. She has recently dropped a calf by the junior herd bull, Grand Wapsie, that is about as classy a youngster as will be found anywhere.

This bull, Grand Wapsie, is from the noted Little herd of milking shorthorns of Janesville, Wis., and judging from the few calves already dropped he will be a worthy successor to the senior herd sire, Oxford Duke 2nd.

The calves all looked so clean and healthy that the writer inquired if there had been any loss from scours or other troubles, and the reply was that only one calf had been lost in two years from any cause. This healthy condition is attributed to cleanliness of stables and feeding utensils combined with good location of barns and stables. In talking about feed rations mention was made of the desirability of having plenty of pumpkins for succulent feed in the fall and early winter, to bridge over between pasture seasons. Nothing else fed at this ranch seems to be quite so good.

Pigs and Prunes.

Unlike most of their neighbors who raise nothing but prunes, R. J. Merrill & Son of Imperial Stock Farm, Morgan Hill, commenced to branch out about 8 years ago and raise registered Berkshires. They pasture their hogs in the prune orchards when possible, and also grow what alfalfa and giant half-sugar stock beets they can. They supplement these succulent feeds with generous grain rations, being careful to buy judiciously and whenever the market seems best.

Heretofore the Merrill's have not shown their stock, but this year they have 4 gilts and a boar, sired by Winona Champion 13th and out of Forest Grove Laurel 14th, that if carefully fed will be inside the money in the get-of-sire and produce-of-dam classes anywhere. These animals are uniformly long and deep in body, nicely marked, true to type and have a world of quality.

One of the aged sows in this herd, Matchless Longfellow's Model, recently farrowed 14 pigs and has always had big litters. She is the kind that the hog syndicates like to lead people to believe are very common. Another aged sow in this herd that has always given a good account of herself is Mayfield Nellie 3rd, bred by W. M. Carruthers, Live Oak.

Unique Detusking Method.

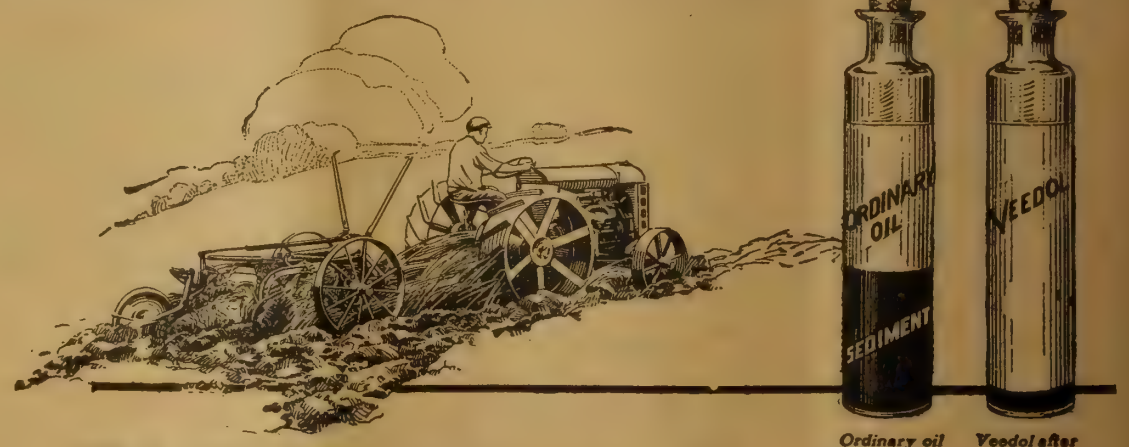
Fred Gatewood, the Poland-China breeder of Hanford, has a unique way of removing a boar's tusks. He uses an ordinary horseshoer's pinchers when the boar is serving a sow. He has no trouble in opening the boar's mouth at this time, and cutting or breaking off the tusks. He says that the method is much to be preferred to the usual method, which is more or less of a fight with the animal and a consequent irritation to the boar's disposition, resulting in a tendency to make him permanently cross and mean.

Cloverdale Hogs in Clover.

Cloverdale Farm, Escondido, is an ideal place for hog raising. The farm, which is located in the picturesque San Pasqual Valley, consists of 60 acres in alfalfa and 500 acres in grain. It is owned by G. J. Bach of San Diego and is leased for a term of years by G. R. Cloes, who showed his faith in big type Poland-Chinas by buying the entire Whitten Ranch herd soon after Mr. Whitten sold his ranch last year.

Mr. Cloes says that he selected the big type Poland-Chinas for their quiet dispositions, quick maturing and easy feeding qualities. He believes tha they will produce the highest qualit of meats, particularly hams an shoulders. He also believes tha Poland-Chinas properly bred and fe will bring quicker returns and greate profit than any other kind of liv stock.

The herd consists of 50 brood sow and gilts of A Wonder, Chief Pric Big Jumbo and Big Timm blood lin and is headed by the $1,000 boa Jumbo Model, assisted by Whitten Big Bob, a son of Big Bob.



Ordinary oil after use *Veedol after use*
Showing sediment formed after 500 miles of running

Don't let inferior oil stop your tractor



Give special care to your truck

The farm truck makes money for the farmer just so long as it runs at minimum cost for repairs and layups. Geared low, the truck engine develops heat less only than that of the tractor.

Inferior oil that breaks down under heat and forms sediment is responsible for almost every difficulty with the truck engine.

Veedol, the lubricant that resists heat, reduces sediment formed by 86%.

Because it resists heat, Veedol reduces evaporation 25% to 50%. This means great economy per mile and per gallon as well as protection against ordinary engine troubles.

NINETY per cent of the engine troubles of a tractor are preventable. With proper care and attention there need be no stops or layups for repairs during the months when your tractor is in continuous service.

At harvest or ploughing time your machine may be worth several hundred dollars a day. If it stops, you not only lose its service but pay repair bills in addition.

Inferior oil is the cause of 90% of tractor engine trouble. Excessive dilution of the oil supply by fuel; loose bearings; overheating; excessive carbon deposits; knocking—all are directly traceable to poor oil.

Solving tractor problems

The special problem of tractor lubrication arises from the fact that a tractor runs at full engine speed for hours at a time. Tremendous heat is developed.

Under this intense heat ordinary oil breaks down very rapidly, forming large quantities of sediment which has *no lubricating value*.

How Veedol, the lubricant that resists heat, prevents the formation of sediment is shown by the two bottles illustrated above.

Veedol is used and approved and recommended by leading tractor manufacturers, and carried in stock and sold by their agents throughout the United States and Canada. In the official tests at the tractor demonstration at Salina, July 23rd and 24th, 1918, Veedol Special Heavy was used by all the leading tractor manufacturers. It was proven that Veedol Special Heavy was superior to other oils for the automobile type of tractor, as on examination it was found that the crankcase contained a lower percentage of kerosene contamination. Its kerosene content was 25% less than the average tests of the other makes of ordinary tractor oil.

Veedol Special Heavy is recommended particularly by Fordson and International Harvester Company dealers.

Buy Veedol today

Your dealer has Veedol in stock or can get it for you. If he cannot supply you, write us for the name of the nearest Veedol dealer. Enclose 10c for a copy of the 100-page Veedol book describing internal combustion engines. This book will save you many dollars and help you keep your gasoline engines running at minimum cost.

TIDE WATER OIL COMPANY
Veedol Department
774 Bowling Green Building, New York
Branches or distributors in all principal cities of the United States and Canada



Fish Meal Cheap Protein For Hogs

[Written for Pacific Rural Press.]

Experiments have proved that hen skim milk is not available, the eding value of corn, barley and oth- grains has increased about 25 per nt by the addition of an animal- atter protein feed. Tankage has en used almost universally, but it a high-priced feed and a substitute ll be gladly welcomed by hog rais- s.

Outside of the meat industry there but one practicable source of ani- l-matter protein, and that is fish. Europe where more congested con- tions enforce a change, fish meal s been used for years with excel- nt results and there are numerous ctories where fish are converted to feed.

In sections of the United States here fish are caught in large quan- ies, rendering plants have been es- blished and fish refuse and inedible rieties of fish are converted into a eal that is of soft texture, fine in echanical condition and clean in ell. There is the characteristic h odor, but it is not unpleasant.

To determine the value of fish meal compared with tankage—also with immilk and milkoline—Prof. J. I. ompson of the University Farm, avis, carried on an experiment rough 43 days ending April 10, feed- g four lots of hogs these different otein supplements with barley. It quired 4.08 pounds barley and 6.96 unds skimmilk to make a pound of in; 5.61 pounds barley and 9.41 pounds milkoline; 4.54 pounds barley and .28 pound tankage; 4.42 pounds barley and .18 pound fish meal. The cost of producing 100 pounds pork with barley at $2, skimmilk at 25c, milkoline 25c, tankage $4.20 and fish meal $4, was $9.90 for the pen receiving the skimmilk, $13.57 for the pen receiving milkoline, $10.25 for the pen receiving tankage and $9.56 for the pen receiving fish meal.

It will be seen that the pen receiving fish meal made the cheapest gains, followed by the one receiving skimmilk. It cost 69c more per hundred pounds to make gains with tankage than with fish meal.

Chemical analyses show that in crude protein fish meal and tankage are about equal, but that in actual flesh forming protein, fish meal leads by a wide margin.

This fish meal is being used in place of tankage and at a considerable saving in cost by Peters, Lamson & Walker of the Winsor Ranch,, Bonita. They fatten thousands of hogs annually and feed a grain ration of rolled barley and milo to which they add fish meal—about 10 per cent for growing stock and 5 per cent for finishing off.

The supply of fish meal in California is limited, but it will be found on the market in most localities, and the results of the experiments at the University Farm indicate that its use will increase the profits from hog raising.

Swine Breeders Active

[Written for Pacific Rural Press.]

The excellent program announced r the seventh annual meeting of the lifornia Swine Breeders' Associa- n, held at the University, brought t the largest attendance ever seen such a gathering. President C. B. nningham showed the progress that s been made in hog raising by citing e fact that 25 years ago it required om 18 to 30 months to produce a 200 und hog, while now this is being ne in from 6 to 8 months. Our ms and bacon are gradually forcing stern brands out of the market, and is expected that soon we shall be porting.

Roy M. Filcher of the San Joaquin lley Farm Bureau Marketing As- ciation stated that three sales a ek are now being held, and that as ny as ten carloads of hogs have en sold at one sale. It is expected at the Association will do a busi- ss of $2,000,000 this year.

Dean Thos. F. Hunt, of the College Agriculture, gave a most interest- g talk about the trend of prices ring the war and suggestions as to at may happen during the next few ars. The length of the Civil War d that of the recent war were prac- ally the same, and the inflation of commodity prices was identical. Consequently, it may be well to know that after the Civil War it took thirteen years for prices to return to pre-war level, although they lost two-thirds of their inflation within six years.

The marketing problem was touched upon in a speech by F. M. Washburn, president of the Western Meat Company, San Francisco; methods for improving the purebred business were discussed by A. B. Humphrey, W. Bernstein and Fred Devore, fieldman of the Duroc Bulletin. E. E. Nicholls told of the methods employed by the Bureau of Markets, and Dr. F. M. Hayes gave a practical talk on hog cholera, swine plague and necrobacillosis. Speeches made by others will be commented upon in this and later issues.

At a business session of the Association the following officers were elected: President, C. B. Cunningham, Mills; vice-president, A. B. Humphrey, Escalon; secretary-treasurer, Prof. J. I. Thompson, Davis; directors, Mark Bassett, Hanford; W. Bernstein, Hanford; H. Braly, Los Angeles; Frank B. Anderson, Sacramento; F. M. Johnson, Napa; W. S. Guilford, Butte City.

Duroc Association Doings.

A special meeting of the Western roc-Jersey Association was held at University Farm, Davis, April 12. e futurity class for the State Farm s taken up and the list completed. was decided to hold a consignment sale of 60 bred sows and gilts next January at the University Farm, and to make an assessment of $20 per head to pay for advertising and other expenses.

The drawing card of the meeting was the presence of Fred Devore, field man of the Duroc Association. He showed moving pictures of noted Eastern herds, gave much good advice and pumped the breeders full of enthusiasm. Mr. Devore is a complete encyclopedia of Duroc information, and a man of excellent judgment, and his visit to California will result in great good for the breed.

YES, WE'LL HAVE A SHOW.

The decision has been made. San Francisco will have a livestock show next fall, and, according to present indications, it will be a hummer. A recent meeting of the California International Livestock Show Corporation was attended by men representing different city interests, such as banks, retail stores and restaurants, and liberal support was promised. The livestock men present were unanimously in favor of holding a show, and the president, W. T. Sesnon, appointed a committee of seven with instructions to get up speed at once, and with full power to act. Lively developments are promised.

'HE OTIS HERD

Milking Shorthorns

WILLOUGHBY, OHIO.



M I L K

LADY OF THE GLEN.

d by us and acknowledged the best and most valuable individual of the breed.

rest herd in America with the best connec- . Many cows weighing 1,700 lbs. and ve with records of over 10,000 lbs. of milk. mers at the recent Congress sale owned by or of our breeding. Sale cattle in carload or single. Calf clubs a specialty.

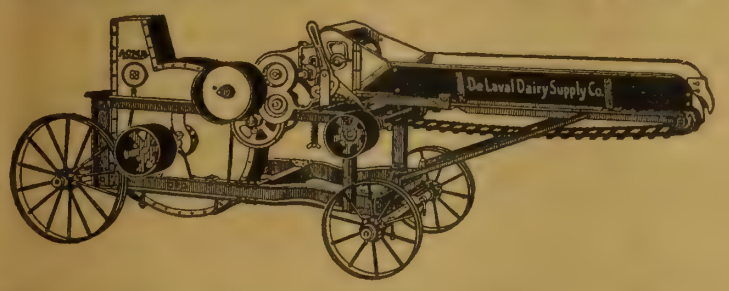
Write T. H. Harrison, anta Rosa Stock Farm, Santa Rosa, Cal. California Representative.

The calf of today is the cow of tomorrow, but it can't live on tomorrow's ration. Feed it good today, and every day.

A big tower-like silo serves as an inspiration to any owner, if he has any ambition whatever, because it compels him to "look up."

ACME

FEED CUTTERS



The Combined Silo Filler, Feed Chopper and Alfalfa Meal Machine

The Cylinder Cutter with the durable ALL STEEL FRAME

A Size for every dairy.

When you have finished the work of silo filling you don't have to store the Acme Cuter away until next season. There is big work for it to do throughout the year—work that is just as important from the standpoint of feed economy as silo filling, and that is the work of chopping your dry hay and making your own alfalfa meal. The Acme will do it all and do it cheaply and well.

The steel frame insures durability and light running. The spiral knives give larger capacity and produce a superior quality of clean-cut ensilage and chopped feed.

Write for complete catalog, circular on economy of chopping dry feed and sample of alfalfa meal.

DE LAVAL DAIRY SUPPLY CO.

61 Beale St., San Francisco.

No other Silo has 'em!

Famous Trussed Steel Bracing



Theh Cyclone Silo is unequalled for strength and durability. Can't twist, lean or blow down. The strongest silo made. Wind proof, storm proof, twist proof.

The Cyclone Silo Trussed Steel Bracing is fastened to the top of the silo and firmly anchored in the concrete foundation. Each stave is not only stapled to each hoop but also to the bracing. Every staple fits into notches pressed in each edge of the steel, so there can be no slipping, no twisting or sagging. Every stave must stand upright regardless of shrinkage or expansion.

Cyclone Hoops Need no Tightening

This is the silo for you. Write for details of Early Buyers' Discount and our Free Book on Silos and Feeding. A postal will do.

National Tank & Pipe Co.

275 D OAK ST., PORTLAND, OREGON.

"Cyclone" Silo

Picking Producers From the Dairy Herd

(Continued from page 593.)

withers; her prominent, open-jointed spinal column, indicating a well-developed spinal cord and strong flow of nerve power. Her shoulder bones, ribs and hip bones are prominent, yet she does not look thin or weak. There is simply a freedom of surplus flesh. Digestion and milk secretion is the work of the nerve system, and the nerve system is the power that drives the animal milk machine. Yet, although the cow is an animal of nerves, she has them under control, and will be found busily but contentedly chewing her cud either in the lot or in the barn.

Good Blood Circulation.

A cow may have a strong constitution and a large capacity, but if her blood does not circulate to the right parts of her anatomy she will be worthless as a dairy cow. In beef cattle the circulatory system is such that the feeding nutrients are carried to the rump, back, loins and ribs, where they are deposited in the form of high-priced meats. In a dairy cow the maximum amount of blood should pass through her udder where the milk is manufactured. On this account it has been considered until recently a good point to have a cow's udder well veined, and to have large, tortuous branched milk veins extend forward from the udder along the belly well to the front, and to pass into the body cavity in large openings known as milk wells. These so-called milk veins do not have milk in them at any time, but carry the blood from the udder to the heart, and heretofore this visible indication of circulation has been considered important on the theory that milk is made from blood, and that the better the circulation of blood to the udder the greater the production of the cow.

However, at the Oregon Agricultural College the milk veins on a cow were tied so tightly that no blood could pass through them, yet no effect on the quantity of milk could be noticed. This indicates that we may have laid too much stress upon the development of the milk veins. While dairy cows that do have large and tortuous veins are generally good producers, cows with small veins cannot be judged as low producers by that fact alone, for it sometimes happens that very good milk cows are not well veined.

Producing Ability.

The digested food is converted into milk only after reaching the udder. Consequently, as the udder is the organ where the milk is made, it must be an efficient organ, and we study it to learn the cow's producing ability. It should be reasonably large, but do not depend entirely upon the eye to estimate the size, for many good udders are contained largely within the body and their size is not apparent. You can see the fore part of the udder, be it large or small. Take hold of the skin between the hind quarters. Up to the point where this skin ceases to be as loose as upon other parts of the body you can judge that the udder extends.

The udder should be long from front to rear—that is, extending far forward and attached high and wide in the rear. Pendulant, pointed udders are a little objectionable, as they are more liable to be injured. The udder should be flat on the bottom, with the quarters well balanced and not cut up. The teats should be of medium size, squarely placed at the four corners.

Size in the udder is not enough. It must be of fine texture, not meaty, so that when it is milked out it will feel flexible and soft and will hang in folds.

The size and shape of the udder can not be accurately judged in dry cows, but this can be fairly well determined by the length and levelness of the rump. A short, sloping rump indicates a poorly shaped udder, and a long, level rump indicates a large, well-formed one.

General Suggestions.

Cows having the capacity to consume large quantities of feed are the most profitable, and it goes without saying that they must have good size. This does not mean that a Holstein should be preferred to a Jersey. The cow should be large for the breed she represents.

The color of the skin, not hair, as affected by the secretions, most noticeable at the base of horn, root of tail and inside of ear, should be noted carefully as indicating the color of the milk and its richness. If you want a high tester, look for a yellow, waxy appearance.

If a cow has not been dehorned you can easily tell her age, as the first ring on a horn makes its appearance at three years of age and a ring is added each year thereafter.

It is important to get a healthy cow from a clean herd. Decide whether or not you want her tuberculin tested, but bear in mind that dishonest dealers often dope cows with tuberculin so that they will not react. Remember, also, that abortion is very prevalent in our state, as elsewhere, and you should use every possible means to determine if the cow is a regular breeder and comes from a herd that is not infected.

There are advantages in buying a dry cow, as you almost immediately get a calf and have the cow through her entire lactation period. Yet, there are many risks. The cow may have a ruined or light quarter. She may be difficult to breed. She may dry up quickly. She may be a fence-jumper. Perhaps she sucks herself. There are dozens of other faults that may be the reason of her being offered for sale.

For that matter, there are many risks in buying cows that are in milk, and if possible purchasers should be made from men who are known to be reliable. The suggestions here given will prove helpful in sizing up a profitable cow, but they will not prove infallible, for sometimes in judging production all signs fail. The only true test of a cow's producing ability is the combination of scales, Babcock tester and record book, and until the time comes when every cow owner is a member of a testing association, the buying of cows will be in a measure a game of chance.

But even so, the skilled buyer will not run as great chances as the novice, so the next time you go to buy a cow read over these different points that should be considered; take the accompanying chart along, and compare each part mentioned with the corresponding part in the cow you are considering. And at least you will get a better cow than you would if you bought on the seller's say-so.



Contagious Abortion

Don't sell the aborters. Clean out the infection. Breeding animals are worth more than ever before. Control of Abortion is doubly necessary.

The Abortion infection causes Barrenness, Retention of Afterbirth and Calf Scours in addition to Abortion. Unless checked it is likely to run through your entire herd.

B-K is a powerful non-poisonous antiseptic—scientifically correct for this work. Used as a douche, it dissolves the slimy albuminous matter in the vagina and uterus, kills the germs, stops discharges and controls the infection. B-K is much more effective than lysol, carbolic acid, Lugol's solution, bichloride of mercury and coal tar disinfectants, all of which tend to coagulate or thicken the albumins.

Contagious Abortion is being successfully controlled in many herds by following our simple plan with B-K. Send for "evidence."

FREE BULLETINS: Send for our valuable bulletin No. 52 on "Contagious Abortion," also "145 Farm Uses" and our "Trial Offer." If your dealer does not have B-K send us his name.

GENERAL LABORATORIES

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Teat Cups Stay On Without Tying

EMPIRE teat cups "stay put" on cows with big teats or small teats, even or uneven udders. Their regular, gentle action is far more effective than hand milking and induces the cows to give down freely. Mr. J. P. Davis, Alliance, Ohio, says:

"After three years of Empire Milker service with our Holstein herd we can state that it milks the cows cleaner, quicker and better than hand milking. We consider it a paying investment. One of my sons milks from 22 to 25 cows in less than an hour with one double unit and one extra pail. It is quite a pleasure to milk with the Empire, *no changing of teat cups for different size teats.* It is easy to put teat cups on and see the machine put milk in the pail while the cows are at perfect ease. The cleaning of parts is quickly and easily done. We would not think of keeping our dairy without our Empire Milker."

From all sections of the country we get equally satisfactory reports from Empire users. They all agree that Empire Milking Machines cut dairy cost, insure cleaner milk and solve the hired help problem.

You, too, can increase your herd and handle it with less help. Write for catalog 45 and let us arrange for a demonstration with our local dealer.

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Also manufacturers of Empire Cream Separators and Gasoline Engines

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EMPIRE
MILKING MACHINES

MOLASSES

We are pleased to announce that we can again supply that superb feed, HAWAIIAN CANE MOLASSES. UNCLE SAM has been taking most of it for the past two years, but now that the war is over, it is again available for stock food. We can supply any quantity, in barrels or tank cars, for quick shipment anywhere, and about half the price of feed corn.

Better write immediately for prices and full particulars.

W. H. YOUNG COMPANY
58 Sutter Street, San Francisco

California Breeders have sold more than **$350,000.00** worth of registered cattle in our sales, under the most stringent requirements laid down by any sales organization in America. Satisfied buyers have been the rule in all our sales.

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C. L. HUGHES, Sales Manager, Sacramento, Cal.



America's Pioneer Dog Medicines

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And How to Feed
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Doing good service for 34 years, positively guaranteed to satisfy, known all over the world wh ever horses are, the name that springs to millio of minds whenever Gall Cure is mentioned—t is what Bickmore's Gall Cure stands for. Succe fully used on over one million horses on ev continent each year. Satisfaction or mo back *guaranteed* everyone. Wonderful for col and saddle galls, broken skin, rope burns, s shoulder, mange and other skin diseases, bruises, c chafes, mud scalds, grease heel, chapped teats cows, and other wounds on horses, cattle, pigs, poultry. No need to lay the horse up while curing h Cure the horse while he works. Bickmore's works bet if you work the horse. Lawrence Garnett, of Sparta burg, Pa., says, "I have used your Gall Cure and it is c tainly good. We used the horse all the time the sore v healing." If your druggist, harness dealer, hardware general store has not Bickmore's, get it direct from Or send 10c for liberal trial sample and very useful Fa Account Book giving helpful pointers to farmers showing how to keep track of all expenses and receip Bickmore's is also now being refined and put out for human use. It is called "Bickmore's XYZ Skin Ointment," is proving as wonderful for human beings as Bickmor Gall Cure is for animals. At your dealer's or direct fr us. The Bickmore Company, Dept 304, Old Town, Ma

Here Are Two Savers

SIMPLEX SILOS

save the crop that would be wasted in the fields.

All silos are savers. Here are 4 big reasons why the Simplex ranks above all other sflos as savers of feed:

1—It does not leak air nor ensilage juices.

One-piece unspliced Oregon Pine (Douglas Fir) staves keep the ensilage juices in and the air out. The result is a perfect siloing process.

2—Its sides remain round and straight.

The Crissell Tangent Top Device keeps them so. It insures the strength and stability of the silo by keeping it round under all conditions.

3—It survives the strains of pressure and of weather.

The weight of many tons of ensilage demands strong construction. Wind and frost must be met. The Simplex is bound with hoops of clean new steel and anchored by a double interlocking system of heavy cables. It is built to last.

4—All parts of the Simplex are built equally well.

The steel re-enforced doors save time in handling. The roof is made to resist weather and save repair bills.

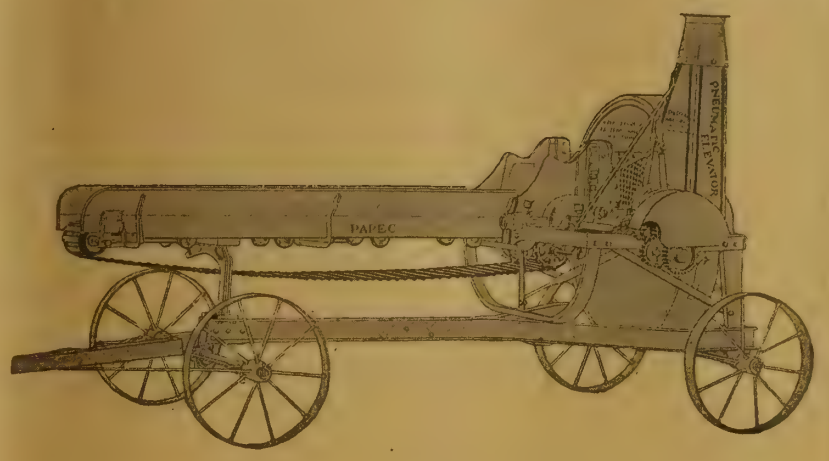
Sooner or later you will build a Silo.

Send for the folder.

PAPEC ENSILAGE CUTTERS

SAVE POWER

Papec cutters **throw** the ensilage as it leaves the knives. Thus less power is required on the blower. Here's part of the Papec guarantee: "We guarantee that ANY Papec Cutter will cut and elevate more ensilage with the same power than any other blower cutter."



Save Repairs—

A one-piece steel frame keeps the knives in line. Papecs are built for rough treatment and all the work that you can pile into them. Our guarantee—any part that shows faulty workmanship or material replaced free.

Save Crops—

With your own cutter you can fill your silo when the crop is ready. As the sileage settles you can fill it again. Only with a cutter right at hand can you make your silo do its full duty.

Save Time—

Dependability is mighty important in any farm machine. You can depend on the Papec. It will perform heavy duty without breaking down and all of its work will be well done.

Some Reputation

Oakley, Cal., Nov. 19, 1918.

Santa Fe Lumber Co.,
San Francisco, Cal.

Gentlemen: Three seasons ago I replaced an —— with an L-16 Papec Cutter from your stock at Brentwood, Cal., your distributing point, and I have had excellent success with it. In fact, the reputation of your cutter has gone all over this delta country and was the cause of a sale to one of my neighbors; also another neighbor has promised to buy a machine next year when his old machine is out of commission. At any time I shall be glad to boost for the Papec.

E. H. FOX.

THE "WHY" OF THE WHEEL



An ensilage cutter with four or less fans requires an elevating pipe large enough to receive at least one-fourth of the ensilage cut at each revolution of the cutting wheel.

A papec—with its six fans—requires a pipe large enough to receive only one-sixth of the ensilage cut at each revolution of the wheel.

Thus the Papec, with its **SIX** fans and **SMALL** pipe "throws and blows" a steady stream of silage with a force more concentrated and with a pressure much greater, than a cutter with four or less fans and a larger pipe.

Papec Ensilage Cutters Require Less Power and Elevate Higher.

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16 California St., San Francisco, Cal.

SANTA FE LUMBER COMPANY,
16 California St., San Francisco, Cal.

Please send me folder describing Simplex Silos, also information about Papec Ensilage Cutters.

Name .....

Address .....

Livestock and Dairy Notes

Livestock breeders all over the state are invited to send on postal cards, notes regarding their sales, State and County Fair intentions, new stock, etc.

LIVESTOCK SALE DATES.

April 26—W. Bernstein, Hanford. Registered Poland-Chinas.

April 29—Jas. McGillivray, Sacramento. Grade Holsteins.

May 1—Superior California Farm Lands Co., Monroeville Orchard, Hamilton City. Registered Berkshires.

May 3—Napa State Hospital, Napa. Grade Holsteins.

May 21-22—McAlister & Sons, Chino. Registered Holsteins.

July 10—Carruthers Farm, Live Oak. Registered Shorthorn sale at San Francisco.

THE DAIRY.

Rochette's Princess, an imported Jersey cow, owned by Meldrum Gray of Roswell, New Mexico, has made a record of 933 pounds butterfat from 17,891 pounds milk.

Willowmoor Miss Carston, an Ayrshire cow owned by the Gossard Breeding Estates, Indiana, has made a junior two-year old record of 607.39 pounds fat from 14,678 pounds milk.

Pietertje Fayne Johanna, owned by A. A. Cortelyou Estate, Summersville, N. J., has just made a record of 48.17 pounds butter from 736.2 pounds milk. She is a daughter of the only 50 pound cow in the world, which is pretty good proof that "blood will tell."

Geo. Lenahan, an experienced dairyman of Tulare, has been engaged to take charge of the H. S. Smith dairy at Modesto. Mr. Smith has some fine registered Jerseys and plans on developing a high-class, pure-bred herd. He will also keep registered Berkshire hogs.

Harry Hill, owner of Sunny Hill Farm, Riverdale, believes in procuring the best possible herd sire, as he bought at the Mitchell dispersal sale the young bull reserved by Mr. Mitchell for use in his coming herd, but placed on sale after the purchase of the $5,000 bull at the Guaranty Sale. Mr. Hill afterwards sold a half interest in the bull to Alan Milnes of Riverdale.

The announcement that the entire herd of 200 Holsteins, owned by McAlister & Sons, Chino, will be sold at public auction, will come as a surprise to California breeders. On account of a change in plans the owners will no longer be able to devote their time and attention to the herd, so the many fine animals, including a large number of high record cows and the world renowned bull, It, will be offered to the highest bidders May 21 and 22.

W. B. Mitchell, prominent Hereford breeder of Marfa, Tex., has been spending several weeks in California and says that this state presents a wonderful opportunity for Herefords. He criticizes our breeders for paying too little attention to breeding quality, but notices a disposition among cattlement to grade up their herds. "In a country where there are twelve months of growing weather," says Mr. Mitchell, "there should be a great future for Herefords."

BEEF CATTLE.

R. M. Dunlap recently arrived from an Eastern Beef Cattle purchasing trip. He secured several fine bulls for Creps Bros. of Woodland and several others for William Foster of Redding.

W. M. Carruthers, Live Oak, announces that his second annual Shorthorn sale will be made in San Francisco July 10, when 60 head of high class stock will be offered. Fred Reppert of Decatur, Indiana, will cry the sale.

At the C. B. Baldwin dispersal sale at Hedrick, Iowa, March 25, 42 Shorthorns averaged $2,012. Rosewood 106th, the dam of Brilliant Charmer, brought $7,000 and 3 bulls averaged $5,825. This is a new record in America for Scotch bred cattle.

Col. Fred Reppert, who cried the beef cattle sales at Davis, stated that in the last six months the middle west has shipped more registered cattle to California than it shipped in the previous ten years. And he added that our buyers want the very best.

R. M. Dunlap bought in Iowa for H. H. Gable of Esparto the Hereford bull Don Perfect, a son of Point Comfort 14th. The latter was purchased at a record price by Mr. Davis of Mississippi. Don Perfect is a half brother of Spooner Bros.' $10,000 bull and is an exceptionally good individual; in fact, Mr. Gable was offered $1,000 more than it cost him by parties who wished to ship him back to Iowa.

In order to get the report of the Shorthorn sale at Davis in last week's issue it was impossible for us to mention several interesting features. One was the price of $1,175 paid for the fourteen months old heifer, Ormondale Maid 2nd, consigned by the Ormondale Company. This is the record price for a Shorthorn yearling heifer in California and the lucky purchaser was Wm. Bond, Newark.

SWINE AND SWINEMEN.

At the last farm bureau auction sale held at Tulare, the highest priced carload brought $18.40. A similar price was secured at a recent sale at Hanford.

The Sierra Vista Vineyard of Minturn sold a carload of hogs last week for 17½ cents at the ranch. They were Berkshire and Mulefoot cross and averaged 226 pounds.

John M. Bernstein of Hanford has returned from the east bringing 26 head of Poland-Chinas for himself, selected from the leading eastern herds. He also purchased several hogs for other California breeders.

Mr. Brown, livestock superintendent of the Miller & Lux Santa Rita Ranch, reports 191 pigs weaned from 24 Duroc sows. This average was obtained under ordinary conditions. The boar was allowed to run with the herd and no unusual care was given sows during farrowing time.

Fred D. Ross of Hanford is mourning the loss of his herd sire, Rossmead Big Bob, by Caldwell's Big Bob. This boar was one of the most promising young Poland-China sires in California, and not only was he proving himself a great breeder, but Mr. Ross expected to make a clean-up with him at the fairs and shows next fall.

The Glenn County Poland-China Breeders' Association has been organized at Orland, with R. J. Yates, president; J. M. Leonard, vice-president; Leonard McKaig, secretary; Charles Temple, treasurer; S. F. Williams, D. H. Ward, W. G. Gurnett, Alec Lake and M. Penfield, directors.

McCarthy and Starkweather, of Rivernia Farm, Modesto, have imported a fine bred Poland-China bred gilt from Robinson Bros., Norton, Ill. She is by Fashion Masterpiece and out of Liberty Girl 2nd, a Big Bob sow. A great litter is expected from the service of Expansion King, junior champion at Illinois and the National Swine Show.

The bred sow sale of the Tulare County Duroc-Jersey Breeders' Association, to be held next July, promises to be a great success even at this early date. R. C. Sturgeon will consign 10 of his best gilts, Allen Thompson will put in 16 good ones and W. J. Higdon 4 of his best. Several other breeders have already picked out choice animals to consign. It is expected that the new Sales Pavilion will be completed in time for this sale.

LIVESTOCK DIRECTORY

Rate in this directory 3c. per word each issue.

SWINE.

Berkshire.

CASTLEVIEW

GIANT TYPE BERKSHIRES

We are booking orders for spring pigs from Grand Champion Sows and sired by Mayfield Roockwood, sire of Champion Barrow at 1919 Western Berkshire Congress.

CASTLEVIEW RANCH, SANTA ROSA.

ANCHORAGE FARM.

MONEY-MAKING BERKSHIRE—The prolific, easy-feeding kind that make the highest priced pork from the lowest priced feed. They will increase your profits. Prices reasonable; satisfaction guaranteed. Write for free booklet, describing our worlds reserve champion, STAR LEADER. We are now making a special offering of bred sows and gilts.
Anchorage Farm, Orland, Calif.

$25.00—$35.00—$50.00
BARON DUKE 201 st
Omaha Grand National Champion
BOAR PIGS: 3, 5, and 6 months old, from 650-pound prize-winning sows. We will sell nothing that we wouldn't use ourselves.
SANDERCOCK LAND CO.,
906 K St., Sacramento.
In charge of Natomas Land sales.

GRAPEWILD FARMS BERKSHIRES
A few spring boars and fall pigs by Big Leader, Grapewild Farm Leader and Majestic King.
A. B. Humphrey, Prop., Escalon, Calif.

(Continued on next page.)

WHAT DOES IT MEAN?

THIS GREAT DISPERSION SALE

OF

McAlister & Sons Famous Herd

OF

Registered Holstein Friesian Cattle?

It means that you, the prospective buyer, can buy such cattle at this sale that other breeders refuse to sell at any price.

You can buy cows that have made as high as 35 lbs. butter in 7 days and 140 lbs. in 30 days—that have milked as high as 110 lbs. in one day and over 3000 lbs. for 30 consecutive days.

You can buy daughters and sons of these great cows sired by the great bull It. At your own price!

You can even buy *IT* at your own price!

Remember the dates—May 21-22 at McAlister & Sons Farm—5 miles south of Chino.

On these dates the greatest bargain sale ever in Holstein Cattle will be held!

200 HEAD TO BE SOLD!

Guaranteed to be breeders. Not Tuberculin tested.

CHAS. L. HUGHES,
Sacramento, Cal.
Sales Mgr.

COL. B. A. RHOADES,
HAROLD B. RHOADES,
Los Angeles, Cal.
Auctioneers.

WRITE FOR CATALOGUE NOW.



One JER$EY STARTS A PROFIT HERD

ONE Jersey will prove the profit of the breed. She will prove her economy in feed. She will show a return in milk richness truly astonishing. Vigorous in the hot South. Hardy in the cold North. Get one Jersey and you will never be satisfied until you have more. Ask breeders for prices and pedigrees. Write us for Jersey information worth having. It's free.
THE AMERICAN JERSEY CATTLE CLUB, 388 W. 23rd St., N. Y. C.

N. H. LOCKE CO.
LOCKEFORD, CAL.
Choice young bulls of King's Valet Blood, backed by Records.
Call at the ranch and make selection.

VENADERA HERD REG. JERSEYS
Herd headed by Altama Interest, Grand Champion 1918 State Fair. Awarded two other championships and 10 firsts, including Aged Herd Breeders' Young Herd, and get of sire. Young bulls for sale from dams and granddams in Register of Merit.
GUY H. MILLER, Modesto, Cal.

LEONARD FARM JERSEYS
Bulls for sale from Register of Merit Cows. Write for information.
W. J. HACKETT,
Ceres, California

T. B. PURVINE & SONS
PETALUMA, CALIFORNIA.
Breeders of
Registered JERSEYS
Young bull calves for sale. Fine individuals with Register of Merit backing.

RANCHO SANTA MARGUERITA, D. F. Conant, Prop., Modesto, Cal.
Register of MERIT JERSEYS A limited number of bulls for sale

FOR LARGE AND ECONOMICAL PRODUOTION
Get one of my young Jersey bulls from a high producing dam. They are rich in the blood of Gertie of Glynllyn and Lady Letty Lambert. Occasionally one old enough for service.
A. A. JENKINS, TULARE, CAL.

FIRST AUCTION SALE

Registered Berkshire Hogs.

75 Head of Sows and Boars. 75

Sired by Iowana Champion Peer 2d, a son of Rivals Champion Superior Emblem, a son of Solano Emblem and Superior Leader, a son of Grand Leader 2d, Grand Cmampion of the world.

A choice selection from a herd of 500 head. Everything from this herd but the very best are sold for pork. The tops are offered at auction. All registered and of the best families. For catalogs address W. S. Guilford, Superior California Farm Lands Company, Willows, California. Herd is at Monroeville Orchard, six miles south of Hamilton City, Glen County, California.

C. L. Hughes, Sales Manager.
Col. Ben Rhoades, Auctioneer.

CROLEY'S BALANCED HOG FEED—The cheapest feed to fatten hogs. Write Geo. H. Croley Co., Inc., Livestock Supplies, 8th and Townsend Sts., San Francisco, Calif.

BERKSHIRES bred at Imperial Stock Farm are the kind that satisfy. Write us or call and be convinced. R. J. Merrill & Son, Morgan Hill, California.

BERKSHIRES IN PERRIS— They make money for me. Write for catalogue and prices. F. L. Hall, Perris, California.

BERKSHIRES—Sired by Star Leader, the $1500 boar. Kounais Registered Stock Farm, Modesto, Calif.

BERKSHIRES by Ringleader 20th, greatest son of Grand Leader 2nd. Geo. M. York, Modesto, Calif.

FOR REAL GOOD BERKSHIRES write Frank B. Anderson, B. 724W., Sacramento, Cal.

CARUTHERS FARMS BERKSHIRES — Cholera immune. Live Oak, California.

REGISTERED BERKSHIRES—Write R. D. Hume, Dos Palos, California.

BERKSHIRES—Fair Oaks Ranch, Willits, California.

Poland-Chinas.

40 SOWS and daughters of Big Bone Bob and I. B. A. Wonder sows for sale. Price right. N. K. Horan, Lockeford, California.

BIG TYPE POLAND-CHINAS—Stock from the best herds of the Middle West. N. Hauck, Alton, Humboldt County, California.

20 HEAD of Big Bone Bob, Grand Model and I. B. A., Wonder stock for sale. J. W. Wakefield, Acampo, California.

LAKE SIDE STOCK FARM—Large smooth and big boned Poland-Chinas. Geo. V. Beckman & Sons, Lodi, California.

REGISTERED POLAND-CHINA SWINE—Prize winners. Finest stock in the State. M. Bassett, Hanford, California.

BIG-BONED POLAND-CHINAS—From Eastern prize-winners. D. H. Forney, Route G, Fresno, California.

POLAND-CHINAS—Young stock for sale. Edward A. Hall, R. 1, Box 39, Watsonville, Calif.

POLAND-CHINA PIGS WITH RIBBONS—Prices right. Johnnie Glusing, Winton, Calif.

POLAND-CHINA PIGS—Bernstein Trewitt, and Ross blood. B. M. Hargis, Tulare.

POLAND-CHINAS—A few young service boars for sale. R. F. Guerin, Visalia, Calif.

REAOAKS RANCH herd of registered Poland-Chinas, W. J. Hanna, Gilroy, Calif.

BIG BONED POLAND-CHINAS—Stock for sale. E. S. Myers, Riverdale, California.

"GROW THEM OUT"

BERNSTEIN'S PIG SALE.

Saturday, April 26, 1919. I will sell to the highest bider, 65 head of registered Poland-China hogs. A few bred sows and service boars. All the rest are PIGS. From weaners up to gilts ready to breed. This is your opportunity to

BUY THEM YOUNG AND GROW THEM OUT.

F. Bernstein, Owner. Write for catalogue to V. T. Dice, Sec., Box 374, Hanford, California.

SPRING PIGS—Big type Polands. Best blood in State. Write for particulars. White Oak Farm, A. F. Busch, Prop. Potter Valley, California.

BOW BARGAINS—We are offering some exceptionally nice tried sows, bred and open gilts, at attractive prices. They are all sired by the undefeated and world's grand champion Superba and out of big type sows, which cost me $200 and over. Investigate before buying elsewhere. Rough's Greenfields, Arlington Station, Riverside, California.

POLAND-CHINAS—Am booking orders for spring boars sired by King's Massive, Orange and from such noted sows as Rosebud Quality jr., sired by President and out of King's Rosebud, grand champion sow of 1917 and other big sows. H. D. McCune, Lemoore, Cal.

MAKE BIG MONEY with Cloverdale Farm big-type Poland-Chinas—the prolific, fast-growing, easy-feeding, money-making kind. We purchased the famous Whitten Ranch herd including great boar Jumbo Model. High-class stock for sale—farmers' prices. Write us. Cloverdale Farm, R. F. D. 1, Escondido, Cal.

NOW BOOKING ORDERS for spring pigs, either sex from my prize-winning, large type Poland-Chinas hogs. Also will book a few orders for bred gilts, February and March farrow, and a few good serviceable, aged boars. Hale I. Marsh, Modesto, California.

ELDERSLY FARM—We are offering some excellent tops from our fall, and spring pigs at attractive prices, sired by one of America's best-bred boars, Big Black Bone Wonder, with grand championship breeding on both sides. He is a real 1000-lb. boar. J. H. Ware, Live Oak, California.

THE BEST IN THE WEST—California Gerstdale and President's Equal are my herd sires. Fall and spring boars now ready to move—each one a corker. Dr. J. A. Crawshaw, Hanford, California.

I WANT TO BUY 10 big-boned Poland-China bred sows for June 1st delivery. Also any number of feeders up to fifty for May 1st delivery. J. R. Tallman, 438 15th Et., Oakland, Cal.

BOOKING ORDERS for spring pigs sired by "Bob Big Bone" 281289, litter brother of the Junior Champion of Sacramento, 1918, P. E. Mitchell, Atwater, California.

OXRONE HERD offers March boars for sale from King's Big Bone leader, grand champion at State Fair, 1918. Write F. E. Fay, Tipton, California.

FALL BOARS by a son of Caldwell Big Bob at bargain prices. Also booking orders for spring pigs. Forest View Ranch, J. H. Cook, Paradise, Cal.

WAUKEEN HERD POLAND-CHINAS—Big type herd boar, the $700 Grand Champion of California. Les McCracken, Prop., Ripon, Cal.

POLAND-CHINAS—Young stock for sale. H. E. McMahan, Lemoore, California.

Chester Whites.

BILLIKEN CHESTER WHITES—One yearling boar for sale; everything else sold. Will book orders now for spring pigs. C. B. Cunningham, Mills, California.

Duroc-Jerseys.

REGISTERED DUROCS—While my hogs carry blood of the breeds' best lines, they are not too proud to get down on their hands and knees in the alfalfa and make money for me at 18 cents a pound. All sows are culled whose pigs fail to reach 200 pounds at 6½ months. Weaned pigs, gilts and sows for sale at reasonable prices. Geo. L. Horine, Winton, Calif.

DUROC-JERSEYS AT IRELAND—Home of Cherry Volunteer II., Grand Champion Boar at Riverside. Ireland's Orion Defender and Orion's King of Ireland are excellent sires in service. Booking orders for spring delivery. Ranch at Owensmouth. City office, 1219 Brockman Bldg., Los Angeles, Calif.

THE JOHNSON HERD OF DUROCS—Two yearling service boars for sale at farmers' prices. These are well grown out, rugged animals. Weaned boar pigs, $25. Frederick M. Johnson, Napa.

SWEETWATER DUROCS—The most popular herd in the West. Our Durocs make money for us—they will do the same for you. Winsor Ranch, Bonita, San Diego Co. Address R. K. Walker.

WE WON MORE MONEY on Durocs at the State Fair than any other exhibitor. Why not buy some of this winning stock? June Acres Stock Farm, Davis, California.

DUROC-JERSEYS—Burke's Good Enuff, Golden Model. King's Colonel and Pathfinder blood. Derryfield Farm, National Bank building, Sacramento.

DUROC WEANLINGS for the farmer. Easy feeders. 200 lb. at seven months. W. W. Everett, River Bend Farm, St. Helena, Calif.

A FEW CHOICE BRED GILTS, spring boars and gilts of the best blood lines. H. P. Slocum & Sons, Willows, California.

BOUDER DUROCS all sold out, excepting some sow pigs weighing 100 lbs. apiece. H. E. Boudier, Napa, California.

HEAVY-BONED DUROCS—A few service boars for sale. Ormondale Co., Route 1, Redwood City, California.

REGISTERED DUROCS—All from prize-winning stock. W. P. Harkey, Gridley, Calif.

REGISTERED DUROC-JERSEY GILTS for sale. D. Fricot, Angels Camp, California.

REGISTERED DUROCS—Stock for sale. W. J. Fulgham & Sons, Visalia, California.

Yorkshires.

LLOYTON HERD REGISTERED YORKSHIRES—Bred gilts and pigs from eight weeks up. Lloyd & Tointon, Llano Road, Santa Rosa, California.

Hampshires.

OUR 28-MONTHS OLD herd boar, sure breeder, 15c. lb. Two open and bred gilts. Weaned pigs. Write, Uneda Hampsire Swine Farm, Tom M. Bodger, Prop., Gardena, Calif.

MY HAMPSHIRES are money makers Stock for sale. Buy now. L. W. Denker, Saugus, California.

HAMPSHIRE SWINE—Young stock for sale. Ira Hart, Dos Palos, California.

MISCELLANEOUS.

LARGE YORKSHIRES—The ideal hog for the progressive farmer. Young stock for sale. A. L. Tubbs Co., Calistoga, Calif.

O. I. C. BREEDERS' NOTICE—I will sell Ohio Boy, two-year-old imported boar; none better. Also boar pigs ready for spring breeding (sire Ohio Boy, dam Toddler's Beauty, imported). Write for full information. Jas. Little, Wasco, California

MULE-FOOT HOGS—Large type. H. T Bailey, P. O. Box 37, Lodi, California. "The Blue Gums."

DAIRY CATTLE.

Guernseys.

GRAPEWILD FARM GUERNSEYS.

A 21-months-old bull out of dam with record of 615 pounds in A. A. class, and a few young bulls up to 1 year of age.

A. B. Humphrey, Escalon, California.

HIDDEN VALLEY FARM offers for sale 2 young Guernsey bulls, ready for service, out of high record advanced register dams. A. J. Welch proprietor, Redwood City, California

EDGEMOOR FARM GUERNSEYS —First in the show ring and in official records. Few animals of either sex for sale. Edgemoor Farms, Santee, California

PALO ALTO STOCK FARM, Palo Alto. Breeders of registered Guernseys; both sexes; prices reasonable.

Holsteins.

A PRICE ON EVERY ANIMAL.

Herd free from tuberculosis. All sales subject to sixty days' retest. Sons of Finderne Soldene Valdesa, whose dam is not only a world record cow in seven-day division, but has two sisters holding world's records for yearly production.

Toyon Farms Association.
679 Mills Building San Francisco.

COMPLETE DISPERSAL

AT PUBLIC AUCTION

THE FAMOUS JAMES McGILLIVRAY HERD

HIGH GRADE HOLSTEINS
TUESDAY, APRIL 29, 1919

SACRAMENTO, CALIFORNIA

To make room for his rapidly increasing herd of registered Holsteins which now numbers close to 250 head, James McGillivray, Sacramento, will make a complete sale at public auction of his well known heavy producing herd of high grade Holsteins. One of the very best grade herds in the West, well marked, good udders, young, and they are the product of many generations of purebred Holstein bulls mated with selected grade cows.

THIS IS WITHOUT QUESTION THE GREATEST OFFERING OF HIGH GRADE HOLSTEIN MILK COWS AND HEIFERS EVER MADE IN CENTRAL CALIFORNIA.

The McGillivrary Ranch is 2 miles south of Sacramento city limits. Go south on 21st St. to city limits, then 2 miles south on Freeport Road. Watch for detailed announcement in next week's issue. It will interest you.

Auctioneer—COL. BEN A. RHOADES, Los Angeles; Sales Manager, C. L. HUGHES, Sacramento.

100 HIGH GRADE HOLSTEIN COWS AND HEIFERS
8 REGISTERED HOLSTEIN BULLS

ALL TUBERCULIN TESTED

AT PUBLIC AUCTION

NAPA STATE HOSPITAL, NAPA, CALIF.

SATURDAY, MAY 3, 1919
Beginning promptly at 10 a. m.

The famous Napa State Hospital herd of grade Holsteins has been headed by registered Holstein bulls for the past 14 years and has been regularly tuberculin tested for the past 10 years. Last year the 117 milking cows and heifers in the herd averaged 11503.6 pounds milk. Every animal over six months of age in this sale is tuberculin tested.

The cows and heifers in this sale are out of the best grade cows in the herd, only the best producers ever having been retained, and they are sired by such registered bulls as Lord Asa, Prince Rag Apple Imperial Korndyke, and Colony Wadmantje Aaggie, whose dam made 18712 lbs. milk and 781.25 lbs. butter in one year as a 4-year-old and later made 33.01 lbs. butter from 552.6 lbs. milk in 7 days.

The bred cows and heifers in this sale are in calf to the noted Napa State Hospital registered herd bulls, including Sir Dutchland Colantha of Longfield, N. S. H. Hazelwood Netherland Korndyke, and a son of Raphaella Johanna Aaggie 3d who holds the world's official record for milk produced in one year.

A SPECIAL FEATURE—We will sell the twin yearling daughters of the great grade cow N. S. H. Monte who made 20596.4 lbs. milk and 762.28 lbs. butterfat in 10 months in the California State Dairy Cow Corporation carrying calf 5½ months and they are bred to a son of Raphaella Johanna 3rd the world's strictly official yearly milk record cow.

EIGHT REGISTERED HOLSTEIN BULLS, choice individuals and most of them out of offcial record dams up to over 29 lbs. butter in 7 days. Some of them are ready for service right now.

Come to the sale whether you want to buy or not. We believe you will be interested in seeing for yourself what the Napa State Hospital is doing to advance the dairy and breeding interests of California. Parties from the interior will find new paved highway completed all the way into Napa. Auctioneer—COL. BEN A. RHOADES, Los Angeles; Sales Manager, C. L. HUGHES, Sacramento.

WHEN IN THE MARKET for young bulls and females, write me. My herd sire and show bull, El Prado Wayne Colantha, is also for sale. Every animal in my herd is priced. J. W. Benoit, Route C, Modesto, California.

HIGH-CLASS HOLSTEINS—I have for sale some sons of Sir Veeman Korndyke Pontiac from A. R. O dams. Write for particulars or come see them. R. F. Guerin, Visalia, Calif.

PALO ALTO STOCK FARM, Palo Alto, breeders of registered Holsteins. Heifers and service bulls. Reasonable prices.

CREAMCUP HERD—Registered Holsteins, Pontiac bull calves. M. Holdridge, Rt. A, Box 437, San Jose, California.

REGISTERED HOLSTEIN BULLS with world's record backing Kounias' Registered Stock Farm, Modesto, California.

BREEDERS OF REGISTERED HOLSTEIN cattle and Berkshire pigs. Whittier State School, Whittier, California.

F. H. STENZEL, SAN LORENZO, CALIF.—Breeder of Registered Holsteins. High test producers.

REGISTERED HOLSTEINS—A. W. Morris & Sons Corp., Importers and Breeders, Woodland, California.

REGISTERED HOLSTEINS — Best blood lines of the breed. R. L. Holmes, Modesto, Cal.

GOTSHALL & MARGRUDER—Breeders of registered Holstein-Friesians, Ripon, Calif.

CHOICE HOLSTEIN bulls for sale. No females. Millbrae Dairy, Millbrae, California.

BREEDERS OF REGISTERED HOLSTEIN cattle. McAlla & Sons, Ripon, California.

HOLSTEIN BULLS and bull calves from A. R. O. cows. C. A. Mills, Ripon, California.

REGISTERED HOLSTEIN CATTLE—E. E. Freeman, Route B, Modesto, California.

EL DORADO HERD OF HOLSTEINS—Alex. Whaley, Tulare, California.

Ayrshires.

ELKHORN FARM AYRSHIRES— Choice young bulls at reasonable prices J. H. Meyer, 440 Montgomery St., San Francisco, Calif.

BULL CALF—Serviceable age. Redwoods Ayrshire Farm, La Honda, Calif.

NORABEL FARM AYRSHIRES—Purebred young stock for sale at reasonable prices. Le Baron Estate Company, Valley Ford, Calif.

AYRSHIRES—Registered; all ages. E. B. McFarland, 412 Claus Spreckles Building, San Francisco, California.

Jerseys.

SUNSHINE FARM JERSEYS—Tuberculin tested. Production counts. E. E. Greenough, Merced, California.

YOUNG BULLS from Register of Merit cows. W. G. Gurnett, Orland, California.

MILKING SHORTHORNS.

BREEDERS OF REGISTERED SHORTHORNS—Milk strain; choice young stock for sale.. John Lynch Ranch, Box 321, Petaluma.

INNISFAIL DAIRY SHORTHORNS—Registered young bulls for sale. Alexander & Kellogg, Suisun, California.

BEEF CATTLE.

BEEF BULLS ! ! BEEF BULLS ! !—On my last Eastern trip of purchased bulls for H. H. Gable, Esparto; S. R. Crowe, Haywards; James Hamilton, Exeter; Creps Bros, Wheatland and William Foster, Redding. Look them over and then let me purchase some for you on my next trip. Am leaving in about 10 days. Why! Mr. Gable has been offered $1000 more than he paid me for one of the bulls to ship it back East again, but nothing doing. I please all my customers. Send in your orders promptly. R. M. Dunlap, Hotel Land, Sacramento, Cal.

OVER 200 Good Hereford and Shorthorn bulls, carefully selected from some of the best herds in the Middle West. Rare chance for breeders. For further particulars apply: Davis Horse & Cattle Co., Davis, Cal.

RANCHO SAN JULIAN SHORTHORNS—Purebred range bulls, unregistered, for sale Estate Thos. B. Dibblee, Santa Barbara or Lompoc, Calif. John Troup, Supt.

ALAMO HERD REGISTERED HEREFORDS (founded by Governor Sparks). Herd and range bulls. Reasonable prices. W. D. Duke, Likely, Modoc county, California.

REGISTERED YEARLING SHORTHORN BULLS—Heavy-boned, thick-meated, Scotch and Scotch-topped breeding. Ormondale Co., Route 1, Redwood City, California.

REGISTERED MILK AND BEEF SHORTHORNS, bulls and heifers for sale; catalogue free. Thomas Harrison, Santa Rosa Stock Farm, Santa Rosa, California.

HEREFORDS—Sierra Vista Herd, Mintura, California. Over one hundred registered animals. Fairfax and Repeater bulls head the herd. On highway.

THE NEVADA HEREFORD RANCH, Jno. H. Cazier & Son Co., Props., Wells, Nevada Registered Hereford cattle. Breeding stock for sale.

REGISTERED SHORTHORNS—A few choice young bulls, grandsons of Fair Knight. Prices reasonable. Fair Oaks Ranch, Willits, Calif.

HOPLAND STOCK FARM—Registered Shorthorns. Prices on application. Hopland, Calif.

REGISTERED HEREFORDS—H. H. Gable, Diamond G Ranch, Esparto, California.

SIMON NEWMAN CO., breeders of Registered Hereford, Newman, California.

GEORGE CALLAHAN, breeder of registered Herefords, Milton, California.

GEORGE WATTERSON—Breeder Registered Herefords, Bishop, California.

HEREFORDS—Mission Hereford Farm, Mission San Jose, California.

SHORTHORN—Caruthers Farms. Live Oak, California.

HORSES AND MULES.

SHIRES —Broodmares— Stallions. Also stallion and filly colts $100 to $700. Jack London Ranch, Glen Ellen, Cal.

FOR SALE—930 high bred yearling ewes. J. A. Youngreen, Orland, Cal.

FOR SALE—A-1 Breeding Jack. Bargain. Have quit raising mules. W. P. Harkey, Gridley.

SHEEP AND GOATS.

F. A. MECHAM ESTATE, Petaluma, Cal.—Breeders and importers of Shropshire, Rambouillets and American Merinos, both sexes. Also Red Polled cattle. Take electric car at Petaluma or Santa Rosa for Live Oak Ranch.

DORSETS AND ROMNEYS—Dorset ram lambs for sale. John E. Marble, South Pasadena, California.

BISHOP BROS., SAN RAMON CALIF.—Breeders and importers of Shropshires.

KAUPKE BROS., WOODLAND, CALIF.—Breders and importers of Hampshire sheep.

CHAS. KIMBLE—Breeder and importer of Rambouillets Hanford, California.

CALLA GROVE FARM, MANTECA, CALIF.—Breeders and importers of Hampshire sheep.

C. J. L. STONEBRAKER, Route A, Chico, Cal. Breeder of Shropshire Sheep.

MISCELLANEOUS.

BUTTE CITY RANCH—Shorthorns, Shropshires, Berkshires and Shetland ponies. Write for prices and descriptions before buying Butte City Ranch, Box P Butte City, Glenn county, Cal. W. P. Dwyer and W. S. Guilford, owners. Special Notice: Second Farm Sale Shorthorns; Shropshires; Berkshires; Ponies, August 2, 1919.

WANTED—Thirty or more good grade Holstein cows. Must be young and sound. Send description and price to G. R. Guthrie, Longwood Farm, Napa.

REGISTERED HOLSTEINS and Duroc-Jerseys— Stanislaus Stock Ranch, Tulare, Calif.

10 HEAD Grade Jersey Cows. R. D. Beebe, Lemoore, Cal.

LIVESTOCK QUERIES

Cow Gives Bloody Milk.

To the Editor: I have a heifer fresh January 1 that started giving bloody milk in one teat about two weeks ago. Gradually the milk in that teat decreased and for a few days only clots of blood came. Now she is again giving bloody milk, but seems to be drying up in that quarter. What can I do for her?—M. O., Mission San Jose.

(Answered by Dr. E. J. Creely, San Francisco.)

The bloody milk is caused either from an injury or an ulcerated condition sometimes seen in the sinus of the gland. Inject a one-half of one per cent formaldehyde solution into the teat and thoroughly work it into every portion of the diseased quarter. Apply carbolated vaseline externally.

Breeding to a Tuberculous Bull.

To the Editor: I have a bull that has reacted to the tuberculin test. Is there any danger of a cow or her offspring catching the disease if the cow is bred to this bull.—L. E., Turlock.

If you keep the bull isolated from the herd, except at the time of service, and then bring the cow to a breeding place away from the rest of the herd and bathe her with a disinfectant after service so that she will not carry the disease from the bull pen back to the herd, there will be practically no danger of bad results, either to the cow, to her calf, or to the rest of the herd. The danger will be reduced in proportion to the care that is taken. Tuberculosis is not hereditary and there is practically no chance that the diseased condition of the sire will affect the calf directly.

Pigs Have Acute Indigestion.

To the Editor: I have lost several young pigs about four months old. They are getting skim milk and are not getting much grain as they have been running at large in pasture. They start to choke, cannot get their breath and after giving a little squeal they are dead. We opened one pig and all we could find was that his lungs looked rather light and had some spots on them. There was some bloat after death and a little foaming. —G. E. F., Sacramento.

(Answered by Livestock Editor.)

Your pigs probably died from acute indigestion, which is often caused by feeding too large quantities of cold or foaming skimmilk at long intervals to very hungry pigs. Turning hungry pigs suddenly into a heavy growth of pasturage also causes such losses. The pigs bloat immediately after death, or die from suffocation due to bloat. We do not believe that your pigs have a disease. Be sure to free the skimmilk from separator froth and feed it warm in clean troughs and in moderate quantities. Do not let the pigs get so hungry that they will drink the milk too fast.

Foundered Horse.

To the Editor: I have a horse that is very stiff in all four legs and his rump is humped and drawn. He eats and drinks well. He had not been worked for about six weeks, then we worked him one day and the next day we found him in this condition. What is the trouble and remedy?—J. D. H., Santa Maria.

(Answered by Dr. E. J. Creely, San Francisco.)

It is very evident that your horse has been foundered. Remove the shoes, cut the feet down medium and let him stand in soft mud for several days. Give him a heaping teaspoonful of saltpetre in a bran mash twice daily. After the tenth day put on shoes exceedingly well concaved, so there can be no bearing on the sole. Use plenty of pine tar oakum, a leather sole, low heels and no toes. Draw the shoes on very loose and report after this has been done. Shoe all four feet the same way.

Injury Causes Bone Tumor.

To the Editor: About four months ago one of my horses was kicked on the hind leg between the hock and ankle. It is not lame, but the leg is considerably swollen. How can I reduce this swelling?—C. L. L., Hollister.

(Answered by Dr. E. J. Creely, San Francisco.)

Your horse has a bone tumor. Mix and apply once daily the following: Lugol's iodine solution, 4 ounces; turpentine, 2 drams; sulphuric ether, 2 drams, spirits camphor, 3 drams, oil cedar, 2 drams; oil wintergreen, 2 drams.

SALE OF BERNSTEIN'S BEST.

Those who attend the sale of Poland-Chinas to be held by W. Bernstein at the Fair Grounds, Hanford, Saturday, April 26, will find that instead of first taking their money away from them Mr. Bernstein will start in by giving them a fine dinner at 11:30, and that roast registered Poland-China pork will be the drawing card on the bill of fare, just as some of the finest young Poland-Chinas that have ever been offered at public sale will be the drawing card at the sale to be held after the dinner.

Some people have formed the erroneous opinion that this is a sale of young pigs only, but while there will be a number of weanling pigs there will also be enough older animals to satisfy all kinds of buyers. There will be 30 splendid gilts just coming one year old, 10 bred sows, 10 young boars that are real herd headers and just ready for service, and 2 great tried herd boars—Kings Jumbo Orphan and King of the Golden Gate. The young stock is by such noted sires as Kings Big Bone Leader, Young Jumbo, President and Kings Jumbo Orphan.

But why mention the quality of the stock? Mr. Bernstein's name on the pedigree of a hog is the same as the sterling mark on silver, and is a guarantee of the very best in the way of registered Poland-Chinas.

BIG MONEY FOR COYOTE SKINS.

According to reports from E. V. Jotter, Supervisor of Trinity County Forest Reserve, coyote pelts can be dyed black so successfully that it is almost impossible to distinguish them from the real black fox skins. Last winter M. J. McKnight, a trapper, sold six large coyote pelts for $18 each, bringing a total of $108.

So here seems to be an opportunity to turn the tables on Mr. Coyote, and instead of paying tribute to him in the way of chickens and other farm animals, we can make him pay us a handsome profit.

The traveling silo salesman is an educational force. Listen to him whether you intend to buy or not.

ROC STEIN RANCH
DUROCS

Have for sale two boars, one of GOLD MODEL and one of CRIMSON MONARCH breeding.

Both are about a year old, weighing 400 lbs. Also eight open gilts and four bred gilts. These gilts are the pick of last year's litters.

W. M. WAY & SON
Route 1, Box 320, MODESTO, CALIF.

REAOAKS SPECIAL
Registered Big Type Poland-Chinas
Bred Sows and Gilts, 25c. per lb.
F. O. B. Gilroy.
W. J. HANNA. GILROY, CAL.

TAMWORTHS
(The Bacon Hog)
Largest Herd in the State
DURCO-JERSEYS
Mature Stock and Weanlings of both sexes. Sure to please.
SWINELAND FARM
W. O. Pearson, Prop. Woodland, Cal.

MONTELENA HERD
OF LARGE
YORKSHIRES



LAKE PARK KING 25211
Grand Champion Boar—California State Fair, 1917.

Due to the ever increasing popularity of the breed, Yorkshire breeders are almost entirely sold out, and it would behoove the prospective purchaser to place his order soon.
We are only able to offer at the present time a very exceptional lot of fall pigs, some sired by "Lake Park King," others by "Montelena Prince 2d." They are out of such cows as "Deer Creek Nena 8th," present Grand Champion sow of the State, who has averaged a fraction over 17 pigs per litter for nine consecutive litters; "Riverina Nena 9th," one of her best daughters, and "Lake Park Lady Frost 291st," the top sow at the Thomas H. Canfield sale last year.

We solicit your correspondence.
A. L. TUBBS CO.
CALISTOGA CALIFORNIA



"I'll leave my happy home for you."

BERNSTEIN'S PIG SALE
Registered Poland-Chinas

A few bred sows and gilts, but this is a sale where "Pigs is Pigs."
Sale will be held at Hanford, Calif., Saturday, April 26th, on the Kings County Fair Grounds, ½ mile west of town. Stock in place early Saturday morning for inspection.

A registered Poland-China Pork Lunch will be served at the Fair Gounds at 11:30 a. m. Sale to start at 12:30 p. m. sharp.

W. BERNSTEIN, Owner.

Write for catalogue to W. T. Dice, Secretary, Box 374, Hanford, Calif.
COL. G. W. BELL, Auctioneer, assisted by COL. T. E. COCHRANE.



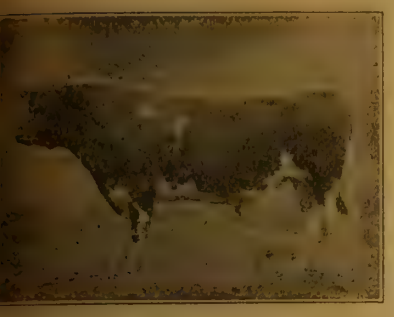
REGISTERED DUROC-JERSEYS
Every point the buyer demands for a profit-making hog is found intensified in the Duroc. We can supply you with weanling pigs, either sex, and gilts from 7 to 10 months. Our herd boar has the blood of Ohio Chief Defender, Crimson Wonder, Jack's Friend, Joe Orion, Etc.
ROUTE 4, BOX 735 THE GARDINER RANCH, SACRAMENTO, CAL.

DIGESTER TANKAGE
Send for Sensible Folder on Feeding Hogs
WESTERN MEAT COMPANY
Animal Food Dept. 704 Townsend St., San Francisco

OAK KNOLL FARM
LAKEPORT CALIFORNIA
We have sold all our young boars and are now booking orders for toppy weanlings. Highlander, the $1,000 Grand Champion Boar, heads our herd of
CHESTER WHITES
SAN FRANCISCO OFFICE, 601 BALBOA BLDG.

HAUSER'S DIGESTER TANKAGE
Gives Great VALUE for LEAST MONEY. IT MAKES THEM FAT.
HAUSER PACKING CO. LOS ANGELES

Edgemoor Farm Guernseys



Imported Itchen May King, 25174

PRETTY PRODUCTIVE PROFITABLE

Noted for the highest natural colored dairy products, the best flavored milk, the most economical production of cream and butter.

A Few Animals of Either Sex For Sale

SANTEE, CALIF.

W. H. DUPEE
Pres.

COMMISSION AGENT

I can offer the best of service in assisting you to buy or sell registered

DAIRY CATTLE
BEEF CATTLE
HORSES
SWINE

My large experience as a breeder, knowledge of blood lines and values, and a close connection with all the principal Eastern breeding establishments warrant you securing my services when contemplating any important live stock transaction. References furnished.

M. H. TICHENOR, JR.
PALO ALTO, CALIFORNIA

BRAHMAN BULLS

High grade Brahman bulls from our full-blooded Brahman bulls, which were imported from India. Write for prices and description.

FRED G. LOCK
PALACIOS, TEXAS

California Cattlemen's Convention

[Written for Pacific Rural Press.]

The announcement that the marketing problem would receive serious consideration, coupled with an attractive program, brought a large and representative attendance of stockmen to the annual convention of the California Cattlemen's Association, held at the University Farm, Davis, April 8 and 9.

Gilbert J. Waller, founder of the Hawaiian Meat Company, told of the successful co-operative methods employed by that company. It consists entirely of stockmen, although stock is also purchased from outsiders. Cold storage facilities are provided so that a stockman can have his stock butchered when he desires, and hold the carcasses in storage until the most opoprtune time for marketing them. Animals are bought according to the dressed weight, thus stimulating an improvement of the herds.

Aside from the marketing problem, the chief topic of interest at the meeting was the holding of a livestock show at San Francisco, and Frank Harding, secretary of the American Shorthorn Breeders' Association, made the statement that communities do not get to the front until after they hold livestock shows.

O. M. Plummer, the live-wire manager of the Pacific International Livestock Show at Portland, told of the methods employed in making that show one of the three greatest shows in America; also in raising a quarter of a million dollars for a permanent home for the institution.

W. T. Sesnon, of San Francisco, president of the California International Livestock Show, followed Mr. Plummer and jokingly but emphatically stated not only that San Francisco would hold a show this year, but that it would make the Portland show look like a side show at a country fair. Resolutions were passed by the association favoring the holding of an annual show at San Francisco.

Judge Peter J. Shields of Orland spoke on "Better Animals Make Better Men," and his words should inspire anyone not already breeding livestock to get into the game. He showed that nearly all of America's big men have been connected in some way with livestock, and that the raising of good livestock has had a greater influence upon the advance of civilization than almost any other factor. He pointed out that Germany has never been an extensive breeder of livestock, and that has unfavorably influenced and colored her civilization. "To raise an epoch-making sire," said Judge Shields, "pays your obligation to civilization."

Various phases of the marketing problem were discussed, and many important resolutions were adopted, among them recommendations that the railroads be turned back to private owners; that railroad abuses be corrected so as to give more prompt and efficient service, and more speedy and equitable adjustments of claims. The work of the Bureau of Markets was heartily endorsed.

The marketing committee reported the result of its findings as follows: First, that the market breaks at about the first of May each year; second, that the reason is the great number of grass cattle marketed at that time; third, that the remedy is to ship the surplus stock in trainload lots to Eastern markets. The committee has arranged with one of the leading Eastern marketing concerns to advance 11 cents per pound f. o. b. shipping point for fat steers, with the understanding that the consignors will receive the excess, if any, or will rebate the difference if the steers sell for less. Or the concern will buy the cattle outright for 11 cents. It is estimated that the stock should return to the shippers from 12½ to 13 cents per pound. This arrangement is only for the period of the year when there is a surplus here—probably extending until July.

A committee was appointed to secure data on the number of cattle in the state, the feeding conditions, when the stock will be ready to market, etc., so as to stabilize the market at home throughout the year.





Champion Ram, P. P. I. E.

SAN RAMON SHROPSHIRES

WINNINGS P. P. I. E., 1915

Aged Ram, First and Second. Yearling Ram, First. Ram Lamb, First, Second and Third. Champion Ram. Yearling Ewe, Second. Ewe Lamb, Second and Third. Get of sire, First. Pen of three Lambs, bred by Exhibitor, First and Fourth. Pen of Four Rams, bred by Exhibitor, First and Fourth. Flock, any age, Second. Flock, any age, bred by Exhibitor, Second. Flock, one year old, First. Flock one year old bred by Exhibitor, First. Flock under one year, First. Produce of Ewe, First, Second and Third. Premier Championship for Breeder. Premier Championship for Exhibitor. A total, including American Shropshire Specials, of 15 Firsts, 9 Seconds, and 6 Championships.

Purebred Registered Rams and Ewes.
Individuals or Carload Lots.

BISHOP BROS., Agents, SAN RAMON
Contra Costa County, California.



KIMBLE RAMBOUILLETS

These sheep are purebred, large and smooth, with heavy fleece of fine, long, staple, white wool. Yearling rams and ewes. Individuals or carload lots.
PRICES REASONABLE. CORRESPONDENCE SOLICITED.

Chas. A. Kimble, Hanford, Cal., Breeder and Importer.

Carruthers Farms

LIVE OAK CALIFORNIA

Second annual **SHORTHORN** sale will be held on July 10th, at San Francisco, at which time and place 60 head of bulls and females of rare breeding will be offered.

HILLCREST STOCK FARM

(T. S. GLIDE)

SHORTHORN CATTLE

Shropshire & French Merino Rams DAVIS, CALIFORNIA

ORMONDALE SHORTHORNS

All are heavy boned, and of Scotch and Scotch topped breeding. Suited for either the range grower or breeder

EVERY ANIMAL POSITIVELY GUARANTEED.

Whether you buy or not, visit our ranch, 7 miles from Palo Alto on Woodside Road
We welcome inspection. Prices and pedigrees on application

SHORTHORN CATTLE
DUROC-JERSEY SWINE

ORMONDALE CO.

REDWOOD CITY, CAL.
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BRIGHTON FARM SHORTHORNS

One three year old bull bred by H. R. Clay
Two outstanding yearling bulls sired by Sir Type, a son of Cumberland Type
A few yearling heifers of same breeding
Also registered Berkshires of both sexes of best breeding

H. L. & E. H. MURPHY, Perkins, Sacramento Co., Cal.

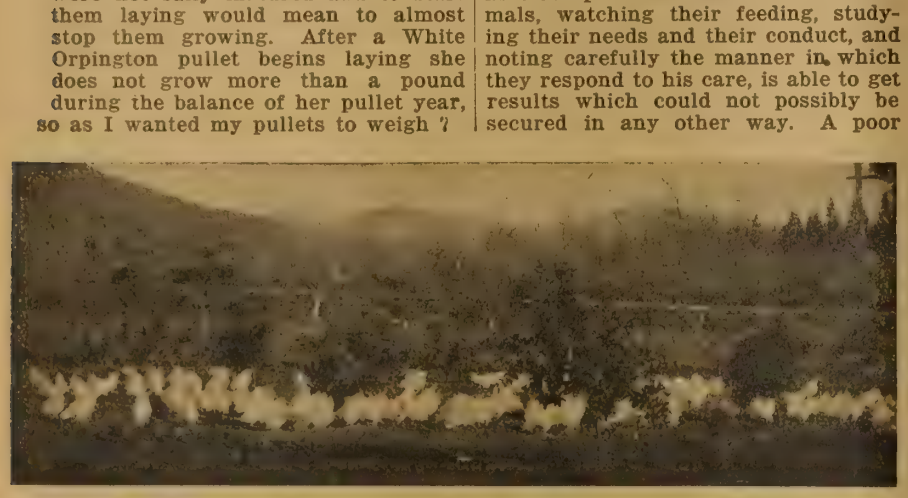
Poultry and Rabbits for Profit

Conducted by R. H. Whitten.

FEEDING FOR HEAVY LAYERS.

In a recent issue we considered the feeding of chicks from birth up to the end of the second month. At that time the first culling should take place—the surplus cockerels and the backward pullets going to market. Youngsters that are kept should be given a larger range if possible and the same feed should continue, except that if they have been given any cracked grains this may be omitted. The chicks should be fed about the same as laying hens, except that if it is possible to add oat groats it will be advisable, as nothing can take their place for developing bone and muscle. If the cockerels are separated from the pullets their dry mash should contain more ground bone and beef scraps than that fed the pullets, as it is not advisable to encourage the pullets to begin laying too early.

It is all right to breed and feed for early maturity, but early maturity and early laying may be quite different. I bred White Orpingtons and when my pullets were a little less than four months old their combs began to redden and a liberal feeding of beef scraps would have started them laying. But this would be folly, for they were not fully matured and to start them laying would mean to almost stop them growing. After a White Orpington pullet begins laying she does not grow more than a pound during the balance of her pullet year, so as I wanted my pullets to weigh 7 pounds at the end of their pullet year, I did not care to have them lay until they weighed 6 pounds.



Liberal exercise is just as necessary as proper feeding in developing heavy layers. Pullets raised on a range like this and made to work for a living will develop greater constitutional vigor than those closely confined.

By using oat groats liberally in the grain mixture and ground oats in the dry mash, I easily had my pullets weighing 6 pounds at the end of the fourth month. But it was a much more difficult task to keep them from laying before then. I cut out the beef scraps entirely during the fourth month, covered up everything that might be used as a nest and moved the pullets from one house to another when their combs reddened, yet occasionally one would lay too early in spite of everything I could do.

Very rarely, however, did I keep a pullet that began laying before she weighed 6 pounds. I considered her more of a freak than a desirable prospective breeder. I kept only pullets that were fully matured before they began laying and by being so particular in this respect, I was able to keep up the size of the eggs, the exceptional vigor and the high laying average.

At the end of the fourth month another culling should take place. The pullets that have not developed properly should be marketed and those that are kept should be put on the regular ration for laying hens, with beef scraps added to the dry mash.

At the end of the fifth month the pullets should be looked over again and those not laying should be weighed. With my Orpingtons, if they did not weigh 6 pounds they were culled unless they seemed very promising in other respects. All pullets not laying when six months old were culled, no mater how good they were in other respects.

When the laying pullets and hens in a farm flock have free range so that they get all the bugs and green feed they need, it is not necessary to give them special feed of this kind. They should have charcoal, grit, shell and running water before them constantly, but it is better not to feed them in the morning. They can pick up enough to satisfy their hunger by working vigorously, which is quite necessary. The lighter breeds may have dry mash before them constantly, but with the heavier breeds it should not be opened up until noon. Late in the afternoon whole grain should be fed at the rate of a pint for every 10 hens, provided the hens cannot pick up much. If they are able to pick up quite a little food, the amount of grain should be reduced accordingly.

Don't force the hens for heavy production by using pepper, mustard, onion, or an increased amount of beef scraps. This cannot be done without reducing the fertility of the eggs, the strength of the germs and the stamina of the baby chicks.

We recently gave formulas for both grain and dry mash for those who prefer to mix their own feeds, but always the breeder should bear in mind the old German proverb, "The eye of the master fattens his cattle." In other words, the feeder who keeps in close personal touch with his animals, watching their feeding, studying their needs and their conduct, and noting carefully the manner in which they respond to his care, is able to get results which could not possibly be secured in any other way. A poor ration in the hands of such a man will produce better results than the most scientific ration in the hands of a careless or indifferent feeder. But proper food and proper attention make a winning combination, and are a guarantee of the best possible results.

PERMANGANATE AS A PREVENTATIVE.

Sickness and death among fowls, which frequently cut profits down to the vanishing point, may be greatly reduced by the frequent use of permanganate of potash in the drinking water. It is a good remedy for several diseases, and is valuable in rearing healthy chicks. It is an intestinal germicide, its action being to destroy in the chick's intestines the bacilli that cause white diarrhea and other bowel troubles.

Besides being good as an intestinal germicide, permanganate is used with excellent results in cases of roup or swelled head. The fowl's head is immersed in the solution and held under as long as is possible without danger of strangulation.

The ordinary proportion is as much of the permanganate crystals as will lie on a silver dime to one gallon of water. When it is to be used to any extent it is much better to make a stock solution. Use a teacup of commercial potassium permanganate to a two-quart Mason jar of water. Add two tablespoons of this stock solution to each gallon of fresh drinking water given to the fowls. You will find this the best of all remedies for the common ailments of fowls.

Once a week wash the drinking crocks in a tub of hot water in which a few spoonfuls of carbolic acid has been added. Scrub thoroughly.

Poultry Breeders' Directory

SULLIVAN'S FAMOUS BUFF ORPINGTONS—Want the best? Write Sullivans, Specialists. Oldest flock on Pacific Coast. Line bred for 20 years. Said by Walter Hogan, originator of "Hogan System," best layers of this variety he ever handled. Have won thousands gold and silver special prizes, cups and ribbons—more than all competitors combined, on the Pacific Coast. Eggs, $3.00, $5.00 per 15; $12.00 and $15.00 per 100. Breeding stock. Write for prices. Mr. & Mrs. W. S. Sullivan, 100 Market Road, Agnew, Santa Clara Co., California. Telephone San Jose 5205, Route 5.

WHY SPEND MORE FOR ORDINARY CHICKS?—My 900 hens averaged over 240 eggs each last year. Why? Bred 20 years to lay 200-290 eggs yearly. White, Brown, Buff Leghorns; Reds; Anconas; Rocks, Minorcas; Orpingtons; clearing customers $5.00. Valuable circular with proof—free. **Chicks:** Two-thirds booked to June, yet most weeks still open for hundreds. 70,000 capacity hatcheries supplying chicks. Many repeat orders monthly, yearly. **Eggs:** Hatcheries overflowing; selling eggs half price, 15-1000. **Breeders, pullets.** J. Beeson, Pasadena, Cal.

WHITE LEGHORNS are the most profitable breed of poultry. If you are in the business for profit, you will eventually have them. Early broilers; early layers; early profits; we sell only **White Leghorn Baby Chix** from heavy laying **Hoganized** hens. Safe delivery of full count live chix guaranteed. Prices per 100: February $15; March, $14; April, $12.50. The Pioneer Hatchery, 408 Sixth street, Petaluma, California.

SINGLE COMB BROWN LEGHORNS—The large, modern, heavy-laying type that won high honors for us at the National Egg-Laying Contest. No better layers, none others so hardy. For 20 years our strain has won highest prizes at New York, Boston, Chicago, San Francisco, etc. Absolutely the finest Brown Leghorns in America. Eggs, $3 and $5 per $15; $15 per 100 Williams Bros., Fullerton, California.

BARRED PLYMOUTH HOCKS—Champion prize winners and wonderful layers. Choice cockerels, hens and pullets for sale. Hatching eggs from twelve grand matings. I have made a specialty of Barred Rocks for over twenty years. That's why I win at all leading shows. "Nothing Better In Poultry" than Vodden's Barred Rocks. Catalog free. Chas. H. Vodden Box 396, Los Gatos, California.

BABY CHICKS—We specialize this season on money-making White Leghorns—hatching from stock with high records that are unimpeachable. Also Brown Leghorns, Anconas, Minorcas, Rocks, Reds, Orpingtons, and White Wyandottes. Especially interesting circular with price list ready January 1st. B. W. Archibald, Soquel, Santa Cruz Co., Calif.

S. C. WHITE LEGOHRN CHICKS—Any quantity, from A-1 Hoganized and trapnested stock, winners of 1st, 2nd and special for pullet and 1st cockerel at Pacific Coast Land Show. Booked up for March delivery; orders taken for April 18th. A. O. & P. M. Foster, 2918 Otis St., Berkeley, California.

GOLDCROFT BUFF ORPINGTONS fulfil every standard and utility requirement. Won San Jose show first, second, third, pullet and cockerel. Eggs, $5.00 and $3.00 from winning pens; 2.00 from general flock; $12.00 per hundred. Stock for sale. Samuel Abrams, Los Atltos, California.

BABY CHICKS EVERY WEEK—Order early and get the date you want. White and Brown Leghorns, Rhode Island Reds, Barred Rocks, Anconas. Also hatching eggs. Safe delivery guaranteed. Write for circular. Stubbe Poultry Ranch and Hatchery, Palo Alto, Calif.

FINEST HATCHERY IN THE WORLD—CHICKS, White Leghorns, Rhode Island Settings—1000's—hatched right in our $60,000 brick and concrete hatchery from our Hoganized heavy layers. Stock, eggs, Pebbleside Poultry Farm. Sunnyvale, California.

RHODE ISLAND REDS—Rose and single comb Rhode Island Red hatching eggs from 220-egg record layers. Cockerels, rose and single comb. Pens. Improve your color, type, and egg capacity. Write for mating list. Wm. Larm, 3915 39th Ave., Fruitvale, Calif.

HATCHING EGGS—White Leghorns, Light Brown Leghorns, Dark Brown Leghorns, White Rocks, $2.50 per $15; $10.00 per 100. All bred to highest possible standard of beauty and utility. Mahajo Farm, P. O. Box 597, Sacramento, California.

SLY'S RHODE ISLAND REDS—Winners and layers. Hatching eggs from high grade stock scientifically bred for exhibition and uitility. Settings, $5.00, $3.50, and $2.00. Send for catalogue. Albert Sly, 1643 Middelton Place, Los Angeles.

OUR FINE FEMALES—Can supply you with eggs at 30c each and up that will hatch just what you want in general purpose fowls. Write for mating list. O. B. Hunt, White Rock Fancier, 1244 Burnett street, R. Berkeley, Cal.

SPRING CHIX—Rhode Island Reds Barred Rocks, Brown and White Leghorns, from Hoganized stock, bred to lay. Satisfaction and safe delivery guaranteed. Tobener Poultry Ranch, Washington Ave., San Jose, Calif.

FOR SALE—We have a pen of six, five and better fingered White Leghorns hens and a four-fingered cock, all beauties. A chance to breed a three hundred-egg hen. Will receive offers. C. B. Atterbury, Turlock, California.

S. C. RHODE ISLAND REDS EXCLUSIVELY—"Pacific Coast Aristocrats." Hoganized flock. Booking orders for day-old chix and hatching eggs. Order early. Rosedale Poultry Farm, Motor A. Box 200A. Ceres, Calif.

BLACK MINORCA EGGS—$1.50 per 15 Special mating, $2.00. Edward A. Hall, Rt. 1, Box 39, Watsonville, California.

RHODE ISLAND RED EGGS for hatching. Mrs. Richard Holdridge, P. O. Box 282, Dixon, California.

BRONZE TURKEY EGGS—No more eggs till further notice. Albert M. Hart, Clements, California.

FAWN RUNNER DUCK EGGS—$1.25 per setting. Mrs. M. Lopez, Lathrop, Cal.

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WHY SOFT SHELLED EGGS.

Are any of your hens laying soft shelled eggs? At this season of the year the greatest trouble is experienced, and often the losses are considerable.

Healthy, normal hens do not lay soft-shelled eggs; neither do hens properly fed and housed. Usually they are the result of an inability to retain the egg until fully developed—a condition that is a sign of weakness in one direction or another, much the same as dropping more than one egg at the same time.

The first and usual cause of soft shelled eggs is that the bird is too fat. The muscular movement of the oviduct is hindered by layers of fat, and instead of the egg being controlled by firm muscles it merely slides through a flabby mass without getting its shell on. The difficulty will vanish if the birds are made to scratch hard in a clean dry straw litter for all their grains, and the ration fed is not over-fattening. Sprouted oats will be a valuable food, as they are less fattening than either wheat or corn. In some cases it might be advisable for a few days to omit all mashes, especially moist mashes from the ration.

The second source is lack of lime in the ration. In this case the shell secreting part of the oviduct fails to do its work because of lack of material. Clam shell is not so readily soluble as oyster shell. What is commercially known as beach shell is preferable to clam shell. It is claimed by some poultrymen that the use of a limestone grit helps to supply material to the hen. It is often recommended that old plaster be broken up and thrown in a box in the pen for birds to pick at as a source of lime. One time when the writer was having this trouble with his hens he purchased some shell meal, or ground oyster shell, and added 1 part to 20 of the dry mash. It overcame the trouble entirely, and thereafter he always used the shell meal in his mash instead of giving the hens access to broken oyster shells.

The third cause of soft shelled eggs is the forcing of hens for too heavy egg production. A second yolk breaks off from the ovary and drops into the funnel of the oviduct, and the first one is forced too rapidly on its way for it to be completely formed when laid.

The fourth cause comes from scouring; that is, from feeding a too loosening ration. Beets or mangels will sometimes produce this result. The droppings normally should be a dark slate or dull black color tipped with white, firm enough to maintain a spiral shape as seen on the dropping boards. If too soft, add middlings to the mash, or better yet, a little blood meal.

RABBIT RAISING PROFITABLE.

[Written by Sanborn Young, Los Gatos.]

The demand for rabbits is increasing rapidly and values are advancing. There is every reason to believe that the demand will continue because the climate of California permits us to raise larger rabbits than is possible in the east. Back there the maximum size and weight are not carried beyond the first generation owing to the extremities of heat and cold, but our locality is especially adapted to the successful raising of rabbits, and snuffles, the greatest scourge of the industry in other localities, is almost unknown here.

Why not raise fine stock—the sort of rabbits for which there is a tremendous demand at from $15 to $50 a head? A fine rabbit eats little or no more than a common one, and requires little more in the way of care and housing. Yet consider the difference in profit!

Less than two years ago I bought a good doe with litter for $12.50. The selling value and money received from the progeny of this doe to date is $509. Had I paid $25 for a doe free from defects, an equally good producer, the value of the progeny would have been much greater and I would not have been compelled to wait until this fall to produce prize winning stock. Last month I sold 10 rabbits for $250, and better known breeders are paid higher prices than I ask. Two years ago I was offered a fine producing doe which I refused. Her owner had sold 32 of her progeny to date at an average price of $15. I date at an average price of $15 each. I could have bought the doe for $15.

The expense of raising rabbits is variously estimated from 20 cents to 50 cents per month, depending upon the overhead expenses charged against them. I estimate that my culls and table rabbits pay for the cost of feeding all my stock. I believe that rabbits, like chickens, are raised more profitably by those who keep a few and give them individual care and attention, and that the profits diminish in direct ratio to the increase in stock.

Although we are only beginning to regard the rabbit as a food staple, Europe has for centuries considered it one of the most important table meats. During the war, owing to the shortage of grain and general food conditions, the rabbits have been largely destroyed. It is probable that we may be called upon to ship large numbers of breeding stock back to Europe.

With regard to its food value, our government has issued the statement that rabbit ranks second only to squab as the most easily digested meat.

Renovate the henhouse. Examine the litter. Possibly it has been on the floor much longer than you think. The weeks slip away rapidly. It is an unpleasant task to get the old stuff out and put new in, but the health of your flock and of your business demands that this be done now and then.

BEANS FOR POULTRY.

On account of the low price of beans, many readers have written to find out if they make a good feed for poultry. So far as food value goes they certainly do, but as a rule hens don't like them. They seem to eat Blackeye beans readily, but these are more like the pea family and are very fattening, so not more than one feed a day should be given unless the hens have lots of exercise. For that matter, hens should be made to scratch for any kind of beans, and when this is done a liberal quantity may be fed. They are as good an egg food as corn, if not better.

It is well to get the mother hen's point of view. Her anxiety will always be for the comfort of the little brood. Her judgment is based on what the tender things say about their comfort. If she be a true mother she will be constantly on the alert for the sounds and signals of distress, and will show a marvelous sensitiveness to them. The skilled poultryman will study these same sounds and signals in the artificial brooding of the newly hatched. The instant he hears the cry of distress he will do something to relieve the strained conditions. Food, water, warmth, exercise, rest and so on must be looked after all the time so that the chicks may be kept in the best possible condition of growth and balanced development.

The hen lays a larger egg than the pullet. To keep up the size of your stock breed from hens.

HE WAS GOING TO BE BUSY.

General Leonard Wood tells the story of a captain to whom was assigned a new orderly, a fresh recruit.

"Your work will be to clean my boots, buttons, belt and so forth, shave me, see to my horse, which you must groom thoroughly, and clean the equipment. After that you go to your hut, help to serve the breakfast, and after breakfast lend a hand washing up. At 8 o'clock you go on parade and drill till 12 o'clock"—

"Excuse me, sir," broke in the recruit, "is there any one else in the army besides me?" — American Cookery.

Provide shade for the fows. They will do better during the hot summer days.



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THE HOME CIRCLE

GOD OF THE OPEN AIR.

Thou who hast made thy dwelling fair
With flowers beneath, above with starry lights,
And set thine altars everywhere—
On mountain heights,
In woodlands dim with many a dream,
In valleys bright with springs,
And on the curving capes of every stream:

Thou who hast taken to thyself the wings
Of morning, to abide
Upon the secret places of the sea,
And on far islands, where the tide
Visits the beauty of untrodden shores,
Waiting for worshipers to come to thee
In thy great out-of-doors!

To thee I turn, to thee I make my prayer,
God of the open air.
And when at last I can no longer move
Among them freely, but must part
From the green fields and from the waters clear,
Let me not creep
Into some darkened room and hide
From all that makes the world so bright and dear.
But throw the windows wide
To welcome in the light;

And while I clasp a well-beloved hand,
Let me once more have sight
Of the deep sky and the far-smiling land—
Then gently fall on sleep,
And breathe my body back to Nature's care,
My spirit out to thee, God of the open air.

—Henry Van Dyke.

KNOTS.

Everybody had told Jamie he was stupid until he began to think it might be so. His parents were dead and he lived with Uncle Peter in the city. Uncle Peter sent him to school to Miss Nellie.

One day Miss Nellie told her boys she was going to the seashore, to Herrick Island, for her vacation, but that she did not like to go alone; it was much pleasanter to have some one for company, to run along the beach and find shells, to pull flowers on the marshes and go out sailing, or for a dip in the sea. She had no brother, so she wanted one of the boys to go with her, and this was how she would decide. Each boy should bring a collection of something selected by himself, either from his own house or the stores or from what might be given him by friends—whatever he chose, but it must consist of a collection of articles all belonging to one class, and every boy should inscribe his particular collection, tell where the articles were made or grown and their use. Three weeks would be allowed them to make ready, and then, on a Friday afternoon, a committee formed of the trustees and relatives and friends of the boys should decide which collection was best and who was entitled to the prize—a two weeks' stay at Herrick Island. How the youngster's eyes shone at this announcement!

"What is the ocean like? I never saw it; did you?" asked Jamie of his school-fellows at luncheon time.

"Course! lots of times!" responded Tommy Wadell, grandly. "It's something like a kettle of boiling suds, only a deal bigger, you know."

"Does it smell like that?" Jamie asked, doubtfully.

"No; it smells salty, 'cause there's codfish in it, I suppose.

"It sounds like a buzz saw when it's going," said Ned Nolan, with an air of wisdom, "and it always is going."

Jamie knew all about buzz saws. Uncle Dan had one in his mill out in the country.

The boys were wild with plans; all talked at once; and each, it would seem, had already begun to make a collection of one thing or another, every one but Jamie—he had not a little store of treasures, not a solitary article of value.

"Uncle Peter wouldn't give me anything!" he thought, disconsolately. "He's got enough to do to keep me. Uncle Dan wouldn't, either. I wish I could find something, but I don't believe it's any use trying."

He stared hard at his desk, and, though he tried to keep them back, big tears filled his eyes. He shook them off when no one was looking, and then his gaze centered in a funny round knot in the top of his desk. He had seen it many a time before. Now, as he stared and stared at the little brown spot, a big thought was growing in his mind; it grew so big that it shone right through his eyes and laughed over his lips, and his whole face lighted up.

Miss Nellie, happening to glance in his direction at that moment, wondered she had never noticed before what a pretty, bright-looking boy he was. She did not know that it was the big thought that had so transformed shy, stupid Jamie.

"Let's all tell what we're going bring," said Bobby Jones, the next day, as the boys sat in a row on the doorstep at recess.

"Corals," responded Ned Nolan, with sparkling eyes. "They're uncommon, and we've got a lot. Grandfather brought 'em to mother one time when he came from India—or somewhere. There are combs and neckchains and lockets and bracelets and, oh, heaps of things. I'm studying 'em up.

The others looked discouraged—all but Jamie; corals were uncommon.

"Well, I'm picking up candies," said Tommy Wadell, recovering somewhat. "You've no idea what a lot of different kinds there are—balls, guns, lozenges, mints, kisses, mottoes, sticks—more than I can begin to tell. And it's easy to describe 'em. Made of sugar, came from the confectioner's, feel sticky and taste sweet."

"My, don't they!" his comrades agreed, smacking their lips.

"I'm going to choose pins," said Bobby Jones. "It takes seven men to finish one and put on its head. Sister said so. I'm going to have all kinds—black heads, white heads, brass heads, gold tops, some garnets and the finest pearl you ever saw. They'll be awful pretty. What are you going to have, Jamie?"

The boys nudged one another and exchanged commiserating glances. They knew very well there was nothing in Uncle Peter's house that he could bring and he never had any money to buy anything with.

But Jamie only smiled as he replied quietly, "Knots."

This response was hailed with considerable merriment by his schoolfellows. "Hard knots, slip knots or bow knots?" asked one. Jamie only laughed with them, saying, "Just wait and see."

At last the fateful day arrived. The corals were lovely, everybody said so. The pieces were laid out on pale blue velvet. "They cost hundreds of dollars, grandfather said," announced their exhibitor proudly.

The candies were sweet, indeed. "It took every cent I have saved this quarter to buy them, besides what was given to me," Tommy informed his friends. "I made the little shelves to put 'em on myself," he added.

To Bobby Jones' friends there was nothing so nice as pins; and no one would have thought pins would display so well. Bobby had stuck delicate little pink ones next to the blues, and lemon-colored beside the greens, lovely pearls, filagree silver and cut steel contrasted with gold, garnets and jets; the effect was beautiful.

Johnny Towne had a fine assortment of fans; Ben Morris had buttons; Charlie Williams, soap in a variety of shapes displayed in an attractive box, and Silas Casey had sponges of all kinds and sizes, arranged on a pink cotton-flannel scarf, and there were many others.

Jamie's turn came last. He had knots—nothing else. But such knots. He had coaxed Uncle Dan to let him come over to the mill one Saturday, and no miser picking solid nuggets from a gold mine could have been happier than the boy looking among the chips and saw logs for his precious knots. If you don't believe

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nots are pretty, go to a saw mill ome day yourself and see what exisite things you can find. The adings and streakings are so ended that no one color shows disnctly, but all are merged together a hazy beauty that would make artist fling down his brush in desair.

Jamie had shown himself to have eye to effect, too. At his suggesn Uncle Dan had permitted one of e men to make each knot the cenr of a little square block. Then the y had joined each block firmly to mate, and so carefully that it was rd to tell where the joining was, cepting for the difference in color. took two weeks, nights and mornгs, to finish the whole to his satisction, but the result was the neatt and oddest piece of mosaic work iaginable. There were red knots d yellow knots, brown knots and ack knots, smooth knots and isted knots, knots with bark on d knots with bark off, knots with acings like spider-webs, like anials, like human faces, like forests d mountains, windmills and vilges, and one that was almost exly like Niagara Falls; there was little frosty knot that looked like country church in winter surunded by bare-limbed trees; but e one he liked best of all was arked in a light, towering shape, at Miss Nellie had told him was a markably good representation of e lighthouse at Herrick Island.

The visitors were loud in their expressions of approval of everything. "Such an excellent idea of the teacher!" they said, and all agreed that the boys had shown wonderful taste in the arrangement of their displays. Finally the committee sat down and conferred in low tones.

In the silence that followed Miss Nellie announced, with heightened color in her cheeks: "We will now listen to the committee's report."

Then there was a silence. In his suspense, poor Jamie imagined he heard buzz saws everywhere. He was so wrought up that he started at the scraping of a chair behind him as one of the trustees arose, and wheeled around so suddenly that he bumped up against that gentleman.

"Oh, please, I didn't mean—I mean—I'm sorry," stammered Jamie.

"Never mind, we can excuse you under the circumstances," responded the trustee. "You are the boy who collected the knots, aren't you? Well, you've won the prize!"

There was a little hush. The other boys stared at each other. Jamie had to catch his breath to save it from slipping away. Had he really won? He looked appealingly into the trustee's eyes. "A good face that boy has," thought the man. But he noted that Jamie's shoes were patched, that his shabby suit was a size too small, that his cheeks were thin and pale, and he was glad of the decision that would give him an outing evidently much needed. "But I'll see that the little chap has some decent clothes," he promised himself. And he kept that promise.

"You have won the prize," he repeated, in response to the unspoken appeal in the boy's eyes.

It didn't seem as though that clapping and cheering could be for him. But he reached out his arms with a swift impulse toward visitors and schoolfellows, as if he would take them all. His eyes were moist, and his voice trembled as he spoke his half-audible thanks. He didn't know what to do or say, he was so happy.

"To thank of his winning the prize with nothing but knots!" exclaimed Tommy Waddell, munching one of his peppermints. "But you're the right sort, Jamie. We all think so, and hope you'll have a tip-top time at Herrick Islands." Boys' World.

USED TO KITCHENETTE.

They had been dining in state in the dining car. Husband, who is a teacher of English, was glad that little daughter had behaved so perfectly. Mother also was in a happy frame of mind. There were numerous other diners in the car and the parents were proud of their child. Not a single thing had happened to mar the serenity of the occasion.

Finally the meal was over and they started to leave the car. Their way took them past all of the other tables. Suddenly the little girl felt impelled to ask a question:

"Mother," she called in a shrill voice, "aren't we going to wash the dishes?"

A NEW HERO.

A group of housewives were having tea together at a restaurant and talking over the events of the day. The question under discussion was as to who had done most to win the war. Some said Haig, others Beatty, others Foch.

At last one woman chipped in.

"I don't know who's done most to win the war," she said, "but I know who's been most talked about."

"Who's that?" came a chorus.

"Why, this 'ere Alice Loraine that the French and Germans came to blows over!"—London Answers.

TAMALE LOAF.

One pound round steak, cut in small squares; cook as for a stew. To this add: 1 can tomatoes, 1 onion, 1 teaspoon chili powder, salt to taste, 1 tablespoon butter, olives as desired, 2 cups cornmeal, stir into the stew; dash cayenne pepper, steam three hours in a five-pound pail. This quantity is enough to fill the pail. Chicken or other meat may be used as desired.

To prevent a placket from ripping, have the tape that is used for the binding in a continuous strip, down one side and up the other, and that brings the strain on a solid piece of tape.



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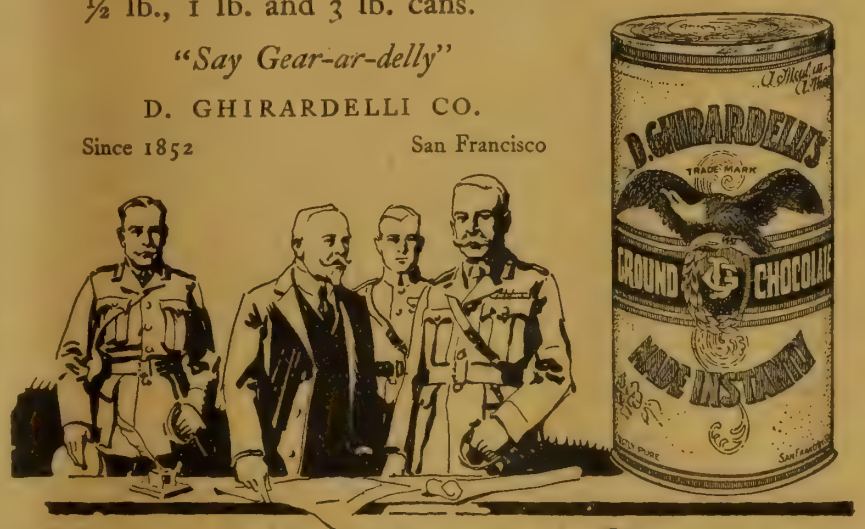
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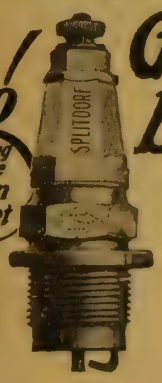
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Market Comment

California Figs Kindling-Wood

With all our high prices for figs it is going to be necessary for us to insist on high quality packing, or we will find ourselves justifying a circular which is being circulated in the East This circular calls California Smyrna figs "kindling wood," and states there will be plenty of Smyrna figs from the Mediterranean during the coming season Perhaps some of the "kindling wood" sold as California figs have been improperly cured and packed Adriatics masquerading possibly as Calimyrnas. This is a matter for our Fig Growers' Association to investigate.

Prune Basis Ten Cents

Prune prices are four times what they were ten years ago. Recent reports indicate that independent prune buyers are offering a 12 cent basis for the 1919 crop. The Association is, according to its fixed policy, not naming any price until there is a more definite opportunity to forecast the crop, and the probable demand. Whatever the independents make from their 12 cent price might as well go to the growers. Whatever they may lose would be paid by the growers anyway because contracts will be strictly construed.

Grain Sacks 10 1-2 Cents.

The close of the war and possibly the increased interest in bulk handling of grain have brought a sharp drop in the price of grain bags, to a trifle more than one-third of the war price. It is estimated that thirty million bags are on their way from Calcutta, and enough cloth still remains there to make twenty million more. Freight rates on bags are reported to be $17 per ton, as compared with $23 a few weeks ago and out-of-sight rates during the war.

Heavier Farm Horses Demanded.

The kind of horses preferred on the farm is changing in the United States as a whole, especially in the Northern and the Pacific States. Automobiles and motor trucks are relieving farmers from the need of road horses, and consequently heavier horses are in demand for farm use. As an example: Mean prices in Chicago on draft horses raised from $171 in the five years 1901-1905, to $213 in 1914, and $220 in 1918

Milk Prices in 100 Cities.

Retail milk prices in bottles ranged between 11 and 20 cents a quart, averaging 14 or 15 cents, in 100 cities in 43 States, according to the February report of the U. S. Bureau of Markets. Prices paid to producers vary from 6 4-10 cents to 12 7-10 cents per quart, averaging between 7 and 8 cents.

Five Per Cent of Our Beans Bought.

The 150 carloads of California beans which the Government has been talking about buying, are being received and it is said that part of them will be sent to the starving Armenians and Syrians. Nearly two million bags were offered to the Government, and only about 5 per cent of them can be taken

Baby Chicks Popular.

It is increasingly difficult to buy baby chicks. The demand is insistent and even at this flush season for hatching, many hatcheries are taking orders for chicks which are yet only eggs. The demand is of course due to the winter's high prices of eggs and the recent strengthening of the market.

High-Priced Meats Demanded.

Not long ago we noted that in California and the East the cheaper cuts of meat were being demanded. This situation has been reversed recently until it seems that the cheaper cuts are dragging. Increased opportunity for work, with the opening of the spring season, is considered to be the cause.

Barley Sale at Good Prices.

Barley growers who held out through the winter are feeling foxy now on account of the considerably increased prices. One lot of 30,000 sacks has brought a Yolo County grower $2.45 1-4 this month.

THE MARKET REPORTS

Figures Given Are Independent and Reliable. Prices Quoted as Paid to Producers.

SAN FRANCISCO.

San Francisco, April 15, 1919.

WHEAT.

The following prices were announced by the Federal Grain Corporation last year and are still in effect. They are figured f. o. b. San Francisco, Los Angeles, Seattle, Tacoma and Portland and guarantee the grower a minimum of $2 f. o. b. shipping point:

Per bushel—	
No. 1 hard	$2.20
No. 2	2.17
No. 3	2.13
No. 1 soft	2.18
No. 2	2.15
No. 3	2.11
Club or Sonora, No. 1	2.16
Do, No. 2	2.13
Do, No. 3	2.09
Recleaned for seed, per ctl.—	
California Bluestem	$4.15@4.25
Early Baart	4.15@4.25

BARLEY.

Barley continues strong on export demand. Very little spot is being offered on this market, and the only purchases are transactions of small amounts. Future options show the tendency of the market, and while May was somewhat lower at $2.48 to $2.50, December was higher at $2.27 to $2.30.

Choice feed, per ctl	2.35@2.40

OATS.

Oats are stagnant. The price will doubtless be advanced if barley continues to reach higher levels. The local demand at present, however, is dead.

Red feed, per ctl	$2.25@2.30
Red for seed	Nominal
Black for seed	Nominal
Recleaned Red or Black for seed	Nominal

CORN.

Corn continues to show strength and is somewhat higher for good thoroughly dry California yellow. Some choice sold as high as $2.75, but the bulk of the offerings are damaged and sell below quotations.

California	$2.35@2.50
Egyptian, choice	Nominal
Milo	Nominal

HAY.

Receipts of hay for the past week were 1,693 tons compared with 1,612 the previous week. The market in this city continues dull and trade light. About the only demand noticeable is a slight inquiry for fancy wheat hay and fancy alfalfa in light bales for the retail trade. Some orders have been placed during the week by the Government for shipment, but local dealers holding large stocks have obtained these orders and are filling them out of warehouse stocks. Cutting of the first crop of alfalfa has already begun in a small way in some sections, and this will doubtless become general within the week. Conditions are favorable for a large crop of both hay and alfalfa.

No. 1 wheat, per ton	$17.00@19.00
No. 2 wheat, per ton	13.00@16.00
Choice tame oat, per ton	17.00@19.00
Wild oat, per ton	12.00@15.00
Barley hay, per ton	12.00@15.00
Alfalfa, per ton	12.00@14.00
Stock hay, per ton	12.00@14.00
Barley straw, per bale	.50@ .80

FEEDSTUFFS.

Cracked corn scored another advance this week due to the difficulty of getting the class of corn necessary for treatment. Rolled barley is also firmer and somewhat higher in sympathy with the whole grain. Alfalfa meal is unchanged.

Cracked corn	$63.00@64.00
Rolled barley	50.00@51.00
Rolled oats	48.00@50.00
Alfalfa meal	34.00@35.00

POTATOES, ONIONS, ETC.

There were no changes in the market prices of either potatoes or onions. The general vegetable market is not what it should be, but the range of prices is still regarded as high. The public is not buying at these prices evidently expecting them to go lower. Asparagus responded to this lack of interest by selling for 9 cents for the best, against 12½ last week, but peas were slightly higher. Some string beans from the southern section of the State brought 35 to 40 cents, but the arrivals were small. Lettuce and summer squash are selling at a lower range.

String beans	Nominal
Peas	7@11c
Lima beans	None
Carrots, per sack	$2.00@2.75
Asparagus	6@9c
Rhubard, Strawberry, box	$1.25@1.75
Cucumbers, hothouse, box of 30	3.00@3.50
English, per dozen	$2.50
Eggplant, per lb	None
Lettuce, per crate	$1.00@2.00
do, Watsonville	.75@1.00
Celery, crate	Nominal
Spinach, crate	$0.75@1.00
Tomatoes, Southern, per crate	None
do, Mexican	$1.00@2.00
Sprouts	Nominal
Summer squash	$1.75@2.00
Potatoes—	
Rivers	$2.00@2.75
Oregon	2.25@2.90
Washington	1.95@2.25
Idaho	2.25@2.65
Sweets, per sack	$4.50
Onions, Warehouse Stock—	
Yellows	None
Australian Browns	$3.50@4.00
Green River	1.00@1.25
Green Alameda	2.00@2.25
Garlic	50@60c

BEANS.

The outlook for the beans of the State is showing a steady improvement and as a consequence prices are showing a higher range. The lima bean pool has evidently had a strengthening effect on the market, although most of the local dealers looked upon it with suspicion at first.

Bayos, per ctl	$6.25@6.40
Blackeyes	3.40@3.60
Cranberry beans	4.75@5.00
Limas (south, recleaned)	7.00
Pinks	5.50@5.75
Mexican Reds	4.75@5.25
Tepary beans	2.50@2.75
Garbanzos	11.00@11.25
Large whites	5.75@5.90
Small whites	6.60@6.75

POULTRY.

Broilers are weaker and will undoubtedly be lower before the end of the current week. There are too many on the local market for home consumption, and they are too high for the packers to enter the market. Hens are firm and in good demand. A car of hens arrived from the east this week and had the effect of keeping hens at approximatly last week's level. One reason for the high prices of poultry at the present time is said to be the high price of eggs, the poultry men preferring to keep their stock for layers to shipping their poultry even at present prices. Both these matters will adjust themselves as the crop of pullets now being raised begin to lay.

Turkeys, live, young spring, lb	30@38c
do, old	34@36c
do, dressed	42@44c
Broilers, 1½ to 2 lbs	50@55c
do, 1¼ lbs	43@45c
do, ¾ to 1¼ lbs	38@40c
Fryers	50@52c
Hens, extra, per lb., colored	44@46c
do, Leghorn	42@45c
Smooth young roosters, per lb. (3 lbs. and over)	45@48c
Old roosters, colored, per lb	25c
Geese, young, per lb	38@40c
do, old, per lb	38c
Squabs, per lb	65c
Ducks	38@40c
do, old	38c
Belgian hares	17@20c
Jack rabbits	$3.00@3.50

BUTTER.

Butter took a tumble this week, going down a total of 5 cents. This decline is said to be due to a number of causes. New York fell 3 cents and a like change was to be expected here, but one of the strong features in the decline was the prevailing warm weather which interferes with the keeping of butter outside the ice houses, and also the increased receipts which the local market refuses to absorb at the prevailing high prices. The production of butter in this district is now aproaching its height and the general prevalence of plenty of green feed is increasing the output.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extra	54½	54½	54	52½	49½	49
Prime first			Nominal			
Firsts			Nominal			

EGGS.

Extra eggs continued their advance this week until they showed a gain of two cents over the close of last week. Then in two days they dropped back to the last week's close. The high price of eggs has had the effect of unusually large shipments to this market. Many of these have not been up to the standard set for extras by the local exchange, and extra lists were again quoted. In sympathy with extras they showed a decline of one cent from the first quotation. Extra pullets show a decline of two cents from last week's close and three from the high price of the week.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	43½	44	44½	45	43½	43
Extra first	42½	42½	42½	42½	42	41
Firsts			Nominal			
Ex. pullets	42½	43	43	43	41½	40

CHEESE.

Fancy California flats declined 1½ cents in sympathy with the lower price of butter, while firsts were strong at half cent advance. California Y. A. fancy is again being quoted, 34½ cents being the opening price. There was little interest in Oregon cheese, which is nominally unchanged.

Fancy California flats, per lb	27½c
First	26½c
California Y. A. fancy	34½c
Oregon Y. A.	39c
Monterey cheese	22½@25c

FRESH FRUITS.

Strawberries continue to arrive only in small quantities, although the market is evidently expanding. Los Angeles are quoted at $2.50 to $2.75 and Imperial Valley $2.75 to $3.25. Loquats are cheaper at 9 and 10 cents. Otherwise no changes.

California apples	$2.50@3.75
Northwest apples	3.00@4.00
Winter pears	2.50@4.00
Persimmons	None
Loquats, per lb	9@10c

CITRUS FRUITS.

There is a continuous demand for all the citrus fruits, which the ample supply is able to fill at last week's quotations. The market is regarded as steady.

Oranges, navels	$3.50@5.50
Mandarins	3.00@3.50
Tangerines	2.50@3.50
Lemons, fancy	4.00@4.50
do, choice	3.50@4.00
do, standard	3.00@3.50
Lemonettes	2.00@3.00
Grapefruit	2.50@3.50

DRIED FRUITS.

While the dried fruit market is developing every week, as yet the only fruit that is being contracted for are the prunes and peaches. Prunes are being generally bought at 11 to 11½c from independent growers. So far the association has not named its price, but it will hardly be lower than that paid the independents. Some reports are to the effect that the association intends to demand a 12 cent basic price. Peaches are now being bought more freely and contracts are being closed at 13½ to 14c. The spot market is quiet. Practically all the spot fruit has been bought and the little still available is not interesting buyers, whose whole attention is centered on the futures.

RICE.

The 1919-1920 crop of rice is estimated 6,000,000 bags, compared with 3,500,000 la season. This is in the rough and will rea about 60 per cent of these totals wh cleaned. The Government prices will sta until peace is signed and the prices are e pected to advance at that time. It is r ported that 10,000 tons of more or less dam aged rice in the hands of California pr ducers will be shipped to Europe throug the activities of the Grain Corporation, b this has not yet been confirmed, nor is t price known, although it was offered fro 5 to 6½ cents according to its conditio Paddy rice, Nos. 1 and 2, $4.32; 3d and 4 grades, $4.16; clean, fancy Japan, 7½c p lb; choice Japan, 7⅝c per lb.; screening 5⅝c per lb.; brewers, 5¼c per lb.; ri polish, $50 per ton, car lots; rice bran, $3 per ton, car lots; early prolific, $4.47.

HONEY.

There were no new developments in hon this week, although the local demand gav evidence of picking up somewhat..

HIDES.

Wet Salted—Native steers and cows, 50 lb up, 16@18c; 30 to 50 lbs. up, 16@18c; kip 15 lbs. 31@32c; bulls and stags, 13@14c

Horse Hides—Wet salted, large prime, eac 15 to 30 lbs. 21@22c; calf and veal, und $5@$5.50; medium prime, $4@4.50; sma $2.50@3.50; dry, large, prime, $2.50@3; dr medium, $1.50@2.50; coldts and ponies, 5(and$1.

LOS ANGELES.

Los Angeles, April 15, 1919.

BUTTER.

This market shows a decline in prices sin a week ago. Under heavy receipts and bett pasturage the market broke down on Mo day. There is a good demand, however, a consumption is holding up well.

We quote:

California extra creamery	51
do, prime first	4(
do, first	4(

EGGS.

The egg market reports little change i prices since last week. Prices are firm a receipts up to normal. It is reported th few eggs are going into storage at this tim of the year in Southern California.

We quote:

Fresh ranch, extras	46c
do, case count	44c
do, pullets	42½

POULTRY.

Broilers continue on the decline. Frie show an increase in price. These conditio are to be expected with young stock comir on the market. Hens and roosters still co tinue in demand. This market reports fa demand with good receipts.

Broilers, 1 to 1¼ lbs	3(
Broilers, 1½ to 1¾ lbs	3(
Fryers, 2 to 3 lbs	4(
Roosters (soft bone), 3 lbs. and up	4(
Stags and old roosters, per lb	1(
Hens	36@3(
Turkeys	39@4(
Ducks	34@3(
Geese	2(

VEGETABLES.

Potatoes broke under very heavy receip and warmer weather. Imperial Valley pe coming into the market and prices sho slight advance. Onions declining while ca bage advances steadily during the past wee This market reports heavy shipments wi strong demand.

We quote from growers:

Peas, per lb	7@
Potatoes—	
Northern Burbank, per cwt	$3.00@3
Idaho Russets, per cwt	2.40@2
Sweet potatoes, per cwt	4.50@4
Garlic, per lb	5
Onions—	
Australian Brown, per cwt	$3.75@4
White Globe, per cwt	8
Cabbage, per 100 lbs	3.50@4
Celery, local, per crate	4.00@7
Celery, northern, per crate	8.00@9
Cauliflower, standard crate	2.00@2
Rhubarb, per 30-lb. box	2

FRUITS.

The deciduous market continues to sho good prices. Bellefleur's sold out entire and no more on the market till the new cro On all other varieties prices advance. T demand good with fair sales.

We quote from growers:

Apples—	
Black Twigs, Northwest pack	$3.50@3
Baldwins, Northwest pack	3
White Pearmains, 4-tier	3.50@3
Yellow Newtown Pippins, 4-tier	3.25@3
Winesap, loose, per lb	7½@8
Roman Beauties, Northwestern, per peck	3.50@3
Loquats, per lb	7@1

BEANS.

This market still reported very qui There is a fair demand for limas but on others it is dull. Prices are steady.

We quote from growers:

Limas, per cwt	$6
Large white, per cwt	5
Small white	5
Pink, per cwt	6
Blackeyes, per cwt	8
Tepary, per cwt	3

HAY.

Quotations remain the same as a week a Dairy people are buying choice alfalfa ep ingly. The tone of this market is dull.

We quote f. o. b. Los Angeles:

Barley hay, per ton	$21.00@24
Oat hay, per ton	23.00@25
Alfalfa, northern, per ton	20.00@21
Alfalfa, local, per ton	21.00@23
Straw, per ton	9.00@10

COTTON MARKET.

NEW YORK, April 15.—Cotton clo steady with net gains of 20 to 40 points.

Spot cotton quiet; middling, $28.65c.

January	$23
May	26
July	25
October	23
December	23

Special Livestock Market Reports.

San Francisco, April 15, 1919.

TTLE—Some good grass cattle being eted and heavier shipments expected next . Not coming in large enough numbers et to influence market materially.

s—
, 1, weighing 1000@1200 lbs..12@12½c
o, weighing 1200@1400 lbs..12@12½c
, weighing 1200@1400 lbs...12@12½c
, thin .....9@10c
and heifers—
. 1 .....9@10c
, second quality .....8@9c
, common to thin .....4½@7c
and stags—
od .....6½@7½c
ir .....5½@6½c
in .....4@5½c
s—
htweight .....11½@12½c
dium .....10½@11½c
avy .....8@10c

EEP—Milk lambs being marketed too for requirements due to unfavorable feed-onditions. Owners anxious to get them ed before they commence to fall off.
lambs .....13@15c
ings .....12@12½c
, wethers .....11@11½c
ewes .....8½@9½c

GS—Hogs are freely offered, but a good soft and oily hogs are coming in spite ckers not desiring to purchase this kind. carcases are hard to sell to the trade at price, especially if they have to be held ength of time after butchering. One of argest concerns refuses to receive acorn

rd, grain fed, 100 to 150.....18½c
, 150 to 250 .....19c
, 250 to 300 .....18½c
, 300 to 400 .....18c

LIVESTOCK.

Los Angeles, April 15, 1919.

TTLE—This market is unchanged since ed a week ago. The offerings are of uality. The killing of good cattle con-light. Only a fair demand.
cwt., f. o. b. Los Angeles:
steers, 1000@1100 lbs...$11.00@13.00
cows and heifers .....9.50@10.50
cows and heifers .....8.00@9.00
rs $6.00

GS—Quotations in this market remain me as reported a week ago. Prices are g firm under fair receipts. Quality of gs very good and demand holding up

cwt., f. o. b. Los Angeles:
, avr'ging 275@350 lbs.$16.00@17.00
, avr'ging 225@275 lbs. 17.00@18.00
.....18.00@18.50
gh docked 20 lbs., piggy sows 40 per

EEP—Few offerings during the past with no change in prices reported. De-only fair. Receipts are ample to meet
cwt., f. o. b. Los Angeles:
wethers .....$ 9.50@10.50
ewes .....8.50@9.50
Yearlings .....10.00@11.00
Lambs .....14.00@15.00

PORTLAND LIVESTOCK.

Portland (Or.), April 15.—CATTLE—Higher; receipts, 186. Steers, best $13.75@14.75; good to choice, $11.50@12.50; medium to good, $10.00@11.00; fair to good, $9.00@10.00; common to fair, $8.00@9.00; good to choice cows and heifers, $10.50@12.25; medium to good, $7.00@8.00; fair to medium, $5.00@6.00; canners, $3.50@4.50; bulls, $6.00@8.50; calves, $9.50@13.50; stockers and feeders, $7.00@10.00.

HOGS—Strong; receipts, 323. Prime mixed, $19.50@19.75; medium mixed,$19.00@19.50; rough, heavies, $17.50@17.75; pigs, $17.00@$17.75; bulk, $19.60@19.75.

SHEEP—Steady; no receipts. Prime lambs, $16.00@17.00; fair to medium, $14.00@$15.00; yearlings, $11.00@12.00; wethers, $9.00@10.00; ewes, $6.50@10.50.

EASTERN.

CHICAGO, April 15. (U. S. Bureau of Markets).—HOGS, receipts 28,000; market strong; mostly 10c higher than yesterday's average; estimated tomorrow 13,000. Bulk of sales, $20.40@20.65; heavyweight, $20.55@$20.70; medium weight, $20.45@20.70; light weight, $20.00@20.55; light, $18.90@20.30; sows, $18.50@20.10; pigs, $17.60@19.10.

CATTLE, receipts 9,000; common and medium beef steers steady to strong; others slow, 15c lower; she-stock, steady to 15c higher than yesterday's best time; bulls steady; stockers and feeders firm; estimated tomorrow 6,000. Heavy beef steers, $11.65@20.00; light beef steers, $10.15@18.50; butcher cows and heifers, $7.65@15.50; canners and cutters, $6.00@10.15; veal calves, $14.00@$15.75; stocker and feeder steers, $8.50@$15.50.

SHEEP, receipts 11,000; wooled lambs, 10c to 15c higher; shorn lambs, irregular, bulk steady to higher; sheep steady; estimated tomorrow, 7,000 lambs; 84 pounds or less, $18.10@20.00; 85 pounds or better, $17.85@19.90; culls, $14.00@17.85; ewes: medium and good, $12.00@15.50; culls and common, $6.00@12.00.

DRESSED MEATS.

The United States Bureau of Markets reports the following conditions as existing in the local market yesterday:

Beef—Supply liberal; market steady; demand fair.

Veal—Supply moderate; market strong, demand good.

Pork—Supply liberal; market steady, demand fair.

Lamb—Supply liberal; market weak; demand moderate.

Mutton—Supply light; market firm; demand fair.

STEERS—No. 1, 19½@20c; second quality, 18½@19½c.

COWS AND HEIFERS—17@18½c.

CALVES—As to size, etc., 17@21c.

LAMBS—Suckling, 28@30c; yearling, 24@25c.

SHEEP—Wethers, 19@20c; ewes, 16@18c.

HOGS—26@27c.

WEEKLY BUTTER AVERAGES.

Cents per pound for Extras.

Week Ending	San Francisco 1918	San Francisco 1919	Los Angeles 1918	Los Angeles 1919
ng 2	50.40	66.10	50.16	63.16
9	51.08	61.00	50.00	64.00
16	52.33	61.70	50.50	64.16
23	52.50	55.83	52.00	62.16
30	53.00	44.91	51.83	49.00
6	50.80	43.58	49.66	47.33
13	52.00	46.80	48.00	47.60
20	51.41	51.58	48.00	53.16
27	51.30	53.90	49.33	55.00
h 6	50.66	56.16	50.00	59.00
13	51.16	55.58	49.50	58.00
20	47.83	54.41	47.00	56.00
27	46.30	56.41	43.30	58.00
3	43.16	54.23	42.16	55.50
10	39.25	57.16	39.50	56.00
17	39.00	....	36.83	....
24	40.50	....	38.16	....
1	40.83	....	39.00	....
8	40.66	....	39.00	....
15	40.46	....	39.00	....
22	40.33	....	41.00	....
9	51.08	61.00	50.00	64.00
29	42.30	....	39.00	....
29	42.30	....	39.00	....
5	43.90	....	41.58	....
12	44.92	....	40.58	....
19	46.50	....	41.75	....
26	47.42	....	43.00	....
3	48.08	....	46.00	....
10	48.90	....	47.50	....
17	50.83	....	48.66	....
24	52.66	....	45.16	....
31	52.16	....	51.00	....
st 7	52.16	....	50.83	....
14	51.88	....	49.00	....
21	52.25	....	49.58	....
28	53.00	....	50.00	....
4	53.00	....	50.00	....
11	54.90	....	50.33	....
18	57.80	....	51.67	....
25	61.33	....	56.17	....
2	64.75	....	58.00	....
9	64.50	....	59.33	....
16	62.50	....	60.00	....
23	61.75	....	60.00	....
30	60.50	....	59.50	....
6	59.60	....	58.83	....
13	60.00	....	61.00	....
20	61.00	....	57.25	....
27	61.60	....	58.75	....
4	62.60	....	60.00	....
11	63.00	....	60.10	....
18	63.50	....	61.91	....
25	64.60	....	62.16	....

WEEKLY EGG AVERAGES.

Cents per dozen for Extras.

Week Ending	San Francisco 1918	San Francisco 1919	Los Angeles 1918	Los Angeles 1919
Jan. 2	52.80	75.60	48.16	69.50
" 9	60.91	69.91	50.66	66.66
" 16	65.66	58.70	55.00	62.41
" 23	65.66	52.58	58.00	54.66
" 30	61.25	48.75	54.00	52.33
Feb. 6	58.50	42.00	51.66	43.00
" 13	44.40	40.90	44.83	37.80
" 20	44.75	36.41	40.83	39.33
" 27	42.40	34.40	39.33	35.00
March 6	36.83	37.58	35.00	37.00
" 13	37.91	37.16	38.00	37.00
" 20	40.66	38.16	39.63	42.00
" 27	39.50	40.41	40.00	42.00
April 3	38.19	42.41	38.33	45.00
" 10	37.58	42.91	36.33	45.00
" 17	39.16	....	36.83	....
" 24	40.50	....	39.66	....
May 1	41.66	....	39.33	....
" 8	40.08	....	37.00	....
" 15	39.16	....	38.83	....
" 22	40.50	....	39.00	....
" 29	38.66	....	37.41	....
June 5	40.80	....	38.83	....
" 12	41.00	....	33.75	....
" 19	43.33	....	33.00	....
" 26	44.32	....	39.08	....
July 3	44.91	....	41.75	....
" 10	48.30	....	45.00	....
" 17	47.66	....	45.50	....
" 24	47.91	....	45.16	....
" 31	48.33	....	46.33	....
August 7	49.50	....	46.58	....
" 14	52.08	....	48.00	....
" 21	56.33	....	50.17	....
" 28	59.20	....	53.00	....
Sept. 4	62.40	....	56.33	....
" 11	63.70	....	58.67	....
" 18	61.30	....	59.00	....
" 25	60.17	....	55.67	....
Oct. 2	65.42	....	59.75	....
" 9	65.08	....	60.00	....
" 16	71.30	....	62.66	....
" 23	78.88	....	70.33	....
" 30	86.41	....	79.33	....
Nov. 6	87.90	....	78.00	....
" 13	86.00	....	78.00	....
" 20	77.25	....	72.00	....
" 27	79.80	....	72.33	....
Dec. 4	82.00	....	73.80	....
" 11	82.08	....	74.33	....
" 18	79.66	....	72.33	....
" 26	82.00	....	71.66	....

FACTS ABOUT EGGS.

gs left in a draught, or where the will blow on them, have a ten-y to dry down very quickly.

shing eggs removes the natural ing of the pores of the shell, h allows the egg to evaporate become stale.

wly-laid eggs have a bloom, while nes look smooth and slick.

Eggs mold when kept in a damp place and the flavor deteriorates.

Exposed to the light, eggs quickly lose quality.

An indication of the present market value of sheep is seen in the bids recently submitted at Billings, Mont., at a sale to close an estate. Ewes of mixed ages brought $12.75 and year-$12.75.

164 acres of the H. E. Losse Estate just South of Sunnyvale has been bought by Charles Schlessinger, a San Francisco capitalist. This is a well known and well equipped prune ranch with a large frontage on the State highway and in addition to a modern residence it has a large fruit packing house and storage for taking care of the crop.

Classified Advertisements

Rate in this directory 3¢. per word each issue.

MISCELLANEOUS.

SILO PERFECTION.
We have it in the **Monro Perfect Silo,**
Before buying, get our booklet and prices.
THE LEWIS COMPANY,
Dept. C,
First National Bank Building
San Jose, Cal.

TOBACCO FOR SALE—Homegrown chewing and smoking, 50c. lb. postpaid. Randolph Tobacco Farm, Paducah, Kentucky.

BEES FOR SALE—Golden Italians in patent hives. John G. Mee, St. Helena, Cal.

FOR SALE—32 H. P. FairbanksMorse Gas Engine. Guaranteed perfect. $600. J. J. Pottinger, 115 Main St., San Francisco.

PRINTED BUTTER WRAPPERS—100, 80c. Additional 35c. 100, postpaid. Northwest Bond Printing Co., Portland, Oregon.

FOR SALE—1350 feet 11-inch slip joint galvanized iron irrigation pipe; one 8-inch centrifugal pump and 6-cylinder Winton engine; 2 three-year-old registered Holstein cows; 1 four year-old registered Jersey bull. A. H. McHuron, 519 California St., San Francisco.

COMPLETE CREAMERY EQUIPMENT—5-ton Remington ice machine, 900-lb. churn, 200-gallon Jensen pasteurizer, 8-H. P. submerged boiler, and many other articles that go to make up a complete creamery equipment. G. W. Stone, Route 2, Byron, Calif.

REMANUFACTURED PIPE.
All sizes standard pipe and wrought iron screw casing. All kinds of fittings. Guaranteed good as new. Write for prices. Weissbaum Pipe Works, 160 Eleventh street, San Francisco.

PATENT ATTORNEYS.
WEBSTER, WEBSTER & BLEWETT, Savings and Loan Bldg., Stockton, California. Established 50 years. Send for free book on patents.

ALL SIZES OF PIPE and screw casing, both new and second-hand, dipped and undipped. Guaranteed. Prices right. Shecter Pipe Works, 304 Howard St., San Francisco.

MADE OF REDWOOD, Hawley's Perforated wooden well casing, the best and cheapest well screen made. Send for descriptive circular. G. M. Hawley, La Mesa, California.

FULLY EQUIPPED CHEESE FACTORY at Woodbridge, Calif. Located in center of dairying district. For sale or rent. Inquire, Ralph C. Clark, Lodi, Calif.

CO-OPERATION (not operated for profit) reduces living expenses. Particulars and catalogue from Co-operative League, Commercial street, San Francisco.

FOR SALE AT A BARGAIN—18-35 Yuba Tractor in first-class mechanical shape—farming implements included. Apply D. P. Corcoran, Gridley, Calif.

FOR SALE—9 H. P. Waterloo Boy gas engine, used but a short time. Demonstrate any time. Price $200.00. L. H. Mueller, Niles, Cal.

SAMSON SIEVE-GRIP TRACTOR—10-25 H. P. and 5-disc plow, $1150. Nearly new. Apt. 205, 116 Lake St., Oakland, Cal.

COUNTRY LANDS.

FOR SALE—440-acre stock and grain ranch. 5 miles R. R. station, Mariposa Co., California. 60 acres cleared and tillable, part in grain now. Good 6-room house, large barn and outbuildings; 6 miles hog-tight fence; large springs, pipe line and concrete reservoir for irrigation. Full bearing English walnuts, oranges, figs, peaches, pears, apples, berries, etc. Average rainfall, 29.88 inches. Lots of free range adjoining. Large oaks and pine trees in pastures. Price only $12,000 includes 34 hogs, 8 head cattle, 4 horses, 50 goats, and all farm implements. Terms. Fred B. Palmer, 131 W. First St., Long Beach, Cal.

FOR SALE—The famous Bane Almond orchard at Orland. On account of labor conditions, as well as physical condition, I have concluded to sell my almond orchard, either in subdivisions of 10 acres, or as a whole. For particulars address P. D. Bane, Orland, Glenn Co., California.

FOR SALE—AT A BARGAIN—5 acres, 3 miles east of Oregon City, Oregon. Five-room house, barn, other buildings. Write E. F. Bell, Chilcoot, Cal.

VERY PROFITABLE 400-acre grain ranch 2 miles from Stockton, for sale. No agents. C. A. Bodwell, Lakeville, Calif.

SEEDS AND PLANTS.

PURE

SOUDAN GRASS SEED.

Twenty cents per pound, delivered any place in California in ten-pound lots or more.
G. M. HICKMAN. ORLAND, CAL.

GRAFTING WOOD—Willson's Wonder Walnut for sale by the originator. Never has failed a heavy crop of largest, finest nuts. Youngest bearer. Also genuine Franquette wood. F. C. Willson, Encinal Nurseries, Sunnyvale, Santa Clara county, Calif.

SOUDAN SEED—First class in every respect. Plump and well matured. Free from Johnson grass. Price f. o. b. Napa, 12½c. a pound for 100 lbs. or more; 15c. a pound for less. Prices quoted on carload. T. H. Stice, M. D., Napa, California.

SOUDAN GRASS SEED—Fine, clean seed—A No. 1—priced reasonable. Samples sent on request. For full particulars and price, J. W. Schuster & Son, Pond, Kern County, Cal.

FLORIDA SOUR AND CALIF. SWEET ORANGE seed-bed stock. The time to plant is propitious; order now. Southland Nurseries, 1941 E. Colo. St., Pasadena, Calif.

FOR SALE—Fancy Dwarf Milo Maize seed. Small lots, 7c. per lb. Sack lots, $5.25 per hundred f. o. b. Earlimart. W. L. Norris, Earlimart, Cal.

ONION PLANTS—1,000,000 California Red, 75c. per 1000. Now is the time to plant. Monroe, The Tree Man, Orland, California.

RECLEANED SOUDAN GRASS SEED—Large or small orders filled at 16c. per lb. f. o. b. W. R. Dresser, Paso Robles, Calif.

5000 AVOCADO SEEDLINGS for sale; will furnish buds for same. West India Gardens, Altadena.

TIRES

BARGAINS

STANDARD MAKES

These tires are all new, fresh goods and NOT retreaded or so-called rebuilt tires.

	Plain Treid Guaranteed	First Non-Skid Guaranteed	Tubes Gray
28x3		$11.40	$2.35
30x3	$9.85	11.90	2.35
30x3½	12.60	13.95	2.85
32x3½	13.90	16.40	3.00
31x4	18.25	21.40	3.65
32x4	18.55	21.85	3.75
33x4	19.35	22.80	3.85
34x4	19.80	23.30	3.95
34x4½	26.20	29.90	4.80
35x4½	27.00	31.20	4.95
36x4½	27.50	31.70	5.10
35x5	29.90	35.60	6.00
37x5	32.25	37.70	6.20

All other sizes in stock.
Write for them or call and see them.

SPECIAL

Non Skid Seconds

36x3½ Clincher $11,75
33x4 Straight Side 18.70
34x4 Straight Side 19.25

Prices subject to change without notice. Goods Shipped C. O. D., Express or Parcel Post. Money Refunded on Goods Returned to Us intact within Ten Days.

Automobile Tire Co.

Sixth and Olive Sts.

F3787 Bdwy, 4049

H. A. Demarest, Coast Manager

533 Van Ness Avenue, San Francisco
1776 Broadway, Oakland.
Second and B Streets, San Diego.
Hotel Fresno Building, Fresno.

The Oldest Automobile Tire Jobbing Concern in the United States and the Largest in the World.

Open Sundays and Evenings

RHOADES & RHOADES

EXPERT LIVESTOCK AUCTIONEERS

Purebred Stock Sales a Specialty

Sales Conducted in All Parts of California.

BEN A. RHOADES, Auctioneer

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GIANT WINTER Rhubarb

Now is Best Time to Plant

Should return from $1,000 to $1,500 per acre first year. If interested in Rhubarb or Berries, write for special prices.

J. B. WAGNER, Rhubarb and Berry Specialist, Pasadena, California.



Keep the Home Fields Earning!

This year, your car should be a more profitable proposition to you than ever. Europe is still looking to American farmers for food. And there's a ready market for everything you can raise.

Your car's a time-saver—a distance cutter. It will help you keep the home fields earning. But to get its best work, you must give it good tires.

You'd be surprised to know how many hundreds of thousands of folks—both in the cities and on the farms—have decided that United States Tires are the best tires they can buy.

This year the proportion of United States Tire users is even greater than ever. War and war work taught the good judgment of putting good tires under a car or truck.

There is a United States Sales and Service Depot in your neighborhood. There you can get good tire service and sound advice as to the best United States Tires for your own individual use.

United States Tires are Good Tires



Special Tractor Edition--Section One

Vol. XCVII—No. 17 Forty-ninth Year

THE PACIFIC RURAL PRESS

SAN FRANCISCO APRIL 26, 1919 LOS ANGELES





Lower picture shows the beautiful work done by the tractor plowing under the covercrop shown in upper picture.

PACIFIC RURAL PRESS

Issued Every Week at 525 Market St., San Francisco.

Member Standard Farm Papers.
Member Audit Bureau of Circulation.

Entered at S. F. Postoffice as Second-Class Mail Matter.

Address all communications and make checks or money orders payable to
PACIFIC RURAL PRESS - - SAN FRANCISCO

FRANK HONEYWELL - Publisher and Manager
W. H. SCHRADER - - Advertising Manager

ONE DOLLAR PER YEAR IN ADVANCE

Advertising rates made known on application.
Copy for change of advertisements must be in office on Monday preceding date of issue. New advertising copy must reach the office by Tuesday p. m.

LOS ANGELES OFFICE, 239 So. Los Angeles St.
NEW YORK OFFICE - - - 381 Fourth Ave.
CHICAGO OFFICE - - - - Conway Bldg.

EDITORIAL STAFF

E. J. WICKSON - - - - - - Editor
R. E. HODGES - - - - Assistant Editor
JNO. J. FOX - - - - - Horticulture
B. H. WHITTEN - - - - Livestock

EDITORIAL.

SUBTLETIES OF ATTRACTIVENESS

We have been trying hard to make this a drawing issue of our journal for the interests of our patrons and have succeeded in constituting it the most notable issue of our journalistic life of 48 years for our own interests. Is there not recorded in poetic history the case of a youth who started out to secure a charming young wife for his chief and pleaded so well the elder's cause that he unwittingly captured the beauty for himself? Thus it really seems to be with our affair of the week. We decided some time ago to devote this issue to declarations of the deeds and desirabilities of tractors and directed our staff writers, advertising tractators and printers to undertake the most notable exposition ever attained in this State of the availability of tractoral pull to secure a greater movement and operation of California agricultural implements and machinery than hitherto attained. This is exactly what the reader will find in this issue—for all have worked well to gather the wisdom and patronage essential thereto, as we expected them to do. But here is the unforeseen subtlety of the event: it causes this issue of the Pacific Rural Press to be 16 2-3 per cent larger than any of its predecessors and 350 per cent greater than the normal volume which this journal was established to assume as its weekly output. We introduce these percentages of course to demonstrate our mastery of the modern science of efficiency—not because we believe that the highest standard of journalistic excellence is the weight of printing paper destroyed. However it would not be modest for us to apply other standards to our own work: the reader must measure the quality of it for himself.

GEOGRAPHY AND HISTORY OF THE FACT.

Judging then by volume, which is the only standard left to us, it is interesting to draw that out a little. Geographically it is significant that we should be able to bring out an issue like this one. California has several agricultural papers which are admirable because of their ability to do so well under the handicap of being forced by natural conditions to draw nearly all their subscribers from a single State which, according to the census of 1910, has but 88,197 farms—standing 34th in the list of States which possess the total of 6,361,502 farms in the United States. It is therefore significant that any agricultural journal thus localized by natural conditions should be able to print either 56 pages in a single issue or 1,560 pages in a single year, as we did in 1918. It is less notable that we should be able to do this than that any California farming paper should be able to do it, and the explanation lies not in any volume or quality of ours but in the more significant fact that California farmers, in the quality of their intelligence and enterprise, furnish a support for conveyors of farming intelligence and patronage for purveyors of high class farming implements, agencies and supplies, which is out of all proportion to their numbers. It is a fact that California farmers as a class stand upon a much higher level in their liberality to intelligent publications, which assist them in their work, and in their purchasing power for farming machinery of the highest class and capacity, than do the farmers of any other State. For this reason it is clear that the experts in efficiency of advertising who base their judgments upon claims of extent of circulation really attain no efficiency at all because they ignore the grade of intelligence and the purchasing disposition and capacity which California journals minister to.

In connection with the historical fact that this is the largest issue a California farming paper has ever attained, it may be stated that the Pacific Rural Press issues it from a printing plant exclusively its own. In early days it had joint ownership in such a plant. More recently it has been the largest periodical job of any of its class which contracted printing from the large printeries of San Francisco. Our last issue came from our own establishment as does this one. It is something of a stress of course to print our largest paper ever with our own wheels which have hardly yet learned which way to go around, but some theorist has declared that the best way to learn to swim is to jump into deep water and we are trying it that way. The reader may expect more force and beauty in our stroke a little later!

SWEETNESS LONG TRACTORED.

Some readers have claimed that our editorial expressions are long drawn out. Such a thing is obviously proper in an issue devoted to tractation. And when we get that concession from the critic we shall further insist that everything in human life comes by drawing—all the way from milk to hard cider: or at least has and will come that way until prohibition dries up the old deacon's delight. In fact, the life of a man is a long-drawn affair. Before he attains auto-mobility he is drawn feet-first under tall posies, blinking at sun-rays and grasping at butterflies. During his youth he usually must be violently drawn at dawn from seductive couch to productive duty. A little later society draws him out. Later still his sweetheart has frequently to draw the all-important question from him: his country draws him to public service both in peace and war. For two or three decades proper pride in his job draws him to his greatest accomplishment, and afterwards his dentist draws his moldering molars to draw the rheumatism out of him. Finally he is drawn again feet-first to his long repose beneath the pines and palms. In all this course of three score and ten, and then some, man does best by being tractable. First and last he has to be, and, intermediately, that man does best who learns to be—tractable. The man who leads in any community is the reasonably tractable person. The intractable person is a burden to himself and to the community—standing athwart the path of progress or digging pitfalls for all who honestly try to follow it.

And, in this week's connection, who is the tractable person? Evidently the person who allows himself to be drawn to a careful study of the new relation of mechanical power to the pursuit of crop production, which has arisen. Of what avail to himself or to the State can that man be who remains intractable after we and our tractor patrons have spread out before him in this issue pages of tractoring which fall only one number short of the roll-call of Heinz's pickles? It is surely evidence of tractability if every reader will carefully consider all the suggestions which we make this week of tractor suitability and availability from the point of view of his own farm requirements or of co-operation with his neighbors to secure the advantages of this new field power, or to meet the opportunities for custom-tractoring in his district by the ownership of a good outfit kept in good order for contract work—for tractors have come not only to stay but to multiply and their quality is that of California farming.

TRACTORIA.

On another page of this issue Mr. Fox very forcibly emphasizes a great need and a great opportunity in his advocacy of making skilled repair-service and supply of extra parts available in sections where tractors are being used—which means practically everywhere in the country. It is not necessary to try to add anything to his insistence that for the saving of time, money and good dispositions and to reduce the current use of profanity, tractorians must have local service and materials. He might perhaps have said more about the opportunity for good country mechanics to extend and specialize their knowledge, to fit up their shops with a higher order of machine-tools and to make much more money with less risk than they ever did in nailing signs of good-luck to the hind feet of unwilling mules. For we really see in the local tractor doctor, an apotheosis of the country blacksmith. It may be rather hard on the poets and artists who have, for many generations, relied upon the ring of the anvil and the leathern apron of the smith to give music and picturesqueness to their creations. It is up to them now to sing and paint of better farming and they must set their meters to the staccato chug of the tractor and take their colors from the drivers' oily jeans. The farming world can no longer brook the inefficiency which pleased the poet

—a smith stands with his hammer thus,
The whilst his iron did on his anvil cool.

The smithy where the roadways cross must become a rural machine shop—a mechanical clinic where all the ills which tractors are heir to may be quickly set right by men with skill and understanding who will write a new sign-language above their resourceful resorts, thus:

Tractorium!
Smith and Sons

or perhaps more effusively:

Tractoribus!
Jones & Robinson
Specialists in Tractorial Pathology.

It will be a great uplift for the rural mechanic and his profit will keep even pace with his social advancement—which will be all right for he or his sons must go to tractor schools and his outfit and stock will require much more capital than a hammer, a sack of coal and a few dozen horse shoes. And he will be entitled to his wider margins because a tractor, idly waiting for repairs, is as great a vexation and loss to a community as a tipsy doctor or a gossiping postmaster. The tractor will surely draw our rural mechanical affairs to a higher plane.

TRACTORS AND STATE DEVELOPMENT.

In the Pacific Rural Press of August 19, 1916, we gave the results of a careful study of historical records showing how California had contributed to the evolution of the tractor in her very early efforts at steam-plowing and steam-wagoning. It is pleasant to remember that though Californians are now using abundantly tractors of all distant designs and manufacture, our own inventors did make a very early "ante" in the tractor game and have played it to the present time with distinguished success—even to the production of a new "army worm" to help clear European fields of the pestilential weed-growth of militarism. As California made this and other original contributions to tractor evolution, she feels all the more entitled to welcome the good work of all other states in tractor design and construction to make contribution to her own state development. And such contributions are really notable, both directly, in the work they are now doing in our crop production, and indirectly, in the fact that the availability of tractors is now creating a new demand for productive lands and a new disposition to make investments in enterprises undertaken to increase and diversify California crop production.

Thus the tractor becomes not only the tool of development, but the incentive to development. The large purchases of land being currently made for subdivision and colonization are conditioned upon the availability of tractors for breaking up, road building, ditch building, the inbringing of irrigation water and other inprovements which are now seen to be rational preparation for settlement. Location of settlers upon raw land, and leaving each to match his map to his part of the wilderness, is now recognized as an irrational proceeding. And the tractor is also guide and compass to those who are now buying large tracts of idle land to enter upon farming, with sufficient courage and capital, on their own account. Thus the tractor becomes a part of the foundation upon which the increasing value of good land in Cali

fornia rests, and we are inclined to believe that it will be the chug of the tractor and not the lamentations of the single-taxers which will draw out all our capable lands to assume their proper share of the burden of taxation.

TRACTORS BEAT THE CHEMISTS

All life upon the earth depends upon the power of transforming minerals, first to vegetable, and then to animal tissue. All efforts to merge the mineral directly into the substance of the higher animals have wretchedly failed, and the most conspicuous demonstration of this fact is seen in the failure of the German chemists in that direction—their most elaborate synthetic compounds merely shunted their confiding constituents upon the sidetracks to debility and imbecility. But there is an agency by which the mineral can be transformed into a maximum of animal food, the inorganic into the organic, and that agency is the tractor. By matching the power of petroleum products with the fertility of the soil this maximum of food is attained—not alone by cheapness and thoroughness of tillage, but by the saving of the fraction of vegetable growth which has been hitherto required to produce and sustain the nerve and muscle of the draft animals which were the motive forces relied upon. Every mule in the world worked first to produce his own ration, for he could give his owner nothing until this was assured. Quite otherwise, the tractor takes its food from the firmament under the earth—leaving every pound of elaborated surface product for the direct feeding of mankind or for the feeding of animals which waste nothing but give the full equivalent of their sustenance in flesh, milk, wool, hides, hair, horns, etc., and the multiplication of their kinds, all of which man depends upon for his growth, his civilization, his intellectual achievement and his advancement in godlike morality. Thus the tractor and all the host of agencies for direct transformation of mineral into vegetable substance, which the tractor symbolizes, become an assurance that mankind will never lack for food while the world lasts. The chemist falls down on his job: the tractors takes it up!

WHAT WILL TRACTORS GO WITH?

But some far-seeing pessimist will shout: "Hold on there." Will not the bowels of the earth be pumped dry of rock-oils in due time? Oh, ye of little faith, they surely will, but what of that? When the oil-fields run dry, when the volcanoes have shot their last blast of explosive vapor and the submerged parts of continents have bubbled up their last liter of marsh-gas, who can tell how many million years it will be before the dynamos will have ground their last kilowatt from the aerial envelope of the earth for electric tractors are simply waiting some slight break in the availability of gas-tractors to take up the burden. But one does not need to wait for, nor wholly depend upon, such radical changes in the propulsion of tractors. Very soon perhaps there will arise a competition between the waste products from the center of the earth and the waste products from the surface of it. Everything which will yield alcohol by fermentation becomes the potential slave of the tractor. This breaks the dream of the enslavement of the mineral which we have been indulging in, it is true, but it is also, perhaps, the assurance against exactions on the parts of those who own or control the mineral explosive substances. There may arise, if it is not already in sight, a competition between utterly waste organic substances, those from the earth and those of unknown origin, like electricity, which will not only force the tractor to make tracks for us, but make them ever more cheaply. It becomes then merely an economic question as to what will make the tractor go in the future. As to whether it will go, perhaps forever, is no question at all!

A BETTER POSITION FOR YOU

This is your big opportunity. We need a few more red-blooded, dead-in-earnest men to take care of our renewals and present the paper to those who are not already subscribers.

It is pleasant, healthful work, and the opportunities are unlimited. Lack of experience is no barrier. No investment necessary, except that you must have an automobile.

Permanent work; straight salary, with advancement. Write us a little about yourself we'll tell you about this opportunity that you can't afford to overlook.

QUERIES AND REPLIES

By the Editor.

Inquirer Must Give Full Name and Address.

Slow Start of Pears.

To the Editor: I send cuttings of my young pear trees. What is the matter with them? Some branches are well developed with leaves while others are just like the ones I send. The trees are two to four years old and are all more or less affected. A neighbor of mine says they are only slow in coming out, but it does not look that way to me as some trees are entirely nude and some are full of foliage with the exception of a branch or so. The soil is all the same.—J. G. G., Geyserville.

Your specimens do not show anything but backwardness probably due to lack of heat to induce greater activity. The buds are starting in a healthy manner now, the inner bark shows no discoloration and the outer bark is smooth and clean. There is some blister mite on some of the unfolding leaves and a little sulpher blown in might check that, but it has no relation to the slow start of the leaf-buds. With good growing weather the trees may be expected to leaf out all right.

Wants Red Spiders to Stay Dead.

To the Editor: For my almond trees I bought a power sprayer in 1916 and got good results for that season. They appeared again in 1917, and in 1918 were as bad as ever, so last December I sprayed again. I understand that red spiders go in the ground during the winter months and come up again when the weather gets warm, etc. Is there no thorough cure for this pest? I have used sulphur and other sprays. What is the latest and most effective formula to destroy red spiders?—J. T., Tracy.

It is true that the red spider has ground connections, but it is not true that it is dependent upon wintering in the ground. Its eggs are freely laid on the tree and the pest goes through the winter in the egg-state on the tree. The first attack on is winter spraying with lime-sulphur to kill the eggs. The second and perhaps later attacks consist in using fine sulphur dry, or sulphur sprays or other insecticides which do not injure foliage when hot weather begins and later to prevent the pest from multiplying enough to injure the tree. There is no thorough cure for the pest because you cannot possibly kill them all. It will keep coming and you have to keep hitting it as hard as you can.

Northern Limit of the Garbanzo.

To the Editor: Will the garbanzo bean yield well as far north as Pomona, and what do they yield per acre?—R. W. M., Chino.

The garbanzo is more of a pea than a bean and its uses are also that of a dry pea—that is in making soups—and it is chiefly used in America by people hailing from Mexico and South Europe—to which countries our chances for export chiefly lie. The California product is not large and the greater part of it comes from 500 or 600 miles north of your district. The yield may be about the same as that of the pink bean, but it may drop much lower as it is much more fastidious in its requirement of growing conditions. As its uses are narrow, it is very subject to price fluctuations.

Black Aphis of the Peach.

To the Editor: I send peach twigs which carry some kind of an aphis, I think. They start on the lower limbs and work up rapidly. Please tell me if they work only in the spring or all the year? Is there danger that they will spread all over the orchard? Is there a spray that kills them?—S. S., Kingsburg.

You have a bad infestation of black aphis of the peach, which is a permanent pest because it lives also on the roots of the peach, but has not usually proven a bad root pest if the infestation of the leaf form is kept thoroughly cleaned off. This is done by the use of soap and tobacco spray driven on hard with a power sprayer—just as is prescribed for the leaf aphis of the apple and plum. It should be started at once and repeated to kill later comers. The insect is active on the top-growth during the spring and early summer—after that on the roots. Practically the only trees infested are peach and other fruits growing on peach roots.

Corn Stalks and Bean Straw to Feed Grain.

To the Editor: What is the best soil renovator that can be planted with maize after a crop of potatoes?—How would be best to plant, at the same time with corn, or later? Would beans be as good to improve the soil as cow-peas, velvet bean, broad Windsor bean, etc? I intend to plant with corn and in Fall gather the ears and plow the stalks and the soil renovator under, and sow oats or barley. I am a new man in California so I will thank you for advice.—C. J. T., Shafter.

The superiority of one legume over another for soil renovation is determined by the amount of growth they severally make. There is practically no difference in the composition of the stuff they furnish you and the one which will do your soil most good is the one which will make most stuff under your growing conditions. Of course another important condition is which one will give you most crop to sell either green or dry and at what prices, but you do not include that consideration. The beans can be put in later than the corn if you have anything to gain by it. "Whether you will get much oats or barley with the soil full of corn stalks and bean straw depends upon whether your soil is light or heavy, and whether you have rainfall or irrigation to rot the coarse stuff before you sow the grain. If you can plow under early and safely sow the grain late there will be time enough to accomplish that—if there is moisture enough to make the time useful. Your proposition will be simpler if you have stock to turn in after you gather your corn ears to turn the rubbish into manure.

Potatoes After Alfalfa.

To the Editor: I have four acres of alfalfa that I intend to plow up next fall. Would it be all right to plant potatoes on it next spring? Some say the tubers would be bad.—C. J. T., Shafter.

Potatoes will come all right after alfalfa if there is interval enough to decompose the alfalfa wastes before planting the potatoes. De-crown the alfalfa by shallow plowing with a sharp plow and later plow deep, turning under the surface wreckage. This will prevent much of the re-starting of the alfalfa from long root taps. Disk the surface in the interval between the deep plowing and planting as may be necessary to kill some restarts of alfalfa, weeds, etc. Open furrows for the potato seed to the proper planting depth, according to character of the soil and the season. This will give you plenty of good spuds.

Relative Blooming Dates of Fruits.

To the Editor: I have never seen a complete list of the comparative blossoming times of deciduous fruit trees. Would you care to publish one? Comments upon the stickativeness of various settings would be interesting. For instance, I would say that the Climax plum is very easily damaged by frost, and that the Gaviota will stick through anything within reason.—H., Loomis.

Such observations are obviously the work of institutions not of individual growers nor of editors, because the institution can grow wide collections of varieties and can afford to pay observers to keep such records both of which would wreck a commercial grower. The California Experiment Station has in past years published such records, but they quickly lose practical interest because they do not include the newer varieties which are the ones which the grower generally has keenest interest in. We presume such records are being kept in the orchards on the University Farm, and publication of data on blooming and ripening dates at rather short intervals would be of much service as you suggest.

California Weather Record.

The following rainfall and temperature record is furnished the Pacific Rural Press by the United States Department of Agriculture Weather Bureau at San Francisco for the week ending at 5 p. m. April 22, 1919.

Stations—	Rainfall: Past Week	Rainfall: Seasonal To Date	Rainfall: Normal To Date	Temperature: Highest	Temperature: Lowest
Eureka	1.68	38.12	41.56	64	48
Red Bluff	.08	26.37	22.81	82	46
Sacramento	.03	17.17	18.57	74	46
San Francisco	0	25.64	20.98	68	48
San Jose	0	18.82	16.80	74	36
Fresno	0	8.74	8.63	84	48
San Luis Obispo	0	17.81	18.91	74	44
Los Angeles	0	8.22	14.92	80	52
San Diego	0	8.10	9.43	74	54
Reno	.01	8.32	9.19	74	32

Choose a Tractor to Pull You Out of Debt

Written for Pacific Rural Press by R. E. Hodges.

Did you go to the Panama-Pacific Exposition and then try to tell your friends all about some certain thing you had seen there? Were you able to remember every detail you wanted to tell? Didn't you wish you had taken notes so you could be sure of your facts and figures and so you could recall plainly the details of some of the things? Well for noise and rush, the Panama-Pacific wouldn't hold a candle to the California Tractor, Truck and Implement Demonstration to be held near Sacramento May 6 to 11.

Your object in going to the Demonstration is either to select a tractor or a motor truck or some tractor implements, or to learn the latest developments, or to have a picnic. You can do all three and be better off for it if you farm ten acres or more. You can do all three and be practically no better off if you come away with an impression simply of magnificent buzzing confusion. You will have missed a specific traction education if you do not look and ask in detail all about each tractor, truck or implement likely to fit your work.

It will cost a little to attend the Demonstration; but with proper planning, it will be one of the best investments you have ever made. The planning will include early elimination of all tractors, trucks and implements not suited to your conditions. Then you will not waste time getting details on these, but will need all of your time to investigate the likely ones. Whatever farm conditions you have, you will find several suitable machines at the Sacramento Demonstration and the hours will slip fast as the attendants explain.

Unless you take notes, you will waste time chasing back to refresh your memory about various features; and after it is all over your memory will get the equipment and price of one mixed with those of others.

Ask Details of Likely Machines.

A pump user recently told the writer that he bought from the first salesman who came along, because he was the first one and because he said his prices were as favorable as any and his pump the best made.

Don't buy the first tractor you look at until you compare its equipment and work with the rest of its class.

Get a pocket notebook 3x6 inches or larger. Clip the following questions and add others of your own. Do not paste them into the notebook but keep them loose so you can move them from page to page. Write the answers under the name of each tractor you ask about. Do it while you are talking. You can't depend on your memory. It will not be embarassing to take notes at the time, and it will tend to make your informant more conservative in his answers. The writer has followed this practice several years interviewing farmers, tractor men, and other business men.

If you don't have the questions handy, you will overlook some, and later will wish you hadn't. Get the general questions first and the detailed questions next. The general questions may eliminate some machines that look good to you at first.

Ask the attendants freely. They are paid to answer all questions and are glad to do it. You place yourself under no obligation to anybody by asking all the questions that pertain to their exhibit and your conditions. Do not weary of repeating the questions to each exhibitor, and do not pass a question just because you are already satisfied in regard to it. You will dig up a lot of new facts and viewpoints by simply repeating the questions to numerous tractor, truck and implement people.

A suggestion of questions to ask is given below. It will be supplemented by others of your own.

QUESTIONS TO ASK EXHIBITORS.

Is your machine suitable for my conditions?
How big a machine should I get, or should I get several small ones?
In what respects is yours superior to others?
What is its height, length, and breadth over all?
What is its drawbar pull in pounds?
What fuel does it burn and how economical is that?
How much experience is required to really drive it right?
How long will your machine last at my work with reasonable care?
What kind of service can you furnish if I get in trouble?
How promptly can I get repairs?
Do you advise using the tractor night and day during rush seasons?
How much time per day will be necessary to inspect, grease, oil, and repair it?
What new implements should I get for use with your tractor?
How economical is your tractor for belt work as compared with a stationary gas engine or electric motor?
How convenient is it to set for stationary work?
Is your machine comfortable to ride on all day long?
Is it easy to turn? What is the diameter of the smallest circle it will turn in, measured from the outer tracks?
What is your system for steering?
What chance is there for dust to get into the bearings or crank case? What chance for dirt to get into the various gears?



Pulling a corn binder with elevating attachment which loads the corn directly onto the rack.

How is the frame hung on the running gear? What strain does it get in driving diagonally over irrigation checks?
How much does the whole tractor weigh?
What are the dimensions of the wheels or bearing surface of the tracks?
What is your system of wheel or track-widening or extra lug equipment for sand and mud?
Where does the plow-pull come with respect to the center line of pull on your tractor? What are the features of your drawbar hitch?
Will normal plow-work create a side draft?
Is it designed to run one wheel or track in the furrow?
Is it desirable for my own comfort or to avoid strain on the tractor to level it by some device when one wheel or track is in the furrow?
What are the speeds your tractor is designed for?
What speed do you recommend for plowing my soils?
What is the name and type of your motor and its advantages over others?
What improvements have you put on your tractor the past year?
Will you trace the power for me from the engine to the wheels or tracks?
Show me how your clutch and transmission work
What are the advantages of your system of applying power to the wheels or tracks?
How do you get at the various working parts for adjustment or replacement (a) crank shaft, (b) pistons, (c) transmission, (d) lubrication facilities, (e) main bearings, (f) minor bearings?
What sort of bearings does your tractor have on (a) main axle, (b) other shafts, (c) crank case, (d) other parts?
Is it easy to start the engine on a cold morning? How do you do it?
Do you supply a magneto? What kind? What are its advantages over others, and over other ignition systems?
What sort of lubrication is provided for internal parts? Is it easy to tell whether it is working or not.
How is the engine cooled; capacity of radiator, pipes, and jacket; cooling surface; geared or belted fan?
What sort of governor does your engine have; how is it adjusted; how does it work?
How much does your tractor cost f. o. b my own station or your shipping point?

The writer doesn't really believe you will ask all of the above questions or that you will record all of the answers. You will know more and select more intelligently if you do. Herein you will get more of a tractor education than you can get anywhere else in ten times the same time.

Program and Exhibits.

The forenoons will be chiefly dedicated to the awe-inspiring general exhibitions of plowing, in which one tractor of each size make will take part for two hours, 10 to 12 a. m. You will see a great deal more in the performance of the various machines you have asked questions about, but you will not have time to inspect carefully the performance of many more than the ones in which you are particularly interested. It seems unfortunate that the suggestion of having all machines of a size plow together will not be carried out, so you may have to cross the entire field to see a certain job.

Tricks in Operation.

There are tricks in all trades and there are a few minor ones for you to look out for in the general demonstration. A driver who wants to make a big or fast showing may set his inside plow bottoms shallow with the outside bottom deep enough to make the open furrow look like good work. He may have to monkey with imaginary plow troubles while his engine cools. He may cut a very narrow furrow on the inside; or he may plow at less depth at the far end of the land. He may overload his tractor in order to make a big showing; but he won't deserve much credit for that. Notice how the tractors handle and turn. Notice how the implements work. Do not judge the tractors by the order in which they finish their plots, but by the work they do.

Afternoons will be devoted to private demonstrations, inspection of tent exhibits, questions about all of them, and to the daily lectures on tractors and implement subjects by Prof. J. B. Davidson and others. This is the time to get in your questions, or else come in the early morning.

Motor Trucks.

A big tent is to house the motor truck display. Motor trucks are logical supplements to tractors for motorized farming. The tractors multiply production; and the produce is to be marketed on motor trucks most economically in many cases—probably in your case. Whether you expect to buy a truck or not, be sure to have talks with at least half a dozen truck representatives regarding the possibilities and costs for your conditions. You may find joy in a motor truck.

Latest and Best Implements.

Implements of every kind including many you have not seen before and equipped with devices you had not dreamed of will be on display in the various exhibitors' tents. You will be wonderfully interested in them if you will only feel free to ask lots of questions. Do not fail to watch the various implements at work in the private and genera demonstrations. You are likely t see something that will make yo money; or you may want to bu something during the year, and yo will be glad you had a good chanc for comparison. Look also for th various farm machinery that may b operated by belt from a tractor There will be a specially good dis play of this in the various tents.

Accessories and Accompaniments.

One or more large tents will cove all sorts of the latest and of th best devices to make tractor wor easier or more efficient. Th troubles you may have had if yo are an old tractor driver have bee the study of service men. Mos likely inventions have been worke out to relieve the difficulties. Man of these you will find already inco porated on late models of tractor and you will be well repaid for in quiring about them.

Accommodations.

Free admission to everything an free exit from everything except e cept the jitneys and the speciall equipped restaurants whose ma agement have profited by previous e perience, so they will this year su ply eats most promptly. Bulleti boards will direct you to the ma chine or tent you want to see. Wat will be provided if it tastes bett than other non-intoxicating beve ages that will be on sale. The fie is about two miles on a boulevar from the S. P. station of Ben A and busses will carry passenge from this point as well as from Sa ramento. The capital city is s miles away by either of two pav highways. You may camp near t Demonstration grounds or room Sacramento whose hotels will ha have just lost the patronage afford by the Legislature and its attache Early reservations may prove mo fortunate. If you come for som thing besides a picnic you will t home a gladder and wiser man.

THE TRACTOR SINGS.

[By S. A. Buchanan, Boulder Cree Cal.]

From the fling of the hills to the d
of the sea—I come! I com
Wherever a plow marks a path on t
lea—behold, my home!
From threshing the wheat on t
vision-wide plain
To marketing wood in a wall
mountain lane,
From city to desert, for eve
man's gain,
I come! I come!

My use is as wide as the ranche
broad need—my back
strong.
Pump water, cut wood, plow, harro
drill seed—day and night lo
I fill up the silo, run mower, sta
hay,
Prepare, plant, and harvest, th
haul crops away.
No hurry, no worry, I make t
ranch pay
To the lilt of a song.

Yet that's but a starter of what I
achieve, my obvious chore
My full purpose reaches, if you giv
leave. A more treasured stu
I can husband, a crop as essenti
to you
As the blood to your veins, or
moisture to dew—
It is time, man, I save—I sa
time for you!
That's my real chore.

On every ranch, since the day of
birth, I'm the factor
That dominates time-saving o'er
the earth, I the tractor.
The care of a horse now te
cow and calf,
Farm work's done on time
done better by half,—
If at weather and chores you w
spring a horselaugh,
Buy a tractor.

Tractors Coming Like a Whirlwind

[Written for Pacific Rural Press.]

S TRACTOR FARMING SUCCESSFUL? Broad question involves all kinds of soils, all sizes of farms, all sorts of operations. Your own answer l be unavoidable when you see the ictor, Truck, and Implement Demtration at Sacramento May 6 to 11. anwhile, we propose to amaze the mers who have told us that tracs on big ranches are all right, but t they are not yet a proved sucs for small farmers. Look below the amazement!

lanufacturers of the United States 1918 made 132,697 tractors as rned in a special investigation of U. S. D. A. Office of Farm Equipnt Control. Of these, 123,483 had elt horsepower rating of 16 to 26 sepower. As the drawbar rating rages about half the belt horseer, 93 per cent. of all the tractors de in the United States in 1918 e rated to pull eight to thirteen se power at their "whiffletrees." hese were made to sell. That they sell and did give satisfactory ser- is indicated by the plans of manacturers for 1919 as reported in the ie investigation. Of the total estited production of 314,936 tractors 1919, the folks who make tractors ell believe the demand will be over per cent for tractors pulling ten or ven horsepower at the drawbar. y believe that over 78 per cent. of demand will be for those rating ht to thirteen horsepower at the wbar. They are not building these chines out of mere fancy, but we y be sure they have studied carey the demand of last year and the bable demand next year.

While gas tractors have been used a decades on large ranches and are re generally acknowledged in their t fitting sphere, only seven-tenths one per cent. of all the tractors de in 1918 were rated at 60 horseer or more on the belt.

spects for Increased Tractor Use.

re we likely to get an oversupply tractors? What are the limits of rease?

While the average-sized farm has reased due to use of tractors, the ual number of farms also has in-

Number of Tractors Manufactured Doubles Every Year.

Is tractor farming profitable? The best evidence of the profitableness of any practice is its rapid increase in popularity. The best evidence of the profitableness of any machine is a rapid increase in the demand for it. The way farmers have demanded tractors in recent years as indicated in the table below will be a revelation to most people. An investigation was made by the U. S. D. A. Office of Farm Equipment pursuant to President Wilson's proclamation of May 14, 1918, by authority of the Food Control Act. The 1919 figure is the total of estimates made by manufacturers for the present calendar year.

Tractors Manufactured in U. S.

Year	Number	Year	Number
1916	29,697	1918	132,697
1917	62,742	1919	314,936

In California, Prof. J. B. Davidson of the Agricultural Engineering Division, University Farm, advises us that July, 1917, the State Council of Defense found they could trace a few less than 4,000 tractors. Statements secured from dealers and manufacturers indicate that 800 tractors were sold in the last six months of 1917 and 2000 in 1918. This would make a total of about 6,800 tractors in use in California at the beginning of 1919.

The Pacific Rural Press has asked tractor dealers to report the number of their tractors in California to date. Replies from nineteen of them total 9,509 with sixteen not yet reported. This shows wide variance from the total given above.

creased due to subdivision of large estates, opening of irrigation and drainage projects, homesteading, and the like. The 1900 census showed 5,737,372 farms in the United States and the 1910 census showed 6,361,502. Probably the nine years since then would show an increase to at least 7,000,000 farms, on which something less than 225,000 tractors have been placed in the past three years

In California there were 72,542 farms in 1900 and 88,197 in 1910, an increase of 21.6 per cent. Of the 88,197, there were 45,058 over 50 acres in extent. With our rapid subdivisions, there are well over 100,000 farms already in California; and with the numerous projects for subdivision now proposed, including $11,000,000 for the State to spend on this activity, we may look for more rapid increase in the number of farms in the immediate and more distant future. In the ten years, 1900 to 1910, California farms of ten to nineteen acres increased in number by 44.9 per cent; 20 to 49 acre farms increased 57.2 per cent.; 50 to 99 aere farms increased 32.4 per cent.; 100 to 174 acre farms decreased 8.9 per cent., 175 to 259 acre farms increased 1.2 per cent., and the number of farms of larger sizes all decreased. These figures show a very good reason for the high percentage of small and medium-sized tractors being manufactured. However, in 1910 there were 45,058 farms over 50 acres in extent. As there are many farms of only ten acres in California which have found small tractors more economical than horses, it may be seen that it will take several dozen machines yet to fill the field.



Tractors are doing almost all operations in grain farming these days from plowing to harvesting. This one is pulling two binders.

DRAWBAR PULL AND HORSEPOWER.

It is becoming quite common for tractor dealers in California and elsewhere to submit their machines to dynamometer tests for drawbar pull in pounds. Then they publish the results in that form, and it is probably the best way of comparing the pulling power of various machines. At the same time, not everybody knows how to translate this into commonly used terms of horsepower, which varies according to the speed at which the tractor is run. We give the formula for such a translation. Let P equal the pull in pounds, S equal the speed in feet per second. Then P times S divided by 550 equals the horsepower exerted. Two and a half miles an hour equals 3⅔ feet per second. If the tractor has a pull of 1,500 pounds and plows normally at 2½ miles per hour, 1500 times 3 2-3 divided by 550 equals its drawbar pull, which is 10 horsepower.

Tractors Exert Least Pressure Per Inch and Per Acre.

[Written for Pacific Rural Press by R. E. Hodges.]

eeing the very considerable weight a tractor, many people believe that exerts injurious packing of the und; and some tractor users have n told the writer that they could its effects on a succeeding crop ere the seedbed was harrowed by ctors running over freshly plowed und. Such packing as it does will a benefit or injury according to the d of soil and the condition it is in. assuming a kind of soil on which king is not desirable, let us figwhether it gets more packing h a tractor than with draft stock. is rather difficult to figure the king effect of wheel tractors, but ck type machines are easily found exert four to six pounds of weightssure per square inch. Weightssure is found by dividing the bear- surface into the weight, and the viest machines show not over six nds pressure per square inch. l-pressure totals the same for ner draft stock or tractors, but is per square inch as shown below. ow, if you think that the follow- theoretical way of figuring the ssure exerted by horses or mules not a fair way, it won't take you g to figure it your own way. In a ent trip through the San Joaquin ley we saw several teams plowing. n horses or mules were hitched in rs tandem and pulling about 60 hes of plows. Now a 1200-pound rse has a foot that will perhaps rage six inches across. This gives an area of about 28 square inches. a horse while walking has all of his weight on two feet only at any given time, his 1200 pounds are resting on about 56 square inches. He is exerting over 20 pounds per square inch.

Now, if the ground is in packing condition, it is getting good and packed as compared with what a trac tor would do with four to six pounds per square inch. But we don't notice the horse's packing, for it tends to make clods, and clods are too common to distinguish their sources. Some draft animals step into their own front tracks with their hind feet. This only makes the clod worse, but if they don't we have the pressure at every step. The plows mentioned above turned over about one acre per mile and a half of travel. As each foot is put down once for every four feet forward progress of the animal, (for the sake of figuring) we have four times 28 square inches of land on which the 20 pounds pressure is exerted for each four feet of forward movement. With ten animals, we have that much pressure exerted on 1,120 square inches for every four feet forward of the gang plow. To plow an acre, we have the horses exerting a pressure of 20 pounds per square inch on 2,217,600 square inches.

We have in mind an eighteen d.b.h.p. tractor, which pulls five plows. Its tracks are twelve inches wide. These exert 4.6 pounds per square inch on two strips a foot wide and 1½ miles long to plow an acre. The strips on which this pressure is applied have an area of 2,280,960 square inches. Now do you prefer the horses' pressure of 20 pounds per square inch on 2,217,600 square inches per acre plowed, or the tractor's pressure of 4.6 pounds per square inch on 2,280,960 square inches per acre plowed? A similar proportion would hold with harrowing, but with the advantage that you can hook some extra cultivator teeth behind the wheels or tracks of a tractor to dig dirt deeper than the harrow would penetrate and thus put it in as fine or finer condition than the rest.



This tractor, pulling five big plows, weighs 9,500 pounds, yet it exerts less than five pounds pressure per square inch as against about 20 pounds per square inch exerted by an ordinary horse.

TRACTORS INCREASE YIELD PER MAN.

Displacement of hired men by tractors was more noticeable than displacement of horses in an investigation by the U. S. Dept. Agr. made on 250 New York farms where tractors were used An increased yield per acre and a decidedly increased yield per man were found.

Buying Tractors with Other People's Money

[Written for Pacific Rural Press.]

The way tractor buyers are financed in these days is quite generally expensive for the farmers and unsatisfactory to the tractor dealers. There are two or three general methods by which tractors are sold now, and there is one way by which tractors might be sold much more greatly to the financial advantage of the buyers and greatly to the satisfaction of the sellers, though it is not much practiced in California now. One system of selling tractors takes about the following path. The farmer pays cash and gets about the lowest price with cash discount and saves interest. He buys only from well established responsible dealers or manufacturers who are in the business to stay, and whose guarantee is backed by a good reputation in the community, and strong financial standing. This is the most satisfactory way where the farmer can get cash. Not always is the cash available, and this is the phase of tractor buying that we wish to discuss.

Under one system of sales the farmer makes a cash payment with the order and gives notes for several deferred payments. These notes are given to the manufacturer or to the dealer. The dealer is seldom able to carry them, and he either turns them over to the manufacturer or to a banking institution. It is said that in general, under this plan of buying a tractor, the price is made about 10 per cent higher than the cash price, and in addition the farmer pays 8 to 12 per cent interest on the deferred payments. The Pacific Rural Press does not like to see this injury done to its readers, but we cannot blame the dealer who requires the extra price to cover his risks. These risks will be discussed below.



This shows how a tractor can pull up hill. Judge the steepness by the man standing.

Extra Charge for Banking Service.

We suggest that every tractor buyer should inquire not only the price under which he can buy on deferred payments, but also the cash price, and find this out for himself in each case. This deferred payment system really makes the manufacturer undertake banking functions which in the case of almost all manufactures is hardly possible to do. For this reason the notes given by the purchaser to the dealer or manufacturer are frequently discounted at some bank. One such system we have looked into in some detail. We find that not only is an 8 per cent interest charge on deferred payments required, but 12 per cent interest is charged on all installments overdue, and a service charge is always made as sort of a bonus to the banking institution. This service charge varies from 60c for one month on an installment of $100 to $225 for an installment of $3,000 due in twelve months. Even with this service charge plus the interest and plus the extra charge made by manufacturers for the deferred-payment sale the manufacturer is required to get a full statement of the purchaser's financial assets and liabilities for the use of the bank, and must also file with the bank a statement of his own financial condition. In addition to this the bank required that the tractor must be insured at the buyer's expense in favor of the bank for at least the full amount of deferred payments. This insurance must be in some company approved by the bank, and at a rate of $1.10 per $100 of insurace on tractors and certain other implements. It is easy to see who pays all these charges. The dealer, of course, must find out under what system the buyer expects to make payments. He then figures on all of these extra charges and adds them to the cash price of the machine, and the farmer pays. It is unfair to the farmer and of no benefit to the dealer. In fact the added price tends to reduce sales and thus works to the disadvantage of the seller.

Dealer's Price Covers Risks.

Another serious objection to this system has been found in practice. As one dealer of twenty years' experience says: "All kinds of machinery works better after it is paid for." It has been found that when machines are bought on deferred payments the buyer in a large number of cases is more or less careless about taking care of them. Whenever anything goes wrong, especially with inexperienced operators, they telephone to the dealer immediately to send out a man in a hurry to fix the trouble. The man in most cases finds the trouble due to faulty care or operation; and in that case the dealer feels that he is entitled to the cost of sending the man out. The buyer, however, objects to paying the charge for this service, and the dealer is unable to compel him to do it except by recourse to law. The buyer threatens not to pay his next note if the dealer compels him to pay the service charge, regardless of who is to blame for the trouble. The dealer in order to keep his good will and to save his business from disastrous effects of the "knocker" stands the imposition. It is like the farmer who refuses to pay notes given in payment for a cow which afterward bloats and dies.

Wherever this system of selling tractors is carried out, the dealer, of course, realizes the conditions ahead and adds a certain amount to the price in order to cover these supposedly free-service expenses. The farmer who conscientiously cares for his machine and fair-mindedly is willing to pay for all troubles not guaranteed against in the contract of sale, pays the same extra charge as the sort of buyer referred to above. Here is an unfairness also.

AT TEN O'CLOCK



The Hour of The Tractor

You will do well to come to the tractor demonstration to see the different kinds at work; to determine for yourself which is best for your farm. Seeing is believing.

Half a hundred tractors, big, little and in between, all in action, doing what you want them to do on your farm.

And there are the plows, harrows and the implements you will want to see hauled by the tractors. Come! Observe what is going on. Make up your mind which is the best for your soil and your farm conditions. Seeing is believing.

TRACTOR DEMONSTRATION

Sacramento, May 6-11, 1919

Virtually every type of tractor manufactured will be there.

You will see these tractors in demonstration doing just exactly what they will do for you on your farm.

In addition, representatives will give you definite information—tell you cost of operation—capacity—details on construction and other things you should know.

Tractors will be in action, plowing, harrowing, sub-soiling, leveling, checking , pulling various kind of tractor-drawn implements—everything that tractors and tractor-drawn implements will accomplish successfully.

Free Admission. Free Auto Parking.
Free Camping Grounds Nearby.
Excellent Restaurant Fully Equipped.

Additional Information Upon Request

CALIFORNIA TRACTOR AND IMPLEMENT ASSOCIATION

Membership: 77 Tractor and Implement Manufacturers and Dealers

HOTEL LAND SACRAMENTO

Cheapest to Pay for What You Get.

We have in mind one firm which has been in business since before the writer was born, but has only recently undertaken the sale of tractors. In their previous experience with other farm implements and machinery this firm had been big enough financially to take care of deferred payments, generally because the amounts were much smaller than in the case of tractors; but in times when they could not handle as many of these notes as were offered for deferred payments, they simply put up some of them at the bank as collateral for loans with which they financed the rest. This plan is still in operation on other machinery; but when they undertook tractors it was quickly seen that too much money was involved; consequently, they have made it their policy to inform the prospective purchaser as to their claims for the tractor. When the prospect is convinced that the tractor is what he wants, provided it comes up to their claims, he pays down a cash installment with his order. This shows his good faith. When the tractor arrives in good shape and is demonstrated on his own ranch proving satisfactorily that it comes up to the claims made by the seller, the farmer "has bought it" and must pay the rest of the money down. This firm guarantees the tractor against all defects of workmanship, for the life of the tractor. Such defects almost invariably show up within one year of the date of sale, so the guarantee is as safe for ten years as for one, and is more pleasing to the buyer. The tractor belonging to the purchaser from that date on, is taken care of with more careful attention, and with less irritation and loss of time than seems general with tractors bought under other systems. The price is put at rock bottom. Considering the quality of the tractor the question arises how can a farmer take advantage of this most advantageous way of buying a tractor, if he does not have the money on hand?

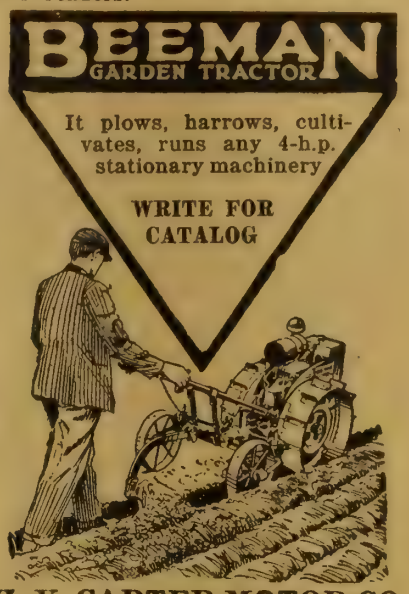
Benefits of Federal Reserve Banks

One of the principal reasons for the existence of any bank in any small or large town surrounded by an agricultural community is to help develop that community into greater financial prosperity. It is the business of the bank to make loans wherever there is good reason to believe that the loans will increase the prosperity of the borrower. For many years it was impossible for small local banks to finance very much of the farming operations in addition to what they did take on of the local commercial business. Their loans were limited by the amount of their capital, and too frequently the bankers forgot their obligations to the basic industry by which not only their own business but the commercial business of their town was supported. Inquiry even at the present time as to the proportion of loans made by local banks to farmers and to local business men would show that a greatly disproportionate amount is loaned within the towns. While the condition ought to be corrected, and sooner or later will be corrected by the demands of the farmers through their various organizations, or by the establishment of farmers' banks as in the Middle West, there is already a well prepared answer to any local banker's objections that he has loaned to the legal limit of his capital. Twelve Federal Reserve Banks of the United States were established for the purpose of enabling local bankers to safely lend money far in excess of the legal limits set by their capital stock and deposits. Any local banks which make safe loans to local business men and take their notes therefor may, when these notes have come within three months of being due, send them to the Federal Reserve Bank and get cash for them. This cash can be loaned to somebody else on the last named party's note which can again be sent to the Federal Reserve Bank and exchanged for cash. This enables the local bank to increase the limits of its possible loans to almost any extent within the bounds of prudence.

Three months proved not to be long enough credit on which farmers' notes could be readily handled, and the Federal Reserve Bank therefore did not prove of much aid to farmers. In March, 1918, according to Governor James K. Lynch of the Federal Reserve Bank of San Francisco, the Federal Reserve Board of the United States ruled that notes given for the purchase of farm implements, when the implements were to be used for agricultural purposes, would be rated as "agricultural paper." At the same time they discussed the question of including tractors as farm implements, and decided that they should be so considered. Agricultural notes when within six months of their maturity are eligible for sale or "rediscount," to the Federal Reserve Bank the same as commercial notes are within three months of their maturity. The notes may be given for any period of time desired, but the local banks, of course, would have to carry them until within six months of the date when due. This ruling enables farmers to buy machinery and tractors, paying for them when the crops have been sold, but at the same time getting the best cash price from the manufacturers.

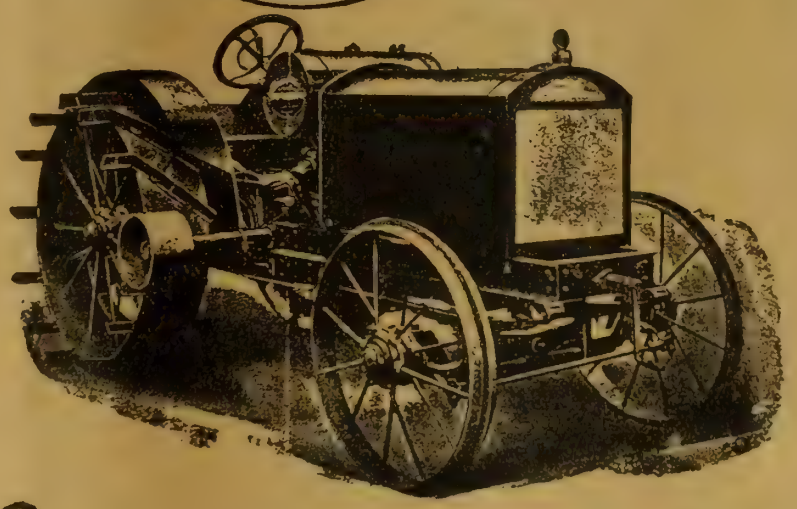
Be Sure Notes Are Negotiable.

In order to take advantage of this Federal Reserve "rediscount" privilege, the note must be practically a standard form. Mr. Lynch calls to notice the fact that some notes required by farm implement companies are made out in such a way that their negotiable character is destroyed. Sometimes the notes are all right but the contract of sale is made in such a form that the negotiable character of the notes is destroyed. The tractor buyer should inquire from his local banker as to whether the contracts and notes which he is asked to sign are available for this privilege. The local banker who expects to finance the farmer in buying the tractor will, of course, see to this matter himself, but many local bankers do not know enough about their farming communities and farm problems to the extent of financing their productive investments. In this case it is the duty and privilege of the farmers who wish to buy money-making machinery to insist on the local banks financing them. Such insistance can only be made effective by the combination of many farmers in some of their organizations to present the matter with authority and power to the bankers. This the Pacific Rural Press would like to see, and if any of our readers will tell us where it has been put into practice, we shall be glad to get the details and print the story for the benefit of our readers.



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Distributors
Agricultural Implements of All Kinds.
724 Van Ness Ave., San Francisco.

HESSION TRACTOR
WORLD'S STANDARD
Hession Tiller & Tractor Corporation
Buffalo, N.Y. U.S.A.



Corner your share of the *Hession* Tractor market

FORTUNES will be made in the next few years by the men who get the selling rights for the *right* tractor—the tractor that best meets average farm needs.

The Hession Tractor is as standard among tractors as wheat is among food-stuffs.

Study these points of advantage, and then decide if you can afford to let someone else own the selling right in your territory.



Rubber tired wheels easily substituted for the heavy cleated wheels, make a truck that will pull a string of loaded farm wagons at a speed of 10 miles an hour.

1. It is absolutely correct in design. No other type of tractor has been proven to be as efficient for all classes of work.
2. The road-wheel feature (a *practical* feature which no other tractor has) gives it *double sales value.*
3. Timken, Hyatt and Ball bearings throughout give maximum power with minimum fuel.
4. Every unit used in its construction is a *standard of excellence* for tractor construction.
5. It is the most practical size for the farmers in your community.
6. Our contract will suit you.

You must act now—if you want the territory for this real tractor. Write, wire or telephone us today

HESSION TRACTOR

HESSION SALES CORPORATION

235 South Los Angeles Street **Los Angeles, Calif.**



More Power For Every Farmer

Every farmer—including YOU—needs and deserves the biggest power with the least possible weight and cost. When you buy this tractor you pay for 12-20 H.-P. and *get* 15-25 H.-P. In the

E-B 12-20 Model AA Tractor

(S. A. E. Rating)

you get a long list of special E-B features that will mean easier, better, more profitable farming. Here are a few of its advantages:

Four-cylinder kerosene motor, rated at 12-20 horsepower by conservative Society of Automotive Engineers' basis, actually delivers 15-25 horsepower in use; E-B patented enclosed transmission; dust-proof gearing; standard E-B construction; highest grade equipment, including Hyatt Roller Bearings; Ball Thrust Bearings; producer type Carburetor; K-W Magneto; high-grade Radiator; 88 parts heat treated. Pulls three plows in any ordinary soil; four in loose soil.

Ask your dealer or write us for complete facts.

Brock & Skidmore Berkeley, Calif.

EMERSON-BRANTINGHAM THE E-B LINE FARM MACHINERY

Farm Tractor & Implement Co. Portland, Oregon

THE H. C. SHAW COMPANY

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Distributors For

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CLARK "CUTAWAY"
TRACTOR DISC HARROWS

SUPERIOR
GRAIN DRILLS

ON DISPLAY AT

TRACTOR DEMONSTRATION

Why Used Tractors for Sale?

[Written for Pacific Rural Press.]

To the Editor: If tractors are a success, why do we see so many second-hand ones for sale?—A. L. U., Salinas.

Do you see one per cent as many tractors for sale as you do farms for sale? Are the farms considered unsuccessful because so many are for sale? We might point out three reasons for sale of used tractors. A few are of faulty design and have no reason to stand up to the work they were bought to do. Such tractors were rather numerous five years ago; but great strides have been made since then in the standardization of main parts of tractors.

Much more is known now as to the actual strains they will get on farm work and they are designed to be strong enough in each part to endure all reasonable strains. A leading reason for people wanting to get rid of their tractors is the fact that through ignorance or carelessness they have injured the machines by lack of lubrication, overloading, or neglected tightening and adjustments. Unless you are a good mechanic, familiar with the normal performance of a machine and with tests to discover its weaknesses, a new tractor is likely to prove cheaper than a second-hand one bought from a stranger at ever so little cost.

However, there are logical reasons for disposing of perfectly good tractors. The man who buys without attending a big demonstration such as the one to be held at Sacramento May 6 to 11, is likely to buy a tractor not so well suited to his conditions as one he may hear about later. It may be of a design more fitted to a neighbor's requirements than his own. It is more likely to be too small. One accustomed to farming with horses often finds it hard to realize that with a tractor the horizon of his effective activities will be greatly broadened and he will undertake jobs that he never thought of doing with horses. He will find uses for the tractor which he never dreamed about until the tractor made such undertakings possible. He will find that he is able to manage several more plows with the tractor than he could with all the mules he had been able to use in plowing. He wants a bigger tractor and the small one is for sale to somebody of smaller activities. Vice versa, he may sell part of his farm, or change the crops he grows on it, or he may have bought a machine entirely too big for his acreage and crops, or he may have intended to do custom work but has become unable to do it. Be assured that tractors for sale do not indicate so much failure of the tractor to do work it was designed to do as it does the failure of the farmer either to make a judicious selection or to take proper care of the tractor.

Orchard-Vineyard-Grain Tractor.

[Written for Pacific Rural Press.]

To the Editor: I am looking for theoretical as well as practical ideas to guide me in the purchase of a tractor. I have about 300 acres—about one-half grain land, the other half orchard and vineyard. I intend to plant the grain land to orchard and vineyard as soon as time, capital, hope, enthusiasm and optimism shall permit. I have been handling the ranch with twelve work animals, some of whose shadows will require a companion to be equal to one horse or one mule. But the 'boes, the blanket stiffs, the drivers and skinners available have been my principal difficulty. Four men in one week leave me for no real reason that I could admit. So therefore I must consider driving my own implements largely, and let the 'boes go to the Bolsheviki—but what kind, what price, what size, what shape? What is the economical, efficient buy?

It would seem to me that as my vineyard is in twelve-foot rows, and the trees in twenty-foot rows, and a double disk harrow the most common implement of cultivation, ample power to pull an 8-foot double disc, with spools on the harrow with discs set convex to each half, is the size. That also will give me power to pull four twelves, so that in one round I can plow the vineyard rows—12-15 H. P. on draw bar?

Some local farmers say that eight horses will in an average season plow and plant but eighty acres, considering the irregularity of the weather, the land, the unreliability of the drivers, break downs, Sundays and unexpected delays—and the desire to get the land well plowed and seeded. I therefore would have ample power to do the agricultural work for winter sown grain. I do not wish to consider any work on the side or outside. I cannot see any money in it, and believe that the better move is to get a machine big enough for my own work only. For when it is done I want to drive it in the shed and get some pleasure out of this forty million road bond issue, and take time enough to forget my support of the myriads of plum tree shakers, pork barrel eaters, political riff-raff and small fry, and the army of socialistic non-producers who are but parasites on those who would produce something.

Your answer, if made, I shall consider at Sacramento next month. What percentage of real estate valuation should be invested in power for home use only.

N. E. R., Yuba City.

Lincoln said that a man's legs ought to be long enough to reach the ground. So we say that a big enough percentage of your real estate valuation should be invested in a tractor so you could get your work done promptly and well. Isn't that pretty good "theoretical" advice? For working advice, we would want a tractor delivering just as you suggest, about fifteen horsepower on the drawbar. You will be looking for such a tractor that will turn short in your vineyard and will not reach too high in your orchard. You will find several such at the Sacramento Tractor, Truck, and Implement Demonstration, May 6 to 11.

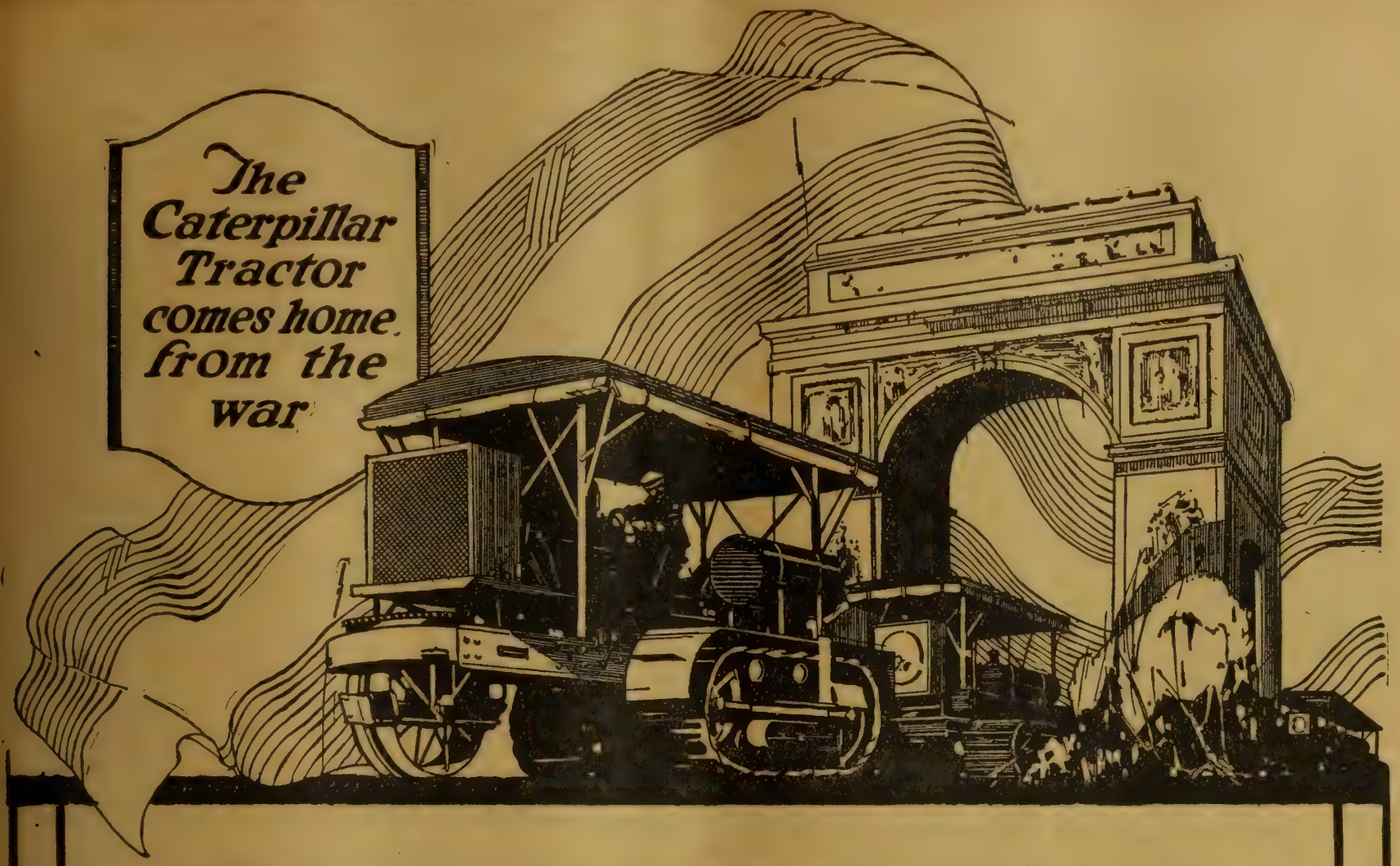
ADJUST CARBURETER TO AVOID SOOTY SPARK PLUGS.

[Written for Pacific Rural Press by Chas. Barnum]

Spark plugs never need cleaning if the gas mixture is adjusted properly. They should, however, have the spark gap just open enough so a worn dime will slip between, no more, no less. Dirty foul spark plugs are almost sure evidence of too rich a gas mixture or too much crank-case oil leaking past the pistons.

To adjust the carbureter to give the correct gas mixture, set the engine running at fairly good speed, but not racing, and with the spark fully advanced. Screw the needle valve to reduce the gas admitted until the engine almost slows down entirely. Open up the needle valve a little and close the throttle until the speed is real slow. Retard the spark and keep adjusting the needle valve until the mixture is so lean that the engine will spit back through the intake valves when spark is fully retarded and gas throttle is quickly opened. Then advance the spark fully and open the throttle. If it goes O. K. the carbureter is adjusted correctly.

Brock & Skidmore, of Berkeley, the State distributors for Emerson-Brantingham tractors who began their sales here last fall, have been handling only the 12-20 size until very recently when they received their first carload of the 12-35 size.



FOCH launches a drive. Yanks, Tommies and Poilus hurl themselves against the enemy line, and drive it back—slowly at first, then faster, and finally the enemy is in full retreat with the Allied Infantry right at his heels.

But the position is a dangerous one. It may be a trap—it might be, were the "doughboys" unsupported. But not this time! For the Allied Motorized Artillery is right behind the infantry, ready to throw a protecting barrage at a moment's notice.

Motorized artillery, and therein lies the secret of its effectiveness. Officers and men in automobiles and motorcycles; supplies and lighter ammunition in motor trucks, and heavy guns and caissons hauled by "CATERPILLAR" TRACTORS.

Now that hostilities have ceased, the part which the "CATERPILLAR" Tractor did toward winning the war is no longer a state secret.

Long before America entered the war The Holt Manufacturing Company was supplying "Caterpillar" 75 and 45 Tractors to the English and French. And as early as 1915, the U. S. Bureau of Ordnance, too, had conducted extensive tests and had decided to equip the first entirely motorized artillery corps the world had ever known—using "Caterpillar" Tractors exclusively for the heavy work.

These tests brought out—and four years of the most strenuous war service confirmed—two outstanding advantages of tractor-drawn artillery.

First, it was more efficient—could go faster—could go *anywhere,* regardless of the weather and no matter how shell-pitted the terrain.

Second, it was more economical—men and money were saved for important service elsewhere.

Of course, only the "Caterpillar" Tractor would do for the most strenuous war-time service. The self-laying-track principle, first successfully applied to a tractor by Benjamin Holt, and *proved out* in peace times upon thousands of the farms of America and other countries, was peculiarly fitted to conditions upon the battle-fronts. And the "Caterpillar" Tractor, both of itself and as the mighty armored "Tank" was able to do an incalculably great part in the overthrow of autocracy.

But at last the stress of war is ended and the Holt factories are again on a pre-war basis, able to make immediate deliveries of "Caterpillar" Tractors and prompt shipment of extra parts, released from important Government demands but strengthened by their war service and experience.

The same efficiency of principle; the same rugged construction—the same "Caterpillar" Track design, turning engine power into drawbar pull with minimum loss and enabling this tractor to work anywhere, any time—all the qualities which won for the "Caterpillar" Tractor honor upon the battlefields of Europe—are at the disposal of American Agriculture as in the days before the war.

Reconstruction time should be tractor time. Write today for full information regarding the "Caterpillar" Tractor—ask for Catalog 395.

"Caterpillar" Tractors built only by Holt or under Holt contracts and patents—the only track type of tractor adopted, after rigid tests, for the hardest war service of America, England and France

THE HOLT MANUFACTURING COMPANY

Stockton, California — Peoria, Illinois
Spokane, Washington — Los Angeles, California

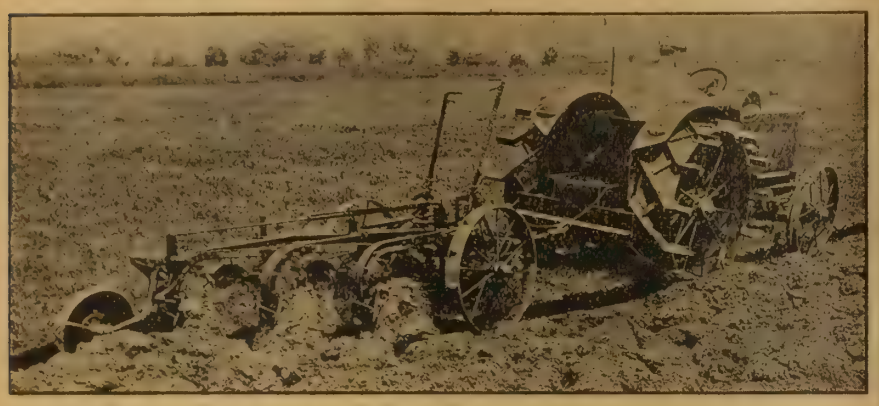
CATERPILLAR
Reg U.S. Pat. Off.

Demonstration Arrangements Ready

[Written for Pacific Rural Press.]

World wide interest is centering in the Tractor Implement, Motor Truck, Auto Trailer, and Accessories Demonstration and Exhibition to be held near Sacramento May 6 to 11. Inquiries have been received by manager R. M. O'Neill from the Netherlands, the Dutch East Indies, and China. Consuls of these and many South American countries have expressed their intention to be present. Two Eastern concerns have recently wired for membership and notified Mr. O'Neill that they have carloads on the way to California.

J. B. Bartholomew of the National Tractor and Implement Association recently came out from Illinois and looked over the level 650-acre field near Sacramento where the Demonstration is to be held. He pronounced it particularly well adapted for the purpose. The soil is a reddish clay with a mixture of sandy loam and is in good moist plowing condition.



Several different tractors are available which will economically do the work on a ranch including orchards, vineyards, and grain.

The Biggest Event of Its Kind.

No State Demonstration ever held in California has equaled the size and perfection of arrangements already achieved for the one at Sacramento. Two weeks before the opening day more than eight carloads of tractors had been unloaded and the immense tents which will house motor trucks, trailers, accessories and tractor-operated farm machinery will be in place a week ahead of the opening date. Fifty-nine different models of tractors are entered for the daily two-hour general plowing demonstrations to be held 10 to 12 a. m., and they will all show up at the appointed time or forfeit a deposit of $25 which has already been put up. These tractors include all that are available for purchase in California north of Tehachapi and several that have not heretofore appeared on the market.

Individual Implement and Tractor Workouts.

A number of extras of various models will be demonstrated on the individual fields allotted to the various exhibitors, at all hours except 10 a. m. to 1:30 p. m.

These tractors will include some small ones and tractor attachments not entered for the general demonstration. The individual demonstrations will include stunts designed to show the adaptability of various tractors to all sorts of predicaments. They will show tractors doing belt work on threshers, silage cutters, pumps, and numerous other farm machines. Tractors, of course, will be pulling subsoilers, ditching machines, checking sleds, land levelers raised and lowered by hand or by air pressure, harrows, disks, and most any other implement you could think of that will increase your crop production per man. These implements have many new ideas worked into them for convenience of handling or for more thorough work. How much the various tractors will pull of the various implements similarly adjusted will make an interesting study. Each tractor exhibitor will have his entire equipment on one piece of land decorated by his own headquarters tent. Implement exhibitors will have their headquarters, too, but their machinery will be widely distributed among the various tractor men. As one implement man says, tractors are far ahead in perfection for their purpose as compared with the implements to be used with them.



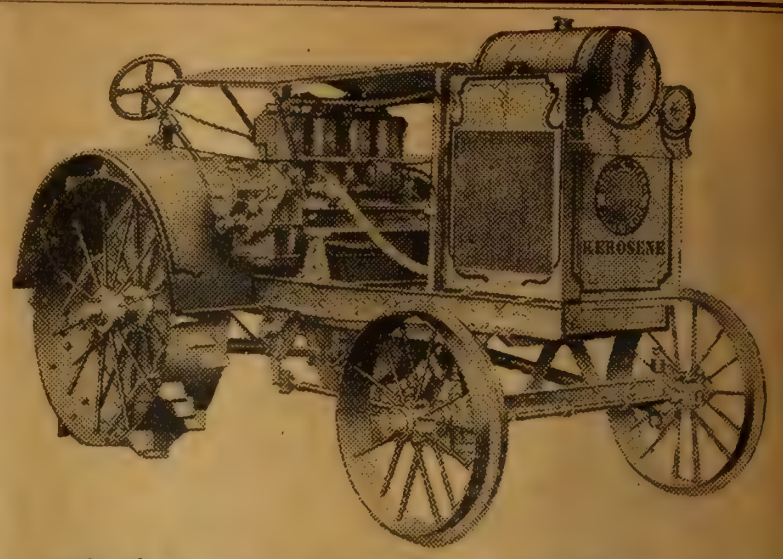
On one job after another tractors take the places formerly believed impossible to fill with iron horses.

Special study of the quality of quality of work done by various implements will greatly profit any farmer. If best quality of work is combined with greatest convenience for handling, investment in those implements will justify any interest rate that might be required to borrow money with which to buy them.

The Grand Plowing Aggregations.

In the general plowing demonstrations each tractor has been alloted a space 500 feet deep and of six-foot frontage for each horsepower claimed at the drawbar. All of each tractor's allotment must be plowed each day. to a minimum depth of six inches. Anyone not able to pull one plow to that depth will be ruled off the field

(Continued on page 650.)



Wonderful Power

Built Into A Light Tractor

A Light Kerosene Tractor with a Surplus of Inbuilt Power for pulling three plows through any soil. Equipped with a powerful 4-cylinder motor (5-inch bore—6-inch stroke.)

A WHALE OF A MOTOR

Guaranteed to Burn Kerosene Successfully

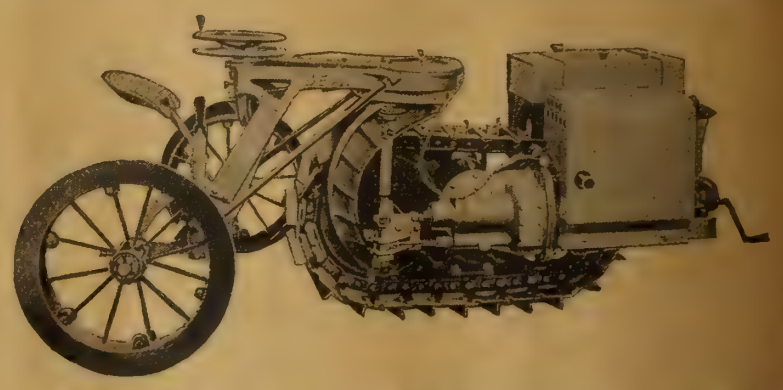
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KEROSENE TRACTORS

BACKED BY 12 YEARS OF TRACTOR EXPERIENCE

See It at the Demonstration

ELECTRIC WHEEL CO. QUINCY ILL.



"WATCH THE BEAN"

At Sacramento May 6-11

Bean Tractor turns inside a 10-ft. circle—pulls its load around the turns just as strong as on the straight away—makes no difference how far off center you hitch.

You steer with the track just as you steer a team—"geeing" and "hawing" in any direction. Ask any of our representatives at the Sacramento Demonstration to demonstrate these features and many others. Catalog 32-A sent on request.

INVEST!

Bean TrackPull Tractor

BEAN SPRAY PUMP CO.

SAN JOSE CALIF.



HUNDREDS OF THOUSANDS OF DOLLARS WILL BE SPENT BY **AVERY** and OTHER TRACTOR MANUFACTURERS TO DEMONSTRATE TO THE FARMERS OF CALIFORNIA THE SUPERIORITY AND ECONOMY OF TRACTORS OVER HORSES.

There is no power on your farm that an Avery cannot supply.

The Avery Separator is Made in Eight Sizes

The Avery Tractor is Made in Eight Sizes

The Avery Motor Cultivator is Made in Four Sizes

They will all be shown and demonstrated at Sacramento, May 6th to 11th, inclusive.

This is your opportunity to see the

AVERY

and all other tractors.

If you cannot attend the Tractor Demonstration, **WRITE** and we will supply you with all the information you need on Power Farming.



AVERY COMPANY

OF THE PACIFIC COAST

67-69 Beale Street, San Francisco

237 So. Los Angeles St., Los Angeles

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Subsoiled Barley and Peaches

[Written for Pacific Rural Press.]

Twice as much barley was obtained after subsoiling done last year by John Morrison of Yuba county as was raised on a piece nearby which was not so deeply cultivated. Part of the excess yield may, however, have been due to planting in January while the other field was planted in February. Mr. Morrison also subsoiled 40 acres of peaches and believes the results were highly profitable. He thinks that before setting out an orchard or vineyard a two-standard subsoiler ought to be run down the proposed line of trees and then crosswise for every row in order to lead water to each tree from four directions in eight channels. The subsoiler was simply a long curved tooth, extending four or five inches below the end of each of two plow beams. These teeth were the same at both ends and had a uniform curve, so when one end was worn the other end was pointed downward. Wings were tried on the ends of these teeth but were given up as not being worth while.

Subsoil While Dry.

Thirty acres were subsoiled for the barley. The land is mostly a gravelly clay with a hard plowpan about four inches thick and four to six inches under the surface. The subsoiler standards are a foot apart and designed to run 16 inches deep with about 20 inches between trips. The 16-inch depth proved too much for the tractor with 18 d.b.h.p., but the plowpan was broken anyway. The winter was dry with practically no rain until January. None of the rain ran off but was absorbed into the soil. The subsoiling was done in December while the ground was still dry. This cracked the soil in every direction. If it had been wet, it would have cut somewhat like a custard pie and at least two-thirds of the benefit would have been lost. A strip of dry adobe across the field was loosened in great chunks. Subsoiling was pretty expensive with so small a tractor. Mr. Morrison figured that with a 75-tractor one man could operate five standards at less cost per acre.

In the orchard, repeated plowing not over four inches deep with a horse pounding down the bottom of each furrow year after year, had combined with the leaching process to make a plowsole that water could not penetrate reasonably. This kept most tree roots at the surface, where they were alternately baked and watered and from which the fertility had previously been taken by grain.

The subsoiler ran not nearer than six feet from the trees. The aim was to cut roots no larger than one's finger. These calloused over the cuts and sent out as many as a dozen feeders from one big cut. The feeders were enabled to explore hitherto unknown regions of plant food and hitherto unmoistened reservoirs of water. Air was admitted to permit bacteria to get in their good work on previously unavailable fertilizing elements. The soil was greatly improved.

POWERLESS TO SAW WOOD.

To the Editor: I have a four horsepower new engine. I wanted it to saw wood with a 16-inch buzz saw cutting six-inch sticks. The engine has a 10-inch pulley. The belt runs from this pulley to a six-inch shaft pulley. The drive pulley from the shaft to the saw is twelve inches. The saw mandrel pulley is three inches. I can speed the engine up to 900 revolutions per minute. It starts easily with one-half turn of the wheel, but when I put soft redwood against the saw, it almost stops. It seems to have no power at all. The factory told me my compression was poor, so I took out the piston rings and oiled them but it did no good. Before I ever got around to try the engine the original batteries were dead. (The company is now out of business, only supplies parts.) I bought four dry cells here. The company said the engine would work best at 2½ turns of the valve or fuel feeder, but at that I get no power. I get a little more at only one turn. I think perhaps my batteries are not strong enough to burn gasoline. But when it isn't pulling anything, the engine runs away with itself. What's the matter? Several men from the mill and several autoists have looked, but know no more about it than I.—T. A. G., Mendocino.

You are probably giving your engine too stiff a job. With your pulley arrangement, your saw is running 6000 r. p. m. where it ought to run about 2400 r. p. m. to give the proper speed at the teeth with its diameter. If you change your pulleys to give the saw this speed, we think it will saw wood. If not, see whether spark plugs are clean and the points the proper distance apart. If they are, perhaps your batteries are being short circuited as might be indicated by their going dead in the first place. A suggested arrangement of pulleys would be to put a six-inch pulley on the engine and a nine-inch pulley on the shaft for the engine belt.

ECONOMY OF TRACTORS FOR BELT WORK.

To the Editor: Is it economical to use tractors for belt work?—M. O. N., Red Bluff.

The answer depends on several conditions. We have seen farmers all over the State using tractors for belt work of every imaginable kind, but chiefly for pumping, silage cutting, etc. If the horsepower of the engine fits the job, practically the only loss by use of a tractor rather than stationary engine, is the interest on the extra investment. If the tractor would not be used at tractor work at the particular time, even this cannot be charged against its use for stationary work. The peculiar fitness of a tractor for all-around stationary work on the farm is the convenience with which it is moved from one machine to another and the ease with which it is set ready to run the next machine. Tractors differ in this last respect and we have seen some folks losing a lot of time getting set. But once in line and with the belt properly tightened, all that remains is to set the brakes and throw the belt wheel in gear.

WANTS DUSTPROOF TRACTOR.

To the Editor: I have 320 acres of light sandy soil, and I need a tractor to level and check the ground as well as for plowing. Would require twelve to fifteen horsepower at the drawbar. I want a wheel tractor that is practical in construction and economical in use and as dustproof as possible.—Subscriber, Stanislaus.

We have suggested your name to a dealer whose tractor is known and used not far from where you live. Meanwhile, we would suggest that the purchase of a tractor is of enough importance to justify a trip to the Sacramento Tractor and Implement Demonstration May 6 to 11. There you will see several suitable machines to choose from.



BOSCH

Bosch Magneto with Impulse Starter

Your Tractor Problem

is a vital one. You want your tractor investment to be productive. You know the rough, rugged service your tractor must give in order for it to be a profitable piece of farm machinery. Investigate tractors from every viewpoint and don't overlook Ignition. There is only one kind of ignition fitted for the strain and stress of tractor work—Magneto Ignition, and when you say magneto ignition you know that no ignition system has ever built up the service reputation of Bosch Ignition. The

BOSCH MAGNETO

With Impulse Starter

is the most highly efficient, self-contained, dependable electrical unit that the Big Bosch Plant at Springfield can build. Every part is designed and built with your needs in mind. It has the strength of a locomotive and is produced with the same care as a high-grade watch.

For rough work—Motor Tractor or Motor Truck—be sure you get magneto ignition and be sure the magneto is a Bosch. Write for descriptive catalog.

AMERICAN BOSCH MAGNETO CORPORATION

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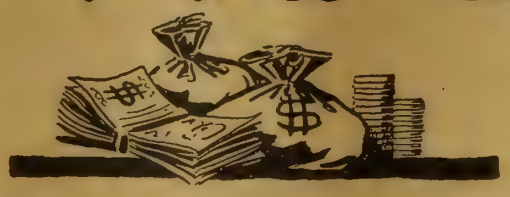
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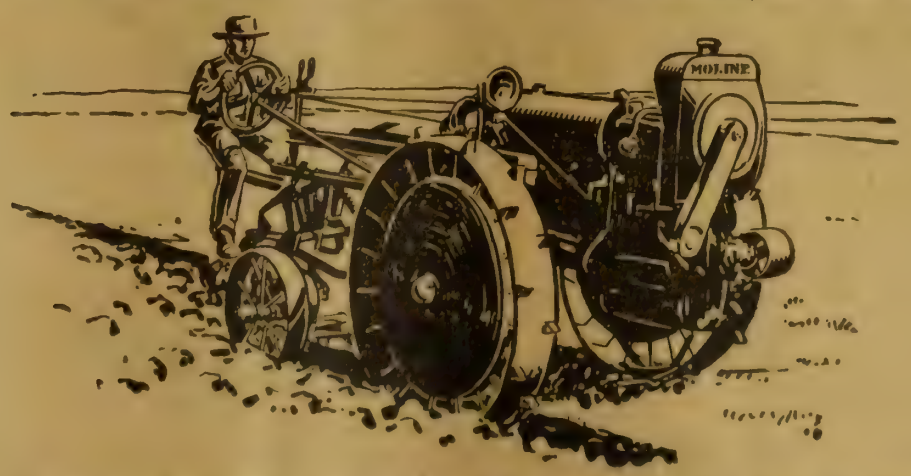
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$1,000.00 REWARD



To the first farmer naming a job of general farming that can't be done by a

MOLINE UNIVERSAL TRACTOR



THE TRACTOR THAT ELIMINATES THE HORSE

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Moline Service Satisfies

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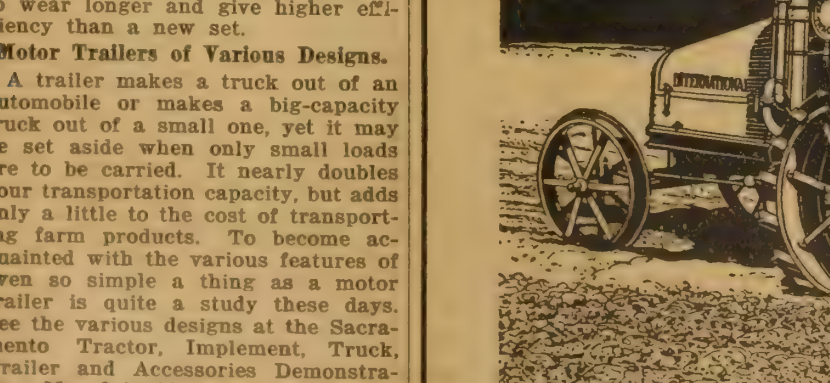
[Written for Pacific Rural Press.]

Big Saving by Truck Hauling.

Here is an indication of the value of motor trucks on country road work. A county road commissioner writes that he has made 5 trips per day, carrying 2½ yards of gravel per trip, at a cost of $9.32 per day. A team could haul only two yards per day at a cost of $4.50, according to this commissioner. The truck saves $1.50 per yard and hauls 10½ yards more per day than one team.

Motor Trucks Get It Done.

"I can put enough lumber on a motor truck to build a bridge. Then I can haul it and build the bridge and have it ready for service by the time I could get the lumber there with a wagon," says a County Road Commissioner.



One man operates the tractor from his seat on a grain binder. Reduction of man power is a chief function of tractors and this appeals to farm women who have fewer men to cook for.

Tractor Pulls Boulders.

A recent demonstration of the versatility of the tractor was made on the farm of W. J. Huebsch, of Los Angeles County. A Cleveland tractor cleared the land of numerous large boulders, many of which were almost entirely submerged in the ground. They were easily pulled from the hard soil by a specially constructed device pulled by the tractor.

Specialists in Transportation.

"The farmer cannot both produce and transport his products efficiently," says L. Pulcher, general manager of the Federal Motor Truck Company. Mr. Pulcher suggests that in these times when every day counts on the crops, motor truck transportation of farm products to town is one of the most important features of farming.

Reground Cylinders Better Than New.

It is now universally conceded that reground cylinders are more valuable than new cylinders, according to W. G. Hansen Machine Works of Sacramento, whose chief business is the repairing of gas engines. Cylinders in use become thoroughly seasoned, and all strains that were in the metal at the start become neutralized by a period of use, and by the natural heat of operation so that they are likely to wear longer and give higher efficiency than a new set.

Motor Trailers of Various Designs.

A trailer makes a truck out of an automobile or makes a big-capacity truck out of a small one, yet it may be set aside when only small loads are to be carried. It nearly doubles your transportation capacity, but adds only a little to the cost of transporting farm products. To become acquainted with the various features of even so simple a thing as a motor trailer is quite a study these days. See the various designs at the Sacramento Tractor, Implement, Truck, Trailer and Accessories Demonstration, May 6 to 11.

Tractors Avoiding Side Draft.

Side draft tends to throw a tractor out of its course, makes steering difficult, strains the machine, and wastes power. For satisfactory plowing with most tractors, it is very desirable, other things being equal, that the line of draft shall run centerly through the tractor and the plow-gang. This requires some tractors to run one wheel or track in the furrow, which is no objection if it does not throw additional strain on the machine. Leveling devices or flexible frames are generally provided to avoid such strain. But probably most tractors are intended to run on unplowed ground. This is feasible with a center line of draft on tractors which pull a few more inches of plows than their own width, and it is also claimed to be provided on the Case 10-20 built for three fourteen-inch bottoms. The center line of draft on this tractor is approximately 21 inches from the furrow edge, due to its drive being on the right rear wheel and the hitch being directly behind it. The left rear wheel is an idler, but may be thrown into gear at any time by its own special clutch.

Truck for Sealer of Scales.

At 1½ ton motor truck has been averaging 10,000 miles a year for over four years in the hands of L. H. B. Farr, Kern County sealer of weights and measures. Mr. Farr reports having some fierce drives to make in and out of stock ranches where he has to test heavy scales. One trip he makes climbing 3,000 feet within 9 miles, often through snow.

Trucks Drive on All Four Wheels.

Nash Quad trucks of which so many did marvelous service with their four-wheel drive feature on European battle fields, will be on exhibit at the Sacramento Tractor Demonstration.



Leaks Soon Drain the Radiator!

THE easiest and quickest way to repair leaks in radiators, pumps, water jackets, motor head gaskets, hose connections, etc., is with Johnson's Radiator Cement. It will stop leaks immediately without laying up the car—no mechanical experience required—all you have to do is remove the cap and pour the Radiator Cement in the radiator. No tool kit complete without a can of Johnson's Radiator Cement. It overcomes the inconvenience of laying up ones car—will ordinarily seal a leak in from two to ten minutes.

JOHNSON'S RADIATOR CEMENT

Johnson's Radiator Cement contains nothing which can clog or coat the cooling system and is absolutely harmless in every respect. It blends perfectly with the water until it reaches the leaks. Just as soon as it comes in contact with the air it forms a hard, tough, pressure-resisting substance which is insoluble in water and consequently makes a permanent seal.

A half-pint of Johnson's Radiator Cement is ordinarily sufficient for a Ford or other small radiator—for medium size cooling systems use a pint and for large cooling systems, a quart. For sale by Hardware, Accessory dealers and Garages. Write for our booklet on Keeping Cars Young—it's free.



S. C. JOHNSON & SON, Dept. PRP, Racine, Wis.
Established 1882

WATCH
International Tractors
WORK AT THE TRACTOR DEMONSTRATION
SACRAMENTO, MAY 6, 7, 8, 9, 10, 11



8-16 International Pulling Double Disk Harrow

Hundreds of International tractors are in service in California. They are built in three sizes, 8-16, 10-20 and 15-30 H. P.—a size to meet practically all requirements.

WRITE FOR CATALOG

INTERNATIONAL HARVESTER COMPANY OF AMERICA

201 Potrero Ave., San Francisco, Cal.

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POWER TO PULL



WEIGHT 3000 LBS. THE WHITNEY 9-18 MODERATE PRICE

The Greatest Farm Tractor in the World

The Whitney 9-18 is the WONDER TRACTOR—the best designed, best engineered, best built, most powerful for its weight. It will consistently pull two 14-inch. bottoms or three 10-in. bottoms—6-ft. double disc with pulverizer—two 5-ft. mowers with plenty of reserve power. From the standpoint of performance, power, reserve power, dependability, and low operation and upkeep costs, the Whitney 9-18 is the lowest priced tractor on the market.

DEALERS!

Sell the Farmer what they need

Thousands of farmers are interested in the Whitney Farm Tractor, because its construction is so strong and simple.

The Whitney Tractor is the easiest selling tractor in the world. Its superior qualities convince every farmer who sees this wonderful Tractor that it is the right tractor for him to own.

WRITE US TODAY—we are closing territory fast, so don't delay.

Compare this remarkable tractor, point by point, with all other farm tractors and you will readily be convinced of its vast superiority over all others. Its strong and simple construction eliminates unnecessary weight and the possibility of any part getting out of alignment.
Its very simple construction protects against costly upkeep.

A THOROUGH PRACTICAL FARM TRACTOR

The Whitney is not a new tractor in a sense that a newly designed tractor is regarded—it is built by a concern who have been building light tractors for 16 years, the motor has successfully passed through many years of practical service, as the most extensively used tractor engine in the country. Besides this, **THE WHITNEY,** after being built with the utmost care by men long experienced in Tractor design and familiar with **FARM CONDITIONS,** has proved its adaptability to all kinds of actual field tests under most trying conditions. It has shown itself to be an all around **FARM TRACTOR,** well adapted to the needs of the average small farm, substantially built and inexpensive to operate.

Don't fail to see us at the Big Show, Sacramento, May 5th to 10th.

SPECIFICATIONS

Rated H.P. of Engine on Belt	Drawbar Pull	High Working Speed—m.p.h.	Low Working Speed—m.p.h.	Road Speed—m.p.h.	Cylinders: Bore Inches	Cylinders: Stroke Inches	Pulley: Diameter Inches	Pulley: Face Inches	Front Wheels: Diameter Inches	Front Wheels: Face Inches	Drive Wheels: Diameter Inches	Drive Wheels: Face Inches	Capacity Gasoline—Gals.	Capacity Water—Gals	Wheel Base. Inches	Length over all. Inches	Width Over All. Inches	Height Over All. Inches	Approximate Shipping Weight—lbs.
18	1500	2½	1¾	4	5½	6½	11	6¾	30	5	48	10	9	5	82	123	56	58½	3000

Don't fail to see us at the big Show, Sacramento, May 5th to 10th.

PACIFIC WHITNEY TRACTOR CORPORATION

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CALIFORNIA, ARIZONA, NEVADA, OREGON, IDAHO, WASHINGTON

310-12 South Los Angeles St. LOS ANGELES, CALIF.

Cost of Electric Line Extensions

[Written for Pacific Rural Press.]

How much prospective electric power consumers shall pay toward a proposed extension of the power line to the location of their wells is a riddle to most of them, and they do not understand by what authority the charges are made. Each power company is likely to have different regulations for this purpose, but all of the regulations are in the form of rulings by the State Railroad Commission.

For the southern end of the San Joaquin valley we print the rulings as followed by the San Joaquin Light & Power Corporation, and approximately, if not exactly, by the Mount Whitney Power Company. These rules became effective June 1, 1918, superseding other rules which had been in effect since May 1, 1916.

(1) The Company will at its own expense make all extensions in cases in which the annual gross revenue equals or exceeds 33-1/3% of the cost of the extensions.

(2) Where the annual gross revenue to be secured from any extension is less than 33-1/3%, or more than 20% of the cost of the extension the Company will make the extension provided that the applicant advances the entire cost of the extension, to be refunded upon the basis of 20% of the monthly bills. The applicant, may, however, at his own cost, construct sufficient of the said extension so that the amount to be expended by the Company shall not exceed three times the annual gross revenue, or may contract in form satisfactory to the Company to take such service that the annual gross revenue paid by him shall be equal to 33-1/3% of the cost of the extension to the Company, whereupon Section No. 1 above, shall apply.

(3) Until the further order of the Railroad Commission, applications for service in which the annual gross revenue will be less than 20% of the cost to the Company of the extension, need not be accepted by the Company.

(4) Extensions within incorporated cities or towns shall be made as provided in Rule No. 15 of the Rules and Regulations established by the Railroad Commission as of November 5th, 1915, in Decision No. 3879 in case No. 683 (see Rule No. 19, Sheet No. 186).

(5) All extensions made by the Company within one year prior to May 28, 1918, shall be adjusted if requested by the consumer within ninety days from May 28, 1918, on the basis of the Rules and Regulations in Sections Nos. 1, 2, 3 and 4 above.

PUMPS CLOSE TO WATER TABLE.

Water levels for wells to be pumped by centrifugal pumps located in pits must be within 20 or 25 feet of the pump, in order to be lifted. In California districts where pumps are entirely depended upon for irrigation, we may generally recognize the fact that the water level is likely to be lowered as the number of pumps is increased. Where gravity water is used we may expect the water table to rise and present different problems.

We have in mind a district in Madera County in which wells have plenty of water, but the water level has gone down so much since many of the pits were dug and the pumps installed that it is at a limit of suction possibility, and in some cases the pits and pumps have had to be lowered already. One instance of a surprising drop in the water level is a man whose pump was placed in a pit within two feet of the water level last summer, but the water table has gone down seven feet since then right through the winter. One well which we know, has been operating two or three years and a new pump was put in this season with enlarged capacity. This drew the water down to the absolute limit of suction, so much that the gallons per minute were reduced to almost one-half the capacity of the pump.

With direct-connected pumps there are two ways of placing them close to the water table without danger of getting the motor or engine wet. One and generally the most satisfactory is to dig the pit to water level at a season when the latter is lowest and cement it strong enough to keep water out. The other way is to set the outfit on a stiff movable frame which can be hoisted or lowered by windlass to keep it out of the water.

WASTED WATER-LIFT.

In installing a pump there is every reason for keeping the water-lift at a minimum in order to save power and keep the capacity of the pump to maximum. The writer was surprised recently to see a standard pump where the discharge pipe was elevated 6 feet above the ground in a level country, and turned loose within 20 feet of the well. The horizontal part of the discharge pipe was connected to the vertical part by a square-cornered elbow, still further reducing the possible capacity of the pump. A curved elbow at the surface of the ground would have reduced the head more than 6 feet.

POWER NOTES.

The northern California Sandusky Agency has been taken over by Vandercock and Meng.

The Wm. L. Hughson Company, distributors for Fordson tractors, advise that they have 2106 of their tractors operating in California.

The Wizard Tractor which was announced with large advertisements recently is not yet ready for distribution. The first one was tried out carefully by its inventor, J. M. Kroyer, and two others are now being tried out for final perfection before establishing the five million dollar factory which is proposed at Stockton.

The Pioneer Motor Company, of San Francisco, have recently undertaken the distribution of R. & P. tractors in the northern part of California, and have been demonstrating and showing them. At least one R. & P. machine will be at the Tractor Demonstration at Sacramento May 6-11. This is made by the Republic Motor Truck Co.

In our trips about the country we see distressing sights. One of these was on a ranch of a man in Madera County who has plenty of buildings. His expensive tractor had been standing like a watchdog beside the gate so long that the tracks were thoroughly covered with rust.

In the accessories tent in the Tractor Demonstration visitors will be interested in the California Hydraulic Company's exhibit of Universal milking machines, Louden barn equipment, and a special oil pump for use of tractor drivers in emptying distillate and the oil from the drums.

D. R. Throup, of the Schmeiser Manufacturing Company, reports that within two months they have had inquiries for their land levelers from Palestine, Austria, Spain, and South Africa, as responses to their advertisements in the Pacific Rural Press. In one mail some time ago three inquiries were received from Palestine.

The National tractor is a new one in this State and is being handled for northern California by the Skaggs-Berg Co. of Fresno. They have two sizes, the 9-16 and the 12-22. They are fourwheeled kerosene burning machines, friction drive, giving a wide range of speeds forward and backward, simple transmission and differential, high tension ignition, force feed oiling, and pump circulation of cooling water.



See the Lauson Perform

The LAUSON excels wherever the requirements overtax the average wheel type tractor. It is noted for its surplus power. You will want to see it perform. California and Pacific state conditions overtax the average tractor. Soil conditions are more severe. Deeper plowing is done. There must be power to spare.

The LAUSON "FULL JEWEL" TRACTOR will be a prominent feature of the

Sacramento Demonstration, May 6th to 11th

Farmers everywhere have come to realize the dependability of the LAUSON TRACTOR. Everywhere you hear them say—"It's a wonderful job—it has power to spare."

There are scores of *cheaper tractors*. But there is *none better*, and few as good. Varying soil and plowing conditions have proven this. Every season finds more and more of the leading farmers in each locality—the men who make farming pay—buying *LAUSON TRACTORS* because of their reliable work in the field and at the belt.

Think what it will mean in *your* farm profits to own one of these machines. Our output is limited to a few thousand tractors each year. Each one has the stamp of quality that has made famous *Lauson Frost King and Alpha Engines*.

Known as the "Pattern" Tractor

The LAUSON is spoken of as the Pattern Tractor—the tractor other makers consider in perfecting their machine. But there is only *one* LAUSON—only *one* size—only one reputation to uphold—and that's twenty-three years of unbroken and successful LAUSON engine building experience.

The "Full Jewel" Tractor

Tractor gears should no more be exposed to the dust and dirt of farm work than the case of a watch should be left open. Every gear—including the final drive gear—is completely enclosed in a dust-tight case and runs in a bath of oil. Users report no signs of wear on transmission gears after three years of continuous field and belt service.

There are twenty-four sets of Hyatt and Timken Roller and Ball Bearings in this Tractor Masterpiece. Realize what this "Full Jewel" construction means in easy running, delivering maximum power and in long life.

Noted for Its Surplus Power

Many tractors have no reserve power for "peak" loads. But the LAUSON has four-plow capacity, though rated a three-plow tractor. And on belt work it pulls the big ensilage cutter or grain separator. It has a reserve power of 30%.

DEALERS! The LAUSON selling franchise is one of the most sought after agencies. Inquire about the LAUSON selling plan. Hang a Lauson Sales and Service sign in front of your place of business. Dealers not far from you are making this their big business.

Distributors for Oregon, California, Arizona and Nevada

DE LAVAL DAIRY SUPPLY CO., 63 Beale St., San Francisco, Cal.

THE JOHN LAUSON MANUFACTURING COMPANY

1042 Monroe Street, New Holstein, Wisconsin

Tractor Edition--Section Two

Vol. XCVII—No. 17 THE PACIFIC RURAL PRESS Forty-ninth Year

AN FRANCISCO APRIL 26, 1919 LOS ANGELES

Local Tractor Service for Fruit Growers

Written for Pacific Rural Press by Jno. J. Fox.

The writer has talked with many tractor users recently in an endeavor to find out from orchard and vineyard men any suggestions that might be offered "for the good of the order" with the result here told.

THE ONE OUTSTANDING suggestion whereon they showed unanimity and that is still a problem was "Service." Some of the tractor concerns are giving courses of instruction in driving and in care, repair and upkeep. The University of California is doing as much in this line as its means will permit—work that is highly appreciated by the farmer and used to the limit. It is to be hoped that the scope of these schools of instruction—both stationery and travelling may be widened. But this alone is not what is wanted.

Service Stations—Two men in Napa County who keep tractors, each employ a well paid man to run their Yubas on the understanding that not only are they to attend to the work but are to keep the machines always in good running order without bothering the boss. One has the use of a machine, the other of a motor cycle so that he can run into town and order or procure a part without loss of time. The one great miss is a near-by depot that can always be relied upon to give service and relief.

In the good old days that have survived through the ages from the time of Tubal Cain up to a very few years ago, the village blacksmith could be counted on to fix anything of importance that was made of metal or wood. Everybody liked to linger round the forge and watch the sparks fly up from welding steel or shaping shoe; to hear the purr of the bellows and the joyous ring of the hammer on the anvil. We liked the jovial sweating smith who took a pride in turning out a good job and who gave us the good word--coming or going. What we want now is good tractor men with service shops in every farming center—men whose work can be relied upon as we did on that of our old friend the village smith. They would get plenty of automobile work to keep things busily going as well as some forge work on tools. When such service centers are established pretty generally the use of truck, tractor and gas engine will increase by leaps and bounds. And the more of these depots there are, owned by the men who run them the better it will be. Of course a man could equip a dozen old blacksmith's shops for the price of one small machine shop but it does seem that a good man could generally get the necessary backing to put him on his feet. Where our fathers took pains to make first class horsemen and drivers of their sons, we must give ours tuition in the care of everything pertaining to engine, motor, tractor, truck or auto.



Plowing to the trees, with a small tractor drawing three disks. The ground is a little dry but good clean work is shown. The size of these young trees is an indication of the character of the soil.

Instances.—We called on Jos. Tyther near Yountville (Napa county) and found him with two neighbors overhauling his Holt Caterpillar, an 8-18. We were there when he bought it four years ago and it is sound today. They were just putting in new gaskets and tightening everything up. Mr. Tyther says that poor cylinder oil is, he believes, the cause of more trouble than anything else. It is better, cheaper and more satisfactory to buy the best procurable that is suited to your engine. He puts in new bushings, new cylinder rings and new pins every year and gets along well now. He has 100 acres of orchard and vineyard to take care of and about 97 acres of farming land—all heavy clay loam. The Holt pulls a gang of four ten-inch disks (John Deere) and can do plowing in dry ground with them. Four tens or three twelves is enough he says in his ground. His eight foot double disk for heavy work he has cut down to seven feet—as it does better work and next time he will buy a six-footer.

He has just bought a Fordson tractor to supplement the Holt, for the work will have to be done quickly this year and he has a John Deere gang of three tens (mould-board) for it. In plowing 'away' with his big tractor he attaches a 12-in. hand plow behind and can thus finish right up to the trees. He has prunes 6, 7 and 8 years old and we noticed no scarred trees. Beyond service, Mr. Tyther's first and last word were, "Daily care, the use of the best oil and plenty of it and a load not greater than the tractor can easily handle are essential for the best results. It saves time and expense not to overload."

W. E. Cole of Rutherford takes care of his 173 acres of strong gravelly clay loam with an orchard Yuba and 4 horses. Over 100 acres are in trees and vines and by next year only about 40 acres will be left in alfalfa. He thinks he can do with only one team later as it would be cheaper to hire occasionally than to keep two teams.

Mr. Cole is trying out the best tractor oils. His man has entire charge of the tractor and is under contract to keep it in good running order. We asked if he could outline the relative cost of horses and machine work and he said, "It is not a matter of cost at all with me, it is a matter of getting the work done. I believe if I had to go back to horses again I would get out of the business."

One man we called on to see why he was disposing of his tractor on a large place. We learned that it was for the purpose of buying a larger one to facilitate his work. We called on another man who has worked his 50 acres of orchard for three years with a Mogul. He is a young professional man and gave up practice for the outdoor life. He keeps that machine in order and works it himself entirely and his orchard is always in good tilth though he has a strong silty clay loam. His tractor is probably worth as much (perhaps more) today than when he bought it. We understand that improvements made since that time have been furnished practically gratis.

It is less common than formerly for men in this section to get caught in hard ground with their plowing, because it can be accomplished so much more expeditiously. Within a mile of this man's place there are over a dozen tractors and nobody without an automobile. Yet it is six miles to town where they may condescend to notice you at a garage or shop but generally these places are chock-a-block with work. Oil and gasoline service is excellent almost everywhere. No time need be wasted so far as they are concerned.

We asked H. J. Baade, the County Agent of the University of California at Napa "why or do any farmers discontinue using tractors and go back to horses again? His reply was "My observation has been that most of the farmers are cutting out using horses and are using tractors. Napa county is forging ahead in this respect. The Fordson Agent here has sold something like one hundred tractors this year. Many of the Fageols are being used while one carload of International Harvesters have also been disposed of. Napa County has this year bought in the neighborhood of 200 tractors. Now figuring that each one will replace five horses, the machines bought will replace about one thousand horses in this county. The demand for horses with us is not very great. Henry Wheatley, President of the Farm Bureau and one of the most up-to-date horsemen in California states that "there is nothing in the horse business now." He has a Yuba and teams as well.

Allowing three acres of fair farming land for the keep of each horse, this saves three thousand acres of such land in little Napa County alone for the raising of products for human consumption or meat production. And with little Napa County making such a progressive showing, it is easy to calculate the immense tractor activity in the enormous areas of fruitful and level land in the great interior valleys.

On April 9 we called on R. P. Van Orden of Mountain View and found him under the shade of a wide-spreading oak tree getting his Bean Tractor ready for the morrow's plowing. He draws a three ten-inch gang with it or a double Moline disk plow and works his mulch with a six foot dou-

(Continued on page 669.)

What the Nations Should Do for Farming

[Written for the Pacific Rural Press.]

Since our comments and citation on the subject were prepared for last week's issue we have received from President K. S. Butterfield of Massachusetts Agricultural College, who is now in Paris as a delegate from the National Board of Farm Organizations, a copy of the final declaration which his delegation presented on March 15 to the American Peace Commission on behalf of the Reconstruction Conference held in Washington on February 10. This declaration involves principles which all our readers should carefully consider. They would also serve as subjects for discussion and action at agricultural meetings in this State. —Editor.

The important interests of trade and labor have already been recognized in the plans for international co-operation. The equally significant interests of agriculture have apparently thus far not been considered.

In the present crisis the farmers of nearly all countries are practically voiceless in the councils of the nations. They have no international organization, no world conference, no co-operating delegations, to speak their need and to contribute their mind to solving the common problem. Yet no question before the Peace Conference is more fundamental to world welfare than the rural question. This is true because:

1. An adequate supply of food for all the people of the world is an essential item in a program of permanent world peace. A hungry nation or even a hungry group within a nation forms a breeding ground for discontent and revolt; a hungry world means chaos.

2. This necessary food supply must be furnished by the farmers of the world. Together with all other soil-grown products that comprise a significant portion of the raw materials of industry, this supply depends completely upon the toil, the effectiveness, the intelligence of those who actually work upon the land.

3. The conservation and improvement of the soil should be one of the chief concerns in world statesmanship. No other natural resource compares with the maintenance of soil fertility in its bearing upon the future of the race. But no fiat of government nor resolution of conferences can ensure the proper use and care of the soil; only as each individual farmer intelligently tills his land and carefully, conscientiously husbands its resources can future generations as well as the present population of the nations of the earth be assured their food. It is necessary, therefore, to provide adequate means of training, stimulating, and encouraging the masses of farmers in every land.

4. In all justice, the working farmer must have the equivalent of a "living wage." Merely to grow a meagre sustenance for himself and his family, with a scant surplus to sell in the market, as a result of employing all the daylight hours in hard physical labor, does not meet the terms of permanent social justice. The farmers must therefore have a reasonable reward; at the very least they must have fair play in the world's economic arrangements.

5. The possession and use of the land by those who actually till it give guarantees of public peace, of intelligent citizenship, of human welfare, hardly acquired by any other means. Therefore the land should be controlled by those who use it. Access to ownership should be made easy; land leases should favor the worker; land proprietorship should be encouraged to the utmost.

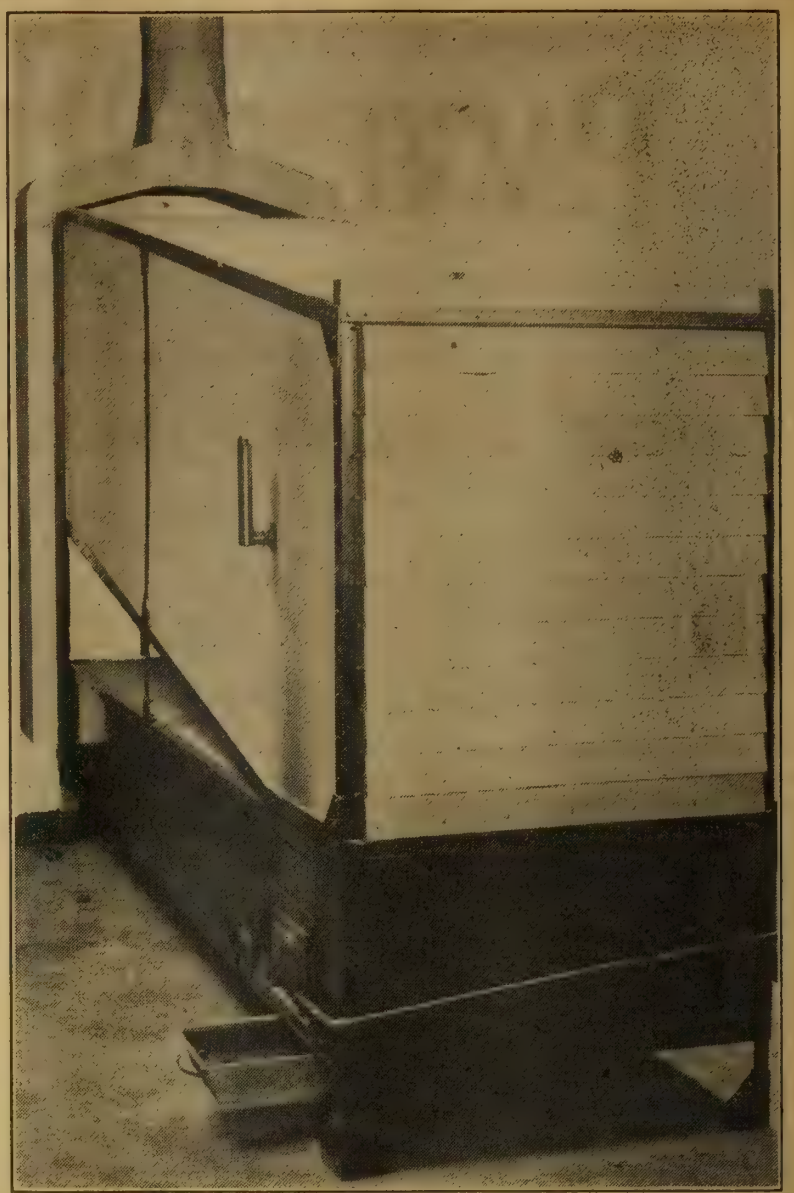
6. The farmer and his family are of more consequence even than the farm. Education, both industrial and cultural, is necessary to intelligent farming and to development of mind. Good local government, health, recreation, conveniences, artistic appreciation, morality, are essential elements in a democratic community. The farmer must have these fundamental requirements of manhood or become practically a slave to unending toil.

7. If the world is to become truly and fully democratic, it is necessary that the farmers of the world should not only understand and appreciate democracy, but they should fully share in all its advantages—economic, political, and social. More than four-fifths of the huge populations of Russia, India, China, live on the land. Poland, the Czecho-Slovak territories, Jugo Slavia, Asia Minor, Mesopotamia, Persia, all are dominantly rural. Africa, South America, Australia are agricultural rather than industrial areas. In the United States nearly half of the people live under rural conditions. In France 48 per cent of the people are farmers. Even highly urban nations such as England and Belgium are finding the farm problem acute and significant.

8. A wise plan of international co-operation in agriculture will provide the mechanism whereby adequate and accurate facts may be obtained, organized, and interpreted; means by which governments may co-operate in spreading popular education for farming and country life and in training an effective rural leadership; legislation which protects the interests of the farmer as a producer, and simplifies and cheapens the process of distribution of soil-grown products; and arrangements whereby the exigencies and uncertainties of climate and weather and attacks of plant and animal diseases and pests may be guarded against so far as humanly possible.

9. No plans of agricultural co-operation on an international basis will suffice, unless it encourages to the utmost the free organization of the farmers themselves, for whatever ends they may desire—economic, social, political. Only so can agriculture be fully democratized, only so can farmers express their convictions, voice their experiences, seek an answer to their needs, and contribute their part to the rebuilding of the world. Organization for co-operative buying, selling, and credit especially should be encouraged in every nation. The effective organization of local farming communities for both industrial and social purposes is fundamental to the larger rural democracy.

10. It is vital to the maintenance of the world settlement that an instrumentality be created to promote international co-operation among those who till the soil. Therefore the League of Nations should make provision for the establishment and perpetual maintenance of means whereby the working farmers of the world shall be enabled to co-operate constantly and fully, in furnishing the world with food, in securing just rewards for their labor, in improving their methods of farming, in enriching their land, in organizing an active and satisfying community life, and in maintaining a high degree of democratic citizenship.



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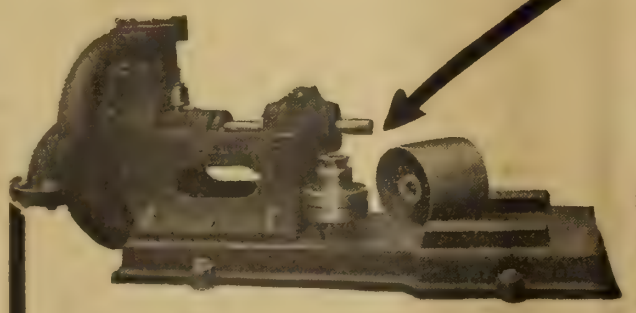
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GOOD ROADS NEED MORE, NOT LESS, SURVEYING.

[Written for Pacific Rural Press by E. W. Doane, Merced.]

I have heard and read other complaints like that of Y. H. Schomberg in the Press of April 5th about highway surveyors wasting the people's money, and as I happen to have received an engineer's education and followed the surveying game for several years, I would like to stick my oar into these troubled waters.

In the first place the reason why we have a Highway Engineering Department is because too many of our roads show that they were surveyed by "two men in half the time." There may be engineers who can place a road survey in the best and most economical line by surveying it only twice, but they are about as few as those farmers who raise dairy cows producing 1,000 pounds of butter fat per year or raise 50 sacks of barley per acre.

Surveying looks easy, don't it? When I was a small boy the county surveyor came to survey a neighboring farm. "Now," he says to the chainman, "you run to that point over yonder," and they started. The rear chainman pulled up at each pin, held his end of the chain over the pin, and called, "stick"; the head chainman pulled the chain tight, and yelled "stuck," and so on. I thought it was great, and the trouble with Mr. Schomberg is that he thinks that is all there is to surveying.

I have known, in locating a railroad line, a half dozen different parties to spend three or four weeks on one ten-mile survey. Fifteen different lines were run and it was all abandoned. Mr. Schomberg would probably have located the only line in a week.

No, sir; there is no one so jealous of getting work done at the minimum cost as an engineer. The assistant engineer in charge of a crew may make a few mistakes or take a few days longer on some piece of line than the division engineer estimated, but he will have to explain why, and if the explanation isn't good he had better be looking for another job. The same with the division engineer; he has to make good to the chief and, believe me, the chief has been through the whole mill and knows what ought to happen, and so do the division engineers.

Judging by my own observations, the Highway Department is spending too little on engineering; a little more study, and a little more inspection, might pay big dividends in the way of reduced cost for repairs on a piece of road that is built for all time. That is the idea—permanence—and you can't build permanently without doing a lot of experimenting and studying, and you want to be right before you go ahead.

No, the highway engineers as a rule earn all they get. The money they spend on surveying is the best spent money in all the road building. The civil engineer is the hardest working and poorest paid man in the world—excepting only the farmer.

RIGHT OF WAY OF IRRIGATION DITCH.

A. E. Chandler, President of the State Water Commission, kindly states the question of the right of way for a ditch for one of our subscribers, as an expression of his personal opinion because his commission has no official juridiction over right of way questions:

Where a ditch crosses the property of another the right of way becomes vested by prescription where the ditch has been operated and maintained for five years—unless the ditch is being so operated and maintained over the lands of the other by permission of the other. As you state, your ditch has been used for about eight years, there would be no question about you having the right to continue its operation and maintenance over the land of your neighbor unless it has been so operated and maintained through the permission of your neighbor's grantors. A prescriptive right would give you the right to operate and maintain the ditch in the way in which it has been operated and maintained in the past, but will not give you a right to enlarge the ditch at this time.

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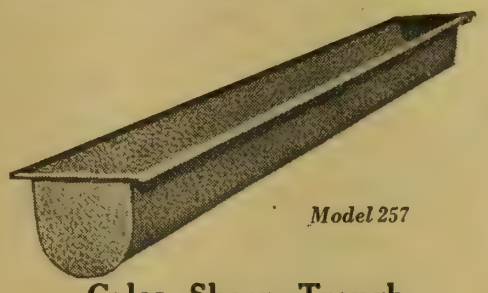
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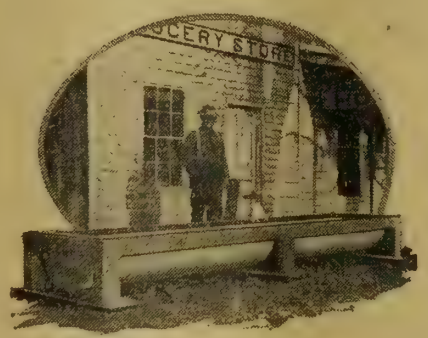
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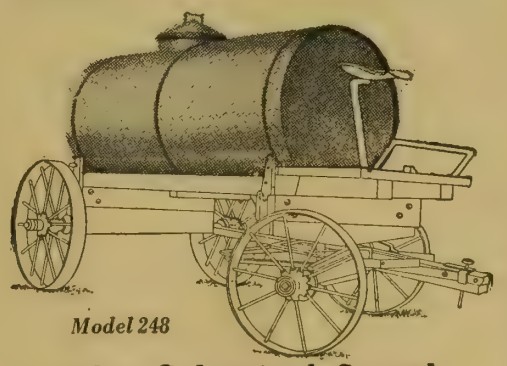
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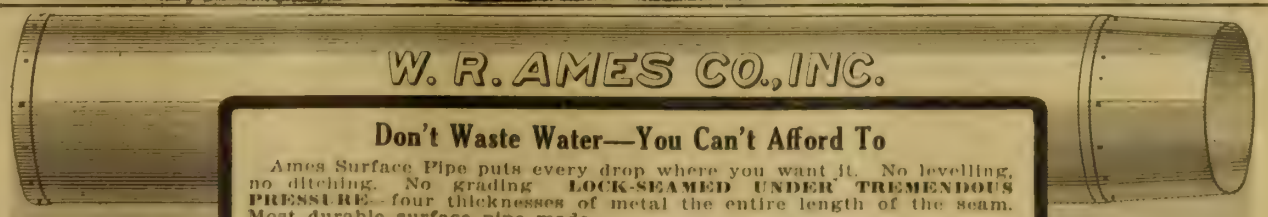
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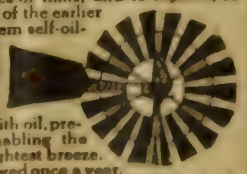
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Getting the Cover Crop Under

[Written for Pacific Rural Press.]

In so many places the late rains developed cover crops to such a degree that they became an embarrassment. Where they were not disked to save all this trouble, there was a veritable tangle. Filaree and mustard are bad enough, but a crop of burr clover that covers the ground like a mat and has been allowed to mature is a "fright" to handle, with the ground drying out rapidly it catches and clogs round the standards while a rolling coulter will often run the plow out because there is not enough "grab" in the share to make the coulter cut through such a wad. R. V. Garrett in the hills near Cupertino was mowing his (April 10) and a mighty good crop of burr clover and filaree he has. He showed us where he left off plowing in despair and took to the mowing machine. He will have to rake it up and shift it over before plowing. He told us that some neighbors had come over to see him to find out what he was going to do as they were in the same boat. He certainly won't want to seed for a cover crop next year. He could not have got onto his ground to plow earlier for the incessant intermittent rains kept his adobe soil too wet to work and kept the stuff growing.

Every spring begins its own problems with regard to working the soil and every man has to decide them for himself. He sets a date for his plowing, perhaps, beyond which he doesn't intend to go. Then we get a season like this when Nature says he can't put a share into that land until she gets through weeping and his fine plans go a glimmering. There is no doubt that those men who disked a little when it was too wet to plow were ahead of the game. In some cases it was difficult to see where the disk was cutting at all, but it did the work even where it only mangled the cover crop a little and hardly marked the ground.

There are a good many of us who wait to see what the big fellow is going to do, who makes a success of things—the man who never saves on any operation because it is too much trouble or because he isn't giving the matter heed. And he is a good man to watch very often but not always, for the best man living is going to fall down once in a while. So it is not safe for any man to be governed wholly by what another man does as no man's judgment is infallible. Here is where our Farm Bureau Centers are of incalculable service. We meet our brother farmers there in a bunch and discuss and compare conditions on our respective farms and cannot help absorbing useful ideas from one another by an interchange of experiences and by asking definite questions that are of moment to us all.

Orchard management will doubtless be always more or less of a problem. Because, apart from differences in rainfall and climate and the textures of the soils, we have such varying conditions in the seasons each year. We generally manage to "get by" somehow or other, but we are learning more and more that proper conservation of moisture in California comes before anything else.

Almonds at Paso Robles

[Written for Pacific Rural Press.]

In reply to our enquiries, G. H. Nehrtrood, Director of the Associated Almond Growers of Paso Robles, has this to say: "As near as I can estimate at present (April 15), we will have about 90 per cent of a normal crop of almonds. This district will, however, turn out about five times as much as usual owing to the number of young orchards coming into bearing. We have planted 1100 acres near Creston this year, and the trees are starting out very nicely. On the high-lying portions of our range out that way, the coldest temperature registered within the past two years has been thirty-one degrees.

We shall do some spraying with Atomic Sulphur on some of our orchards if the yellow mite shows up. If they do we are ready to hit them and hit them hard. In a recent copy of the Pacific Rural Press you state that the Arbuckle people have planted out about 1,000 acres this season and it is up to us to beat them. This district has planted about 2,900 acres this season."

Tom Henry, Manager of the White Sox Ranch at San Miguel, says: "I have visited several orchards lately—spent all day yesterday (April 15) among the almond orchards, and I find conditions about as follows:

"The Nonpareils (young trees) did not set well and they will not have a good crop, but the old Nonpareils have a very good crop. The cause of poor setting on the young trees was the fact that we had rainy weather when they were blooming. The young I X L trees had a poor set from the same cause. The Ne Plus Ultras, Drakes and Texas set very well. None of them have been damaged by frost and I would judge that we will have about 85 per cent of a crop. There were over 2,000 acres planted here this season, and there will be many more acres planted next season.

Fruit Conditions in Stanislaus County.

"Almonds have been dropping to such an extent in Stanislaus County that the crop will be below normal, says A. L. Rutherford, Hortiultural Commissioner. The peaches and apricots are setting well." With plenty of irrigation water in sight and a well defined and strong demand assured, Stanislaus will have a bunch of money to spend again this year. We hear that a number of subsidiary pumping plants will go in. Oakdale almonds orchards suffered considerably from red-spider last year. They will be fighting them now.

THINKS THE 'COTS "TOOK A CHILL."

To the Editor: We are hearing quite a lot about apricots not "setting" their fruit this season, and various reasons are given for this, fungus, black heart, damp weather, etc. Now I have an idea, I may be away off, but I will state what I think may be the reason for the poor setting of the cot.

We all know that the first ten days in January was the coldest period ever experienced in California, we also know that all kinds of palms (with very few exceptions) got so severely frosted, in some sections were completely killed, that it will be a year or two those that did not get killed assume their natural appearance. We also know that the apricot will not withstand very low temperature for any length of time. Now, if palms that were never affected before should get so badly injured, why is it not reasonable to believe that the fruit buds of the apricot were injured by the same frosts?—John Vallance, Oakland.

[So long as no demonstration has been made it is reasonable to cite facts and draw analogies. Our judgment, however, is that the dormant apricot bud can stand a temperature which would knock all palms galley west. Our belief is that causes in operation after the buds become active must be blamed for the trouble. But, as we have said, in the absence of demonstration, that is only an opinion.—Editor.]

AMBIGUITY.

"I'm puzzled. My boy writes me from England that he's lost twenty pounds."

"Getting thin, eh?"

"That's what worries me. I don't know whether he's referring to weight or money."—Detroit Free Press.



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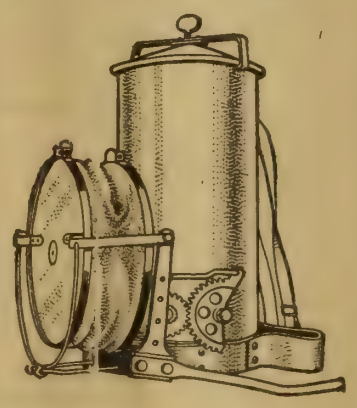
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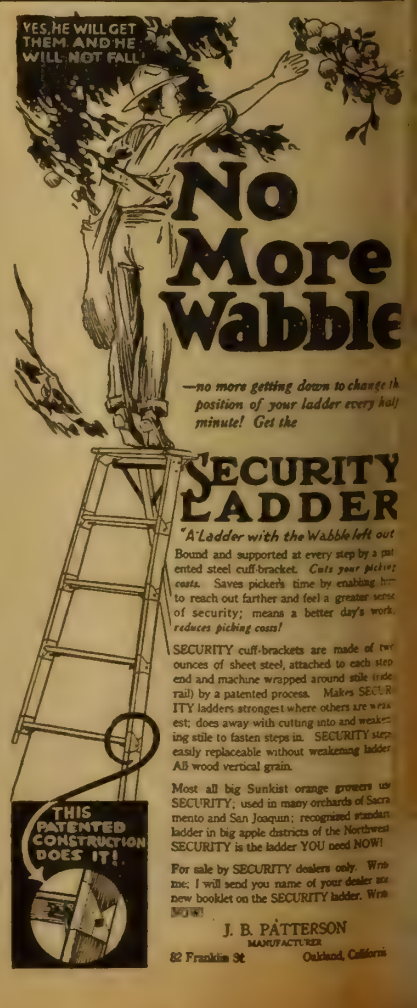
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LOCAL TRACTOR SERVICE.

(Continued from 1st page.)

ble-disk. He said 'service' is the great desideratum for tractor users, that and daily care. Also it was his option that overloading the tractor by new users was the most common fault and one which led to the most common complaint by users when the machines needed overhauling. In regard to this he said:

"All tractor men are to blame in demonstrating their machines at the public fairs and other meetings by pulling an unconscionable load. They tack on tools that are altogether too much for the tractors to pull, sometimes having to edge down the cut of such tools to the maximum pull of the engine. The new buyer figures on using the size tools shown and on driving as fast as the demonstrator does. He thus starts in by overloading and over driving and as a natural consequence lands his machine in the shops in short order. When he has learnt to be as reasonable in his demands on the tractor as he would be with a team he has no trouble."

Mr. Van Orden said further that it was wonderful how tractors were improving in efficiency and simplicity. Here is a machine working under the most difficult and trying conditions—working over rough, hard, dusty or soft, uneven ground with a steady, heavy draft at its tail, yet it had to work really as smoothly as a watch. And he instanced the marvelous methods of keeping working parts free from dust and dirt that are employed on them all today. He suggested that service men in the field could gather many valuable suggestions from users if they could spend more time watching individual operations with various tools attached to their own makes of tractors. The difference in a method of hitch or the point of attachment very often means all the difference between good work and dissatisfaction. A teamster very often works these things out for himself and if he is ingenious enough, carries them out in a rough way. Before plowing under his heavy cover crop, Mr. Van Orden will use the double disk the same way as he plows and then cross the work with the disk to cut out the centers and work a good mulch. Then he cultivates his orchards every ten days or two weeks until nearly harvest time.

We called one afternoon to see Theodore Hook of Walnut Creek—a Director of the Contra Costa County Farm Bureau. He has a 45 H. P. Holt tractor that takes care of some 500 acres of farming land—all black adobe. Ninety acres of this is bearing pear orchard. He can plow that 90 ocres in five ten-hour days with the Holt, drawing six 14-inch bottoms. This averages about three miles an hour most of the time. He uses a P. and O. self-lifting plow and finds no trouble in the turns and also finishes up a neat headland. He says the headland packs a bit but then all headlands pack whatever you use and it doesn't seem to affect the trees. We asked Mr. Hook (who was born on this ranch) how he liked the Holt. Up to a few years ago the place was worked with horses. "Well," he said, "it is the only thing that ever came onto the ranch that has done better than the salesman claimed for it. In addition to the cost of the annual overhauling and general care, I have only paid out $130 for repair parts in two years." He has had no new track in the three years.

As to care and cost, he uses one gallon of field oil and about 30 gallons of distillate a day. Also in plowing he uses from three to five gallons of track oil, but in harrowing, sometimes as much as 15 gallons a day. He floods the tracks about every two hours. He loks after the tractor himself and says it pays to be lavish with lubricants.

Service stations for repairs and care are a necessity. They should be established in every center as soon as there are enough tractors and trucks to warrant them, and if they receive encouragement from the tractor men, it will add to the satisfaction of tractor users and increase their number. By the time these shops become a familiar feature of the rural landscape the small urchin will learn all about the "innards" of the machine by watching—just as our country lads learned many things about horses and gear in their youth while haunting the blacksmith's shops. They should become expert drivers and handy men by the time they leave the eighth grade. This will lead to more custom machines being used whereby enterprising young men will contract to plow and cultivate half a dozen small ranches that consider themselves too small to keep a machine of their own and yet have not really enough work to keep a team going more than one-fourth of the time.

None of the men whom we saw would willingly go back to horse labor again any more than an automobile owner would be content to return to the buggy. The reason does not mean so much cost per acre saved apparently, as time and moisture saved in the spring and chores and man labor reduced.

If the promise of this spring is fulfilled hundreds of tractors will appear next fall where horses are now.

Soy-bean meal, like cottonseed meal, has a high fertilizing value. Feeding the meal to stock and applying the manure to the soil is the most economical way to use it.

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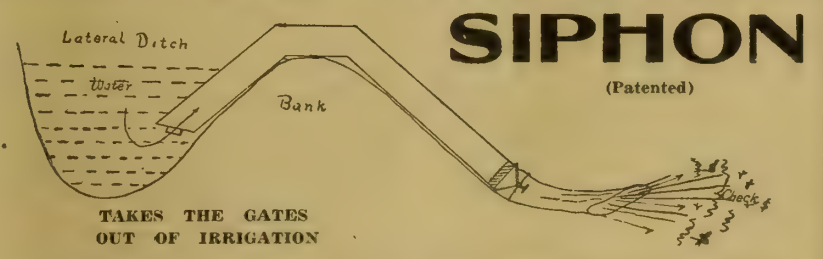
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Fruit Growing an Everlasting Fight

[Written for the Pacific Rural Press by by John J. Fox.]

At a grand inspection of troops in Ireland taken by a celebrated general who would brook no profanity in his officers, a certain very irascible colonel of cavalry transmitted the order to sound the "charge." The trumpeter in his nervousness sounded the "retreat" instead. Upon which the colonel dashed up to him exploding with wrath but, seeing the general within earshot he dared not swear. So, after writhing in an apoplectic state for a few seconds, he shook his fist and said, "Naughty, naughty trumpeter!" His usual vocabulary of invective having been denied him he was unable to do justice to the occasion.

And the way that colonel's bottled up wrath affected him is just what many a fruit grower feels when, after a long and costly campaign against one pest or condition has been won, another shows up in some other form. Florida has just won a four year (or more) war against the citrus canker—a disease brought in on imported stock. It cost her millions of dollars and the federal government millions more to eradicate this disease. Florida lost by its ravages 247,840 bearing orange trees and 2,953,768 nursery trees as well as being placed in quarantine by every other orange growing country. At last she is able to report that no case of citrus canker has been discovered in six months.

It is only by the strictness of our own quarantine laws faithfully administered that has kept the pest out of our State. Prevention is better than cure and cheaper. And now Professor Watson, of the Florida Experiment Station, has issued a warning that "the white fly situation is truly alarming and that unless vigorous action is taken to control it, the growers may expect an even heavier infestation with the accompanying sooty mould and damage to tree and fruit; a rapid increase of purple scale, general infection of melanose and stem end rot."

Nobody can blame the grower under such conditions if he says something stronger than "naughty, naughty." But he has to do something as well. Our State Horticultural Commissioner isolated and cleaned up the white fly in Marysville a few years ago and is doing the same in sporadic cases showing up there again and at Sacramento. But the fruit grower has to be eternally vigilant. And he must act without delay not only at the first sign of attack but often to forestall any possibility of attack as in the case of fungus diseases.

If he waits to see foliage badly affected by the attacks of red spider or mites or bean thrips, the damage has already been done and cannot be repaired—those leaves are gone to a large extent so far as their functioning is concerned though they may still afford shade. Then there are the codling moths which must be fought at the right time if any good in to be done. Last year we lost heavily—in foliage especially—by canker worms, tent caterpillars and tussock moth worms. The man who doesn't own a spray outfit is like a man who has to go and borrow a neighbor's gun to repel marauders. It is handier to have one of your own and then you can shoot first.

The growing endeavor to set prices for us on the part of consumers would be humorous if it were not so serious. Because it must be apparent to all that if any commodity does not pay to raise it will not be produced. A farmer's strike would be automatic, not organized. Over $250,000,000 has been added to our cost of transportation by rail in increased wages to employes. The consumer thinks the farmer should foot this bill. The people have voted for standardization of products and quite rightly. They can not expect to get the perfected article at the same price as orchard run. It costs far more to produce a perfect apple—or any other fruit—than a small wormy one. The farmer should foot this bill? Farming and any other food production from the land is above this particular law of economics—the definite establishment of prices. For no farmer knows any year what his cost of production is going to be. For instance: last year the cost of harvesting prunes and raisins was more than doubled by rain and high cost of labor, yet the quality of a very large percentage was so impaired that it was cast out as hog feed by order of the pure food men—would most of it have been so used even without their authority? It is only the fact that the growers are organized to manufacture, process and market their own products that makes them reasonably safe from exploitation today. The war has taught the farmers more and more the importance of organization to achieve results and to safeguard their interests. It has also taught the independent packers how to organize.

How?

We have our noxious insects, our plant diseases, our rains, frosts, drought and the desire of the consumer and the politician to handle the other essential details of our business for us. The farmer's fight is just one practical joke after another. By unremitting work he can keep his own barracks clean. His "company" is well drilled and ready to fight for hearth and home. But there is no "general," no coherence, no organized plan to withstand an onslaught on his own domains.

So the captain of each company can say "naughty, naughty" as much as he likes when his organization is attacked. And that is about all the good it does him. For his position is isolated and he has no reserves.

Effects of Frost in Tulare County

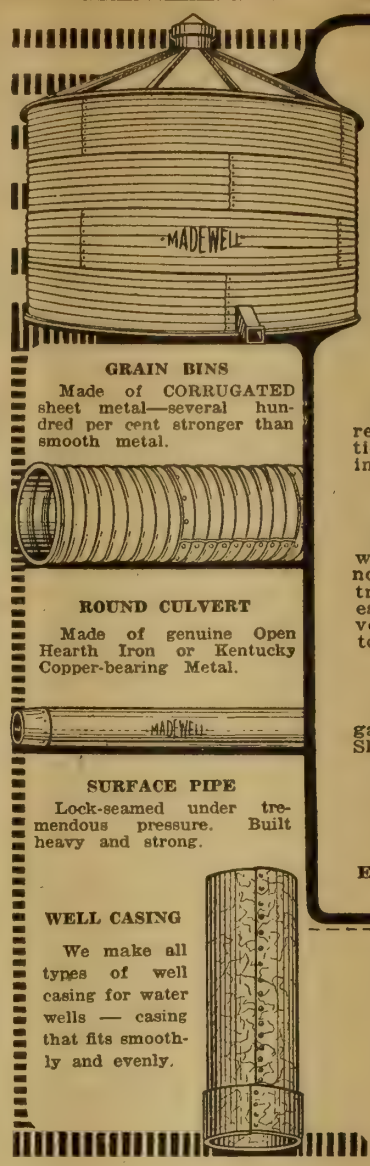
[Written for the Pacific Rural Press by Franuk A. Brann, Horticultural Commissioner]

Injury to citrus fruit from frost, season 1918-19, was confined almost entirely to the Valencia crop. There was apparently no injury to bearing trees. A high degree of humidity of the atmosphere during the entire frost period was probably the reason for this. Estimation of the Valencia fruit injury is as follows for the entire Lindsay District.

About 70 per cent of the crop was injured to a greater or less degree—about 30 per cent escaped serious injury. About 25 per cent of the crop consisting of fruit of least degree of injury will recover sufficiently to be marketed under the laws governing frost injured fruit. This means that about 55 per cent of this season's crop will be put on the market or about 45 per cent loss. The major portion of fruit injury occurred on the north side of trees (the reverse of usual frost injury to fruit), probably due to the long period of time fruit remained in a frozen condition as the days were cool and cloudy and consequently little thawing occurred.

In most cases only the most exposed fruit of the south sides of trees was injured to a degree of total loss, except on properties unfavorably located and where damage was severe. The most favorably situated groves of the hillsides and protected spots escaped with practically no injury. Aside from these groves the degree of injury to the extent of loss runs from about 3 to 95 per cent.

A very peculiar (and new to this district) condition occurred relative to the most severely injured fruits. Abscission of the stem occurred on about 7 or 8 per cent of the fruit (almost entirely on north sides of trees) and this amount has dropped to the ground. Of course this peculiar result obviates the necessity for picking, hauling, separating, grading, and dumping of this fruit, and is consequently somewhat of a saving of expense to the grower. The percentage of this crop was not the same on all groves injured.



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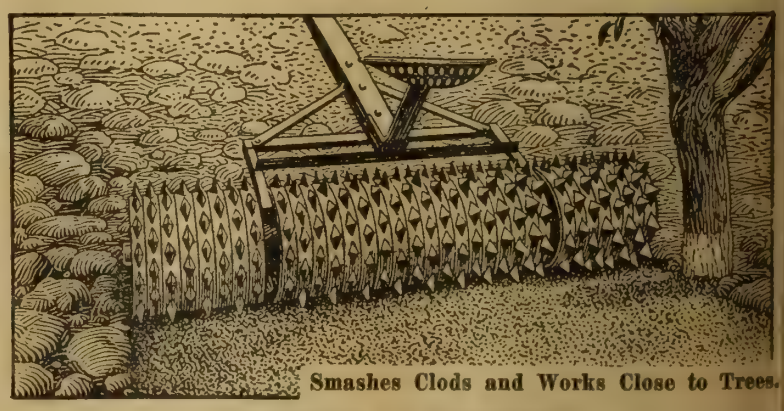
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We have but a few thousand left.

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First National Bank Building,
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HORTICULTURAL JOTTINGS.

5000 acres at Fruto, Glenn County, has been bought by E. D. Conolley of San Francisco.

Smartsville cherries (Nevada County) will be ready to pick in about two or three weeks.

A little over two acres of land at Montecito (Santa Barbara County) has been sold for $10,500.

"Almonds are all right," says C. C. Neot of Oakdale (Stanislaus County), who claims three tons of nuts from three acres of trees last year.

The outlook for peaches in the upper Sacramento valley, in the foothills and the peach sections of the interior is excellent at the present time.

The Roy Jones estate (Romina Ranch) at Tehachapi has 150 acres in bearing pears and 150 acres in young pear trees. The rainfall has been good and the ground well filled in this section.

A citrus grove and apple orchard merger involving property worth $100,000,000 is announced. The plan is to merge citrus interests of California and Florida and apple interests of various sections.

The first cherries of the season were shipped East from Loomis (Placer County) on Thursday, April 17. The variety is known as the "Early Loomis" and came from the orchard of Mrs. C. B. Roddan.

75 of the leading prune growers of Butte county met at Chico recently and hope before the next harvest to have every prune grower in the county a member of the Prune and Apricot Growers' Association.

The East Side Canal and Irrigation Company (Stanislaus County) has been authorized by the Railroad Commission to increase its rates from $1 to $2 an acre provided previous orders of the Commission directing certain improvement are carried out.

A serious infestation of field mice was reported to the Rodent Control Division of the Horticultural Commission by L. R. Cody as occurring on the L. B. Dutton ranch. An average infestation by counting the burrow in given areas was 70 between four trees. Control measures were taken at once.

George Compere, who has been serving with the Federal Horticultural Board at New Orleans organizing a new Quarantine Department there, has now resumed his duties in the San Francisco office of our own Quarantine Division where he belongs.

A Fresno syndicate has purchased 3700 acres of the California Wine Associations' great Western vineyard here it is announced for the purpose of subdivision and colonization. The price paid is stated as $1,300,000. It is expected to cut the holding into lots ranging from 20 to 160 acres, 2551 acres is in growing vineyard half wine grapes and half raisin grapes. 160 acres has been set aside for a townsite.

The acreage devoted to cantaloupes in 1918 for this State amounted to 15,650 acres, according to the U. S. Bureau of Crop Estimates. This year's indicated acreage is 21,867, an increase of 39 per cent. The total acreage of cantaloupes in the United States last year was 42,370, while this year (1919) the estimated plantings will comprise 60,233 acres—an increase of 42 per cent.

It is estimated that one-third of the strawberry crop of California has been contracted to freezers at from nine to eleven cents per pound. Some canners are contracting at ten cents.

It is reported that 600 carloads of wine grapes have been contracted in Placer County at $30 a ton, with 400 carloads more in prospect. A Chicago man is said to be the buyer. The grapes are to be used in the East for home wine-making.

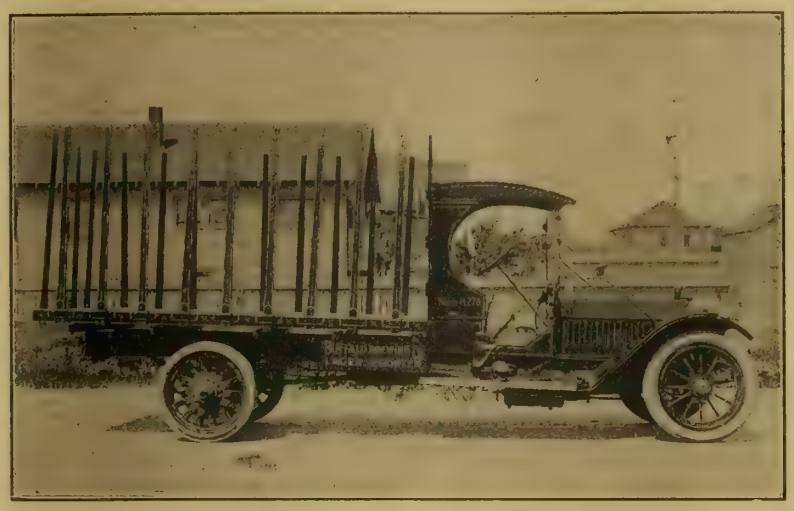
About 5,000 new apricot trees have been set out in the Alizal section—mostly Royals—and 6,000 in Aromas, according to Horticultural Commissioner John B. Hickman of Aromas (Monterey County), 8,000 young almonds have been set out by Clyde Patton of Pleyto; I X L, Nonpareils, Ne Plus and Drakes. All young stuff is looking well so far, and if they receive proper cultivation and protection this should be a record year for young orchards all over the State.

More than one-half of the cotton crop of 1918 grew in Texas, Georgia and South Carolina.

During the past two years six new packing houses have been established at Livingston (Merced Co.) three of them of a co-operative nature. In nine years the population of this growingly important central town has increased from 3900 to 5200.

A handful of rags fastened to a poke and soaked in kerosene is an effective weapon to burn out nests of gregarious insects, as the apple-tree caterpillar, fall-webworm, and others.

Louisiana expects to ship 1000 carloads of Strawberries this year.



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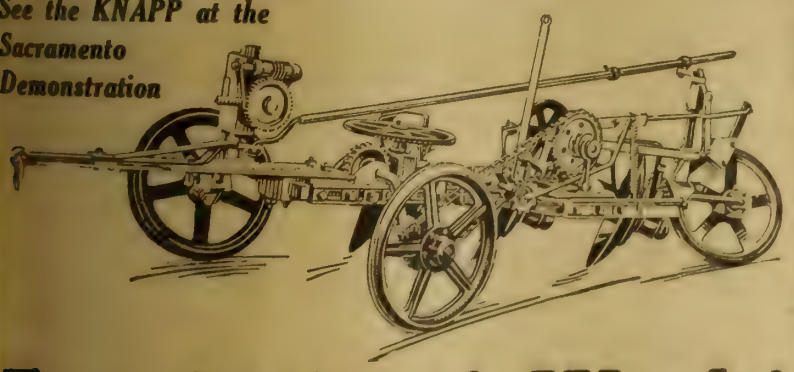
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Plant the right variety for your purpose, whether you are growing for home or market, or whether you are growing for cattle, horses, hogs, goats, rabbits, or poultry. See the 1919 Catalog of the

Aggeler & Musser Seed Co.

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Here and There in the Fruit Business

[Written for Pacific Rural Press.]

Mealy-bug Destroyers.

A report from the State Commissioner of Horticulture states that during February a large colony of the mealy-bug destroying ladybird Cryptolaemus, was sent to France at the request of the French Minister of Agriculture. Colonies of the ladybird Hippodamia will be despatched to Australia. A shipment of parasites of the new Japanese mealy-bug is expected shortly from Honolulu. As an example of the recent effective work done in the biological control of insect pests, an inspection of the Culp orchard at Santa Paula, our first demonstration orchard, failed to show a single mealy-bug, though this orchard for the past ten years had been severely infested. Throughout Ventura County, where we have introduced beneficial insects, great improvement is shown.

A Singular Circular

Bearing the signature of Hills Brothers Company, Beach and Washington streets, New York City, appears to be knocking us for the purpose of helping their Syrian brethren. Read: Figs—"We want to call especial attention to our article on figs in our circular yesterday. There is hardly a shadow of doubt but what we will have an ample supply of the selected Camel Brand of Smyrna Figs next fall. No doubt our California friends will unload their kindling wood, which, out of courtesy they call figs, on the trade at high prices. We have every reason to believe that there will be a good quantity of Smyrna figs shipped into the market early next fall, and if there are you may be sure that there will be gnashing of teeth among the jobbers who have loaded up with the California kindling wood." If this is trade propaganda it is rather coarse work. Nothing subtle or insinuating here. It certainly is not the way to curry favor with real American buyers.

Getting Acquainted.

After 20 months service "over there," Edward W. P. St. George, amongst other interesting things, tells us that: "California packed fruit and oranges are for sale throughout France and Belgium at every canteen and I bought Fresno raisins from a German shopkeeper in Cologne. On the package was a label showing the package had been sent with a Red Cross shipment to the starving Belgians, only to be stolen by the Germans. I want to suggest that Jimmy Hunt, the Del Monte people and the other fruit packers put the map of California on their labels so there will be no mistaking the fact that the fruit in the cans comes from this country. There is nothing like the canned fruit of California to be had in all France or Belgium. There is nothing to substitute for it, so it is eagerly sought after."

Government to Extend Our Markets.

The government program for the extension of American foreign trade in the interest of the farmers has been placed entirely in the hands of the Department of Agriculture's Bureau of Markets, which announced recently that several agricultural trade commissioners will be sent abroad to study the marketing and distributing of American farm products. Before the war foreign trade in agricultural products reached a total of more than a billion dollars, or 45 per cent of the total exports of the country.

Among the specific activities of the bureau will be investigations on grain and grain products, cotton and cottonseed products, livestock and meats, dairy and poultry products, fruits, vegetables, nuts, honey and tobacco; export forwarding and transportation of agricultural products.

Market Bare of Raisins.

All the large market centers are now bare of raisins, according to Holgate Thomas, sales manager of the California Associated Raisin Company. A heavy export demand is arising. This year's raisin crop will be sold on the basis of "firm on opening price," and the opening price will be named July 15 at the earliest. Mr. Thomas has started on the annual grand trade tour. He says, "It will be my purpose to visit all the big trade centers, to gain an insight into the prospects of the business and to confer personally with the Association's private brokers and to meet the jobbers in general. Large shipments of raisins to Scandinavia, Holland and Denmark are already assured. Great Britain and France will allow no exports. The British Food Ministry is still in force in England, but a removal of these restrictions soon is not unexpected. We have already received many inquiries from the Orient, and we expect a heavy tonnage out of Pacific Coast ports."

Cancellation of Contracts.

In a test case in the name of the Clovis Fruit Company, the District Court of Appeals recently reversed the decision of the lower court which awarded damages of $4,932.32 against the California Wine Association for cancellation of contracts for wine grapes. This will involve many other cancellations. According to the evidence, all contracts for the purchase of grapes contained a provision that should the law be modified so that the tax on brandy used in fortifying sweet wine be greater than 6 cents per proof gallon, defendant at option could cancel the contract. The court ruled the cancellations were legal.

Decrease in Strawberry Output.

The Middle Western States are reported to have considerable less acreage in strawberries this year. The same is true of the Atlantic Coast and in Missouri and Arkansas in the South. Louisiana is now shipping. Last year growers suffered a heavy loss from drought which is said to be responsible for a reduction in the country's acreage which will be reduced approximately 30 per cent.

In California a slight increase in acreage planted has taken place and prevailing conditions offer a warrant for the remunerative prices prevailing for strawberries.

Pear Seedlings Distributed.

Fifty thousand young Chinese pear trees which are said to be blight resistent have been distributed to experimenters, orchardists, scientists and nurserymen from the U. S. Plant Introduction Station at Chico. Among them were a number from the Ural Mountains. The blight resistent pears grow wild in China. The seeds were gathered there and shipped to the Government Experimental Station at Chico a year ago by the late Frank N. Meyer and Professor Reimer of the Oregon Agricultural College.

Berry Baskets to Remain as They Are.

The endeavor of the State Sealer of Weights and Measures to flatten out the bottom of berry baskets has been defeated. Every berry grower knows that this spring bottom is not for the purpose of misleading the consuming public, but that the tender fruit therein shall carry in sounder condition. The law provides for the amount of berries to the basket, just as a standard quart of liquor is the actual content of the bottle and the bubble in the bottom doesn't matter.

Standardization in Washington.

The Washington State Senate has killed a bill which would have allowed apple growers to ship cull apples into State markets unwrapped and in specially marked boxes. These apples must now be sent to the by-products plants. Many of the prominent fruit shipping organizations throughout the State opposed the bill and assisted in defeating it.

A Goodly Yield from Figs.

E. Brumi of Hughson (Stanislaus Co.) has sold this year's crop on four acres of figs, it is reported, for the sum of $3,000. The purchase price has already been paid in advance. Mr. Brumi is only called upon to plow

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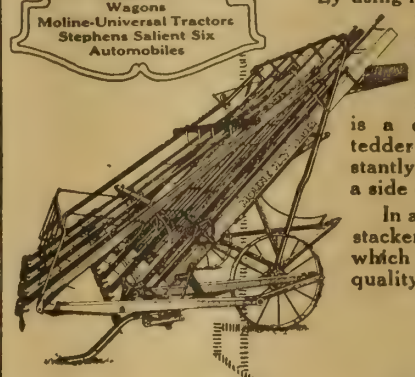
Use Moline Hay Tools this year and you will accomplish two things—obtain a better grade of hay and save a great deal of time.

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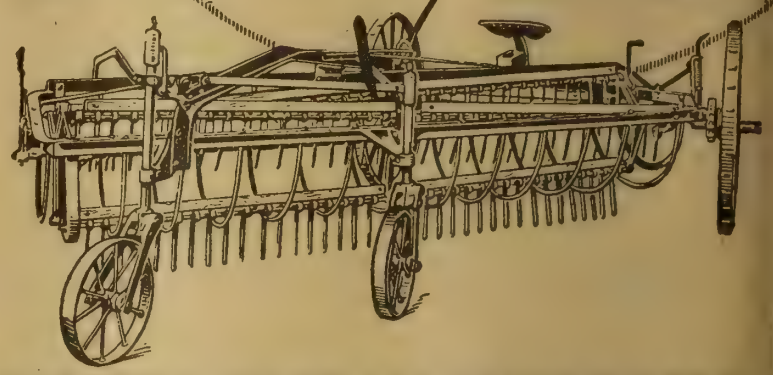
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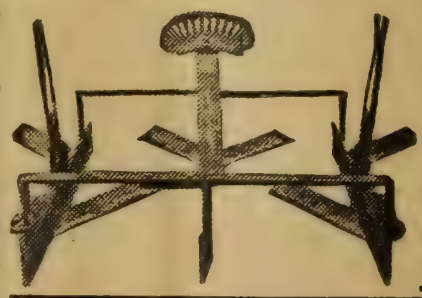
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and work the orchard and give it one irrigation—the purchasers will attend to the caprifying, harvesting and marketing and assume all the risk of getting a crop. The trees are all Calimyrnas, 16 years old. The owner has this year set out 20 acres more. Why not?

Plum Foliage Burned.

We spoke of a little foliage injury from lime sulphur last week, but it was nothing to hurt and had been beneficial in brown rot control. The owner in passing had given a 10-year old plum tree a spraying of the same material for luck. It took all the plums off and severely burned the young foliage, which looks as though 1 to 30 of lime sulphur on very young plum foliage is a bit too strong.

$2,000 an Acre for Prune Orchard.

$250,000 was refused by the Pomeroy Bros. (Santa Clara) for their 125 acres of prunes, it is reported. This creates a record for prune orchard values. From present appearances they may make 25 per cent on this price the current year. Have to make up for lean years once in a while.

Walnuts in Orange.

The Walnut Association of Orange County shipped 4,224 tons of walnuts of the 1918 crop. Assuming that independent shippers handled a quarter of the walnut crop of the county, the total output reached $3,151,680. Orange County claims to be the heaviest producing walnut county in the State.

Lemon Grove Sells.

$30,000 for a nine-acre lemon grove belonging to George E. Vorhees of Montecito is a sale reported from Santa Barbara. A New York man has made the first payment on option to buy 100 acres in this section, the purchase price of which is said to exceed $400,000.

Operations Against Mealy Bug.

Have been carried out in Vineyards in the San Joaquin Valley near Selma by stripping off the rough bark in order to give the spray a better chance at the little pests.

Pear Prospects in Nevada County

"In the Grass Valley and Bridgeport districts the bloom in going to be light," said D. F. Norton, Horticultural Commissioner of Nevada County on April 16. "Cannot tell yet what the set will be. In the district above named there are no fruit buds on spurs, mostly terminal buds on last year's growth, which is very unusual. Chicago Park and Forest Springs Districts are showing 75 per cent of last year's bloom, but will be a bigger crop than last year on account of young orchards coming into bearing. Some blister mite is showing up in orchards where the spray was not on early enough. No blight has shown up yet, nor am I anticipating any. One season of blight in thirty-two years is more than enough to satsify us. Orchard plowing is under full headway, and the ground is in prime condition. April weather has been ideal for late sown grain, and late plowing—a number of showers, with warm, cloudy weather following.

One of your good subscribers (perhaps he would not like to have his name mentioned), sent me a clipping from the Pacific Rural Press, asking me if I had not been misquoted when I said to spray when the buds were just breaking, and again when the blossom clusters had separated, for the control of pear scab, using the lime sulphur solution, one to ten. He said "it seemed incredible that we could use 1 to 10 as reported, without destroying the crop." * * * He says, "I began spraying my Bartletts with Rex just as the blossom clusters were beginning to separate, using 10-190 and the injury was so apparent we quit without finishing the job." Let me say that I was not misquoted, that this is the strength we use here, and we control the scab. I have sprayed with that strength when the trees were in full bloom without injury; though I would not advise spraying at that time as it interferes with pollination."

FIGHTING THE CABBAGE APHIS.

To the Editor: Lice are multiplying on our acreage of commmercial cabbages. What should be done?—Grower, Los Molinos.

[Answer by E. Ralph de Ong, University of California.]

We have been compelled to spray our cabbage grown at the University Farm as a protection against the insect, the usual remedy applied being nicotine sulphate at the rate of six ounces per fifty gallons of water, with sufficient fish oil or rosin soap (dissolved) to make the water sudsy. The amount of soap will vary with the hardness of the water. This will cause the spray to spread in a film over the leaves instead of rolling off in little drops.

In our experience at Davis we got the best results by spraying the first part of April and again about a month later. The usual method of application is with a knapsack pump, a short spray rod and an angle nozzle. It will be advantageous to have two men work together, one lifting up the leaves of the plants so that the spray can be thrown directly on the aphids. We counted on an expense of from $2.00 to $3.00 per acre for labor and the spray material will be at the rate of about 1½c per gallon, making a total cost per acre for material of about $1.00. If a very heavy infestation is present of course larger amounts of spray will be necessary.

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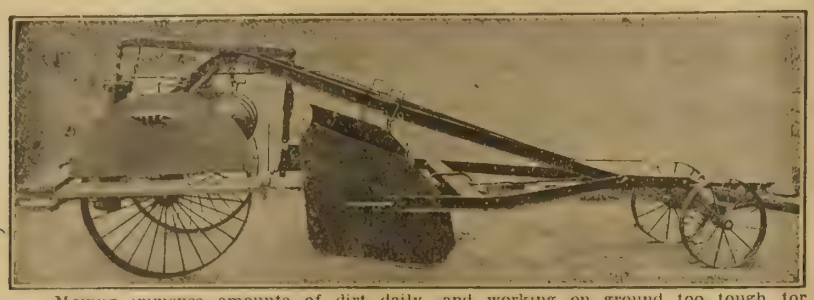
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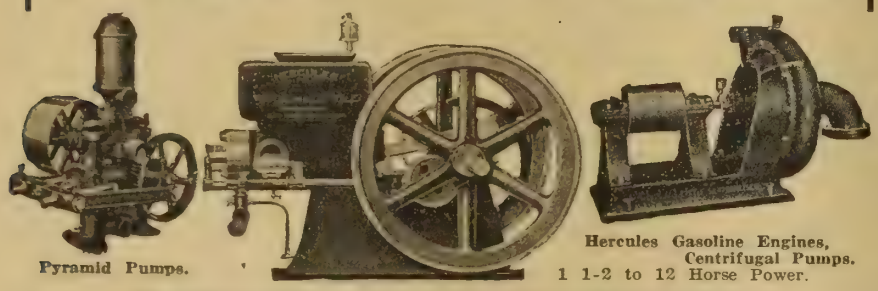
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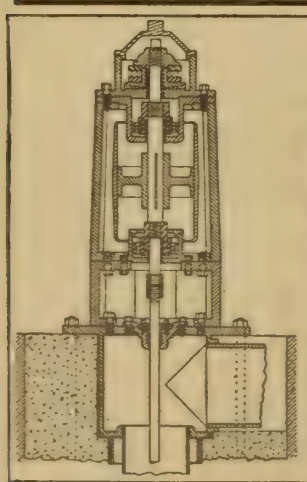
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GRAINS AND BEANS IN STORAGE.

Receipts of wheat in San Francisco during March were more than five times as great as during March, 1918. Barley receipts more than doubled, bean receipts were reduced from 104,634 sacks in March, 1918, to 77,784 in March, 1919. More hay was received, but less oats and corn. On April 1 there were 15,580 tons of wheat in Port Costa warehouses, 5,604 in Stockton, and 144 in San Francisco. On the same date there were 20,232 tons of barley in Port Costa, 10,364 in Stockton, and 731 in San Francisco. The accumulation of beans was 289,746 sacks as against 164,170 a year ago and 137,389 two years ago.

Prune Price Pointers from Association

[Written for Pacific Rural Press.]

Except at a few points we understand that no large amount of prunes has been purchased from non-association members. In some districts packers have purchased prunes from non-association orchardists largely at prices of 8 and 8½ cent basis. In Santa Clara and elsewhere they have made some purchases from growers desiring to secure advances. It is not likely that Eastern buyers would readily purchase at the high prices now offered to growers by independent packers if they thought the price likely to drop. We have heard of eleven cents being offered and the fruit not yet set (April 10).

Yet the prospects of a crop today are better with 10½ cents offered than they were a month ago when they were bought at 8 cents and 8½ with the trees dormant. There are over 6,500 growers who are members of the Prune and Apricot Growers' Association. They have command of the prune situation. It used to be governed by about a baker's dozen of non-producers, who manipulated your produce and divided the profits among themselves.

Want to hand it back? If not, fall in with the main squad and keep step. The greatest difficulties of the association are the result of your fruit being purchased and marketed in competition with them. The association alone is extending markets to take your wares—is spending money to advertise and push them. Its brands are registered in fourteen foreign countries. It has connection with brokers and sales agencies throughout the world. It is selling more prunes today at double and treble the prices obtained a few years ago on a smaller crop when you were told the low price was due to overproduction and an engorgement of the market. And there are some 70,000 acres of young prunes and apricots not yet in bearing! Without the organization how would you find a market for that? When, up to 1909 four cents was a record price and was looked upon as a fair "knock down" by some growers who had sold prunes at a 1½ and 2 cent basis only 15 years ago. The farmers and growers organizations all over the United States welcome every new member—must have them to keep pace with increased acreage. They are not impatient as the darkey girl was to her shy or reluctant lover in the song who hesitated outside the door:

"Don't stand out on the coky-nut mat
A scropin' yer feet abaht;
If ye want ta come in, come in, come in,
If ye don't—stop aht!"

The new member, no matter how small his acreage, is a welcome recruit whether his trees be young or old. His name on the roster of associated growers is another buttress to the industry he has chosen to adopt as a profession.

THE FRUIT GROWERS' SUPPLY COMPANY.

[Written for Pacific Rural Press.]

This is a growers' co-operative organization, subsidiary to the California Fruit Growers' Exchange at Los Angeles, for whose members it purchases and distributes supplies. Its annual report shows business transacted for the year ending August 31, 1918, to amount to $4,281,956, a decrease of nearly one and a half millions as compared with the previous season to match the reduced crop. Packing house supplies handled during the season amounted to $2,228,030 and orchard supplies to $1,281,966. After deduction of the operating expenses and transfer of 10 per cent of the remainder to the sinking fund reserved for contingencies there is available for refund to members on their packing house purchases $90,008 or 4.0398 per cent of the value thereof and $44,864 on orchard supplies or 3.49 plus per cent.

The principal supplies handled are box shook, fruit wraps and box labels, nails, cyanide, sulphuric acid, fertilizers, cover crop seed and bud selection from superior citrus trees. The directors have adopted a plan known as the "Revolving Fund Agreement" providing for the annual partial redistribution of the stock of the Supply Company among its members. This insures a distribution of the capital stock of the Fruit Growers' Supply Company upon a more equitable basis and provides in a practical manner for the liquidation of the investment of a stockholder should he cease to market his fruit through the California Fruit Growers' Exchange.

GRAFTING IN BORED HOLES.

[Written for Pacific Rural Press by Samuel Haigh.]

Here is a new way of grafting that any one can manage. It occured to me through my failing to secure one of the so-called side grafting tools, as I understand the patent is being contested—at least that was the explanation given by the agent when he returned our check.

Being anxious to try side grafting I thought a round hole was just as effective as a three-cornered one and also less trouble to make. I therefore selected some of the small center bits in the shop; bored holes 1¼ inches deep in the trunk and main limbs of apricot, apple, walnut and peach trees; selected scions to fit the holes tight. With a sharp penknife I cut three narrow (⅛-inch wide) wide strips of bark at equal distances round the scions lengthwise and drove them in tight, leaving about ⅛ of an inch of the bare wood outside of the of the hole in trunk of tree so as to insure that the cambium layers of scion and stock would cross each other in different places. Every scion is now growing. The method is so easy of application that I thought it would interest fruit growers who lacked experience in grafting by the ordinary methods.

If I found a scion that was a loose fit I split it open and inserted a thin wedge of green wood, just entering the wedge in the split end of scion sufficiently to hold it in place when fitting it in the bore, then I drive it in until it fits quite tight, applying hot asphaltum and resin round the graft, working it smooth and air tight with wet fingers. I grafted a grape vine the same way and stopped the flow of sap with plaster of Paris by making a dam of asphaltum on the root of the vine before boring into it, then quickly inserting the scion, driving it in tight as in other fruit trees, piled the plaster round it and left it. It soon hardened but as it has only been inserted a few days I cannot say whether it will unite or not.

San Jose.

[This method has been commended from time to time—especially in grafting grape vines—but has never come into wide use, perhaps because it requires more time and a little higher order of mechanical skill than common methods. Still it holds the scion firmly, with less danger of blowing out after heavy top growth and is a great joy to a good mechanic.—Editor.]

VINES FROM LONG-JOINTED CUTTINGS.

To the Editor: My Thomson seedless vines made very long growth last year owing to good soil and abundance of irrigation water. Are these long-jointed canes good for cuttings; or will they produce inferior fruit; or is the objection to them caused by scarcity of joints which produce roots for the new vine?—L. D. A., Madera.

[Answer by Professor Bioletti.]

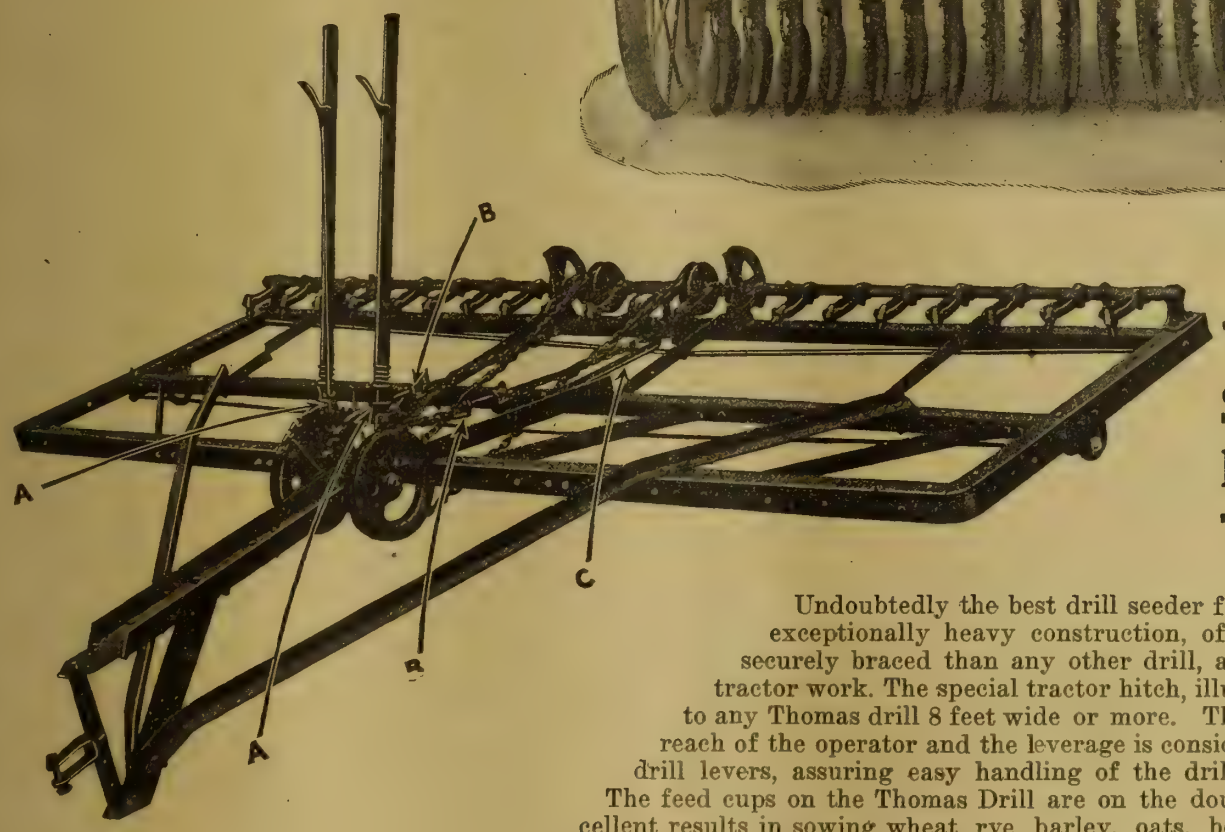
A long-jointed vine cutting is unsuitable for rooting for several reasons, the principal of which is that it roots with more difficulty than a shorter jointed cutting. It is usually less well matured, less supplied with reserve nutriments, and does not make so much growth the first year. If it grows, however, there is no reason to suppose that it will not make just as good a vine as any other cutting and that the fruit is not absolutely identical.

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The Western Three Section, Pulverizer, Mulcher and Packer



This remarkable implement does the work of three machines in one operation—pulverizes, mulches and packs. It closes up all air spaces between the subsoil and the surface and leaves the packed soil with a loose granulated mulch on top, which retains all moisture.

The loose motion of the pulverizer wheels prevents clogging in almost any kind of soil and makes this implement the only one that can immediately follow a plow without clogging.

The Western Pulverizer, pictured here, is built in three sections of very heavy angle steel for use with any tractor. Its three sections give it great flexibility, which means the best results on both level and uneven land.

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Co-operative Marketing of Livestock

[Written by Dr. Elwood Mead, Univ. of California.]

At the recent Cattlemen's Convention at Davis, the report of the marketing committee showed that during April, May and June, there is a surplus of beef cattle ready for market in this state, and it was decided to ship the surplus stock to Eastern markets in trainload lots. However, the fact was disclosed that year in and year out this state produces no more beef than it consumed, so if cattle are shipped out during one period of the year, a corresponding number must be brought in during another period, and the plan is not without its drawbacks.. Prof. Mead prepared the following address for the Swine Breeders' meeting, but was unable to deliver it on account of illness. It suggests a remedy for the difficulty.

The trouble which confronts stock raisers in this country is that there is not free competition between buyers. Five meat packing firms have steadily extended their domination until they now control the marketing of meat in all great cities. This enables them, where the government does not interfere, to control prices. They have absorbed, or are able to dictate to, small packers and independent butchers. They own all the important stock yards, the refrigerator car lines, the cold storage warehouses, the cattle loan banks, the trade papers and the canneries. Some of the packers are establishing trade chain stores, butter and cheese factories, tanneries, and other marketing facilities. They not only control markets, but the means by which marketing is carried on. Stock raisers have come to believe that having this monopoly control they used it to manipulate prices in such a way as to bring profit to the buyer and serious or disastrous losses to the seller, because livestock once shipped or ready for market must be quickly sold to stop the mounting costs of care and keep.

When the war brought a need for more food, and especially for more meat, the stock raiser had to be protected against these arbitrary changes in price and the remedy used by the government was price fixing. The President gave as a reason of this action that "unjustifiable fluctuations in prices are not merely demoralizing—they inevitably deter adequate production." Price fixing cannot, however, be considered a permanent solution. Its value depends too largely on the fairness and wisdom of the office-holder who fixes the price. The fixing of the price of fish in California does not seem to have satisfied either the producer or the consumer. The report of the Federal Trade Commission and the hearings of the Senate Committee on agriculture last winter both show the gravity of the present situation, and have lead to the introduction of what is known as the Kendrick Bill. It aims to restore competition in buying by taking away from the five big packers the right to own car lines, stockyards and other related industries, which makes the competition of small packers impossible.

This legislation has one defect. It is not constructive. It does not create any road between the producer and the consumer. This is being done in other countries by a co-operation between the producer and the Government under which co-operative associations of stock raisers are loaned money on favorable terms to build and own their own packing plants or the government builds, owns and operates them as a means of securing free and fair opportunity for both producer and consumer, and to help make the road between them straighter and shorter.

These government-owned stock yards and slaughter-houses at terminal points have been tried long enough to show their value. The one in Edinburgh, Scotland, is nearly 60 years old. It is owned and operated by the city. All fresh meat sold there has to be killed in the city abbatoir, or it is necessary to pay a tax equal to the killing charge. To that abbatoir comes, therefore, all the live stock sold in Edinburgh from the surrounding districts in Scotland. It is not the largest, but is the best equipped slaughter-house I was ever in. It is as efficient as a privately owned plant and it does more. It makes competition fair and free and eliminates price fixing. The owner of a car load of hogs will find at the Edinburgh yards buyers for two large meat dealers. They are the Swift and Armour of Scotland. If they offer a satisfactory price, they get the hogs. If they don't, the hog raiser has a safe and satisfactory alternative. He turns them over to the municipal authorities to be slaughtered. He pays for this slaughter the same charge per animal as the big dealers do. The rate is the same for one hog as for 10,000. He gets the same allowance per animal for the offal. After slaughtering, his animals are tagged and put in a cold storage warehouse, and are held there for a given time without charge. He has now the carcasses of a carload of hogs which he can sell to the retail stores. The barrier between the producer and consumer which exists here is removed. It enables the independent butcher to live. He goes into the country and buys stock, has it slaughtered at the municipal abbatoir. The big meat companies have to compete with him on fair terms. At the end of 50 years' trial, Edinburgh built a new plant intended to meet the needs of the next quarter of a century, as they had no intention of abandoning this system.

There are scores of similar plants in England and Scotland. Two-thirds of the slaughter-houses in Denmark are owned by co-operative associations of farmers. In Germany, which before the war was the best organized business country in the world, out of 1500 slaughter-houses 1000 were municipally owned. Australia is younger than this country, but its stock raisers have had to confront the same menace of monopoly control of the meat business that confronts us. As a result, New South Wales and South Australia have built at their chief seaports state-owned slaughter-houses, and all animals intended for retail sale or for export must be killed at those houses. In Victoria, another Australian state, the state government owns and operates at its two principal seaports cold storage warehouses, and it has loaned to co-operative associations of farmers the money with which to build slaughter-houses at three different points in the state. This gives the farmer a square deal. He controls the slaughtering, or can sell to slaughter-houses controlled by farmers, and the government fixes the prices and allots the space at the warehouses where the ships load. Before these co-operative warehouses were built, practically all the hogs slaughtered in Victoria were bought by two private firms, and prices went up and down without any regard to the prices in the world's markets, but the grower lost so much from those manipulations that the government had to intervene to protect the livestock industry. In the same way the cold storage warehouses were built by the government to protect the independent dairyman from being robbed and ruined, by bringing the control of privately owned warehouses which had to be used in shipping the surplus abroad.

I believe the remedies for monopoly control, and for removing the barriers between producer and consumer, which have proven successful elsewhere ought to be seriously studied here, not because they are more efficient, but because they are more democratic. An autocratic government may be efficient, but not desirable. The same is true of an autocratic control of any industry or business.

Some farmer boys should be extra proficient in the use of the bayonet as soldier boys, because their fathers have taught them to practice on the bull with a pitchfork.

Southern California potato planting is very light, according to H. A. Hyde, seed potato grower.

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UNEEDA QUEEN MODEL, Grand Champion State Fair, 1918.

UNEEDA GLENN COUNTY HERD OF

Duroc-Jersey Hogs

KEY HERD OF PACIFIC COAST

Won at Sacramento:

Grand Champion Sow, Senior Champion Sow, Junior Champion Boar, seven Firsts, 23 other prizes.

PIGS BY NOTED SIRES

High Orion, the world's record-breaking sire, Great Wonder, Grand Champion Iowa; King Orion Cherry, First Prize Indiana and Ohio, and other best boars of the breed. Get some of their pigs. Few bred sows and gilts left.

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WILLOWS, CAL.



THE POPLARS RANCH

Registered Hampshire Swine

A limited number of three-months old weanlings for sale. Am booking orders for future delivery of youngsters by Gen Tipton. Have a few young boars sired by Duke's Allen Grand Champion, 1917, Sacramento

C. J. GILBERT, Lancaster, Cal.

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Send for Sensible Folder on Feeding Hogs

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OAK KNOLL FARM

LAKEPORT CALIFORNIA

We have sold all our young boars and are now booking orders for toppy weanlings. **Highlander**, the $1,000 Grand Champion Boar, heads our herd of

CHESTER WHITES

SAN FRANCISCO OFFICE, 601 BALBOA BLDG.

ROC STEIN RANCH

DUROCS

Have for sale two boars, one of GOLD MODEL and one of CRIMSON MONARCH breeding.

Both are about a year old, weighing 400 lbs. Also eight open gilts and four bred gilts. These gilts are the pick of last year's litters.

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Route 1, Box 320, MODESTO, CALIF.



A General Purpose Breed

The Holstein-Friesian Breed excels in milk production; it is superior for veal production and valuable for beef production.

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Send for our booklets—they contain much valuable information.

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Registered Big Type **Poland-Chinas**

Bred Sows and Gilts, 25c. per lb.
F. O. B. Gilroy.

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TAMWORTHS

(The Bacon Hog)

Largest Herd in the State

DURCO-JERSEYS

Mature Stock and Weanlings of both sexes. Sure to please.

SWINELAND FARM

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REGISTERED HOLSTEINS

Creamcup Herd offers service bulls and bull calves of 34-lb. breeding. Females offered for foundation stock. Tuberculin tested.

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R. D. "A," Box 437.

Two miles out North First Street.

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Sizes 2 to 30 H-P.—Select Your Own Terms—Direct-from-Factory prices. Write your own order—Save $15 to $200. Prompt Shipment. Big new catalog, "How to Judge Engines" FREE—by return mail, Postpaid.

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2862 Oakland Ave., Kansas City, Mo.
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Save $15 to $200

Remarkable Fleece of Bullard Ram

Someone has said that a good photograph is ten times more effective than the best written description. If so, then the accompanying illustration of a Bullard ram ought to be worth hundreds of dollars to beginners with sheep who want to keep before them a picture of a good fleece, to guide them in their breeding.

This ram was two years old when the picture was taken and weighed 232 pounds. He sheared 30 pounds of wool at 12 months' growth. His fleece was shown at the California Wool Growers' meeting held at the University Farm, Davis, and was pronounced by Prof. R. F. Miller to be one of the finest fleeces ever grown on a ram, as well as one of the most even.

The ram was sold at the Salt Lake ram sale in 1918 to Hobbs & Gilette of Idaho for $600, to head their high-class flock. He is a ram of Bullard Bros.' own breeding.

It will be remembered that at the 1918 Salt Lake sale, Bullard Bros. purchased for $3,000 a ram that was conceded by Prof. Coffey to be the best Rambouillet in the United States. This well known firm, which is located at Woodland, raises Rambouillets on an immense scale, and will have about 800 yearling rams for sale this season. They have just sold 150 lambs for shipment to South Africa at a total price of $10,000.



It pays to breed up sheep, the same as other kinds of livestock It costs no more to keep this ram shearing 30 pounds than one shearing 10 pounds. And think of the extra profit.—Courtesy of American Sheep Breeder, Chicago.

FORECLOSURE

Auction Sale

OF

2500 RAMBOUILLET EWES

2000 LAMBS

Are All From
Pure Bred Black-Face Bucks

These sheep are all in fine shape and have not been shorn; have 8 months clip

POSITIVE SALE

THEY WILL BE SOLD IN LOTS OF 800 with privilege of all

They are running in three bands now. Located on Haggin Grant, 2 Miles N. E. of Robla Station on Northern Electric R. R., 8 miles north of Sacramento on Marysville Road

They can be inspected any time before the sale and will be sold on

Wednesday, April 30, 10 A. M.

At the Main Entrance of the Court House at Sacramento, on I, between 6th and 7th streets

All legal proceedings passed by the law firm of
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For Further Information Call
Leachman, the Auctioneer

ORD L. LEACHMAN, Auctioneer
1004 Fifth St., Sacramento
Phone Main 1987-R

WARDEN BROS., Mortgagees.

THE HOG THAT PACKERS WANT.

"Pigs is pigs" to the city man, but when his wife goes to market she doesn't proceed on the principle that all pork is pork. She usually says to the butcher, if she happens to want a slice of ham: "A nice little slice of ham, please—not too much fat." Or she may say: "I want to get half a dozen pork chops—not too large—that will look well on the plate. I'm giving a little dinner tonight." Or she may be buying a ham for baking, and the conversation will be along this line: "One about ten or twelve pounds, please. Not that big one—Oh no! Hams run up into money these days."

So you see, while consumers may not be able to distinguish between pigs or hogs, when it comes to buying ham, bacon or pork chops, they have a keen idea of what they want. It explains why the large pork chops and the twenty-five pound ham from the big, heavy hog have to be discounted, and why a 300 to 400 pound hog, perhaps a beautiful specimen of its kind, is docked by the packer when it is sent to market. A heavy hog will bring the producer more money than a 200-pound hog, but pound for pound the latter is worth more. The relative marketability of the various cuts is the deciding factor.

The heavy hog yields more pounds of meat, lard and by-products, but the cuts are too heavy for the average retail trade. The dealer wants smaller hams, smaller slices of pork to go over the counter, because those are demanded by his trade. The price of the meat has something to do with the public preference. A twenty-five pound ham represents a considerable investment to the average family, and the same principle holds good with a heavy slice of bacon.

The butcher hog, weighing between 200 and 250 pounds is the most popular with the packing companies because it furnishes everything that is desirable in meat, and consequently will command a higher price.

The silo determines the color of the ink on the ledger page.

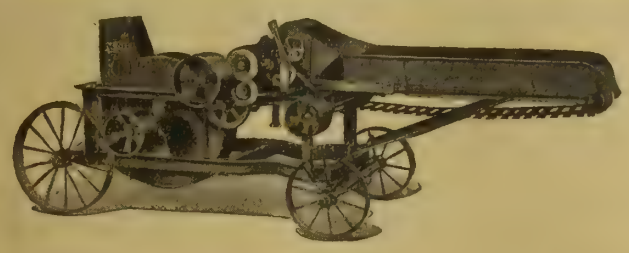
Mud left to dry on the horse's feet may lead to cracks in the flesh. Rub the mud off each day after work is done.

"There is rank profiteering going on somewhere," said the hog. "Pork is selling for $18 and we get no more feed than when it sold for $6."

FILLS THE SILO

MAKES ALFALFA MEAL

CUTS DRY FEED



The ACME Cutter

HUNDREDS of Pacific Coast dairymen have reduced feeding costs by chopping their hay and making their own alfalfa meal with an Acme Cutter. You can do it too. We have a size for every feed cutting requirement, all mounted on steel wheel trucks.

The Steel Frame Acme is unequalled as a silo filler. Its spiral knives give it large capacity, and produce a clean-cut silage of superior quality.

Plan to Purchase an Acme this Year

Send for the Catalog Now.

De Laval Dairy Supply Co.

61 BEALE ST., SAN FRANCISCO
Exclusive Distributors of

IDEAL GREEN FEED SILOS

Greatest Producing Herd in the West

This has been said many times of

McALISTER & SONS' FAMOUS HERD OF Holsteins

on their farm 5 miles south of Chino

To Be Sold at Auction May 21 and 22

90 Heavy Producing Cows—

5 with records over 30 lbs. butter in 7 days.
28 with records over 25 lbs. butter in 7 days.

50 Sweet Heifers—

Six out of 30-lb. cows.
Daughters of It and Granddaughters of the 40-lb. sire King Korndyke Sadie Vale.

40 Bulls—

Including It and King Paul Korndyke Vale—a 31-lb. son of King Korndyke Sadie Vale. Four other 30-lb. bulls, two 34-lb. sons of It. On account of a large number of bulls to be sold we predict a bull feast. Every bull buyer should make it a point to be present at this banquet.

NOT TUBERCULIN TESTED GUARANTEED TO BE BREEDERS

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HAROLD B. RHOADES,
Los Angeles, Cal.
Auctioneers.

WRITE FOR CATALOGUE NOW.

Milk Producers on the Right Track

[Written for Pacific Rural Press by R H. Whitten.]

For several years I wore as a stick-pin that was formerly an emerald brooch, owned by my grandmother. The quaint gold setting encircled a deep, rich green stone, but I had always questioned its value. Was it a genuine emerald or merely a good imitation? Finally I took it to a jeweler for his opinion. He examined it critically with a powerful glass and said: "I am quite sure it is a genuine emerald, for I can detect a flaw in it." Greatly surprised, I asked, "If it were an imitation would it probably be without imperfections?" "Yes, that's it," he replied. And he gave me an estimate of the value which proved that a genuine emerald with a flaw was worth a hundred times more than an absolutely flawless imitation.

And so, while our investigation of the Milk Producers' Association has disclosed certain flaws, it has convinced us of the genuineness of the movement. We believe that it is organized on the right basis, that it is operating along truly co-operative lines, that it has made as good progress as could be expected, and that its mistakes are no more than would have been made by any other body of men organized for the same purpose.

Mr. Henderson and his associates have had a whale of a job on their hands. Their problems were quite different from those which ordinarily arise. To a considerable extent they were pioneers in a new field, and they had to play the part of creators as well as organizers. There were no past experiences to profit by, there were no tried and tested plans to adopt, and as each new problem appeared it had to be considered in all its details and untried plans had to be tested.

It was not an easy task by any means, and to make it all the harder the association had an opposing faction to fight. Most members of co-operative creameries were in favor of the movement, but those who were interested in privately owned plants were generally opposed to it, and, feeling that it was necessary to fight for their very existence, they pushed their propaganda against the association, criticized its methods, and tried their best to prevent producers from joining.

It was because we had received numerous reports of misrepresentation and mismanagement that we began our investigations. We wanted to see the association succeed, and we felt that if there were faulty methods they should be corrected. It appeared to us that dairymen were being induced to join through misrepresentation, and from the reports received on the Keyes creamery deal we were afraid that the methods of the association were not strictly co-operative—that the association would not take care of existing co-operative creameries.

Final on the Keyes Deal.

Our findings in the Keyes creamery matter have already been published, although the article was printed before our investigations were completed, and since then we have learned that after the association took over the Modesto creamery the old directors did not continue in office, as was stated. Furthermore, we have learned that those who were most active in the sale of the Keyes creamery represented that it was a co-operative concern, while in reality most of the stock had fallen into the hands of a very few who apparently had bought it up for speculative purposes.

It is evident that the Keyes people were given to understand that it was not the intention of the association to manufacture butter or own creameries, and it seems to us that when it was decided to build or buy creameries and manufacture butter, this change in policy should have been announced to the Keyes dairymen who had signed up, and they should have been given an opportunity to withdraw if they desired. Had they decided to stay in after knowing that the Keyes plant might be bought or even run out of business, we feel that the association would then have been justified in endeavoring to buy the plant at the lowest possible price, or even competing with it through the Modesto plant, for it was not a co-operative plant at the time, and it must be expected that as the association spreads out some of the independent plants will be forced out of business. We are sorry that this is necessary, but it seems inevitable in order to eliminate duplication, reduce operating expenses and return to the dairymen the greatest possible part of every dollar that is paid for butter, cheese or other dairy products.

Effect Upon Outside Plants.

As H. E. Watson, one of the well-satisfied members of the Modesto unit, points out, in every 100 pounds of 3.6 per cent milk there are 3 pounds of milk sugar worth right now 62 cents per pound; also 3 pounds of lactein worth 22 cents per pound, making $2.52 in addition to the 3.6 pounds of fat at 60 cents, or a total of $4.68. The cost of manufacture is less than $1, which leaves at least $3.68 for the producer, instead of only $2.16, the amount he would get for his butter fat alone.

But to manufacture these products large, expensive plants are necessary, and these are being established at central points. Consequently, while some creameries can still be used for manufacturing butter and some for collecting, skimming and condensing stations, others must be eliminated for the good of the dairymen at large.

We have the assurance of Mr. Henderson that as the association expands it will take care of all co-operative creameries, buying them up at fair prices, and that when independent creameries can be used to advantage these also will be purchased. In fact, we know of expansion plans, not yet ready for publication, which satisfy us fully that the association is doing all and even more than can reasonably be expected of it in this respect to work in full accordance with the principles of true co-operation.

Mistakes—Stepping Stones.

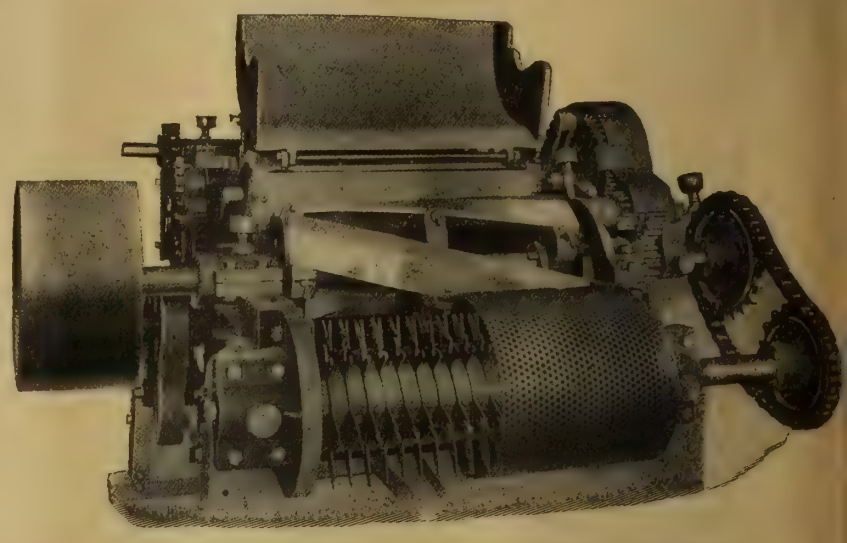
Mistakes, of course, have been made—lots of them. But who has accomplished anything great without making almost innumerable mistakes, especially when blazing a new trail? Edison, in taking a visitor through his laboratories, casually called his attention to 9,000 unsuccessful experiments that had been made in his attempt to perfect the storage battery. "Then all those experiments have been wasted," exclaimed the visitor. "Oh, no," replied Edison, "I now know of 9,000 things not to do." To him a mistake was only an endeavor temporarily off the track, and he turned his repeated failures into pillars of success.

It is said that the only perfect person is a perfect fool; that he who never made a mistake never did anything worth while, and that the men who make mistakes are the ones who lead the world of business. Consequently, the mistakes made by the leaders of the association are indications that these men are real leaders. Probably they will continue to make mistakes, but we are now satisfied that they have the good of the movement at heart; that they are earnestly striving to do their best; that they will profit by their mistakes, and will not make the same one twice.

We cannot reply individually to all of the members who have sent complaints to us, but we want to say to them here that each complaint has been investigated, and we are satisfied that no member was intentionally imposed upon, deceived or even slighted. Because of the size of the undertaking, many matters which were of deep concern to individual producers were of secondary importance to the leaders, and their time was so occupied with big matters of vital importance that they could not attend to matters of lesser importance.

However, several open meetings have been held recently for the purpose of answering complaints and clearing up misunderstandings, which have resulted in great good. One such meeting was recently held at Orland and was attended by several hundred persons. They were asked to state any grievances they had, and to report any unfair treatment or information pointing to dishonest or impolitic management. Every question was answered to the entire satisfaction of all present, and prejudice was entirely cleared away. Details of the acounting system were

THE SMALLEY RECUTTER



Showing SECTIONAL VIEW with Screen Cut Away

Double Cut—No Grinding

Meal Capacities—Silo fillers in sizes 12, 14, 16, 18, 20 and 26 denote the length of the knives in inches on each size. Meal capacities of these silo fillers are figured at ninety pounds per cutting inch, with the 5-16-inch screen on the recutter when the machine is set to cut ¼-inch. These capacities are based on the cutting of good grades of hay. Capacities in straw would be reduced. Alfalfa cutters in sizes 20, 26, 36 and 40 also denote the length of the knives in inches. The meal capacities of these machines are figured at one hundred pounds per cutting inch per hour, based on good grades of hay.

SEE OUR 26-INCH SMALLEY MEAL MILL
Also Stock Food Mixer In Operation At
TRACTOR DEMONSTRATION AT
SACRAMENTO.

PACIFIC IMPLEMENT COMPANY
San Francisco

SEE OUR DEMONSTRATION OF LOUDEN BARN EQUIPMENT, UNIVERSAL MILKING MACHINES, AND SPECIAL OIL PUMPS (for Oil and Distillate Drums) AT THE SACRAMENTO TRACTOR DEMONSTRATION.

Louden Barn Equipment

The Louden line includes Stalls and Stanchions, Litter and Feed Carriers, Detachable Water Bowls for Cows, power Hoists, Cupolas, Ventilators, etc. Write for particulars.

Universal Milking Machines.

reliable safe, convenient, a saver of time, labor, and money. Write for catalog.

Good Territory for Live Dealers

On both of the above lines. Write for our proposition.



Insure Your HAY Crop This Season

Get it under cover in record time. Cut down your labor cost. Eliminate repairs.

You can do it with Loudon Hay Tools. Loudon equipment costs less than the loss of a ton of hay. Try it out this season. It will save you time, labor, and expense. It will help you save the crop.

FREE BOOK OF BARN PLANS.

112 pages of practical plans, profusely illustrated. Also complete catalog of Louden Hay Tools and Barn Equipment. Write—now.

California Hydraulic Engineering & Supply Co.

68 Fremont St. SAN FRANCISCO
424 E. Third St. LOS ANGELES

WE OFFER FOR IMMEDIATE SALE TWO HIGH CLASS
BERKSHIRE BOARS
11 months old. Will weigh over 375 lbs. each in just common flesh.
Write us today for price and further description.
Address
R. J. MERRILL & SON, MORGAN HILL, CAL.

explained and supposed errors of management disappeared.

At the anual meeting of the Northern California Association held on the 7th of this month, 400 members attended in person. All were given an opportunity to make complaints, and not one single complaint was heard.

Prices for Butter Fat.

The statement is made that association creameries are not paying dairymen any more than independents are paying. This is true in some cases, but we think it will be found that the association was the means of making competitors pay more; also of making them eliminate unfair butterfat tests and short weights. Furthermore, as a rule the difference between what a member receives from the association and what he would receive from an independent creamery is used to pay for the plant. This makes his stock—or membership, as it is called—worth more, so his real benefit cannot be measured entirely by his cream check. Also, with experience and expansion the operating expenses should be lowered, and it may be expected that in time higher prices will be paid.

Misrepresentation of Solicitors.

In our investigations we found that there had been considerable misrepresentation in organization work. It was suggested that this could be eliminated by employing well-known dairymen in each locality as solicitors instead of outside promoters. This might eliminate the misrepresentation, but we do not believe the suggestion is a practicable one, because organization work is a specialty by itself and to be successful it must be done by specialists in that line.

We know something of the difficulties of trying to make field solicitors stick to the straight and narrow path, but we did not feel that whoever had them in charge was doing as much as he could and should do to make them cut out this misrepresentation. However, we now have the following statement direct from Mr. Henderson: "We are anxious to lear of any misrepresentation. It will receive our immediate attention and will be run down. We shall make every effort possible to prevent misrepresentation, and when we find that a solicitor has wilfully misrepresented he will be discharged immediately. While I personally am giving my time and efforts to the association without expectation of any reward, I will loan my every effort to prevent misrepresentation on the part of our solicitors or anyone else."

This to us is a sufficient guarantee that misrepresentation will be reduced to a minimum, for when Mr. Henderson says he will do a thing he means it, and he puts it through with a bang.

Don't Form Hasty Decisions.

In closing, let us say that what constitutes proper methods is largely determined by the viewpoint of the observer. What is considered unfairness by one who does not desire an organization of this kind may not be considered unfair by one who favors it. In other words, "it makes a difference whose ox is being gored." Those who are fighting the association, and who in turn are experiencing some goring, are spreading many unfavorable reports, but we advise our readers to run down all such reports and get the full facts on both sides before making a decision. Then, like as not they will find that, in the language of the prose poet: Trouble has a trick of coming butt end first; viewed approaching, then you see it at its worst. Once surmounted, straight it waxes ever small, and it tapers 'till there's nothing left at all."

Sort all young growing animals according to sizes and ages and continue sorting them as they grow. Neglecting to keep your eye on this point the whole year through shows a lack of interest in the care of stock and leads toward failure. It requires a very small amount of additional fencing, and a little more planning.

The following sign is conspicuously displayed on a ranch in the San Fernando Valley: "Tresposers will be persekuted to the full extent of 2 mean mongral dorgs which aint never been oranly soshibil with strangers and 1 dubbel barelt shotgun which aint loaded with no sofy pillers. Dam if I aint tired of this hel raisin on my proputy."



EXTRA VALUE
in Racine Country Road Tires

RACINE Country Road Tires are rapidly and logically coming to be a part of the modern farm's necessary equipment.

These are the only tires specially designed for country road service. They are bridged up in the center by the "country road" tread, and are extra strong in the side-walls. They have the rugged toughness to take roads as they come.

Extra Tested

Racine Country Road Tires are carefully *extra tested* in Racine Rubber Company factories. Each tire is subjected to a series of extra manufacturing precautions. Each of the extra tests adds its measure of extra mileage—extra value for those tire dollars of yours.

Use Racine Country Roads. They save you money.

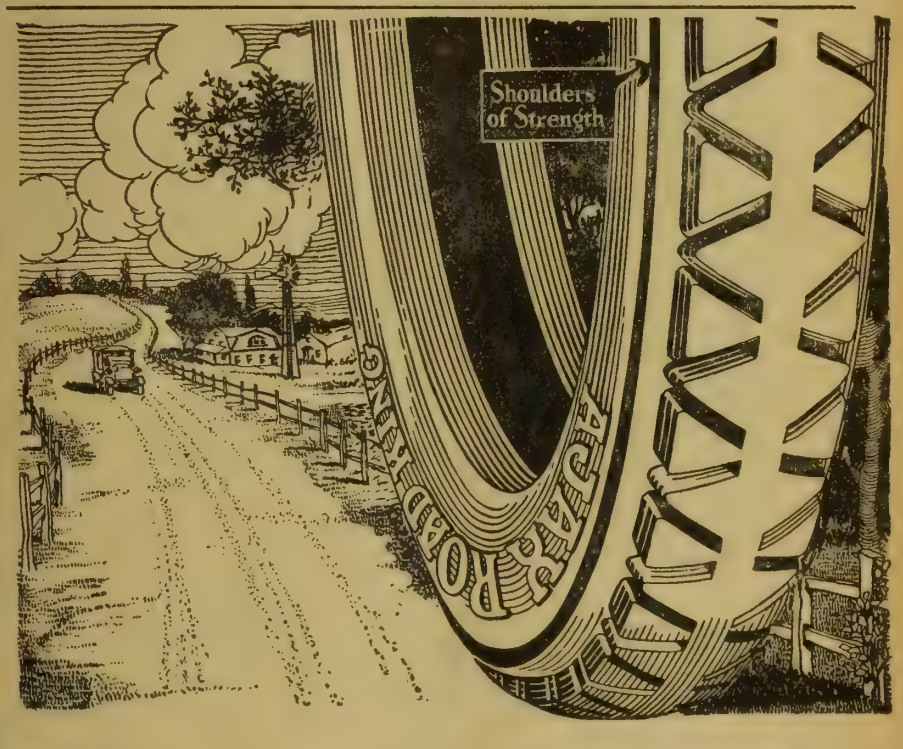
For your own protection be certain every Racine Tire you buy bears the name

Racine Rubber Company - - Racine, Wisconsin

Makers also of Racine "Multi-Mile" Cord Tires

RACINE TIRES

RACINE RUBBER COMPANY EXTRA TESTED TIRES



Mileage!

SURELY you've noticed the ever-increasing number of Ajax Tires in use on your own roads. More and more the farmer who checks up his mileage turns to Ajax. He knows that the greater mileage we have built into the Ajax Tires, enables him to get greater mileage out of them.

AJAX ROAD KING

More mileage is actually built into the Ajax Road King by Ajax Shoulders of Strength—those buttresses of rubber that brace and re-inforce the tread. They are an exclusive Ajax feature—a scientific means of putting more rubber where it should be—more tread on the road.

Added proof of Ajax superior service is shown in the fact that 9 world's records and 49 track records were smashed in 1918 by dirt track racers using Ajax Tires.

Remember this—dirt tracks are merely country roads fenced in.

Ajax Tires will win for you. Use them.

Ajax Tires Are Guaranteed In Writing 5000 Miles

AJAX TIRES

AJAX RUBBER COMPANY, Inc., NEW YORK

Factories: Trenton, N. J. Branches in Leading Cities

Rubbing Elbows with Other Breeders

[Written for Pacific Rural Press by Thos. F. McConnell.]

Cattle at Carruthers'.

While the Shorthorn as a breed originated in England, much of the popularity of the breed at the present time is due to the improvement wrought by the "Sage of Sittyton," Amos Cruickshank. He, by a judicious crossing of animals of Bates and Booth blood as foundation stock, became the producer and originator of the Scotch Shorthorn and therefore we find the "Canny Scot" often a very successful breeder of the "reds, whites and roans." This is true at Carruthers' Farms, Live Oak, as any one can testify who has made the trip to this noted ranch where roans with ribbons and beautiful Berks are very much in evidence.

Mr. Carruthers has not been long at his present location, but barns and buildings have already commenced to show that some one who knows what he is about has things in charge. The cattle scattered about in their various pastures bear evidence of the master breeder, both in selection and mating. Females, most of them strong in Scotch blood lines, are dropping calves from the noted sire Count Glory. The loss of this great sire is keenly regretted by Mr. Carruthers at this time as he was right in his prime and had demonstrated his worth in every way.

It certainly was a pleasure to walk about among the scattered oaks, see the sedate matrons and hear Mr. Carruthers' comments as to each one's desirable qualities, although there was a note of sadness in these comments tempered with the consolation that all of the cows and heifers to freshen would drop calves by Count Glory.

After viewing the cows and heifers of breeding age a trip to another part of the farm revealed as classy a lot of calves as is often seen—about 35 in number and of such quality that it could truly be said that one could not find an inferior animal in the lot. Everywhere the straight top and bottom lines, broad backs with equal width from crops to tailhead, plenty depth and quality and disposition manifest in every line and move. One could not ask for more in a lot of youngsters, for they need only to be seen to be admired.

The passing of Count Glory is much to be regretted, but Mr. Carruthers has another bull in Hallwood Villager who has given a very good account of himself as a sire and is a most excellent individual in every way. Nearly one-half the above mentioned calves were sired by this bull and they are an excellent demonstration of his ability to transmit true Shorthorn characteristics.

After going the rounds of the "Farms" it was the writer's great pleasure to enjoy the hospitality of Mr. and Mrs. Carruthers as expressed in a 22-pound roast turkey, flanked by many other good things. It will be many a long day before the memory of that feast and the pleasure of the company will be forgotten.

Poland-Chinas at Riverina Farm.

Going west from Modesto along Paradise Road one comes upon a real paradise for Polands when he reaches Riverina Farm, owned and operated by McCarty and Starkweather.

The foundation stock at this farm speaks well for the future of the herd. Both the aged sows and gilts are individually and collectively what make for success in either the breeding stock or market hog lines. Size, substance, constitution, good bone and quality, are all in evidence.

Among the aged sows Mc's Miss Model, sired by Cantrall's Ideal out of Miss Long Model 2d, is an individual that suits the eye. She has size and symmetry combined with plenty of bone, and still good quality. Another particularly good individual is Model Riverina, having all the size and bone of any of the rest with perhaps a little more quality. She is sired by Big Bob Orange 3rd out of Model Miss.

Of four gilts about one year old sired by Kansas King, three are outstanding individuals.

Noyes No Novice with Herefords.

When a man who is over 60 years of age, who has ridden after cattle since he was 8 years old, and has made a success of the business—when such a man picks out a breed of beef cattle, that breed is sure to have much merit. Also when he not only takes time to observe cattle of his own locality but travels over much of Oregon and Washington observing cattle on the ranges and on the farms, again we say the breed selected must have merit. Then when the cattle are inspected one cannot help but say—Mr. Noyes, you certainly made not only selection of a good breed but good selections of the breed.

Mr. Noyes has been breeding registered Herefords only 3 years but has been in the range cattle business all his life. The herd is made up of 25 females and 4 bulls. The senior herd bull is Don Balboa, who is typical of this great beef breed—thick-meated, with good constitution. He cannot help but give good results as a sire.

A youngster of great promise is Pacific Corker, by British Corker, who was a 2700 pound bull. This young bull never was pampered or had a nurse cow, yet he weighed 1100 pounds at 16 months. Not only is he good weight for his age, but his conformation is such that immediately one thinks how he would look well in any company.

Beef men all know that Jersey steers are "no 'count poor trash," but Mr. Noyes crossed two grade Jersey family cows with a Hereford bull, and whether it is due to the good bull or good feeding and care, the fact remains that he has the best half-blood Jersey steers ever seen. They are smooth, straight, close-coupled beefy type animals that cannot help but feed out well.

To clean up weeds and grass about the farm buildings Mr. Noyes has 19 registered Shropshires that are very good types of the breed. He says they keep things cleaned up and get no other feed. They certainly did not look as though they needed anything else. In the hog line they have registered Poland-Chinas that look good to anyone who knows the breed.

Mr. Noyes feeds no grain to his cattle—nothing but native hay and pasture—and when seen by the writer some of the females seemed almost too fat for breeding animals. The hay is fine and looks to be of highest quality, and results certainly prove its great nutritive values. As long as such hay is available grain is a superfluity.

The winter quarters of Mr. Noyes and family are at the farm at Sutter City but the summer range where they spend 5 or 6 months with their cattle is in the Sierras at Meadow Valley, at an elevation of about 4,000 feet above sea level, where the feed and fishing are both good.

Milking Shorthorns at Murphy's.

Sometimes it seems as though Shorthorns are strictly beef animals, and then again when a visit is paid to a herd like that owned by H. L. & E. H. Murphy, Brighton Farms, Perkins, it is evident that there are herds showing strong milking characteristics. The broad, straight backs are there, but the covering of flesh is not quite so thick, the neck is thinner, and there is the absence of excess fat seen in some herds. The udders also are more in evidence, but that easy quiet disposition without sluggishness, which is so much desired, is there just the same.

The herd at Brighton Farms is composed of some animals of their own breeding and eastern bred. Such individuals as Dutchess of Gloucester, Roan Duchess, Miss Utility and Elizabeth, are types approaching the above description and are sure to be admired by those wanting such animals.

These brothers are also breeders of excellent Berkshires and their herd sire is a Laurel Champion boar, Wilsonia King Laurel, who was third in his class at Sacramento. He is of good type and ought to give a good account of himself as a sire.

Sixty livestock farmers in one county back in Missouri prepared a directory of the herds of purebred livestock in that county and are sending it throughout the state. Why would this not be a good plan for groups of California breeders to adopt?

Herefords

LEADING HERD OF THE STATE.

My stock is the result of nearly 40 years of careful breeding and selection. Have for sale a carload of registered bulls and a carload of heifers —1917 calves, grandsons and granddaughters of Beau Donald 31 No. 109885 and Mr. Perfection No. 215575.

They will go quickly. Write or call at once.

Wm. Bemmerly, - - Woodland, Cal.



Veramont Stock Farm

TAYLORSVILLE, CAL.

HEREFORDS

The practical, beef-producing kind, raised under range conditions. See herd of young Bulls and Heifers at SANTA CLARA, CAL.

H. M. BARNGROVER, Santa Clara, California.

Carruthers Farms

LIVE OAK CALIFORNIA

Second annual **SHORTHORN** sale will be held on July 10th, at San Francisco, at which time and place 60 head of bulls and females of rare breeding will be offered.

ORMONDALE SHORTHORNS

All are heavy boned, and of Scotch and Scotch-topped breeding.
Suited for either the range grower or breeder.
EVERY ANIMAL POSITIVELY GUARANTEED.
Whether you buy or not, visit our ranch, 7 miles from Palo Alto on Woodside Road.
We welcome inspection. Prices and pedigrees on application.

SHORTHORN CATTLE
DUROC-JERSEY SWINE

ORMONDALE CO.

REDWOOD CITY, CAL.
R. D. No. 1

BRIGHTON FARM SHORTHORNS

One three-year-old bull bred by H. R. Clay.
Two outstanding yearling bulls sired by Sir Type, a son of Cumberland Type.
A few yearling heifers of same breeding.
Also registered Berkshires of both sexes of best breeding.

H. L. & E. H. MURPHY, Perkins, Sacramento Co., Cal.

HILLCREST STOCK FARM

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SHORTHORN CATTLE

Shropshire & French Merino Rams DAVIS, CALIFORNIA



AUCTIONS

Sell your stock or implements at public auction. I can get big prices for you. Have cried successful sales in all parts of the State. Customers always satsjfied. Write for terms and dates.

ORD L. LEACHMAN,

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BRAHMAN BULLS

High grade Brahman bulls from our full-blooded Brahman bulls, which were imported from India.
Write for prices and description.

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PALACIOS, TEXAS

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EXPERT LIVESTOCK AUCTIONEERS

Purebred Stock Sales a Specialty

Sales Conducted in All Parts of California.

BEN A. RHOADES, Auctioneer

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Milking Shorthorns

WILLOUGHBY, OHIO.

BEEF MILK



LADY OF THE GLEN.

Bred by us and acknowledged the best and most valuable individual of the breed.

Largest herd in America with the best connection. Many cows weighing 1,700 lbs. and above with records of over 10,000 lbs. of milk. Winners at the recent Congress sale owned by us or of our breeding. Sale cattle in carload lots or single. Calf clubs a specialty.

Write T. H. Harrison,
Santa Rosa Stock Farm, Santa Rosa, Cal.
California Representative.

LIVESTOCK QUERIES

CALF CHEWS FENCE RAILS.

To the Editor: I have a calf about seven weeks old that is inclined to chew at the fence rails. She seems healthy; has milk three times a day, cut alfalfa hay, salt and plenty of water. What is the cause and cure? —W. P. H., Chico.

[Answered by Dr. E. J. Creely, San Francisco.]

Your heifer has a depraved appetite caused from the lack of bone-forming and hardening elements in the system. Indigestion usually accompanies this condition and a little flaxseed tea occasionally will prove beneficial. Be sure that plenty of salt is supplied, and once daily give a teaspoon of the following mixture: Pulverized Gentian root, 4 ounces; dried iron sulphate, 1 ounce; phosphate lime, one-half ounce; ginger, 1 ounce. If it is possible for you to get some bone meal you will find that a little fed regularly will help greatly.

BOOK OF BRANDS.

To the Editor: Has the new book of brands for cattlemen been issued and, if so, where can I obtain a copy? —W. A. G., Nicolaus.

[Answered by Livestock Editor.]

We are informed by the state printer at Sacramento that the book of brands will be ready the latter part of this month. At that time you can get a copy by writing to the State Cattle Protection Board, Underwood Bldg., San Francisco, Cal.

PIGS' HAIR COMING OFF.

To the Editor: I have a litter of pigs just weened and notice that their hind legs have become scaly and the hair is coming off. The legs are swollen some and on the inside are a number of pimples. They seem to be a little stiff and are inclined to walk on their toes. We have them on a board floor in a small pen. G. S. H., Coyote.

[Answered by Dr. E. J. Creely, San Francisco.]

Give a teaspoon of lime water and cod liver oil once a day to each pig. Change the surroundings so that the pigs will be on earthen floor and, if possible, give them a pasture so that they will have more exercise. This, with proper feeding, will overcome the trouble.

MEASUREMENTS AND PROPORTIONS.

To the Editor: Some of the remedies you prescribe are given in measurements which are not familiar to us—such as drams. I do not have a graduated glass. Can't you give us common measurements so that with what we have on the farm we can get reasonably close to what you prescribe?—W. F. D., Earlimart.

[Answered by Livestock Editor.]

Tack this up under the shelf where you keep your medicines. 1 c. c. equals 15 drops. One teaspoonful equals one dram. Two tablespoonfuls equal one ounce. One pint equals one pound. One pint water and two tablespoonfuls antiseptic equals one per cent solution. One gallon water and two tablespoonfuls antiseptic equals about one per cent solution. Three barrels water and one gallon antiseptic equals about one per cent solution. One gallon dip in 13½ cubic feet water equals about one per cent.

HORSE HAS EYE TROUBLE.

My horse has a thick scum coming over one eye. It is about the size of a ten-cent piece and covers half of the pupil. What can I do to remove it?—J. F. R. Albion.

[Answered by Dr. E. J. Creely, San Francisco.]

Your horse has inflammation of the cornea. Examine carefully to see that there is no foreign body lurking in some portion of the eyelid, especially the inside corner. Use a saturated solution of boracic acid (tablespoon boracic acid to 1 quart of warm water) and bathe thoroughly twice daily, after which dry gently and force into the eye well between the lids, the following ointment: Yellow oxide mercury, 10 grains; lanoline, 1 ounce; purified extract adrenals, 3 minims.

HORSE HAS BONE DISEASE.

To the Editor: I have a young horse which lately became quite stiff and lame in the right front leg. After several days the lameness changed to the left front leg. Then she became all right in front, but stiff in the hind legs. And now when she lies down for any length of time she can hardly get up, and when she does get up she is so stiff that she can hardly walk. After she moves around for a while she becomes more active. Her appetite seems all right. What is the trouble and what can I do for her?—L. C., Modesto.

[Answered by Dr. E. J. Creely, San Francisco.]

This is a generalized bone disease. Give one table spoonful of saltpetre three times a day and use the following liniment: Linimentum soap, 10 ounces; oil mustard (synthetic) ½ drachm; oil cedar 1 ounce; oil origanum 1 ounce. Mix and apply to affected parts.

SHEEP SHEARING SUGGESTIONS.

Don't raise the dust when driving sheep into the shed.

Don't allow your sheep to stand in damp or dirty pens.

Don't have a dark shed so that you cannot see what you are doing.

Don't undertake to do more than you can manage well.

Don't allow shearers to "race" in their work.

Don't allow fleeces to be broken.

Don't allow the fibres of the wool to be cut in half.

Don't allow sheep or shearers to stand on the fleece.

Don't allow the sheep to be ill-treated while handled by shearers.

Calf Enemies

WHITE SCOURS
BLACKLEG

Your Veterinarian can stamp them out with Cutter's Anti-Calf Scour Serum and Cutter's Germ Free Blackleg Filtrate and Aggressin, or Cutter's Blackleg Pills.

Ask him about them. If he hasn't our literature, write to us for information on these products.

The Cutter Laboratory
Berkeley, Cal., or Chicago, Ill.
"The Laboratory That Knows How"

COMMISSION AGENT

I can offer the best of service in assisting you to buy or sell registered
DAIRY CATTLE
BEEF CATTLE
HORSES
SWINE

My large experience as a breeder, knowledge of blood lines and values, and a close connection with all the principal Eastern breeding establishments warrant you securing my services when contemplating any important live stock transaction. References furnished.

M. H. TICHENOR, JR.
PALO ALTO, CALIFORNIA



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TRADE MARK REG. U.S. PAT. OFF

Reduces Strained, Puffy Ankles, Lymphangitis, Poll Evil, Fistula, Boils, Swellings; Stops Lameness and allays pain. Heals Sores, Cuts, Bruises, Boot Chafes. It is a SAFE ANTISEPTIC AND GERMICIDE

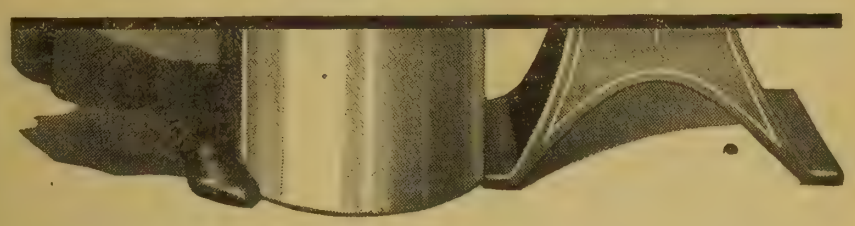
Does not blister or remove the hair and horse can be worked. Pleasant to use. $2.50 a bottle, delivered. Describe your case for special instructions and Book 5 R free.

ABSORBINE, JR., antiseptic liniment for mankind, reduces Strains, Painful, Knotted, Swollen Veins. Concentrated—only a few drops required at an application. Price $1.25 per bottle at dealers or delivered.

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DE LAVAL
Is Taking No Chances



OST any kind of cream separator will do fairly good work the first few months, when it is new.

But if it is a cheaply made or inferior machine, after the first few months your trouble will begin.

And the worst of your experience with such a machine will not be the fact that it wears out quickly or that it runs hard, or that you are piling up repair expense, but that you are losing a lot of butter-fat that is worth 50 to 60 cents a pound.

And that is what you really buy a separator for—to save this valuable butter-fat.

Any time you buy a cream separator—no matter who makes it or what claims are made for it—that has not behind it a long record of satisfactory service, a record known to all, a record that is in itself a guarantee of satisfactory service, you are taking a gamble with all the odds against you.

Why take chances at all when you come to select a machine that may mean so much in increasing the profit from your cows?

There is one cream separator that has been the acknowledged world's standard for over 40 years. It's the one cream separator that is used by the creamerymen almost exclusively. Dairy farmers the country over know the De Laval and its sterling quality. Experience has shown them all

It is the best cream separator that money can buy

Order your De Laval now and let it begin saving cream for you right away. Remember that a De Laval may be bought for cash or on such liberal terms as to save its own cost. See the local De Laval agent, or, if you don't know him, write to the nearest De Laval office as below.

DE LAVAL DAIRY SUPPLY CO.

THE LARGEST DAIRY SUPPLY HOUSE ON THE PACIFIC COAST

ALPHA GASOLINE ENGINES
IDEAL GREEN FEED SILOS
ACME FEED CUTTERS
JAMES BARN EQUIPMENT
VIKING ROTARY PUMPS
LAUSON TRACTORS

EVERYTHING FOR THE DAIRY

Catalog of any of these lines mailed upon request

61 BEALE STREET SAN FRANCISCO

Livestock and Dairy Notes

Livestock breeders all over the state are invited to send on postal cards, notes regarding their sales, State and County Fair intentions, new stock, etc.

LIVESTOCK SALE DATES.

April 29—Jas. McGillivray, Sacramento. Grade Holsteins.
May 1—Superior California Farm Lands Co., Monroeville Orchard, Hamilton City. Registered Berkshires.
May 3—Napa State Hospital, Napa. Grade Holsteins.
May 21-22—McAlister & Sons, Chino. Registered Holsteins.
July 10—Carruthers Farm, Live Oak. Registered Shorthorn sale at San Francisco.

THE DAIRY.

Guy H. Miller of Venadera Jersey Farm, Modesto, recently sold the bull, Exile Interest, to the California Barrel Company of Arcata.

C. A. Miller of Ripon, recently sold a young Holstein service bull to F. A. Mondrone, Ripon, and another to E. H. Fink & Son, Acampo.

A. J. Welch of Hidden Valley Farm, Redwood City, has sold to Henry Rohner, Alton, a high-class young Guernsey bull for a herd header.

The Creamcup and Golden West sales of registered Holsteins at Modesto, April 17, was called off after 13 of the 30 animals listed had been sold. It was undertood that the prices received were not satisfactory. The top of the 13 head brought $400 and the average was $213.84.

Forty-two pure-bred and 62 grade Holstein cows, together with 3 registered bulls are being shipped to France, having been purchased by dairy specialists of the Department of Agriculture for the French High Commission. It is understood that there is an urgent demand for milk from the war striken areas.

K. H. Mulder, Modesto, is much pleased with the butterfat production of the cows recently purchased at the Putz sale. Five cows are producing over 8½ pounds fat per day on ordinary feed although two are to freshen in August and one in September. Mr. Mulder recently sold his creamery at Madera to the Central California Milk Producers' Association, and purchased an alfalfa ranch near the Hart school house with the intention of developing a herd of high producing registered Holsteins.

E. E. Freeman of Modesto, recently sold a registered Holstein bull to W. L. Choisser and another to C. W. Baker, both of Riverdale. These men started out with an auto and trailer in quest of young herd sires and found what they wanted at Mr. Freeman's, making a round trip of 130 miles with less trouble, risk and expense than if shipment had been made by rail. Mr. Choisser's bull is King Segis Pontiac Dutch, out of a 20-pound four-year-old, and Mr. Baker's bull is Judge Segis Ignaro De Kol. Both bulls were sired by Mr. Freeman's herd bull, Segis Pontiac De Kol Burke.

BEEF CATTLE.

Monroe & Johnston of Imperial County are pasturing steers on alfalfa and barley and are paying at the rate of $4 per month.

R. M. Dunlap, the beef cattle expert will leave for the middle west states on another buying trip in a few days. His address is Hotel Land. Sacramento.

W. M. Carruthers of Live Oak and Mayfield, is making an extensive trip among the middle west Shorthorn herds. He may find a herd bull to take the place of Count Glory.

Bystander, an Angus bull, half-brother to the Angus calf that sold back east last year for $5,150, has arrived at the University Farm and will be on exhibition Picnic Day, April 26.

M. D. Church, proprietor of Lime Kiln ranch, Grass Valley, has imported a registered Hereford bull and a carload of registered heifers. These will be used to improve the already large herd of the Lime Kiln ranch.

D. F. Norton of Grass Valley, says that in his 32 years residence in Nevada County, he has never seen pasture better than it is this spring. The grass is knee-high everywhere and stock is fat and sleek.

Thos. Harrison of Santa Rosa Stock Farm, Santa Rosa, recently sold the Milking Shorthorn bull, North Star, to Chas. L. Weaver, Tulare. The sire of this young bull recently sold in England for $4,000 and the dam for $3,00.

SWINE AND SWINEMEN.

Guy H. Miller of Modesto, has sold 4 Duroc gilts to Dr. L. J. Belknap, proprietor of the Jersey Queen Farm at San Jose.

The first promotion sale of the Western Berkshire Congress was held at Martinez, March 19, and 29 pigs averaged $50, most of them going to farmers of Contra Costa County, as was desired. The next sale will be held at Dixon, May 20.

Dr. L. J. Belknap of the Garden City Sanitarium, San Jose, has just returned from a trip through the San Joaquin valley in search for Durocs. He found prices high, but purchased some top-notches from Elmer Lamb, Ceres; W. M. May & Son, Modesto, and J. E. Thorp, Lockeford.

Les McCracken of Ripon, says that his purebred Poland-China business is booming and that he has nearly all registered stock now. He reports sales during the past week of service boars to Logan Bros., Paskenta, Tehama County; Fred Finne, Ukiah and George Bay, Ojai.

The California auction sale record for hogs was broken at Modesto, April 17, when the top car of 82 hogs, averaging 204 pounds, brought $18.90 without deduction for shrinkage or freight. The average price for 365 hogs was $18.10.

Prof. J. I. Thompson of the University Farm, Davis, has been busy filling an order for a big shipment of animals for the Philippine Government. They consisted of Berkshires and Durocs and most of the leading herds in Glenn and Sutter counties were drawn upon.

Keep your eyes on Lendorris Liberty Bond, the junior sire in the Lendorris Ranch herd, owned by W. L. Haag & Son, Hanford. This wonderful young boar, born last November, was sired by Liberty Bond and out of Hercules Lady, a Disher's Giant-Hercules sow. Liberty Bond is the sensational young boar for whom Glover & Moore paid $3,000 and whose litter brother sold for $5,000. The young Haag boar is just as good in individuality as he is in breeding, and he promises to become one of the greatest sires on the coast. He will make a great team mate for Young Jumbo, the other sire in this herd.

SHEEP.

J. R. Bloom, Dixon, reports that orders are already coming in for his Shropshire rams, which are unusually fine this year.

Lambs were recently sold by Richter Bros., of Woodland, for $10.95, which is said to be the record figure so far this season.

Plans are being laid for the sheepmen of Kern County to market their wool crop collectively. It is planned to assemble all of the wool at a warehouse in Bakersfield, have it all graded and auctioned off to the highest bidder.

E. B. Holt of Holtville, Imperial Valley, has received word from the government that his six months clip, shipped last December, has been appraised at 58 cents. There was about one ton of wool, all fine quality and extra clean. Mr. Holt's sheep are Merino and Hampshire.

The sale of 1,000,000 pounds of Nevada wool at 40 cents and 500,000 pounds of Idaho wool at 45 to 48 cents is reported. An offer of 40 cents was made for 1,000,000 pounds of Utal wool, but was refused. Clips taken off at feed lots near Chicago have been selling at 50 to 57 cents, with a firm market.

LIVESTOCK DIRECTORY

Rate in this directory 3c. per word each issue.

SWINE.

Berkshire.

GRAPEWILD FARMS BERKSHIRES
A few spring boars and fall pigs by Big Leader, Grapewild Farm Leader and Majestic King.
A. B. Humphrey, Prop., Escalon, Calif.

CROLEY'S BALANCED HOG FEED—The cheapest feed to fatten hogs. Write Geo. H. Creley Co., Inc., Livestock Supplies, 8th and Townsend Sts., San Francisco, Calif.

BERKSHIRES bred at Imperial Stock Farm are the kind that satisfy. Write us or call and be convinced. R. J. Merrill & Son, Morgan Hill, California.



Calf Scours

Save every Calf. High meat and milk prices make control of Calf Scours more necessary than ever before.

Scouring calves indicate a germ infection that is likely to run through your entire herd with serious losses. The loss of one calf is bad enough, but nothing compared to your loss when the infection spreads, as it will unless checked. Then your year's work in building up your herd is wasted and your profits lost.

B-K, the powerful germicide and disinfectant will promptly stop scours and finally banish it from the premises. B-K contains no poison, acid nor oil. When used internally it destroys germs, heals inflamed membranes, relieves irritation, restores healthy action. B-K may be given freely in milk and drinking water.

The B-K plan is simple and practical. It is giving wonderful results. Send for "evidence"

FREE BULLETINS: Send for our valuable bulletin No. 136, "Calf Scours," also information on other farm uses and our "Trial Offer." If your dealer does not have B-K, send us his name.

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CASTLEVIEW

GIANT TYPE BERKSHIRES

We are booking orders for spring pigs from Grand Champion Sows and sired by Mayfield Roockwood, sire of Champion Barrow at 1918 Western Berkshire Congress.

CASTLEVIEW RANCH, SANTA ROSA.

ANCHORAGE FARM.

MONEY-MAKING BERKSHIRE—The prolific, easy-feeding kind that make the highest priced pork from the lowest priced feed. They will increase your profits. Prices reasonable; satisfaction guaranteed. Write for free booklet, describing our worlds reserve champion, STAR LEADER. We are now making a special offering of bred sows and gilts.
Anchorage Farm, Orland, Calif.

THURSDAY

MAY 1, 1919

FIRST AUCTION SALE

Registered Berkshire Hogs.
75 Head of Sows and Boars 75

Sired by Iowana Champion Peer 2d, a son of Rivals Champion Superior Emblem, a son of Solano Emblem and Superior Leader, a son of Grand Leader 2d, Grand Cmampion of the world.

A choice selection from a herd of 500 head. Everything from this herd but the very best are sold for pork. The tops are offered at auction. All registered and of the best families. For catalogs address W. S. Guilford, Superior California Farm Lands Company, Willows, California. Herd is at Monroeville Orchard, six miles south of Hamilton City, Glen County, California.

C. L. Hughes, Sales Manager.
Col. Ben Rhoades, Auctioneer.



Calf Profits

Are you getting them? Calf profits mean more to you now than ever before.

Blatchford's Calf Meal

has been known since the year 1800 as the complete milk substitute. Costs less than half as much as milk—prevents scouring—promotes early maturity. Sold by dealers or direct from the makers.

Write for New Data See actual figures showing you how to increase your calf profits.
COULSON CO. - - - Petaluma, Cal.

Lendorris Ranch Poland-Chinas



PUT PROFIT IN FARMING

Our herd is the result of careful selecting and constructive breeding, and combines size, bone, easy-feeding qualites, prolificacy—everything you want for a profit-making hog.

Great Battery of Boars

YOUNG JUMBO (see picture), the great son of Jumbo Bob, who is all that his name and breeding imply; also the sensational young boar, **LENDORRIS LIBERTY BOND**, a son of the $3,000 Liberty Bond. He promises to become one of Coast's greatest sires. This is the blood you need to insure your success.

W. L. HAAG & SON
HANFORD, CALIF.



ORION'S KING GANO,
Junior and Reserve Grand Champion, Liberty Fair, Los Angeles.

Big Type Durocs

ORION CHERRY KING, sire of all National Swine Show Grand Champion boars, is the real King of **BIG TYPE DUROCS.**

Two of his grandsons head my herd—**Californ a Orion Cherry King**, a great son of Orion Cherry King Jr., 1916 National Grand Champion; and **Orion's King Gano**, the sensational winner for which I refused $2500.

WRITE ME YOUR WANTS. SATISFACTION GUARANTEED.

DONALD H. GRAHAM,
LANCASTER, CAL.
Ranch near Del Sur.

HAUSER'S DIGESTER TANKAGE

Gives Great VALUE for LEAST MONEY. IT MAKES THEM FAT.

HAUSER PACKING CO. **LOS ANGELES**

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for Milk Cows and Chickens and Young Pigs and Hogs. Cheapest food in the market today. If your dealer doesn't carry it, address

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433 California Street, **San Francisco.**

$25.00—$35.00—$50.00
BARON DUKE 201 st
Omaha Grand National Champion
BOAR PIGS: 3, 5, and 6 months old, from 650-pound prize-winning sows. We will sell nothing that we wouldn't use ourselves.
SANDERCOCK LAND CO.,
906 K St., Sacramento.
In charge of Natomas Land sales.

BERKSHIRE BOAR PIGS—From large litters. Order one if you want the best. Satisfaction guaranteed. R. J. Merrill, Morgan Hill, California.

BERKSHIRES IN PERRIS— They make money for me. Write for catalogue and prices. F. L. Hall, Perris, California.

BERKSHIRES—Sired by Star Leader, the $1500 boar. Kounais Registered Stock Farm, Modesto, Calif.

BERKSHIRES by Ringleader 20th, greatest son of Grand Leader 2nd. Geo. M. York, Modesto, Calif.

FOR REAL GOOD BERKSHIRES write Frank B. Anderson, B. 724W., Sacramento, Cal.

CARUTHERS FARMS BERKSHIRES — Cholera immune. Live Oak, California.

REGISTERED BERKSHIRES—Write R. D. Hume, Dos Palos, California.

BERKSHIRES—Fair Oaks Ranch, Willits, California.

Poland-Chinas.

EL PROFITO—Our great herd boar, will put profit-making qualities into your herd. His offspring have size, stretch, bone, good backs and feet, and easy feeding qualities. To make the right start with big-type Poland Chinas, get one of his boar pigs. Prices right. Correspondence cheerfully answered Viola L. Renwick, Santa Barbara, California.

SOW BARGAINS—We are offering some exceptionally nice tried sows, bred and open gilts, at attractive prices. They are all sired by the undefeated and world's grand champion Superba and out of big type sows, which cost me $200 and over. Investigate before buying elsewhere. Rough's Greenfields, Arlington Station, Riverside, California.

POLAND-CHINAS—Am booking orders for Sprinb boars sired by King's Massive, Orange and from such noted sows as Rosebud Quality 1st, sired by President and out of King's Rosebud, grand champion sow of 1917 and other big sows. H. D. McCune, Lemoore, Cal.

MAKE BIG MONEY with Cloverdale Farm big-type Poland-Chinas—the prolific, fast-growing, easy-feeding, money-making kind. We purchased the famous Whitten Ranch herd including great boar Jumbo Model. High-class stock for sale—farmers' prices. Write us. Cloverdale Farm, R. F. D. 1, Escondido, Cal.

NOW BOOKING ORDERS for spring pigs, either sex from my prize-winning, large type Poland-Chinas hogs. Also will book a few orders for bred gilts, February and March farrow, and a few good serviceable, aged boars. Hale I. Marsh, Modesto, California.

ELDERSLY FARM—We are offering some excellent tops from our fall, and spring pigs at attractive prices, sired by one of America's best-bred boars, Big Black Bone Wonder, with grand championship breeding on both sides. He is a real 1000-lb. boar. J. H. Ware, Live Oak, California.

THE BEST IN THE WEST—California Gerstdale and President's Equal are my herd sires. Fall and spring boars now ready to move—each one a corker. Dr. J. A. Crawshaw, Hanford, California.

HARTSOOK BIG TYPE POLANDS—A fine lot of young boars. Both bred and open gilts for sale. Toggenburg goats and Holstein bulls ready for service. Fred Hartsook, Lankershim, California.

I WANT TO BUY 10 big-boned Poland-China bred sows for June 1st delivery. Also any number of feeders up to fifty for May 1st delivery. J. R. Tallman, 438 45th Et., Oakland, Cal.

BOOKING ORDERS for spring pigs sired by "Bob Big Bone" 281289, litter brother of the Junior Champion of Sacramento, 1918, P. E. Mitchell, Atwater, California.

OXBONE HERD offers March boars for sale from King's Big Bone leader, grand champion at State Fair, 1918. Write F. E. Fay, Tipton, California.

SPRING PIGS—Big type Polands. Best blood in State. Write for particulars. White Oak Farm, A. F. Busch, Prop. Potter Valley, California.

FALL BOARS by a son of Caldwell Big Bob at bargain prices. Also booking orders for spring pigs. Forest View Ranch, J. H. Cook, Paradise, Cal.

WAUKEEN HERD POLAND-CHINAS—Big type herd boar, the $700 Grand Champion of California Les McCracken, Prop., Ripon, Cal.

BIG TYPE POLAND-CHINAS—Stock from the best herds of the Middle West. N. Hauck, Alton, Humboldt County, California.

20 HEAD of Big Bone Bob, Grand Model and I. B. A., Wonder stock for sale. J. W. Wakefield, Acampo, California.

LAKE SIDE STOCK FARM—Large smooth and big boned Poland-Chinas. Geo. V. Beckman & Sons, Lodi, California.

REGISTERED POLAND-CHINA SWINE—Prize winners. Finest stock in the State. M. Bassett, Hanford, California.

BIG-BONED POLAND-CHINAS—From Eastern prize-winners. D. H. Forney, Route G, Fresno, California.

POLAND-CHINAS—Young stock for sale. Edward A. Hall, R. 1, Box 39, Watsonville, Calif.

POLAND-CHINA PIGS WITH RIBBONS—Prices right. Johnnie Glusing, Winton, Calif.

POLAND-CHINA PIGS—Bernstein Trewhitt, and Ross blood. B. M. Hargis, Tulare.

POLAND-CHINAS—A few young service boars for sale. R. F. Guerin, Visalia, Calif.

READAKS RANCH herd of registered Poland-Chinas, W. J. Hanna, Gilroy, Calif.

BIG BONED POLAND-CHINAS—Stock for sale. E. S. Myers, Riverdale, California.

POLAND-CHINAS—Young stock for sale. H. E. McMahan, Lemoore, California.

Chester Whites.

BILLIKEN CHESTER WHITES—One yearling boar for sale; everything else sold. Will book orders now for spring pigs. C. B. Cunningham, Mills, California.

Duroc-Jerseys.

DUROC-JERSEY PIGS AND GILTS—All animals sold as breeders are from mature sows and represent the tops of closely culled litters. I keep nothing in my herd but heavy producing sows whose pigs must reach 200 lbs. at 6½ months on alfalfa and milo. Young stock for sale every month n the year. Geo. L. Horine, Winton, California.

DUROC-JERSEYS AT IRELAND—Home of Cherry Volunteer II., Grand Champion Boar at Riverside. Ireland's Orion Defender and Orion's King of Ireland are excellent sires in service. Booking orders for spring delivery. Ranch at Owensmouth. City office, 1219 Brockman Bldg., Los Angeles, Calif.

THE JOHNSON HERD OF DUROCS—Two yearling service boars for sale at farmers' prices. These are well grown out, rugged animals. Weaned boar pigs, $25. Frederick M. Johnson, Napa.

SWEETWATER DUROCS—The most popular herd in the West. Our Durocs make money for us—they will do the same for you. Winsor Ranch, Bonita, San Diego Co. Address R. K. Walker.

WE WON MORE MONEY on Durocs at the State Fair than any other exhibitor Why not buy some of this winning stock? June Acres Stock Farm, Davis, California.

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DUROC WEANLINGS for the farmer. Easy feeders. 200 lb. at seven months. W. W. Everett, River Bend Farm, St. Helena, Calif.

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DUROC-JERSEYS—A few choice September gilts—Weanlings either sex. H. E. Boudier, Napa.

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REGISTERED DUROCS—All from prize-winning stock. W. P. Harkey, Gridley, Calif.

REGISTERED DUROC-JERSEY GILTS for sale. D. Fricot, Angels Camp, California.

REGISTERED DUROCS—Stock for sale. W. J. Fulgham & Sons, Visalia, California.

Yorkshires.

LLOYTON HERD REGISTERED YORKSHIRES—Bred gilts and pigs from eight weeks up. Lloyd & Tointon, Llano Road, Santa Rosa, California.

Hampshires.

OUR 28-MONTHS OLD herd boar, sure breeder, 15c. lb. Two open and bred gilts. Weaned pigs. Write, Uneda Hampsire Swine Farm, Tom M. Bodger, Prop., Gardena, Calif.

MY HAMPSHIRES are money makers Stock for sale. Buy now. L. W. Denker, Saugus, California.

HAMPSHIRE SWINE—Young stock for sale. Ira Hart, Dos Palos, California.

MISCELLANEOUS.

LARGE YORKSHIRES—The ideal hog for the progressive farmer. Young stock for sale. A. L. Tubbs Co., Calistoga, Calif.

O. I. C. BREEDERS' NOTICE—I will sell Ohio Boy, two-year-old imported boar; none better. Also boar pigs ready for spring breeding (sire Ohio Boy, dam Toddler's Beauty, imported). Write for full information. Jas. Little, Wasco, California.

MULE-FOOT HOGS—Large type. H. T. Bailey, P. O. Box 37, Lodi, California. "The Blue Gums."

DAIRY CATTLE.

Guernseys.

GRAPEWILD FARM GUERNSEYS.
A 21-months-old bull out of dam with record of 615 pounds in A. A. class, and a few young bulls up to 1 year of age.
A. B. Humphrey, Escalon, California.

HIDDEN VALLEY FARM offers for sale 2 young Guernsey bulls, ready for service, out of high record advanced register dams. A. J. Welch, proprietor, Redwood City, California.

EDGEMOOR FARM GUERNSEYS —First in the show ring and in official records. Few animals of either sex for sale. Edgemoor Farms, Santee, California.

PALO ALTO STOCK FARM, Palo Alto—Breeders of registered Guernseys; both sexes; prices reasonable.

Ayrshires.

ELKHORN FARM AYRSHIRES— Choice young bulls at reasonable prices J. H. Mayer, 440 Montgomery St., San Francisco, Calif.

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Holsteins.

COMPLETE DISPERSAL SALE

THE JAMES McGILLIVRAY GRADE HERD

200 HIGHEST GRADE HOLSTEIN COWS AND HEIFERS

TUESDAY, APRIL 29, 1919,

SACRAMENTO, CALIFORNIA

The James McGillivray herd of high grade Holsteins is known far and wide throughout central California as one of the heaviest producing herds in the territory, composed of young, well marked, good uddered cows that are the product of many generations of high class registered Holstein-Friesian bulls used on carefully selected dams.

Mr. McGillivray disperses this herd for the sole reason that room is needed for the expansion of his splendid herd of registered Holstein-Friesians which now contains around 250 head of females.

The unusual advantages which this herd of grades has had for many years in the use of the best sort of purebred bulls is in large measure responsible for the present high character of the young cows and heifers in the herd. A very large percentage of the milking stock is first, second, and third calf heifers, and there is not a hard milker in the herd.

DAIRYMEN if you want real producers and money makers at the pail don't overlook the opportunity to buy them in this sale. They are well worth a trip from Imperial or Siskiyou, for this kind of grade Holsteins is practically never offered in such numbers, and the expense of shipping is only a very few dollars a head to the extreme ends of the State.

THE JAMES McGILLIVRAY RANCH, is reached by going south on 21st. Street to Sacramento City limits, then continue straight ahead for two miles on paved Freeport Road. Look for sign at ranch entrance.

REMEMBER THE DATE—TUESDAY, APRIL 29.

Auctioneer—COL. BEN A. RHOADES, Los Angeles; Sales Manager, C. L. HUGHES, 211, Ochsner Building, Sacramento.

BEAUTIFUL HIGH GRADE HOLSTEINS

AT PUBLIC AUCTION

NAPA STATE HOSPITAL, NAPA, CALIF.,

SATURDAY, MAY 3, 1919
Beginning at 10 a. m. promptly.

100 GRADE COWS AND HEIFERS
8 REGISTERED HOLSTEIN BULLS

These are the cattle you need for profitable dairying. The cows and heifers are the product of 14 years of careful selection and use of high class registered Holstein bulls. Herd tuberculin tested regularly for 10 years and every animal in sale over six months of age is tuberculin tested.

Some of the registered bulls to be sold are good enough to head purebred herds, and dairymen will find some choice ones from which to select.

Come to the sale whether you want to buy or not. You will find the Napa State Hospital herd and dairy plant interesting. Auctioneer—Col. BEN. A. RHOADES, Los Angeles; Sales Manager, C. L. HUGHES, Sacramento.

DAIRYMEN, ATTENTION!

My premises having been sold, I am compelled to offer for sale my herd of A-1 Holstein cows, which I have taken a pride in building up for a number of years, all being select stock, consisting of 100 cows, more or less, mostly fresh. Now is the time to investigate. G. P. Codoni, King City, Monterey County, California.

A PRICE ON EVERY ANIMAL.
Herd free from tuberculosis. All sales subject to sixty days' retest. Sons of Finderne Soldene Valdesa, whose dam is not only a world record cow in seven-day division, but has two sisters holding world's records for yearly production.
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WHEN IN THE MARKET for young bulls and females, write me My herd sire and show bull, El Prado Wayne Colantha, is also for sale Every animal in my herd is priced J. W. Benoit, Route C, Modesto, California.

HIGH-CLASS HOLSTEINS—I have for sale some sons of Sir Veeman Korndyke Pontiac from A R O dams Write for particulars or come see them R F Guerin, Visalia, Calif

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HOLSTEIN BULLS and bull calves from A. R. O cow A. A. Mill Upton, California.

REGISTERED HOLSTEIN BULLS with world's record backing. Kounias' Registered Stock Farm, Modesto, California.

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REGISTERED HOLSTEINS — Best blood lines of the breed. R. L. Holmes, Modesto, Cal.

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BREEDERS OF REGISTERED HOLSTEIN cattle McAlis & Sons. Chino, California

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BEEF CATTLE!! BEEF CATTLE!!—Going East again in a few days. What do you need in Beef Cattle? Let me use my thirty years' experience in supplying just the animals you require and save money for you. Write me at Hotel Land, Sacramento—R. M. Dunlap.

OVER 200 Good Hereford and Shorthorn bulls, carefully selected from some of the best herds in the Middle West. Rare chance for breeders. For further particulars apply: Davis Horse & Cattle Co., Davis, Cal.

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RANCHO SAN JULIAN SHORTHORNS—Purebred range bulls, unregistered, for sale Estate Thos. B. Dibblee, Santa Barbara or Lompoc, Calif. John Troup, Supt.

ALAMO HERD REGISTERED HEREFORDS (founded by Governor Sparks). Herd and range bulls. Reasonable prices. W. D Duke, Likely, Modoc county, California.

REGISTERED YEARLING SHORTHORN BULLS—Heavy-boned, thick-meated Scotch and Scotch-topped breeding. Ormondale Co., Route 1 Redwood City, California.

REGISTERED MILK AND BEEF SHORTHORNS, bulls and heifers for sale; catalogue free. Thomas Harrison, Santa Rosa Stock Farm, Santa Rosa, California.

HEREFORDS—Sierra Vista Herd, Minturn, California. Over one hundred registered animals. Fairfax and Repeater bulls head the herd. On highway.

THE NEVADA HEREFORD RANCH, Jno. H. Cazier & Son Co., Props., Wells, Nevada Registered Hereford cattle. Breeding stock for sale.

REGISTERED SHORTHORNS—A few choice young bulls, grandsons of Fair Knight. Prices reasonable. Fair Oaks Ranch, Willits, Calif.

HOPLAND STOCK FARM—Registered Shorthorns. Prices on application. Hopland, Calif.

REGISTERED HEREFORDS—H. H. Gable, Diamond G Ranch, Esparto, California.

SIMON NEWMAN CO., breeders of Registered Hereford, Newman, California.

GEORGE CALLAHAN, breeder of registered Herefords, Milton, California.

GEORGE WATTERSON—Breeder Registered Herefords, Bishop, California.

HEREFORDS—Mission Hereford Farm, Mission San Jose, California.

SHORTHORN—Carruthers Farms, Live Oak, California.

REGISTERED HOLSTEIN CATTLE—E. E. Freeman, Route B, Modesto, California.

EL DORADO HERD OF HOLSTEINS—Alex. Whaley, Tulare, California.

HORSES AND MULES.

SHIRES —Broodmares— Stallions. Also stallion and filly colts $100 to $700. Jack London Ranch, Glen Ellen, Cal.

FOR SALE—930 high bred yearling ewes. J. A Youngreen, Orland, Cal.

FOR SALE—A-1 Breeding Jack. Bargain. Have quit raising mules. W. P. Harkey, Gridley.

SHEEP AND GOATS.

F. A. MECHAM ESTATE, Petaluma, Cal.—Breeders and importers of Shropshire, Rambouillets and American Merinos, both sexes. Also Red Polled cattle. Take electric car at Petaluma or Santa Rosa for Live Oak Ranch.

R. J. BLOOM, DIXON, CAL.—Breeder of Shropshire rams out of pure blood ewes and imported registered rams. Single and car load lots.

DORSETS AND ROMNEYS—Dorset ram lambs for sale. John E. Marble, South Pasadena California

BISHOP BROS., SAN RAMON CALIF.—Breeders and importers of Shropshires

KAUPKE BROS., WOODLAND, CALIF.—Breeders and importers of Hampshire sheep.

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C. J. L. STONEBRAKER, Route A. Chico, Cal. Breeder of Shropshire Sheep

MISCELLANEOUS.

BUTTE CITY RANCH—Shorthorns, Shropshires, Berkshires and Shetland ponies. Write for prices and descriptions before buying Butte City Ranch Box P Butte City Glenn county Cal W P Dwyer and W S Guilford, owners. Special Notice: Second Farm Sale Shorthorns; Shropshires; Berkshires; Ponies. August 2, 1919.

WANTED—Thirty or more good grade Holstein cows Must be young and sound Send description and price to G R Guthrie, Longwood Farm Napa

REGISTERED HOLSTEINS and Duroc-Jerseys Sturgeon Stock Ranch, Tulare Calif.

40 HEAD Grade Jersey Cows. R D Beebe, Lemoore, Cal.

THE HOME CIRCLE

JUST CALIFORNIA.

'Twixt the seas and the deserts,
'Twixt the wastes and the waves,
Between the sands of buried lands
And ocean's coral caves,
It lies not east or west,
But like a scroll unfurled,
Where the hand of God has hung it,
Down the middle of the world.

It lies where God has spread it
In the gladness of His eyes,
Like a flame of jeweled tapestry
Beneath His shining skies;
With the green of woven meadows
And the hills in golden chains,
The light of leaping rivers
And the flash of poppied plains.

Days rise that gleam in glory,
Days die with sunset's breeze,
While from Cathay that was of old
Sail countless argosies;
Morns break again in splendor
O'er the giant new-born West,
But of all the land God fashioned,
'Tis this land is the best.

Sun and dews that kiss it,
Balmy winds that blow,
The stars in clustered diadems
Upon its peaks of snow;
The mighty mountains o'er it,
Below the white seas swirled,
Just California stretching down
The middle of the world.

—John S. McGroarty.

MY LITTLE SISTER.

When I was six years old, I was sent on a visit to my grandmother. It was very pleasant for the first day or two, but after that I longed unutterably for home.

"I suppose she could go back tonight," said grandfather.

"Oh, tomorrow will be soon enough," said grandmother.

"Day after tomorrow will be most convenient," said Aunt Martha. "It's not a matter of the slightest importance, anyway."

That was always Aunt Martha's way—to insist that matters which were fraught with weal or woe to me were not of the slightest importance!

The next day was so long that I felt myself growing perceptibly aged. Toward its close I comforted myself by thinking that when I did go home my mother would be sitting as usual in her little, low sewing-chair. She would draw me to her and kiss me and ask me if I had been a good girl. Always when I went away she told me to be good, and when I came back she asked me if I had been good.

My father would make no reference to goodness. He would say, "Hullo, chipmunk! What are you doing back here? I thought I put you off these premises once." And all the time he would hold me tightly in his arms, and I would put my face in his neck and think what a funny father he was, and how kind and nice he was.

I would tell them how homesick I had been, and when they said they could just as well as not have sent for me before, I would say, "It is not a matter of the slightest importance." Then they would be much surprised.

The next day after this long one that I have told of, as grandfather's hired man was going to the town a few miles beyond our house, it was arranged that he should "drop" me on the way. When he discovered how eager I was to reach home, he said it was very injurious to horses to make them trot. It put them into a fever. A slow walk was the best thing for them.

This made me so angry that I slipped out at the back of the lumber wagon, and ran home with all the speed I could muster. Arrived there, I flew panting through the lower part of the house, and then rushed in dismay to the kitchen.

"Sally Sally!" I screamed at the cook; "where is mamma? What has happened?"

Sally deftly lifted me by one arm, and set me with unnecessary force on a chair.

"Stop your noise," she said. "Your mother is sick, and you're not to disturb her."

I sat still for a few moments, trying to realize the condition of affairs.

"Well, I declare!" exclaimed a familiar voice in the doorway; "if here isn't papa's girl." I sprang into papa's arms.

Papa led me very softly into mamma's room. I was not allowed to rush to her nor to hug her at all; and then they showed me a tiny face in a flannel bundle beside her, and said that was my little sister!

I looked at it first with pure wonder that any one could be so small and yet be alive. Then a pang of jealousy shot through my heart. This was my father and mother, and I had expected that they would be overjoyed to see me! Instead, they scarcely noticed me, but were gazing with unconcealed pleasure at this ugly, red-faced little interloper.

I went to bed with a strangely desolate feeling. There was no father to throw pillows at me and pretend that I had broken some of his bones when I threw them back again; no mother to tuck me in, and ask me to wake her next morning with a kiss.

My father played no more games with me. It would disturb the baby. My mother told me no more little stories. Her time was absorbed by the baby. Even cross old Sally said, "Bless its little heart" when she spoke to the baby.

Once, when the baby behaved rather worse than usual, they sent off in haste for the doctor, and afterward when I had a bad toothache they said that was what I must expect when I got my feet wet every day.

At another time, papa, who was going away in a great hurry, exclaimed in a loud, laughing voice, "Only ten seconds for refreshments!" And as he spoke, he kissed mamma and the baby in the hall, and forgot all about asking where I was.

My heart ached and ached. I shut myself in my room, and cried desolately. I thought of every friend I had in the world, and it seemed to me that every one had been deliberately unkind to me. Cronk, the gardener, was a possible exception. I dried my eyes and went out to him with the hope that he would say something consoling.

"Mr. Cronk," I said, by way of drawing him out, "you are very handsome and clever, aren't you?"

Cronk straightened his commonplace person with a sigh.

"Ah, Miss Ellie," he said, "you ought to have seen me when I was a young man!"

"Well, anyway," I said, "I wish I was good-looking and clever both."

"Oh, you're pretty passable," said Cronk.

Somewhat discouraged, I went back to the house, and determined that if nobody cared for me I would care for nobody. In a few days, as a result of this decision, my mother had a serious talk with me. She told me how much I had grieved her and my father by my naughty behavior, and that it was an awful thing for a person to let the Evil Spirit get control of her thoughts and actions. After a long talk, she told me to come and kiss my little sister, and I refused.

"It would only be a Judas kiss, mamma," I said. "I don't really love her. She has spoiled all my pleasure in life. And I'm not going to pretend to love her when I don't."

"Then you must go to your room, and ask God to give you a new heart," said mamma sadly. Some days afterward she told me my father wished to see me alone in the library.

I felt myself growing cold and leaden all over. I seemed to have lost all love for my father and mother, and as for my baby sister, I simply hated her. Perhaps my father thought he could scold me or whip me into pretending that I loved them. Well, he just couldn't, then I was sure of that. I would not yield. I clenched my teeth, and locked my lean little hands together, and went down to my father. After I came in he closed the door behind me, and then he showed me a sad, sad face.

"Darling," he said, "I want to ask you to forgive me. I've been thinking it all over, and I see that ever since baby came I've been a poor, cheap, second-rate kind of a father to you. I didn't realize it before, but I blame myself for all this coldness



"My wife is keeping her eyes on the churn; young Johnnie is dumping feed now and then into the cutter; one hired man is feeding fireplace wood across the teeth of a saw; the other man is attending the irrigation canal in the west field—but the real work in each case is being done by my

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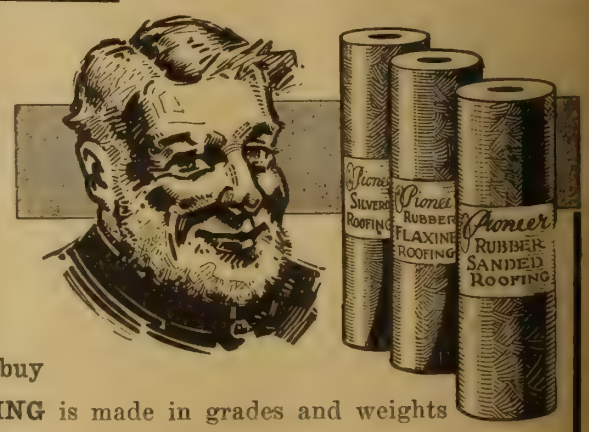
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that has come between us, and—"

"But with a loud sob I had dropped before him with my face on his knees. He drew me up to his breast. "Oh, no, papa!" I said, "it isn't you at all. I have been wicked and cold and hateful—"

He stopped my lips with kisses.

"Don't you dare slander my chipmunk," he said, and I only tightened my clasp on his neck and gave a long, long sigh of relief and rest and blessed joy.

Since then I have always been very fond and proud of my little sister.—Ethelwyn Wetherald.

THE HOT LUNCH FOR RURAL SCHOOLS.

Much valuable work on the hot school lunch has already been done in certain sections of the country, the plan being a co-operative one, depending upon help given to mothers and teachers by the Home Demonstration Agents and the organization of school children by Boys' and Girls' Club leaders.

Teachers who have made a practical test of the hot lunch state that much of the listlessness and inattention in the afternoon session is overcome by the hot dish at noon. This hot lunch is not expected to be sufficient for the children, but is many times only one hot, nourishing dish to be supplemented by sandwiches and fruit brought from home. This dish is prepared under the direction of the teacher and, of course, is an added burden to her, but the increased alertness and attentiveness of the pupils for the remainder of the school day compensates for the increased work.

In the one-room rural school which has been built without reference to the serving of hot lunches, the floor space is limited. The equipment therefore must take up little space and should be placed in one of the rear corners with some sort of a screen in front of it.

A place to store supplies, a work table and a stove comprise the necessary kitchen furniture. A two-burner, coal oil stove with portable oven is probably the most satisfactory, although a small one-burner stove could be made to answer if there were a fireless cooker.

To insure the success of the hot lunch, the school board, the parents, the teacher and the children themselves must share the responsibility. The school board must furnish equipment or be willing to help, the parents must provide the children with money to buy the hot dish, or contribute supplies, as requested. The teacher must have an active interest and keep supervision over the practical work from day to day and the children must work in groups to prepare the meal.

In serving, the children's desks are used for tables and two paper napkins used—one spread upon the desk and the other for use.

As soon as the meal is over, the dishes must be washed and put away and dish towels washed and hung out to dry. All paper napkins and dry garbage should be burned and other garbage should be buried.

To keep the flies from gathering, all windows and doors must be well screened and no refuse thrown out anywhere near the house.

THE USE OF ORANGES.

Ordinarily, oranges are eaten out of hand or used for the dessert of a meal, but the use of them in salads should not be overlooked.

Fruit salads are wholesome as well as appetizing, and oranges may be used for the foundation of several varieties. Peel the oranges, separate the parts and remove all the pithy white skin, and dice. Mix with an equal amount of diced pineapple, one-fourth cup chopped celery and a few marshmallows. Use a mayonnaise dressing, which can be made more delicate by the addition of whipped cream and serve on lettuce leaves.

Another combination is oranges, apples and celery with walnut meats, still another, oranges, canned pears and bananas with a few maraschino cherries, all of these salads to be served on lettuce with mayonnaise dressing.

These combinations of fruits may be used for a fruit cocktail to begin a coufse dinner, served in small glasses, with a sprinkling of sugar and topped with a cherry or they may be served as a most delicious dessert, commonly called Ambrosia. If served in this way, let stand in their own fruit juices and add a bit of vanilla when combining. Walnut meats, white cherries, marshmallows or whipped cream may be added if desired.

Cretonne is very cleverly used to disguise a single iron bed, by having not only a cover for the bed but a ruffled slip-on for the two ends, so there is no metal shows. This was shown at one of the good furniture stores.

Lamp shades of silk are rather more popular than those of art glass and many of the stores give free lessons in the making if the materials are purchased there.



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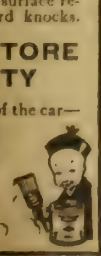
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The work of the most glorious armies of all history placed us on the threshhold of an open door. A new world of unlimited possibilities lies beyond. They could not bring it to us. They could only show it to us, and its vast worth—and give their lives to do it, if that were needed.

It is our task to finish this work.

They showed us the way and passed on—perhaps to new worlds to conquer. And whether we will or not, the solemn obligation to finish their work has fallen upon us.

"If ye break faith with us who die,
We shall not sleep—though poppies blow
In Flanders fields."

Your patriotism and mine was not buried in those graves in Flanders. There is still work to do—for our country, for ourselves, for our children. Else the war will have failed in its purpose—and millions of young lives will have gone out on a vain quest.

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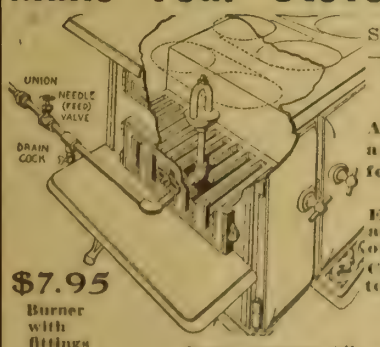
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TIME TO SWAT THE ROOSTER.

A bad egg tasted is a good egg wasted, to the extent that Madam Hen often is criticized where she should be eulogized. Industriously she works to lay an egg a day, and, other conditions being equal, the egg is produced in as nearly a perfect food product as fowl ingenuity can make it. If the hen is properly fed, if the nests are clean, if the eggs are gathered often, stored in a cool, dry room or cellar and delivered to the city consumer in prime condition, the consumer grins appreciation as he breakfasts on shirred eggs of matchless market quality.

On the other hand, if the roosters are allowed to run with the flock after the hatching season, if the hens are not properly and regularly fed, if the nests are dirty and crowded, if the eggs are gathered only once every other day and are stored in warm, ill-ventilated quarters, and if marketing is deferred until enough eggs have collected to fill a crate, the city consumer usually grunts disgust and shouts for a gas mask when the eggs appear opposite him at the table.

Bad eggs are not the result of accident; they are examples of neglect, slovenly management, and shiftlessness. It is just as easy to produce and market good-quality eggs as it is to offend consumers with stale, fertile eggs. Farmers lose approximately $50,000,000 a year from bad methods of producing and handling



These hens would lay just as well without the male bird, and the eggs would bring a higher price on account of their better keeping quality.

eggs. One-third of this loss is preventable, because it is due to partial hatching of fertile eggs which have been allowed to become warm enough to begin to incubate.

The rooster makes the egg fertile, while the fertilized egg produces the blood ring which is the partial development of the chick. The rooster does not increase egg production; he merely fertilizes the germ of the egg, and hence he should be allowed to run with the flock only during the hatching season. After that he should be confined, killed or sold.

Summer heat has the same effect on fertile eggs as the hen or incubator. The fertile germ in hot weather quickly develops into a blood-ring which spoils the egg for food or market purposes. Heat is the great enemy of eggs, both fertile and infertile. On this account poultry producers should keep nests clean in warm weather and provide one nest for every four fowls so that the nests will not be used too often and heat or soil the eggs. He should gather the eggs once or twice daily; keep them in a cool, dry room or cellar; market them at least twice a week, and pen or dispose of all roosters as soon as the hatching season is over.

Hens isolated on range or pasture from the male birds produce infertile eggs of desirable market quality. In general, about two weeks after the roosters are removed from the flock the hens will again yield infertile eggs. Occasionally hens running with male birds produce infertile eggs, but as a rule this results from the fowls being confined too closely, being overfat, or not having access to enough green feed.

HELP FOR CROP-BOUND HENS.

Theoretically, fowls that are properly fed should not become crop-bound, but the fact remains that they are inclined to eat things that are not adapted to their digestive powers. Some bulky article obstructs the outlet of the crop, and finally with other food become so impacted that the mass presses on the windpipe, or fermentation sets in and causes a form of poisoning.

If you find that the crop is soft and apparently has some fluid in it, turn the bird's head downward and knead the crop. It may be necessary to do this several times, as more liquid will accumulate. If the accumulation is rather hard, give the bird some castor oil, and follow this by massaging to remove the contents through the mouth. If successful give the bird a quarter of a teaspoon of baking soda in a tablespoon of water to sweeten the crop and help put the bird back in good condition.

If this manipulation does not prove successful it will be necessary to open the crop and remove the food. If the bird is a vigorous one and weighs over a pound, the operation will not prove difficult or risky.

Have someone hold the bird so that you will have both hands free to work. Pluck or cut with scissors enough feathers from the breast to give a bare space one inch wide by two inches long. With the fingers of the left hand draw the skin tight, and with a sharp knife or scalpel make an incision in the outer skin near the center of the crop. Insert the point of the scissors and enlarge the slit until it is from an inch to an inch and a half long, depending upon the size of the bird. Leave the crop untouched until the blood has ceased to flow. It may be removed with absorbent cotton.

Carefully draw the slit in the skin to one side about a half inch and make a cut through the crop wall a little over a half inch long. Remove the contents of the crop, using a spoon handle as a scoop. If filled with grass or hay it may be necessary to cut the the mass with scissors before any start can be made. When the crop appears empty, push your little finger into it to see if there is any obstruction at the outlet. If you find the opening clear, wash out the crop with a permanganate of potash solution and sew up the cut. Use needle and white silk thread and make stitches an eight of an inch apart, tying them carefully. Draw the outer skin together and put a few stitches in it, being careful not to include the crop in any of the knots tied.

Swab the wound with a weak solution of carbolic acid or some other antiseptic, and put the bird in a clean, comfortable place. After an hour it may have water, colored to a light pink with permanganate. Do not feed for twelve hours; then give an easily digested mash at the usual feeding time for a few days. After three or four days begin feeding grain and green stuff, and if the bird appears normal it may be put back with the flock.

Poultry husbandry is the most popular subject chosen for correspondence study by California ranchers, according to reports from the State University.

When you want to add variety to your chick ration, try a dish of plain bread and milk. Chopped cooked meat is a splendid appetizer also.

Beef scraps get more eggs than red pepper and do not hurt the hens.

Poultry Breeders' Directory

YOU ARE NOT TOO LATE—Our early maturing, winter laying strains, May, June hatch develop quickest into profitable winter layers. "My thirty pullets laid at four, sixth month (January) cleared $31." Why? Bred 20 years to lay winters, 200-290 eggs yearly. White, Brown, Buff Leghorns; Reds; Anconas; Rocks; Minorcas; Orpingtons; clearing customers $5. Valuable circular with proof free. 70,000 egg hatcheries supplying chicks. Thousands shipped promptly, below ordinary chicks. Eggs; Half price. Hatcheries overflowing. Breeders (Pullets), Sale beginning. J. Beeson, Pasadena, Cal.

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WHITE LEGHORNS are the most profitable breed of poultry. If you are in the business for profit, you will eventually have them. Early broilers; early layers; early profits; we sell only **White Leghorn Baby Chix** from heavy laying **Hoganized** hens. Safe delivery of full count live chix guaranteed. Prices per 100: February $15; March, $14; April, $12.50. The Pioneer Hatchery, 408 Sixth street, Petaluma, California.

SINGLE COMB BROWN LEGHORNS—The large, modern, heavy-laying type that won high honors for us at the National Egg-Laying Contest. No better layers, none others so hardy. For 20 years our strain has won highest prizes at New York, Boston, Chicago, San Francisco, etc. Absolutely the finest Brown Leghorns in America. Eggs, $3 and $5 per $15; $15 per 100 Williams Bros., Fullerton, California.

BARRED PLYMOUTH HOCKS—Champion prize winners and wonderful layers. Choice cockerels, hens and pullets for sale. Hatching eggs from twelve grand matings. I have made a specialty of Barred Rocks for over twenty years. That's why I win at all leading shows. "Nothing Better In Poultry" than Vodden's Barred Rocks. Catalog free. Chas. H. Vodden Box 396, Los Gatos, California.

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SLY'S RHODE ISLAND REDS —Winners and layers. Hatching eggs from high grade stock scientifically bred for exhibition and uitility. Settings, $5.00, $3.50, and $2.00. Send for catalogue. Albert Sly, 1643 Middelton Place, Los Angeles.

OUR FINE FEMALES—Can supply you with eggs at 30c each and up that will hatch just what you want in general purpose fowls. Write for mating list. O. B. Hunt, White Rock Fancier, 1244 Burnett street, R. Berkeley, Cal.

FOR SALE—We have a pen of six, five and better fingered White Leghorns hens and a four-fingered cock, all beauties. A chance to breed a three hundred-egg hen. Will receive offers. C. B. Atterbury, Turlock, California.

BABY CHICKS—Barred Plymouth Rock, R. I. Reds, Buff Orpingtons, Black Minorcas, Brown, White and Buff Leghorns from Hoganized stock, bred to lay. Tobener Poultry Ranch, Washington Ave., San Jose, Cal.

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BABY CHICKS—Hatching season ends June 1st., except for special orders. A few chicks still available for later part of May—leading varieties. B. M. Archibald, Soquel, Santa Cruz Co., California.

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RHODE ISLAND RED EGGS for hatching. Mrs. Richard Holdridge, P. O. Box 282, Dixon, California.

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BRONZE TURKEY EGGS—No more eggs till further notice. Albert M. Hart, Clements, California.

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S. C. WHITE LEGHORN EGGS for sale. from heavy-laying, prize-winning strain, headed by males from 280-egg stock, range raised. Setting $1.50. Hundred, $8.00. Mrs. Sanders Hayes, Longvale, Cal.

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My speciality. Bred for eggs, size, color. Hens on free range means strong chix. Price right. Denton Poultry Yards, Box 360, Campbell, California.

MODEL POULTRY FARM—White Leghorn specialists. Our fifteenth year. Baby chix and hatching eggs for sale. Our prices are right. W. C. Smith, Prop. Corning, Calif.

BARRED PLYMOUTH ROCK EGGS for sale. Good range flock headed by cockerels from 260 to 290-egg stock. $1.50 per setting Mrs. J. A. Vassar, Laytonville, California.

FOR SALE—Bourbon Red Turkeys and eggs for hatching, $5.00 per setting of 13 eggs. Book your orders early. Albert E. Balmer, Alhambra Valley, Martinez, California

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EASTMAN'S "BRED-TO-LAY" Hoganized and trapnested Barred Plymouth Rocks. Baby chicks. Eggs; cockerels. Fairmead Poultry Farm, Fairmead, California.

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BABY CHICKS—We have the large heavy-laying S. C. White Leghorns, severely culled last year. Send for prices. Tupman Poultry Farm, Ceres, California.

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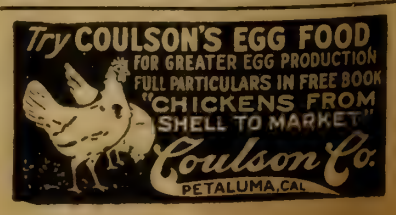
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GOBBLER'S THROAT SWOLLEN.

To the Editor: Our gobbler's throat is swollen so that he cannot get his head down to eat. It seems to be in the red skin outside of the throat. We lanced it and it seemed to be puffed up with air. Since then it has puffed up again. The bird does not seem weak otherwise. What is the trouble and remedy?—F. B. T., Martinez.

This is a new one on us. Have any of our subscribers had the same trouble and if so, have they been able to overcome it?

Classified Advertisements

Rate in this directory 3c. per word each issue.

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FOR SALE—440-acre stock and grain ranch. 5 miles R. R. station, Mariposa Co., California. 60 acres cleared and tillable, part in grain now. Good 6-room house, large barn and outbuildings; 6 miles hog-tight fence; large springs, pipe line and concrete reservoir for irrigation. Full bearing English walnuts, oranges, figs, peaches, pears, apples, berries, etc. Average rainfall, 29.88 inches. Lots of free range adjoining. Large oaks and pine trees in pastures. Price only $12,000 includes 34 hogs, 8 head cattle, 4 horses, 50 goats, and all farm implements. Terms. Fred B. Palmer, 131 W. First St., Long Beach, Cal.

400-ACRE—Santa Cruz mountain ranch; will rent on basis of cash, shares, partnership or improvements. Box 1370, Pacific Rural Press.

SEEDS AND PLANTS.

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Fifteen cents per pound, delivered any place in California, in ten-pound lots or more
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CABBAGE PLANTS—Half a million, best varieties, grown on burned over soil from reliable seeds. By parcel post, prepaid, 50c per 100. By express, $3 per 1,000; 10,000 $25.00. I. F. Tillinghast, Santa Rosa, Cal.

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FLORIDA SOUR AND CALIF. SWEET ORANGE seed-bed stock. The time to plant is propitious; order now. Southland Nurseries, 1941 E. Colo. St., Pasadena, Calif.

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STOCK PUMPKIN SEED—Good germination and any amounts, 20c. per lb. Aurora Seed Mill, Stockton, California.

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5000 AVOCADO SEEDLINGS for sale; will furnish buds for same. West India Gardens, Altadena.

TURN THE LIGHT ON BAD EGGS.

A peep through a home-made egg testing device, plus the ability to differentiate between sound and stale eggs, enables a farmer to add several cents to the price of the eggs he sells.

The shell of a new laid egg has a soft "bloom," which is the visible sign of perfect freshness. This bloom is destroyed by a touch, and in any case disappears after a few days' exposure to the air. After that the appearance of the shell is not a reliable indication of the condition of the contents.

By holding an egg between the eye and a strong light in such a manner that the rays of light come to the eye through the egg, the condition of the contents can be seen. This method of examining eggs is called "candling." The work is done in a dark room, using a light enclosed in a case having opposite the light a hole of proper size and shape before which the egg is held for examination.

An ordinary hand lamp, a lantern, an incandescent bulb, or a flash light may be used. Any box large enough to hold the lamp, set on end, can be used for a case. Besides the hole in the side opposite the light there should be a hole in the top end; otherwise, the heat from the light would fire the box. A tester chimney such as is used on a lamp for testing eggs in incubation may be used for candling.

For convenience the light should be placed on a table or shelf. The eggs to be tested should be placed at one side of the light, while on the opposite side receptacles for the good and bad eggs should be provided. Each egg should be examined alone by holding it, large end up, close to the light. A perfectly good, fresh egg shows "full" and "clear" before the light; there is almost no air cell at the large end, and the yolk outline is only fairly discernable. A fixed air cell of one-eighth to three-sixteenths of an inch in depth indicates a fresh egg, as eggs run in general. A larger air cell with a mobile lower line indicates—according to size and fluctuation— a stale egg, or one becoming weak and watery.

Very small spots which are apparent in the eggs are usually blood clots. Large spots, rings, and shadows are due to heat and germination and indicate decomposition in the first stages. An egg that is opaque except for a large fixed air cell contains a chick dead at an advanced stage of decomposition. An opaque egg with large air cell having a mobile lower line is in an advanced stage of fluid decomposition. Eggs showing soiled spots or rings can often be utilized by breaking them and separating the bad part.

BE SURE TO TOE-PUNCH THE CHICKS.

Many farmers unintentionally keep old hens in the flock and cull younger hens because of the difficulty in distinguishing between the birds after pullets have matured. Such a mistake can be avoided by marking the chicks in the web of the foot with a toe punch right after they are hatched, or at any time before they are mixed with chicks of other ages.

A toe punch can be purchased at little expense from a hardware store or poultry supply dealer and a good system is as follows: Do not toe-punch the chicks in the first lot of the season at all and have that lot known as No. 1. Give all the chicks in lot No. 2 a punch mark in the right half of the right foot; No. 3 a mark in the left half of the right foot; No. 4 a mark in the right side of the left foot; No. 5 a mark in the left half of the left foot; No. 6 a mark in both sides of the right foot; No. 7 marks in both sides of the left foot; No. 8 a mark in the left side of the right foot and another in the right side of the left foot; No. 9 a mark in the right side of the right foot and the right side of the left foot; No 10 in the left side of the right foot and the left side of the left foot; No. 11 the right side of the right foot and the left side of the left foot.

This system of marking may be continued indefinitely according to the ingenuity of the individual poultryman in mapping out a foot-print schedule. It provides means of identification for fowl as efficient as the Bertillion system of finger-print records of criminals.

FATTENING DUCKS FOR MARKET.

Ducklings to be marketed should be fattened for two weeks before killing on a ration made of three parts, by weight, of corn meal, two parts of middlings, one part of bran, one-half part of beef scrap, with 3 per cent grit and 10 per cent green feed added to this mash; or a mash of three parts corn meal, one part low-grade wheat flour, one part bran, one-fourth part beef scrap with the green feed and grit, and 3 per cent oyster shell added. Feed this mash three times daily, giving all the ducklings will clean up in a half hour. The green feed is sometimes left out of the ration during the last seven days of fattening, as it tends to color the meat and may produce a slightly flabby rather than firm flesh; however, it is easier to keep the ducklings in good feeding condition on a mash containing green feed.

RABBITS HAVE ABSCESSES.

To the Editor: In killing a few of my rabbits I found that one had a sort of boil on one cheek and inside it was full of small white worms. Another had a similar gathering on its hind leg. What is the disease and is there a remedy for it?—C. L. M., Livermore.

These boils, or abscesses as they are generally called, come from various causes (either impure blood or hereditary), over-feeding, from a scratch or bite or bruise. Those that form internally may prove fatal as they are not generaly discovered until too late, but when on the surface they are easily treated. Wait until an abscess is ripe, then clip the fur from the swelling and open it with a sharp knife or lance, making an incision clear across the lump. By careful squeezing you can entirely remove the pus bag. Wash the wound out thoroughly with a weak solution of peroxide of hydrogen in warm water to which have been added a couple of drops of carbolic acid. Use this wash occasionally while the healing is going on to prevent infection.

Many people raising poultry think of increased production only along the line of increased numbers. This is a mistake. The necessary object to be kept in view is increased revenue from increased quality and production more than from increased numbers.

Lumber
Roofing
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SASH—DOORS—NAILS

All kinds and sizes.
Some slightly damaged.
Get our estimates.

FOR QUICK SALE

200 Modern Electric Features at One-half Price.

New and Second-hand Plumbing Guaranteed 20 Per cent. Saving.

Act Quick!

Cut out and mail us this ad.
Write in blank below stock desired.

WE HAVE EVERYTHING

SYMON BROS.

11th and Market Sts., San Francisco

Send me your special prices, f. o. b. San Francisco on the following:....

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The Efficient Power for All Kinds of Pumps



as shown by their successful service on hundreds of important irrigaion projects. See them at work

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Rigid Cast Frame—Solid Metal Rotor Winding—Positive lubrication—means steady operation with little attention—low upkeep—low maintenance cost

"Y" Engines also give Economical Irrigation Power

Fairbanks, Morse & Co.

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Coming Back

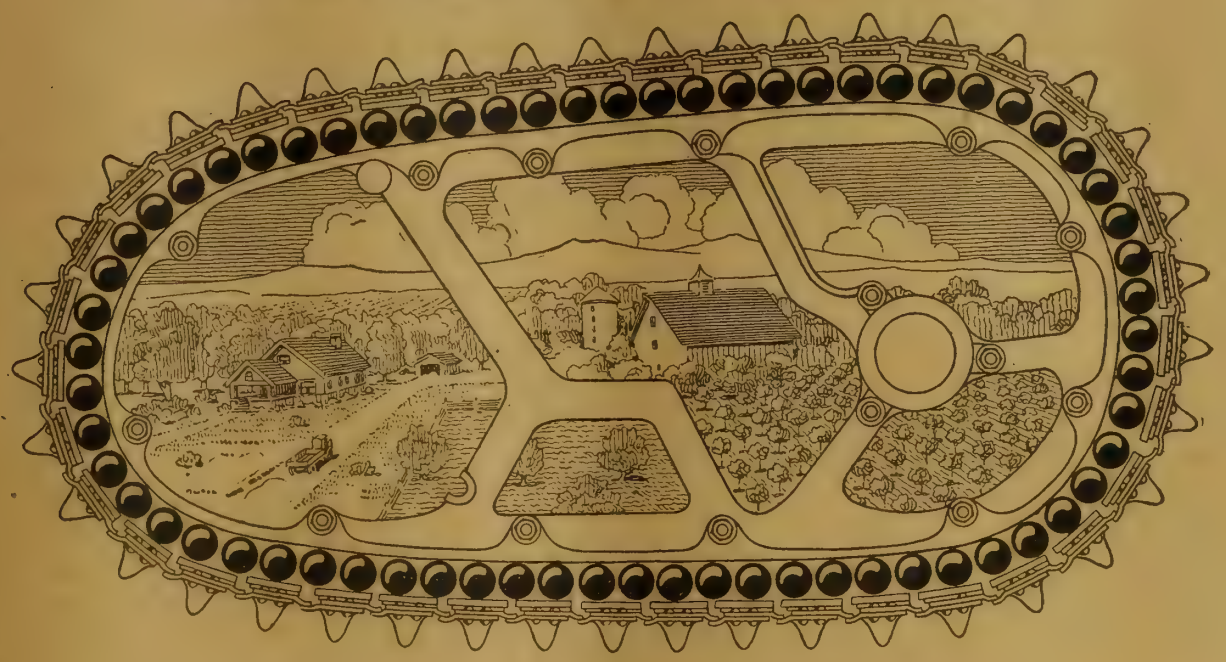
America is proud of them—the whole world is proud of them. They finished their part of the job with a courage and daring best described by Marshal Foch in these words to General Pershing before the battle of the Argonne:

> "Your men have the devil's own punch. They will get away with all that. Go to it."

How proud of them are you?

THE AMOUNT OF
THE VICTORY LIBERTY LOAN
YOU SUBSCRIBE
Measures your pride in them.

Successful Farming thru the Ball Tread



Putting the Rollers under the Drudgery in Farming

There are three sizes of these
Roller-Bearing, Work-Achieving, Money-Making
Yuba Tractors: 12-20, 20-35, 40-70
Ready for Immediate Delivery

Power farming is the modern business idea. The resistance of hard soils, the long field, the weary round, drive you toward the use of power on the farm.

The machine best adapted to hard usage, *the one that puts the rollers under the drudgery on the farm,* is the YUBA Ball Tread Tractor.

Riding your YUBA you feel a sense of security. You are sure you will arrive at the end of the day without breakdown. You know that the mechanical perfection of your YUBA is your best guarantee of long service, few repairs, small upkeep.

Perhaps the only argument against the YUBA is the price. But that affords YUBA perfection.

Write for the catalogue. Tell us how many acres you farm, or what uses you expect to have for a tractor.

Address:

Yuba Manufacturing Company

Marysville California

YUBA DEALERS:

Henry Spring, Inc., Sacramento.
Pengilly & Clarke, Stockton.
San Jose Truck & Tractor Co., San Jose.
Ketterlin Bros., Santa Rosa.
Young Hardware Co., Napa.
Mayfield & Long, Suisun.

DEMONSTRATION ARRANGEMENTS NEARLY READY.

(Continued from page 642.)

and anyone pulling too many inches of plows to move at that depth will have to take off enough so he can. No tractors will be allowed to run more than ten per cent above their catalog plowing speed and no racing of tractors is to be allowed. No contests are to be staged nor prizes awarded. Each tractor will burn the kind of fuel desired by its operator, but any fuel containing over five per cent of gasoline will be classed as gasoline. Placards will be carried by all tractors indicating their belt horsepower, motor revolutions per minute, bore and stroke, plowing speed, other speeds, and fuel used. Only one tractor of each make and size will be allowed in the general demonstration.

Daily Lectures by Experts.

A lecture will be given every day at 1:30 p. m., each by an expert on his own topic. Speakers are Paul R. Melchert, of the Standard Oil Co., on Lubrication; N. F. D'Evelyn, of the Sperry Flour Co., on More Wheat and Better Wheat; Dr. Cocaneur on Humus in the Soil; a speaker from the American Bosch Magneto Corporation, probably the San Francisco manager P. Furrer, on Ignition; A. C. Shaw, of the Chanslor & Lyons Co., on Carbureters; and Prof. J. B. Davidson, of University Farm. The order of these lectures has not been decided at this writing.



Medium-sized tractors for medium-sized farms have proved far the most popular in the past year or two.

Conveniences and Accommodations.

Road signs are to be placed liberally along the highways. The Oakland, Antioch & Eastern Railway, running from San Francisco to Sacramento, wil carry passengers at 1½ fare for the round trip. Auto stages will run every ten minutes from Hotel Land in Sacramento six miles to the Demonstration grounds for a fare of 25 cents for the round trip. Men are already fencing the great auto parking space in which machines will be guarded and checked free of charge.

The Sacramento Chamber of Commerce has an information bureau to help visitors locate rooms at all prices. The Sacramento City free auto camping grounds are not far from the field. This place is fitted with every convenience for campers, including tables, seats, many hydrants, fire places, frames for canvas-covered rooms, etc. First class, reasonable priced meals may be had on the grounds or in the city. While you are here, do not fail to run a few miles into the Placer County foothill fruit district centering around Newcastle and Penryn.

Trucks, Trailers and Accessories.

As transportation is equally important with production, motor trucks and trailers will be exhibited, showing many hitherto unnoted improvements. Following are the exhibitors:

Auto Car Sales & Service Co., Sacramento.
Clyde Cars Co., San Francisco.
Champion Spark Plug Co., Oakland.
California Hydraulic Engineering & Supply Co., San Francisco.
Chanslor & Lyon Co., San Francisco.
Anthony, Earl C., Sacramento
American Manganese Steel Co., San Francisco
Butler-Veitch Co., Oakland, Fageol trucks.
Brown Truck & Trailer Co., San Francisco.
Bean Spray Pump Co., San Jose.
Bowman Auto Supply Co., Sacramento
Double Seal Ring Co., San Francisco.
Ensign Carburetor Co., Sacramento.
Ely Machinery Co., San Francisco.
Fairbanks, Morse & Co., San Francisco
W. P. Fuller Co.
G. M. Truck Co., Sacramento.
Garford Truck Co., San Francisco.
Healds Engineering & Auto School, San Francisco.
Huber Mfg. Co., Marion, Ohio.
Hirsch Motor Co., San Francisco.
W. G Hanson Machine Works, Sacramento.
International Harvester Co.
Jacobson&Brown Co., Chico.
Logan-Cadwalader Co., San Francisco.
Moreland Motor Truck Co, Sacramento.
New York Lubricating Oil Co., San Francisco.
Pioneer Motor Co., San Francisco.
Pacific Nash Motor Co., San Francisco.
Pieper Co, James F., Sacramento.
Patriot Truck & Sales Co., Sacramento.
Skinner, R. L., San Francisco.
Stone, J. N Stockton.
Taylor-Wharton Steel Co., San Francisco.
Three Leaf Cot Co., Sunnyvale.
Union Oil Co., Sacramento
Valvoline Oil Co., Sacramento.
Wade, R. N & Co., Portland, Oregon, engine-operated crosscut saws.
Weinstock-Nichols Co., San Francisco.
Western Soil Bacteria Co., San Francisco.

New Tractors at Demonstration.

Many tractors new to Californians will appear at the California Tractor Demonstration, Sacramento, May 6-11. The Electric Wheel Company, of Quincy, Illinois, has wired for space in which to show their tractors, which have not been heretofore known in California. The Huber Tractor Company, of Marion, Ohio, whose machine is very little if any known in California, has wired Manager R. M. O'Neill of the Sacramento Tractor Demonstration that they will have a carload of tractors here before the opening date. Frank O. Renstrom, of San Francisco, the Northern California distributor for Belt Rail and Twin City tractors, was admitted to active membership in the California Tractor & Implement Dealers' Association at their last meeting. Mr. Renstrom says he will have one of his 16-valve four-cylinder Twin City tractors at the Demonstration. The new model Happy Farmer and the Little Giant tractors, both handled by the California Tractor and Implement Co. of Sacramento are others relatively new to Californians. The Velie tractor, handled by Logan & Cadwalader, is a recent introduction which will appear at the Sacramento Demonstration, and the Campoco is another. The latter machine has two circles of pivoted shoes on each wheel, thereby permitting three flat shoes to rest on the ground at all times during the revolution of the wheel. Application for membership in the California Tractor and Implement Association has been received from Weaver & McIvor, of Fresno, who are handling the Dart tractor. This also is a new tractor on this Coast, and will be shown in action at the Sacramento Demonstration. The Coleman Worm Drive tractor, handled by the Hunt Tractor Co., of Sacramento, will be there.

Emerson-Brantingham, Whitney, and Hession tractors are others to see.

One of the well known tractors of the East is the Russell, of which not many have yet been introduced into California. The biggest being handled by the A. H. Averill Machinery Company, of San Jose, are of as much power as any other gas tractors used in California, being rated at 40-80 hp. They are of the four wheel type, burn kerosene at a maximum of not over 6 gallons per hour, and have a draw bar pull of 6000 lbs. at low speed. The machine has a 12 foot 5 inch wheel base and turns in a circle of 19 ft. radius. Other sizes of Russell tractors are the 20-40, 15-30, and 12-24.

MONARCH TRACTOR

See It at the Sacramento Tractor Demonstration

The Sacramento Demonstration will present an excellent opportunity for you to see what the Monarch Tractor DOES. Watch it PULL. Note the POWER. See it GRIP THE SOIL. Observe how readily it RESPONDS to every desire of the driver. Keep your eye on the Monarch as it swings a circle in its OWN LENGTH. Be especially wide-awake when it hits the rough spots and see how each track ACCOMMODATES ITSELF to the unevenness of the soil without throwing the tractor out of line, straining the frame, or reducing the pull. To miss the Monarch is to miss the BIG FEATURE of the demonstration.

Write For Catalog

LOCAL DISTRIBUTORS
FRESNO: Monarch Tractor Sales Co., 2225 Fresno St.
MODESTO: E. Ustick & Son.
LOS ANGELES: W. L. Cleveland Co., 211 N. Los Angeles St.
J. W. Wulf, Holtville.
J. E. Stuart Estate, Ventura.
SACRAMENTO: Sacramento Valley Tractor Co.
SAN JOSE: The Farmers' Union, 151 W. Santa Clara St.
SANTA MARIA: Bryant Trott & Co.



Monarch Tractor Sales Co.

State Distributors

120 S. AURORA, - STOCKTON, CAL.

Long Distance Phones: 2800-4011W



Men Wanted

TO OPERATE, KEEP UP, AND REPAIR FARM TRACTORS, 1000 SKILLED TRACTOR MEN COULD FIND EMPLOYMENT AT GOOD WAGES—RIGHT NOW—IN CALIFORNIA ALONE—TRACTOR BUSINESS IS GOING AHEAD VERY FAST.

Fortunes untold have been made in the AUTO business—hundreds more will be made in the future—The FARM TRACTOR BUSINESS is the next great business that will make countless fortunes for men who have skill and courage—Why not learn this business while it is still young—grow up with it—make money—be independent? Go over to the office at 1220 Post Street any day or evening and talk it over with Mr. Hymer or Mr. Nabors—

—Tractor Operator	—Tractor Salesman	—Tractor Mechanic
—Auto Repairing	—Vulcanizing	—Welding
—Ignition Expert	—Battery Expert	—Farm Tractors
—Machinist	—Lathe Hand	—Electrical
—Civil Engineer	—Mechanical Drafting	Engineer
—Gas Engineer	—Plan Reading	—Electrician
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—Short Auto Course for Owners—Drivers—Women

If you can't visit this big school, then check the trade you want to learn—Mail this coupon today—Full information will come in the next mail.

Name .....

Address .....

Heald's Automobile and Tractor School

1220 Post St., S. F.

The largest and best equipped trade school on the Pacific Coast—32 instructors—over 2000 students annually

GAS POWER ITEMS

Weekly Tractor Demonstrations.

The Fresno Tractor and Implement Dealers' Association, according to President Webb, is holding weekly tractor demonstrations in the neighborhood of that city. Farmers come from miles around to see the tractors at work under conditions similar to their own, and the results have been highly gratifying, not only to the dealers in making sales, but to the farmers in making buys. A parade moves through the strets of Fresno on Saturdays and plows on a nearby field Saturday afternoon, sometimes continuing the demonstration through the week.

Combination of Tractor Associations.

The association of tractor and implement dealers, which has been holding such profitable and numerous demonstrations in Tulare County, especially in the Porterville district, is about to join the Fresno Tractor and Implement Dealers' Association.

Local and State Associations Affiliate.

The Yuba-Sutter Tractor & Implement Association, which consists mostly of salesmen with headquarters in Marysville, applied March 28 for affiliated membership with the California Tractor & Implement Association. Other local dealers' associations are considering the same movement.

Plowing Away from Hops.

F. L. White, of Yolo County, uses a 20-12 Monarch tractor, and a John Deere power lift plow, turning the soil on his hop ranch. He finds it entirely satisfactory in plowing close to the poles and throwing the dirt away from the vines. This indicates good control and steering qualties.

Demonstration Improved Soil.

An observer of one of the previous tractor demonstrations and one who lives in that vicinity remarks that the extra deep plowing which that field was given has done lots of good to the ground. It made the next season's work much easier, and the soil could be handled very soon after the rains, something that could not be done before, as water remained too near the surface.

Tractor Driver Rides on Implement.

The California Moline Plow Company expects to have several of their tractors at the Sacramento Demonstration. These will be shown ready to connect up as a one-man outfit with six or eight different farm implements, so attached that the tractor driver rides on the implement, but is close to the tractor. This is one of the two two-wheel tractors on the market.

Automatic Engine Oiler.

A clever labor saver in oiling a gas engine and one which practically assures adequate oiling is that designed by S. P. Hale of Madera County for his irrigation pump engine last season. He set a 5-gallon coal oil can on a shelf in the corner above his head in the pump house, and connected a tube from a stopcock in the can to the engine.

DO SUMMER FIELD WORK BY NIGHT.

You don't have to travel long in California in the summertime to find people who are unable to work their horses or mules through the heat of the day. Likewise they are unable to use their stock after dark. Many of these people are now seeing how they can work a tractor through the heat of the day with the driver sitting in comparative comfort under a parasol, and another driver running the tractor all night long when working is much more comfortable all around. All that is necesary is to put one of the several electric or gas lighting arrangements on the tractor. If there is not enough work to keep it going day and night frequently the operator will find it more desirable to do his field work at night rather than during the heat of the day. By so doing he will probably get the fields cultivated oftener and will get greater yields than he could with insufficient horse cultivation kept to minimum by lack of light at night and by intense heat in the day time.



Show Me Facts!

BEFORE you buy *any* tractor you have every right to say to the manufacturer: "Show me what the USERS of your tractor have to say. *Show me* that it has already proved itself economical and practical in everyday work. *Show me* the *figures* your *users* have given you so that I may figure costs and so determine why I should own one of your tractors."

Here, then, is part of one of the large number of letters constantly received from farmers telling us what their *Cleveland Tractors* do for them.

To begin with, I used my Cleveland Tractor to plow about 305 acres during 1918 and used double discs, two 60 tooth harrows and a heavy wooden drag on one load for fitting.

When I plowed I covered from eight to ten acres a day with a two-bottom gang and covered about 40 acres a day with the harrows.

I harvested 150 acres of wheat and oats at 25 acres per day.

In July I used the Cleveland in loading hay, and got in the crop from 140 acres at the rate of about 35 tons a day.

Besides these things, I used my Cleveland for a great many belt jobs—put in 300 tons of ensilage in 32 hours, on 30 gallons of kerosene, for instance.

I now keep six horses, instead of the fourteen I had before and need two men less than previously.

My Cleveland is in excellent condition, ready for the 1919 season, and counting everything, I haven't spent over $10 for repairs.

F. H. JOHNSON,
New Augusta, Indiana.

Such specific, definite facts tell why the Cleveland is so fully justifying the faith that so many farmers have placed in this compact, powerful Tractor. Write *today* for complete information and the name of your nearest Cleveland dealer.

The Cleveland Tractor Co.

19079 Euclid Ave.  Cleveland, Ohio

The largest producers of track-laying tractors in the world

Cleveland Tractor

Mr. C. E. Everett of North Cambridge St., Orange, Calif., writes under date of March 17th, 1919:

"My Cleveland Tractor, bought in June, 1918, has given me every satisfaction. In my opinion it is the only tractor on the market suitable for orchard work, being easily handled, gets closer to the trees, without injury, than with horses. So far my upkeep expense is negligible, while the cost of operation is surprisingly low."

Send for "The Story of Cleveland Tractor Company," illustrated. Free as long as our supply lasts.

"30 Minutes from Service"

SMITH BROTHERS

DISTRIBUTERS

PEERLESS - CLEVELAND TRACTOR - BRISCOE

1616-1624 S. FIGUEROA ST. - LOS ANGELES, CAL.

Good Drainage without Ditches or Tile.

"Any land with subsoil moisture close to the surface or saturated with alkaline salt must be subdrained to produce profitable crops. Our experience has taught us that the action of drainage renders any soil more friable and porous, so it will admit air and heat. Marine Meadow Ranch, located in Solano county, gopher-tiled 500 acres which was unfit for any farming in 1914, but which yielded a paying grain crop the following season. In the fall of 1915 the American Beet Sugar Co. began to work a gopher-tiler at its Arlington ranch in Riverside county. About 100 acres of heavy clay soil were tiled in lines 40 to 60 feet apart at a depth of three to three and a half feet. The fall to the main is not quite sufficient to provide a good drainage. The results, however, were beyond expectation. Twenty-five acres of the one hundred could not be farmed at all on account of surface water; but after gophering, the land dried out rapidly and is now producing a good crop every year.

Low Cost of Installation.

"Clay tile drainage, of course, is preferable; but on account of its high cost, is not always feasible. A very satisfactory drainage system can be installed through use of the Killefer gopher tiler at a small expense. This gopher tiler has been used over five years in Southern California with very satisfactory results. The machine will 'tile' one acre an hour at a cost of $2 to $5 per acre as operating expense (depending on the nature of the subsoil); while a clay tile drainage would cost $30 to $50 per acre.

How This Gopher Works.

"The drain is made by an eight-inch ball (a smaller ball is not advisable), which follows a subsoiler, making a continuous underground passage, especially in wet clay, but leaves it open enough from above to give surplus water a chance to drain in. A 75-horsepower tractor is powerful enough to pull the gopher-tiler to a depth of three or four feet in a subsoil of sedimentary nature. In heavy subsoil, the power of two tractors is essential."

Needs Considerable Power.

John Ruopp of the Patterson Ranch Co. in Ventura county also responds with the following experiences:

"When we purchased our gopher tiler, we owned the Fowler steam plow tackle, the engines of which developed something like 125 horsepower. These engines are so powerful that we were able to draw the tiling machine at its maximum depth of about four feet with the cone attached through any soil we encountered. Since selling that tackle, we have had to use only a 75 h.p. tractor. This did not develop sufficient power to give satisfactory results. We tried drawing the machine through the ground first without the cone and then attaching the cone to the subsoiler going through the slot made the first time. We have also tried drawing the subsoiler at a depth of about two feet and then repeating through the same slot at a greater depth. We have not attempted to use two tractors in tandem, but have heard of others attempting it with poor success. Conditions of the soil or different soil might give good results with less tractor power. In our own case, the light soil which allowed us to draw this implement at sufficient depth with the Caterpillar tractor did not particularly need this subsoiler; and the land that did need the subsoiler required a greater power.

Benefits Justify Repetition.

"The benefits accruing from this drainage, where it could be properly done, were apparent and valuable. We never considered that this method took the place of permanent drain tile, but that it supplemented a drainage system. Under certain conditions, for instance, where a party might have a short-time lease not justifying the expense of permanent tile, he might to advantage spend the nominal amount necessary for gopher-tilage. The benefits to be expected from this tilage properly done are so great compared with the nominal cost, that it may economically be done every third or fourth year so the maximum benefits may continue. We know of land which has been benefited and the expense justified for putting these lines through, 30 feet apart.

"We have observed holes sufficient to allow some drainage effects the fifth year after having been put in. The greatest benefits may be expected from the first to the fourth year; and under unfavorable conditions only the first two or three years."

How and When to Gopher.

In putting in these lines, it is impossible to raise and lower the implement satisfactorily over uneven ground so that the gopher holes will be at a true grade. Mr. Rudorf suggests that it should be well leveled before gophering. Where the leveling is not done. Mr. Ruopp notes that gopher holes put in at a varying grade exert their benefits only partly by carrying of water. Much of the benefit accrues as a result of loosening the subsoil, improvement of the physical condition of all the soil, and better moisture distribution.

Adequate drainage ditches must be provided to carry the water from the ends of the gopher holes; and each outlet needs a length of drain tile to keep it from caving in. The shorter the lines, the better their results. They should run crosswise of the slope of underground water in order to cut the veins.

From the end of April to the end of May is the best time to gopher-tile land, according to Mr. Rudorf. At this time the subsoil still contains moisture, but not so much as during the rainy season when heavy rains might cause the lines to cave in and wash away the lose dirt. September and early October are also suitable.



Gopher-drainage machine making underground passage to drain off surplus water and admit air and heat to the soil. Three big tractors hitched tandem to pull it on the Santa Ana Sugar Co.'s ranch in Orange county.

So writes Karl Rudorf to Robert Oxnard of the American Beet Sugar Co., answering our request for the latter's experience in subsoiling.



Cross section of gopher drain.

IRRIGATION DISTRICT ORGANIZATION.

An effort was made at the last meeting of the Merced County Farm Bureau directors to get them to either approve or disapprove the Irwin bill then before the Legislature. The bill was intended to change methods of organization of irrigation districts and the voting of bonds. The Merced people refused to take action. They want something still different but apparently reasonable. They favor requiring a majority for organization and two-thirds for voting bonds.

The Great Western Power Company, of California, is planning to spend six million dollars for development work.

Waterloo Boy Tractors
John Deere Tractor Plows

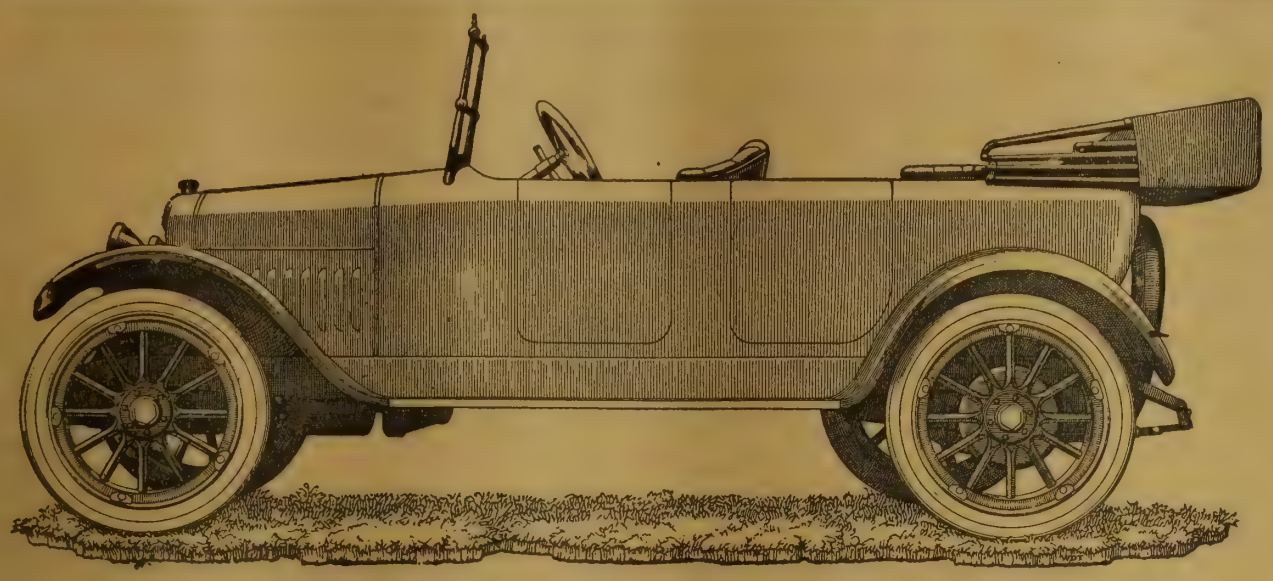
A wonderful combination for first-class results.
Complete Information, Literature, Etc., Furnished.
Tent No. 11, Tractor Demonstration Field.
May 5th to 11th.



Simplicity the Keynote
Accessibility of all parts--The Conveniences
Man'fd by a Deere Factory--The Quality

John Deere Plows Work Perfectly
Behind Any Tractor

SEE THEM AT WORK IN THE FIELD



The movement to better Cars in which Maxwell shares

OBSERVATIONS recently made among farmers show a marked tendency to buy better automobiles. They want a little more luxury, and at the same time don't care to waive the consideration of economy.

For a motor car to a farmer is a piece of time-saving, comfort-giving, dollar-saving machinery.

Hence the tendency toward Maxwell has a good reason behind it.

For this car has not only a self starter, and demountable rims, but other points of luxury that make it popular on the boulevards of the big cities.

Still it is not a "boulevard" car. For it is built to stand the gaff of rough and ready use, good roads and bad, mud and concrete, a trail as well as asphalt.

It is built to be everlastingly reliable. And this is how reliability has come to be its middle name.

Five years ago a very simple chassis was designed. Simple so that it would be easy to build, easy to run, free from trouble; and simple so that it would have no "grand opera moods."

Today 300,000 Maxwells have been built on this original chassis plan. More than 1000 improvements have been made; but never one single radical change in design.

There is scarcely a greater business monument to the policy of doing one thing and doing it well than the product of the Maxwell Motor Company.

It saves you money three ways and returns you a sum of satisfaction on which you can draw interest for 100,000 miles.

$895 f. o. b. Detroit.

Maxwell

More miles per gallon
More miles on tires

MAXWELL MOTOR COMPANY, Inc., Detroit, Mich.

Turlock Irrigation District Crops

[Written for Pacific Rural Press.]

The Turlock Irrigation District has carried out a system for the past five years of having its ditch tenders gather information from every farmer in the district as to what crops he intended to plant. This is for the purpose of figuring how much water will be required. The information is usually tabulated by April 1. Some changes are made in the plans of the five or six thousand irrigators in the district, but these offset each other to some extent and final reports generally would not show a great change. Of the 176,000 acres in the Turlock Irrigation District, which is bounded by the Tuolumne, San Joaquin, and Merced rivers and by the Sierra foothills, nearly all could be irrigated, and there is an increase of irrigated area each year.

TURLOCK CROP ACREAGE ESTIMATES AS OF APRIL 1ST.

Item	1918			1919		
	Irrigated 1st crop	Dry farmed	Second crop	Irrigated 1st crop	Dry farmed	Second crop
Alfalfa	34,402	.....	.....	30,920	1,434	.....
Beans	15,084	.....	16,795	6,299	848	11,661
Beets	1,567	.....	.....	1,401	41	295
Cantaloupes	3,020	.....	.....	8,278	474	82
Casabas	229	.....	.....	1,185	196	995
Corn	10,785	.....	3,874	12,804	5,266	6,460
Garden	903	.....	.....	872	195	59
Grain	25,399	.....	.....	25,242	11,076	131
Sweet potatoes	2,357	.....	.....	3,472	94	7
Trees	3,854	.....	.....	4,293	236	.....
Vines	2,803	.....	.....	2,893	761	.....
Watermelons	838	.....	.....	3,083	143	22
Tomatoes	.....	.....	.....	677	2	63
Total acres*	101,235	18,617	20,848	101,419	20,766	19,775

*Includes acreages of minor crops not tabulated.

The Government figures on watermelons quoted on page 660 of this issue aparently do not cover even the Turlock district. The table presents an interesting commentary on the bean situation, plans being to reduce the "first crop" bean acreage by more than half. Plans may easily change before second-crop beans are planted, but interest in these also is curtailed. It would be interesting to learn why alfalfa acreage is reduced at this time of greater content among dairymen. Cantaloupes last year dropped in acreage because it was feared they would lose out in transportation in favor of more substantial foodstuffs. They are coming back this year and watermelons are increased nearly four-fold. Casabas also are greatly increased—about five-fold. That irrigated grain is profitable even on high-priced land is indicated by the persistence of this crop. Most of it was followed last year by beans and corn (grain sorghums). More than half the irrigated grain this year will produce corn and beans afterward. Sweet potatoes proved profitable last year all through the Turlock and Merced County irrigated districts, partly because the small sizes were sold for $25 per ton. These had before been fed to hogs. So the acreage will be increased this year.

WESTERN HAY SITUATION

We were confidentially informed a few weeks ago that the hay market was to go to pieces within about ten days but it didn't and isn't, even with new hay about ready to come on the market in the South. The Government last week ordered 3,000 tons compressed hay for shipment to New York and 3,000 tons for Hawaii and the Philippines. Several thousand tons have also been shipped from California to Arizona, New Mexico and Texas. Looking over the Government hay reports for the Missouri and Western States, we note a firm demand for hay and no liberal offerings in every State except Arizona where the imminence of new hay has weakened prices. Northern stocks are moving to nothern terminal markets. Leading Missouri, Utah and Texas markets are very shy of hay. First cutting alfalfa is quite generally in the shock in the warmer districts of California; and while this is generally weedy, the good haying weather has helped to make it of better quality than usual.

AGRICULTURAL NOTES.

Pea picking for the canneries will commence in about two weeks from date of this issue. There are almost 500 acres in the Empire district.

The world is never more than 60 days ahead of starvation, according to estimates recently made. If all crops should happen to fail for three months at a time none of us would be left to tell the tale.

Buyers of Almeda county peas for eastern markets are offering four to five cents per pound and will soon be shipping to the East in carlots. Early peas for Bay markets are being received at about 400 bags daily.

First-crop alfalfa is being cut quite generally in Stanislaus County. Some of it is pretty weedy. Two portable alfalfa mills are running full blast at Salida grinding alfalfa meal and loading it directly into the cars.

After the signing of the armistice the U. S. War Department released 111,000 tons of nitrate to the department of agriculture to add to the 40,000 tons received from Chile last year too late for agricultural distribution. These 151,000 tons have all been sold to American farmers at $81 per ton f. o. b. shipping point, in orders ranging from 200 pounds to 300 tons. This nitrate is being handled by 500 Federal nitrate distributors.

Irrigators in the vicinity of Newman, Stanislaus County are to pay $2 per acre per year for the irrigation company's water, as against $1 previously paid. This is for the purpose of enabling the company to carry out certain improvements and service betterments according to orders of the railroad commission. The company irrigated 10,016 acres in 1918. The manager's salary is fixed at $1,200.

A fourth experimental farm has recently been undertaken by the Sperry Flour Company. It consists of 53½ acres near Escalon; and while it is under lease until next fall, a number of improvements are already being made by the Sperry people. Hog-tight fences are being built, as this ranch will be used chiefly for the purpose of testing out mixed feeds for hogs and poultry. The first experimental farm of the Sperry people near Farmersville will not be operated next year, but their experimental farm number two of 300 acres and their experimental farm number three will be cropped again.

Argentine wheat stocks totalled 39,096,400 bushels, December 31, 1918. A crop has just been harvested which is estimated at 187,353,500 bushels. The local consumption and seeding requirements will be about 66,060,000 bushels, leaving 160,380,900 bushels for export. The Argentine government has fixed a minimum price of $1.55 per bushel for export wheat. The U. S. shipping board has quoted a rate of 94c. per bushel freight from Buenos Aires to New York and the International Institute of Agriculture at Rome is authority for a rate of 34c. per bushel from Buenos Aires to Liverpool. This will make the price of Argentine wheat in New York $2.49 per bushel and in Liverpool $1.89 per bushel. It is interesting to note that the British government has fixed the selling price on imported wheat at $2.40 per bushel.

The Imperial Valley lettuce season is about closed up now on account of warm weather as shown by R. G. Risser's Government Crop Report. San Fernando growers have been shipping, but due to a recent price drop, they are holding what they can until the Imperial Valley crop is out of the way. Several carloads have gone from the Watsonville district, but the Bay district has just begun cutting and the Sacramento crop is heading nicely for shipments beginning about next week.

Potatoes should be handled carefully and not as though they were cobblestones. The potato is a living thing, with a protective skin, which it is able to keep intact if it has a fair chance.

When honestly done, farm cost accounting furnishes a direct and safe basis on which to work out a more profitable business management for the farm.





AGRICULTURE-HORTICULTURE

The Strawberry acreage in the United States is put this year at 58,-159 acres as against 83,139 acres last year and 107,000 acres in 1917.

Formalin does not control rhizoctonia on potatoes, all statements to the contrary notwithstanding, according to the emphatic statement of Eugene Grubb.

Fifteen hundred jackrabbits were killed at Nicolaus (Sac.) on April 6 in a district drive. Several hundred visitors helped local men in the round up. The animals filled three wagonbeds.

During the next few years the manure spreader will justify its existence more than ever before. All stable waste should be spread over the land before any of its fertility is lost.

Reports generally to date indicate 100 per cent of a crop of peaches for the state judging only on condition. It is too early for a definite estimate but the bloom in peach districts has been heavy and strong.

Mills in the Puget Sound are said to be quoting a price of 15 cents on apple boxes and some large contracts are reported at 14 cents at which price a contract for one million boxes was recently closed it is stated.

There is the prospect of a big apple and pear crop in the southern apple and pear growing sections, on condition of trees up to the 18th., according to George P. Weldon, Chief Deputy, State Commission of Horticulture.

The U. S. Department of Agriculture reports that the Commercial peach acreage in western New York has been reduced at least 20% since the winter of 1917-18 while Ohio is reported to have suffered a 40% decrease.

The weed fight is one of the standard routine operations on the farm, and it represents a large proportion of the labor necessary to produce crops. No other single feature of farming requires such universal and unceasing attention as do the weeds.

Eighty bushels of wheat have been produced in Ohio experiments as an average from one ton of acid phosphate. Unfertilized clover crops following the wheat have produced an increase sufficient to pay all cost of fertilizing, leaving the increase of wheat as clear gain.

Twenty-eight thousand one hundred and eleven pounds of old seal bones from the Pribilof Islands is reported to be sold to a Seattle firm for $29 a ton by the Bureau of Fisheries. After deducting $140 due to the natives for collecting, the balance will be turned into the U. S. treasury.

Although spraying is one of the most expensive of orchard operations, the value of the crop is so greatly increased thereby that it is a comparatively small investment, the expense amounting to only a fraction of the returns directly due to the practice. Orchard spraying is, in fact, an exceedingly cheap form of insurance.

Fruits valued at $27,081,396 were imported from foreign countries during 1915. Bananas constituted 50 per cent of the imports, having a valuation of $13,512,960. Imports of lemons were valued at $3,730,075, and the imports of currants, figs, grapes, olives, and pineapples amounted to more than a million dollars each.

Sweet potatoes slowly advanced in production for many years before the war, and in no year did the crop reach 60,000,000 bushels, but in 1915 production jumped to 75,000,000 bushels, and, after a recession in 1916, rose to 84,000,000 bushels in 1917 and 86,-000,000 bushels in 1918. This crop has no foreign trade.

The 160 acre peach orchard of Landram and Clough, near Atwater (Merced Co.), is reported sold recently for $53,000. The orchard is ten years old, and is composed of half cling and half freestone peaches.

Strawberries are now being harvested at Watsonville. It is expected they will turn off the largest crop in years.

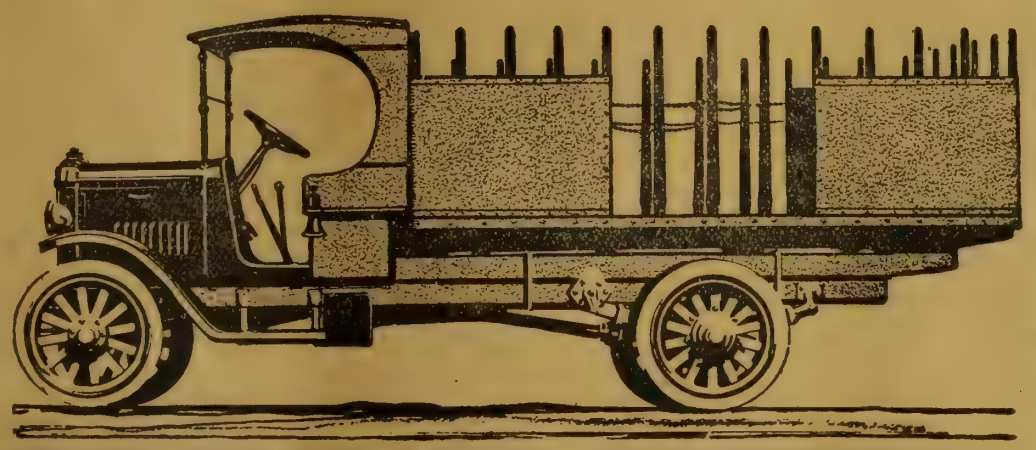
Twenty acres of alfalfa on one side of the road and thirty acres on the other are irrigated from the same pump and surface pipe by S. P. Hale of Fairmead. All last summer, he carried several hundred feet of surface irrigation pipe back and forth across the road to get water to the proper high points in the two fields. This spring he has laid a line of surface pipe along the fence in the home field to a point opposite the high point in the other field. At a cost of $18 he has laid concrete pipe across the road and now the surface pipe empties into the concrete and the water bounces merrily out on the other side with never any need of moving the surface pipe across the road.

"There has been a big stir in Lake County Pears for the past three weeks, and prices have risen from $50 a ton orchard run, to $75 a ton orchard run. Most growers have sold. Prospects right now are most promising for a bully crop of both prunes and pears. Prune blossoms are just falling (April 21), and pears are in full bloom. The bidding for pears is most spirited, 20 cents is offered for our dried pears—orchard run; taking everything decent." This invigorating report comes from Fred G. Stokes, Horticultural Commissioner of Lake County.

A. J. Maulsberry, of Fresno, who delivered the first bale of cotton to the local gin last season used Oliver cotton planters and cultivators, such as have been satisfactorily used for several years in Southern California and in the Salt River Valley. See the Oliver exhibit at the Sacramento Tractor and Implement Demonstration.

The melon growers of Manteca will have a shipping shed of their own and a very extensive business this year. Over 400 acres in cantaloupes, besides casabas and watermelons, will take some handling. A great deal of the planting has been done, with the ground in fine shape, with all conditions most promising, especially that of present moisture and future supply.

NASH



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NASH TRUCKS

One-Ton Chassis, $1875 Two-Ton Chassis, $2440 Nash Quad Chassis, $3600

Pacific Coast Points.

A 73,000 Bushel Grain Loading Station

[Written for Pacific Rural Press.]

With milling concerns throughout California recommending handling California wheat in bulk, and the growing interest among the grain farmers of the State in this economical and modern way of handling grain, several designs have been prepared for loading stations at shipping points which will materially aid in the handling of bulk grain for the current season's crop.

Connecting Link of System.

Several of these connecting links between the farmers' bulk grain storage and handling facilities and bulk handling cars of the railways have been designed for local co-operative organizations of grain growers with the capacity of 25,000 bushels of wheat. An even more pronounced effort to convert California grain handling methods to the bulk system through the erection of what practically amounts to a community elevator, is forecasted in the design of a 73,000 bushel capacity loading station, consisting of twelve of the largest-sized metal grain storage bins recently introduced to the grain farmers for individual bulk storage on ranches throughout the State.

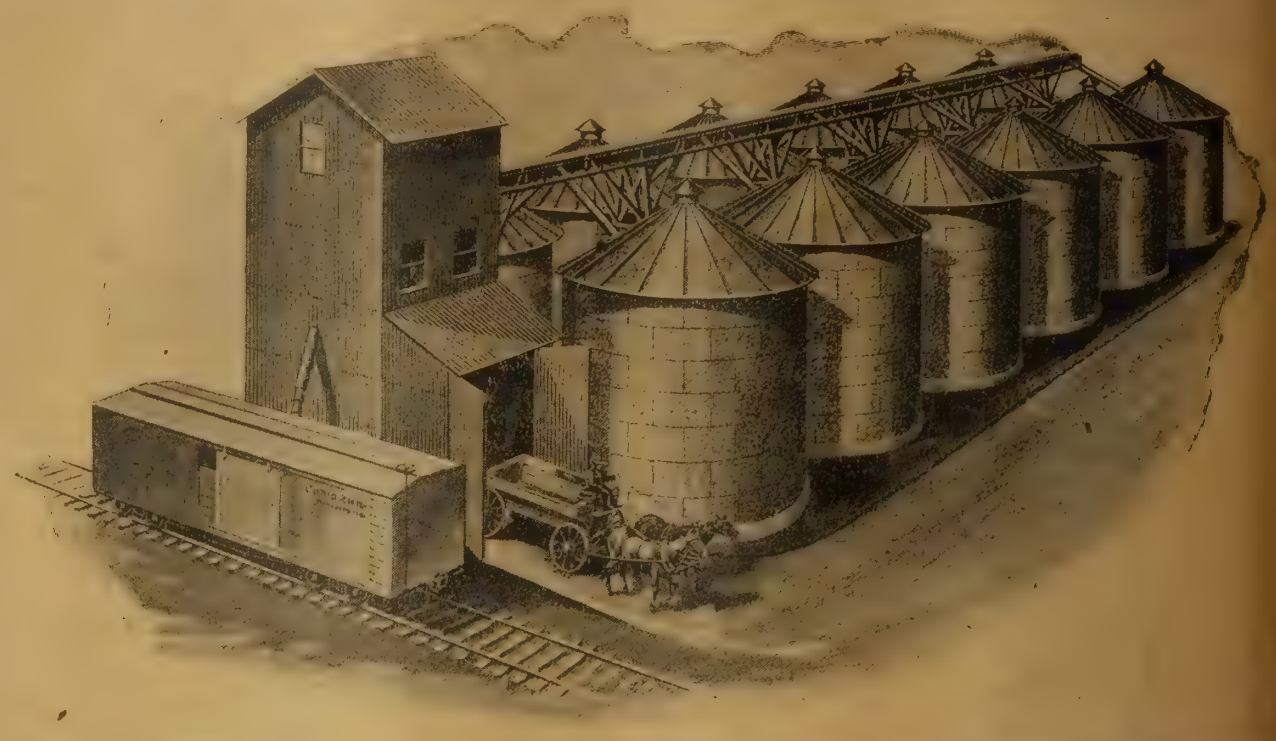
Twelve-Bin Loading Station.

Those twelve metal grain bins, each of which is 22 feet 1 inch in diameter by 21 feet 5 inches high, which are arranged in two parallel rows, six bins to a row, with each bin mounted on a conical reinforced concrete base. It is planned to erect this structure at one of the important grain-shipping points on the west side of the Sacramento Valley in time for its use in handling and shipping the current year's crop.

Built Along Side Railway.

It will be located along side a railroad siding with the elevator house adjacent to the track and the two rows of bins extending back from the railway line. Driveways from the main road will make ready access to the plant, the wagons and trucks loaded with bulk grain passing through the workhouse tower or elevator building, delivering their loads of grain into a receiving pit below the grade of the floor.

The design prepared for this twelve-bin loading stating provides two conveyor systems, which will make for dispatch and economy in the handling of the grain, whether it is being delivered to the storage bins for temporary storage prior to shipments or conveyed from the bins through the elevating machinery to bulk grain-carrying cars on the railway spur for shipment.



Modern Conveyor System.

Leading from the inverted conical foundation under each bin are 10x10-inch wooden chutes connected to a 12-inch unloading screw conveyor, which is located in a tunnel on the center line between the two rows of bins. Parallel to this unloading screw conveyor, but in a trestle approximately thirty-one feet above the grade line, is a twelve-inch loading screw conveyor with thirty-inch metal chutes leading from the same to each bin. The workhouse tower, fourteen feet square by thirty-four feet high, is connected with this by two walkways, which permit the operator to control the delivery of grain to any particular bin and watch the process of storing or delivering.

Low Cost of Construction.

According to schedule this rust-resisting sheet metal and concrete plant can be built for an estimated cost of $17,068. This is a cost of 0.234 per bushel of storage capacity, considerably lower than the bushel cost of bulk grain storage facilities in reinforced concrete, which is the only other material comparable with similar fire, vermin and weather-proof qualities.

Automatic Receiving Machinery.

When in actual operation grain will be received from ranches in wagons or motor trucks either of which will be driven upon an automatic dumping gear located over a receiving pit of concrete which will form the foundation of the elevator building. It will have a net capacity of 290 bushels and is capable of handling approximately three wagon loads of grain. This is considered sufficient to take care of a temporary choke-up in either elevator or conveyor machinery.

Thousand Bushels Per Hour.

Grain will gravitate from the re-

(Continued on page 658.)

THE KILLEFER MANUFACTURING COMPANY—

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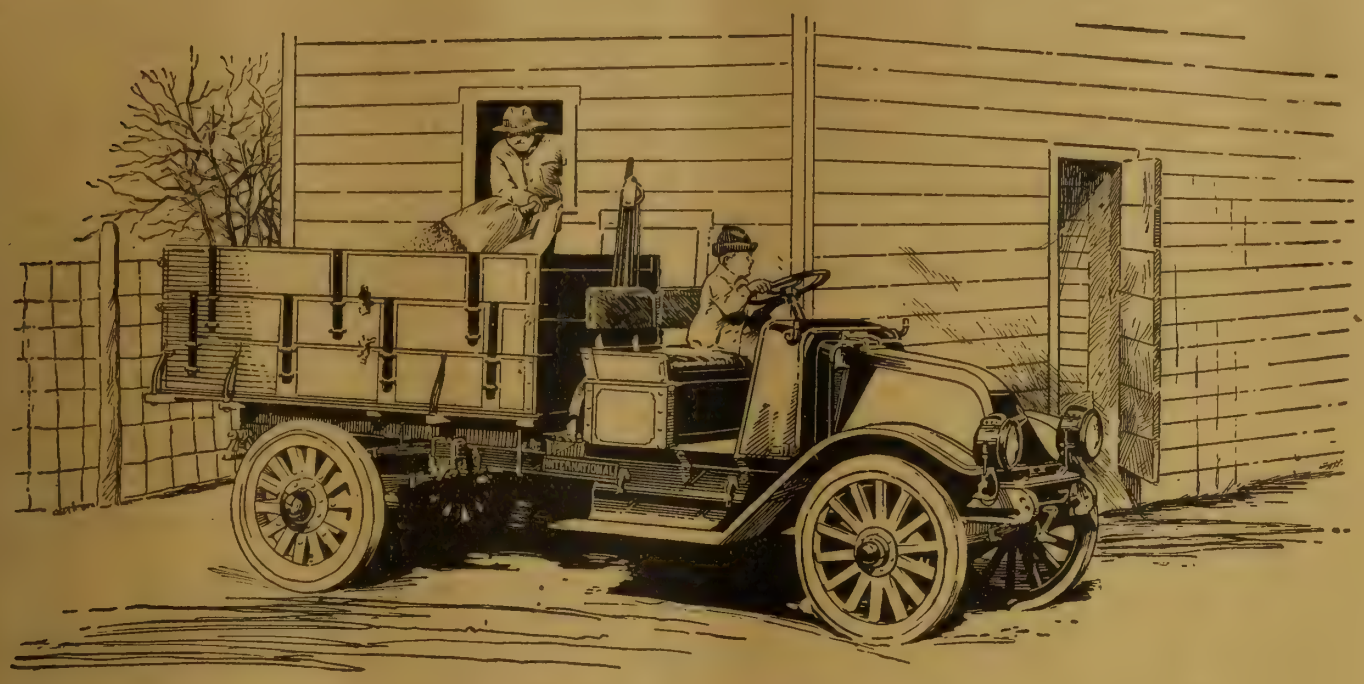
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15c or 33c—Which?

HAULING a ton of farm products is costing you either 15c or 33c for every mile, depending on whether you use motor trucks or horses.

The U. S. Department of Agriculture says that it costs 15c per ton mile to haul corn and wheat to market with motor trucks and that it costs 33c to haul corn and 30c to haul wheat with horses. This is the average for the country. In some sections, it costs 49c to haul corn and 42c to haul wheat with horses.

There is One Best Way

to haul farm products by motor truck and that is to use the dependable International Motor Truck with service and quality built into it to the last part. Our many years of experience in developing and selling power equipment for farm use—engines, tractors, and all kinds of farm machines—and all the knowledge of farm conditions that experience has given us, are built into the International Motor Truck. It will prove as useful, as convenient and as profitable as your engine, tractor or automobile — perhaps more so. — Every part — engine, transmission, internal gear drive rear axle — is made to work efficiently with every other part under country road and load conditions. It is a truck you can afford to buy and afford to use. There is a style of body and size of truck to meet practically every hauling requirement.

Give us your annual tonnage to and from town, and we will tell you whether or not an International will prove a profitable investment. Write now so you will have complete information to use when you need it.

Motor Truck Sales Department

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Branch Houses, Distributors and Dealers Everywhere

SOIL MOISTURE AND WALNUT DROPPING.

[Written for Pacific Rural Press by Prof. L. D. Batcheler, Univ. of Cal.]

Questions have been received like this: What effect, if any, irrigation of walnuts at this time of year, say from now until May 15, while the trees are in bloom or nuts setting, has upon the setting of the crop? Will early irrigation be likely to cause nuts to drop?

I do not think there is any danger to the setting of the walnut crop by thoroughly irrigating your trees at this time of the year. I have never had my attention called to a case where the dropping of small walnuts was positively due to irrigation early in the season. Such results might possibly follow if the soil had been allowed to become excessively dry, in which case the longer irrigation is withheld the more aggravated the case will become. Similar results are sometimes seen with the deciduous fruits, especially plums, that is, that when the trees are dried out excessively and then irrigated, there is a considerable drop immediately following the irrigation. There is always more or less "June drop," of young walnuts even under the most favorable cultural conditions and entirely aside from the blight. Such dropping of the nuts may coincide with the season of early irrigation without there being any correlated relationship of cause and effect.

On the contrary, if the soil moisture in your grove extends only to 3 feet or a little more from the surface, I think it is highly important that it should be irrigated thoroughly at the beginning of the growing season.

It has been my observation that the most successful walnut growers keep up favorable soil moisture conditions to a depth of six or eight feet from the surface throughout practically twelve months in the year.

Riverside Citrus Station.

Ask the Man Who Has Used It

Whether or not he has made good crops with Nitrate. Why speculate with Non-Nitrated forms of Nitrogen when, by using Nitrate, you can insure crops against adverse conditions? With the rational use of Acid Phosphate, always recommended by us, there will be no interference with normal soil conditions, either in one year or in one hundred.

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Her part of the work on the farm is just as important as the rest. Here is an opportunity to take some of the drudgery off from her shoulders and give her more time to devote to other important things. Get her a

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Farm Pump Engine



It is no trick to run it and it is perfectly safe. With it, she can pump all the water that is wanted, both for stock and household use. She can make it turn the washing machine, the cream separator, the grindstone and others similar machines.

Comes ready to set up to pump and start going—no belts, no braces or special platforms needed. Costs very little to run.

Write today for our new Catalog No. F. It tells all about it.

Pacific Pump & Supply Co.
851-853 Folsom St.
San Francisco

A 73,000-BUSHEL BULK-GRAIN LOADING STATION.

(Continued from page 656.)

ceiving pit through a regulating gate into an elevator boot, where it will be picked up by 8x5-inch buckets on twelve-inch centers, mounted on nine-inch six-ply rubber belt operating at a speed of 440 feet per minute. This will give a wheat-handling capacity of approximately 1,000 bushels per hour, allowing for a reasonable factor of safety on the bucket capacity.

Cleaned and Stored.

Grain is elevated to the top of the tower, where it is delivered into a hopper from which it passes by gravity through the cleaner, where all weed seed, cheat, etc., are removed. Hoppers receive these by-products from which gravity delivers them to sacks and they are returned to the grower for use as poultry food and for other feeding purposes on his home place.

Conveyor Discharges to Bin.

Clean grain is delivered to an automatic scale, which weighs it and passes it on to a boot of a second elevator from which it is elevated to the top of the tower again, and discharged into a hopper from which it flows into a twelve-inch loading spiral conveyor. This passes it along to any bin which the operator desires to fill. When it is desired to load a car, this wheat can be discharged directly into a railroad car without being diverted into the bins.

As the average freight car has a capacity of 1,500 bushels and elevator capacity and spiral conveyors are designed to handle 1,000 bushels per hour, the average railroad car can be loaded and ready for shipment in one and one-half hours.

Variable Features.

When loading cars in the customary way, as just described, the cleaner is by-passed, having already performed its function when the grain was received and transferred to the bins. Its capacity, therefore, depends entirely on the rate at which grain is delivered from the ranch by wagons or trucks. This is usually considerably below the capacity of the elevator. The elevator capacity can be reduced down to that of the cleaner by adjusting the regulating gate of the elevator boot. In the design prepared for the group of Sacramento Valley grain growers, the 1,000 bushel per hour capacity has been provided for.

Costs Are Considered.

The estimated cost of the station of $17,075 is divided in two parts, one of $12,783 for final iterms, including the metal grain bins, building, trestle foundations, receiving pits, tunnel, etc., and a variable cost for the conveying, elevating, weighing and dumping machinery, chutes, and miscellaneous features of $4,292. The latter depended upon the policy of the community planning to erect this plant and adapting it to its local needs.

Flexible Plan Allows Extensions.

Additional pairs of bins, adding approximately 12,000 bushels capacity, can be added at an estimated cost of $2,250 per pair, including foundations, trestle, tunnel, spiral conveyor, etc. The design of this loading station has been made flexible enough to permit of extensions and alterations to it, providing for varying its size from six to sixteen bin plants, costing approximately the amounts shown in the tabulation below:

No. of Bins	Capacity Bushels	Total Cost	Cost per Bushel
6	36,534	$10,325.00	$28.3
8	43,712	12,575.00	25.3
10	60,890	14,825.00	24.3
12	73,068	17,075.00	23.4
14	85,246	19,335.00	22.7
16	97,424	21,575.00	22.1

Itemized Costs.

Assuming that the grain-growing communities which may be interested in erecting similar structures in other parts of the State will follow the plan proposed for the group of Sacramento Valley grain growers, for whom this design has been prepared, who are planning to purchase their material, and employ their own labor and superintendent, and erect it under their own supervision, the cost of the various items of construction is pro-rated as follows:

Variable Cost.

Each additional pair of bins, including foundations, trestle, tunnel, screw conveyors, etc., costs $2,250. In other words, if a smaller or larger station is planned, all that is necessary to obtain a cost estimate is to add or subtract this amount as shown in first tabulation.

Material Cost of Bins, Tops and Manholes	$7,386.60	
Material cost of Building	442.33	
Material cost of Trestle	296.60	
Cost of Concrete Bottoms of Bins	2,158.50	
Cost of Concrete Receiving Pit & Building Foundation	302.04	
Erection cost of Bins, Tops and Manholes, Erection cost of Building, Erection cost of Trestle	1,250.00	
Cost of Concrete Trestle Footings	9.45	
Cost of Concrete Flooring between bins	110.00	
Cost of Concrete Driveway	43.00	
Cost of Concrete Tunnel	784.50	
Variable Costs.		$12,783.02
Material Cost of Conveying Machine Chutes, Gates, Etc.	$2,138.56	
Material cost of Dumping Gear	68.46	
Material cost of Scale	350.00	
Material cost of Cleaner	540.00	
Material cost of Motor	468.70	
Erection cost of Conveying Mch. Chutes, Gates, etc., Erection cost of Dumping Gear, Erection cost of Scale, Erection cost of Cleaner	190.00	
Superintendency	146.00	
Wiring Motor	50 00	
Freight	342.00	
Miscellaneous Extras	18.26	
		4,291.98
		$17,075.00

DISCRIMINATION IN WATER RATES.

With something like 18,000 consumers paying a standard rate of 62½ cents an acre a year for water for irrigation purposes, the Fresno Canal and Land Corporation has applied to the Railroad Commission for an investigation of its rates for the purpose of having determined whether the existence of approximately 260 contracts giving lower rates to that number of consumers does not constitute a discrimination. The commission is also asked to rule in the matter of other contracts under which water is given free to other consumers. In this regard, the applicant says: "No valid reason exists for the furnishing of water without charge while other water users are required to pay for water furnished to them under the same circumstances and conditions." A list attached to the petition shows that if the 260 consumers are required to pay the standard rate of 62½ cents, the increase will add approximately $5,000 to the income of the company. The individual increases will range from 20 to 100 per cent.

GOOD CROP REPORT FROM WINTERS.

The following crop report comes from H. G. Boyce, one of the leading fruit growers of Winters (Yolo County), April 22:

"To the Editor:—Am sorry to have missed seeing you when you were here. With regard to almonds, we have a full crop of Ne Plus and I. X. L.; Nonpareil and Drake are fair, while Peerless and Texas are light. The apricot crop in this section is fine and generally clean; trees overloaded show some shot-hole. Early-blooming plums are very light with Wickson a total failure. Tradgedy, Diamond and Grand Duke are full. About May 1, we will dry-sulphur Tragedy and Almonds."



CALIFORNIA WONDER CORN

The result of ten years' selection. Produces six times as much as common corn. First prize winner at San Francisco Land Show. Quick and big returns from a small investment. All seed produced from corn bearing 5 to 12 ears per stalk. Grows 10 to 16 feet in height, producing enormous crops of very rich ensilage. Choice selected seed for sale at reasonable prices. Shelled, on the ear, and stalks with ears all on them. Our illustrated booklet, giving full history and details of this wonderful money-maker, sent free on request.

E. C. FRAZEE

Corn Specialist.

Santa Rosa, Calif.

THE STEPHENSON PATENT COOLER

Absolutely Sanitary Perfect Ventilation

NO ICE REQUIRED



Awarded first prize wherever exhibited. If not for sale at your dealer's

Write for particulars and prices

L. ANDERSON CO., Mfrs.
MARTINEZ, CAL.

The Threshing Problem Solved

Threshes cowpeas and soy beans from the mown vines, wheat, oats, rye and barley. A perfect combination machine. Nothing like it.

"The machine I have been looking for for 20 years." W. F. Massey, "It will meet every demand." H. A. Morgan, Director Tenn. Exp. Station. Booklet 27 free.

KOGER PEA & BEAN THRESHER CO.
Morristown, Tenn.

The Measure of the Farmers' Dollar

To the Editor: The answer to a subscriber, entitled "The Farmer's Dollar Goes Farthest," which appeared in your issue of March 15, got on my nerves. You quote figures to show that we receive 60.7 per cent more for our products and only have to pay 30 per cent more for what we have to buy, but I don't believe it. I bought a cultivator in 1916 for $51.75; now they want $140. A plow cost $14.40; now they ask $25. I could cite many similar advances. Now, if you want to see society people rise up with indignation and start an investigation, just let butter and eggs go up a few cents, although things that make a show on their backs can go up 300 per cent and they never make a whimper.—J. P. C., Neenach.

Sorry, brother, that we published that answer, for it was misleading, although not in the way you indicate. While you can refer to specific cases where the increases are not according to the figures quoted, we believe they are reliable, and that in general the prices of farm products have gone up more than the prices of articles bought by farmers.

But that is no way to determine the farmer's profit. It is regulated very largely by the cost of feed and labor, and there is no getting around the fact that these two items have increased out of proportion to the prices received by the farmer for his products. Consequently, even at the high prices he receives the farmer actually makes less money than he made in pre-war times, and he is in no position to pay the advanced prices required for the things he has to buy. Either he should get more for his products or the cost of production should be lowered.

You make a dandy dig at society people, and the facts are just as you state. The writer has a cousin in the swellest millinery store in this state, and she says that they simply can't turn out hats fast enough to supply the demand; also that there seems to be no limit to the prices women will pay. In fact, they don't seem satisfield unless they pay about $75 for a hat. Yet if the price of butter or milk or eggs goes up a cent or two, these same women will make all sorts of ridiculous claims of profiteering, and sometimes will even resort to boycots. Tough for us, but such seems to be the unreasonableness of human nature.—Livetock Editor.

NOTICE

the wonderful job of plowing and turning under a heavy cover crop in an orchard, as illustrated on the title page of this issue of The Pacific Rural Press.

This work was done by an Oliver gang plow, equipped with the celebrated combination rolling coulters and jointers.

You can see this plow at work at the Sacramento Tractor and Implement Demonstration

AGENTS EVERYWHERE

Oliver Chilled Plow Works

San Francisco Los Angeles

Double-Worked Bartlett Pears a Success

[Written for Pacific Rural Press.]

A feature that interested the writer more than anything else on a ranch of 130 acres in fruit was four acres of dwarf Bartlett pears. The owner, Frank T. Swett of Martinez, President of the California Pear Growers' Association, told us that these pears were worked on Beurre Hardy stock on Quince root. The trees are very symmetrical and even in form, heading at about 18 inches from the ground. They are set 16 feet apart on the square or 170 trees to the acre and they began to bear at 5 years old. They are now 13 and in the fullness of vigor and productiveness. These trees were nearly in full bloom on April 4 and had not yet been plowed, for the soil is adobe and was still too moist to handle to advantage. Sprayings had been completed for scab and thrips. The advantage of this orchard appealed to us at once. The trees could be almost entirely handled from the ground in all operations—pruning, tying and picking. They average from eight to ten tons of pears to the acre. Mr. Swett said that one of the most important things to consider, after building the trees is to prune them so that they do not overbear. All the rest of the Swett orchards are standard trees. Some young pears have been left on the new system of pruning young trees recently expounded by the University of California. The condition of the pears here in the Alhambra Valley could not well be better at this time of writing—no thrips damage and a very strong bloom with soil conditions admirable. Frost touched up some of the almond trees in this valley and may be responsible for the ensuing die-back now painly visible. Mr. Swett has two blocks of young Wickson plums which he is considering working over, in alternate rows to another variety—possibly Santa Rosas. Cherries here were in full bloom and not a thrips could we find in them. Bordering two of his orchards and skirting the road is a sturdy row of Concord walnuts worked on black about two feet from the ground. Our host told us that this variety did better than any other in this section and that the Franquette was not a success here though the Wiltz Mayette did fairly well. By-the-way adjoining these orchards was a pear plantation where the fruit was sold last year—on the trees—for $700 an acre to some Japanese who, however, lost money on the transaction. Mr. Swett has a Cleveland tractor for his bottom land and uses teams for the rest. The season has been a hard one to keep up with and by the time the spring work is through cherries will be ripe. Then almonds, plums, peaches, pears, prunes, grapes (both wine and table) and then walnuts. Truly there is no rest for the —fruit farmer!

"RED SPIDER" ON PRUNES AND ALMONDS.

[Written for Pacific Rural Press.]

On April 10 and 11 we noticed the red spider or brown mite hatching out "to beat the band" and thousands of eggs just ready to hatch. Many young orchards and old ones, too, lost not only their leaves but their fruit last year from this cause and received a set-back that they have not recovered from yet. Each year all the Horticultural Papers and Horticultural Commissioners and other experts publish the remedy for mites and point out the necessity of fighting them. In some counties control measures are practiced, in others they are not. Some men believe that certain dormant sprays clean up all the eggs, but we have not found that they do. To spray with lime-sulphur winter strength just as the buds are bursting will get a lot of the first hatch but—there are others. L. H. Day, Horticultural Commissioner of San Benito County, has found the best results in summer spraying by the use of 1 gallon of lime-sulphur and 4 pounds of atomic sulphur to 50 gallons of water. One man whose almond orchard at Lodi was badly injured last year told us he had winter sprayed and then dry sulphured three times during the summer. Perhaps if the dry sulphur had been used only three times but not more than five or six days between, he might have had better results. As we have already pointed out, a flour paste used with a spray at this time is a great aid—not only as a spreader but to keep the tiny creatures stuck. After this spraying it pays to keep a close watch or to dust them a week later anyway for new hatched mites. Morning glory is a great host and breeding place for red spider and yellow mites. So is alfalfa—another reason why alfalfa should not be grown in the orchard. To wait till leaves are grey and dull and lifeless is to wait too long. With a week's warm weather they will be out in millions. There is a chance of good crops of most fruits this year together with highly remunerative prices to make up for some of those lean years. Nobody can afford to feed his crop to the mites this year. The expense of spraying is not great and the returns are incalculable. Now is the time to start right after them.

DISPOSING OF A COVER CROP.

To the Editor: Last fall I sowed Canadian Peas in an orange orchard for a cover crop. The winds have dried out the ground to such an extent it is impossible to turn the crop under. When will be the best time to cut them for hay—also the volunteer stand of oats with them? The peas are putting out pods now.—T. G. L., Sanger, Calif.

Your cover crop should be mown without delay in the best interest of the trees. If they were in a field by themselves you would mow before the peas hardened and while the wild oats were in the dough stage—no later. You will do well to get water on your orchard, and plow it as soon as possible.

Road bonds for $500,000 to be spent by Washoe county, Nevada, have recently been approved. Surveys for a paved highway between Reno and Sparks have already commenced. A main highway toward Susanville, Cal., is one of the projects.

Maguire & Haddock, of Sacramento, have recently taken the agency for Aultman-Taylor tractors, formerly handled by W. A. Ekberg, of San Francisco.

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Field and Garden Suggestions.

Water Rates Raised—Still Cheap.

Non-contract or "rental service" water users on 2450 acres served by the Fresno Canal and Land Corporation will hereafter pay $1.50 per acre per year instead of $1 as heretofore. On April 17 the Railroad Commission authorized this advance but would not grant the $2 rate which the canal company asked. This company irrigates 213,550 acres in Fresno county, all but 2450 being under a contract rate previously approved.

Railroad Commission Busy.

The State Railroad Commission handed down 3736 decisions in the year ending July 1, 1918, according to their annual report just off the press. This is quite a record in view of the fact that every State in the Union except Delaware has a similar public service commission, and not one of them has decided so many questions as our own. The California Railroad Commission held 717 public hearings during the year in all parts of the State. Its policy is to hold hearings at points nearest to the center of interest in the question under discussion. In addition to these hearings, the Commission met 268 times in its San Francisco office. Decisions covered questions pertaining to water, warehouses, electricity, gas, stages, motor truck lines, telephone and telegraph utilities, steam and electric railways, pipe lines, wharfingers, etc.

Shipping Screenings in Wheat.

It is unlikely that mills will make the arbitrary allowance paid last year for usable screenings in wheat, writes Geo. R. McLeod of the Sperry Flour Co., who is urging growers to remove all screenings possible before shipping them. In the 1918 wheat crop, screenings ran from one per cent to as high as 25 per cent. Part of these were usable but a very large percentage was a total loss. There was also a loss of wheat in separating usable screenings such as barley and oats and also in removing cheat and in washing smutty wheat. It is expensive to pay freight and other handling charges on screenings, but you can feed much of them to good advantage at home. Watch the thresher separator and then use a fanning mill if necessary. It will pay.

Record Crops Wheat and Rye 1919.

The winter wheat and rye crops promise to be the biggest in U. S. history. The U. S. Dept. Agr. April estimate is for 837,000,000 bushels of winter wheat and 101,000,000 bushels of rye unless unforeseen unfavorable conditions arise. The April estimate of winter wheat last year was 560,000,000 bushels and the final returns showed 558,000,000 bushels. The rye crop last year was 89,103,000 bushels, which was the largest on record. The largest winter wheat crop ever harvested was 684,000,000 bushels in 1914. The crop condition in April this year was 99.6, the highest since 1882. The April condition in the record year 1914 was 95.6. The California wheat crop promises to be more than double that of last year.

Potato Scab and Rhizoctonia.

A seasonal reminder is needed to avoid a scabby crop of potatoes or a growing crop affected by rhizoctonia, which looks a trifle like scab on the tuber but does more damage to the plant, causing "little potatoes" and malnutrition. Soak the seed before cutting for 1½ hours in a 1 to 1000 solution of corrosive sublimate (one ounce per eight gallons of water) in a wooden vessel. Do not reinfect the seed by using infected bags, boxes, etc. afterward.

Spray for Onion Thrips.

Onion thrips cause loss estimated by the U. S. Dept. Agr. at $2,250,000 per year in the U. S. These insects are widely distributed in California. The first indication of their serious work is whitening of the onion leaves. Later the leaves become curled, crinkled, and twisted, and are likely to die entirely. The control is spraying with blackleaf 40 about ⅜ pint per 50 gallons of water in which four pounds of soap are dissolved. Apply this as soon as the unnatural whitening becomes apparent.

Alfalfa Cutting Questions.

Do you determine when to cut alfalfa by the amount of bloom showing? Do you try to cut it before the new crop of shoots becomes tall enough to be clipped off? Does it injure the shoots to be clipped in this way? Do you cut at a different stage of growth for horses than you do for cattle?

Honey Sorghum 30 Tons Per Acre.

Honey sorghum filled a 180-ton silo from six acres grown last season by S. Husman of Merced county. Mr. Husman is not so enthusiastic as might be expected. It is heavy to handle, hard to cut, and the hard outer casings of the stalks bother the cows in their effort to get the appetizing inwards inward.

Watermelons and Cantaloupes.

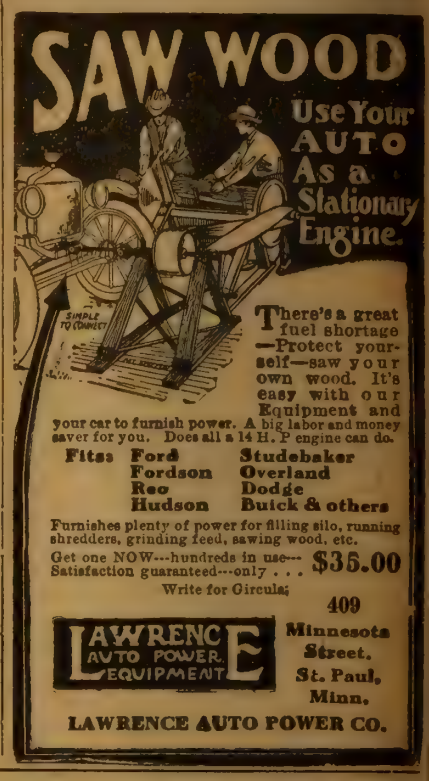
California is reported to have 21,867 acres of the 60,233 acres planted to cantaloupes in twenty States of the U. S. this year. Total cantaloupes last year were 42,370 acres. With watermelons we are not so strong. U. S. acreage last year was 67,550 and this year 89,514, of which California is reported to have 2226 acres.

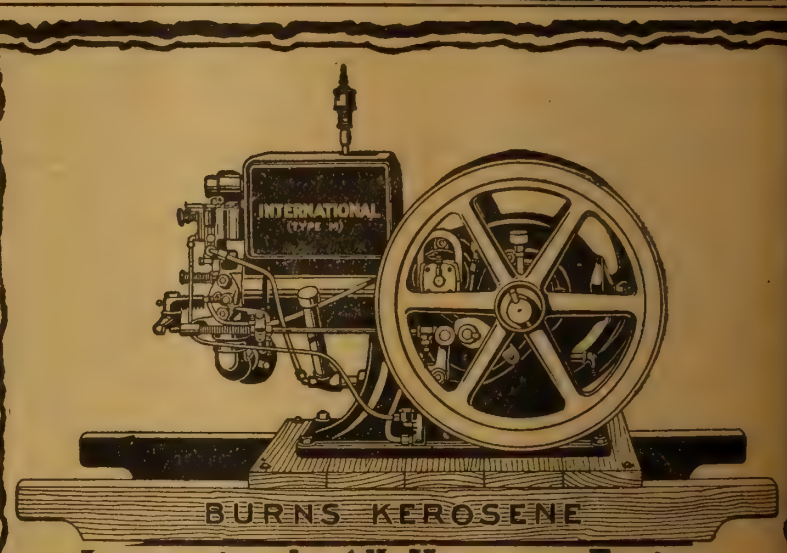
Extraordinary Shipments to Europe.

Europe really is hungry though we don't hear so much about it. Extraordinary measures have been taken on the Atlantic seaboard recently to enable exporters to send a total of 1,600,000 tons of grains and cereal products to Europe within 30 days. President Barnes of the U. S. Food Administration Grain Corporation said this would be necessary to maintain order in those countries.

Rice Planting is Rushed.

Sacramento Valley rice growers are rushing night and day now to get their seedbeds prepared and crops planted.





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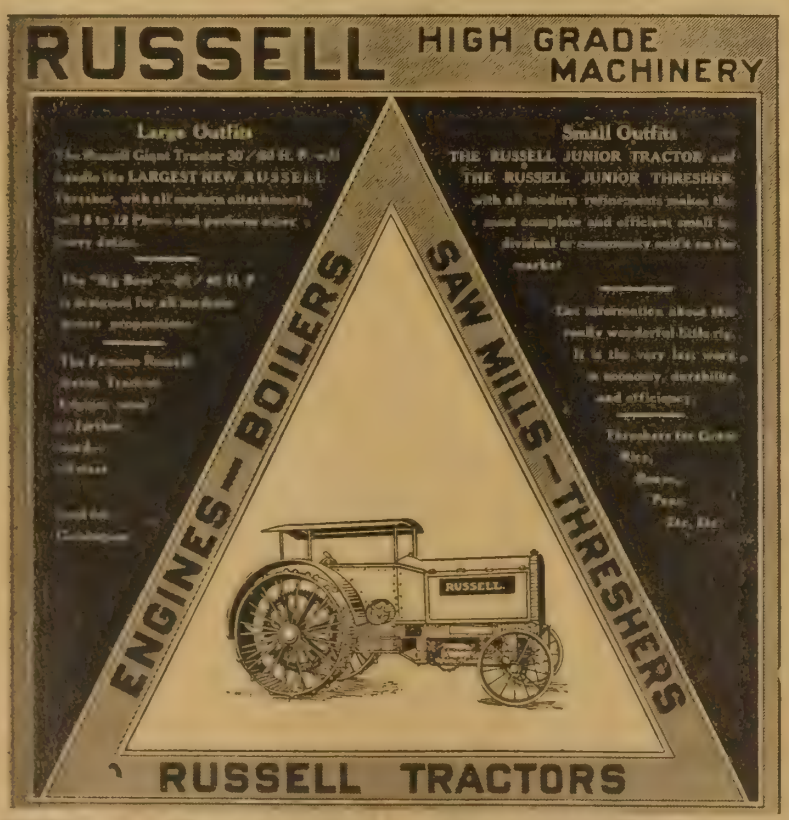
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SEE THE RUSSELL IN OPERATION

At the Sacramento Demonstration

May 6th to 11th

After the weather becomes suitable, quick work is desired in order to give the rice as long a growing season as possible. Last season owing to early rains a great deal of harvested rice lying sacked in the fields got wet enough to heat and partially spoil. About 400,000 bags of this remain on our hands.

Nitrate of Soda or Dried Blood.

That nitrate of soda is more quickly used by plants than dried blood seems indicated by experiments made by the New Jersey Experiment Station. They put equal quantities of each of these fertilizers into cylinders of soil and grew a crop of barley. The average amount of nitrogen recovered for all cylinders with nitrate of soda was 60.64 per cent and with dried blood 41.23 per cent. A crop of rye was then grown in the same cylinders. There was no recovery of nitrogen from seven of the ten nitrate cylinders and none of the other three recovered over five per cent. The average recovery from the dried blood cylinders was 6.27%.

Time to Plant Sudan Grass.

The rancher disposed to discount unreasonable claims is not likely to be disappointed by growing sudan grass for hay this season, for it is really a comparatively good dry-land hay crop if it gets started pretty soon now. It is to be remembered that for cows it is likely to get coarse if left too long before cutting.

Lettuce Needs Shade.

Lettuce planted from now on in most California localities will do better if it has a partial shade. Lettuce seed left over from last year are as good as new.

Bean Imports and Exports.

Bean imports to U. S. during the seven months ending January, 1919, totaled 1,823,065 bushels as against 1,762,295 bushels in the corresponding period a year ago and 1,268,576 two years ago. The figures do not show any remarkable increase this year, especially when we remember how hard it was to ship anything across the Pacific in 1917 and 1918. Our exports of beans recently have practically equalled the imports as shown by the Monthly Summary of Foreign Commerce. For the seven months ending January, 1919, we exported 1,635,802 bushels of American beans and 767,298 bushels of foreign beans. In the same period a year previous, we exported only 618,401 bushels of our own beans and 454,176 bushels of foreign beans.

COTTON ACREAGE SHORT.

Strange news to consumers of cotton goods will be the announcement that the Southern Cotton Growers' Association is reported to have pledged one-third less acreage for cotton this year in order to boost prices. This Association consists of growers throughout the cotton states. Imperial county, California, will have only half as much in cotton as last year, largely due to labor conditions and the report that the Colorado river will be 25 per cent below normal flow during the summer months. Very little interest is being shown in the Pima variety, due to the poor market for last year's crop of this long staple. Early planted cotton is just coming through and an even stand is promised. Very few are attempting a volunteer crop. One man still watches for the good stands each season, and rents such fields if they are likely to volunteer well. The test is to dig up some roots and if the bark slips easily, the roots will make a volunteer crop. This man subleases where he can and goes 50-50 on the crop. With Mebane cotton, he figures that if it produced 30 bolls per plant it yielded a bale per acre and is likely to yield nearly that in the volunteer year.

Rye Grasses for United Kingdom.

Perennial and Italian rye grass seed are produced to an estimated amount of 67,000,000 pounds annually in Scotland and Ireland. About five-sixths of the production is exported, largely to the United States; and California uses a large quantity. About two-thirds of the production is the perennial variety.

Seed Conditions Here and in Europe

The Seed Reporting Service of the U. S. Department of Agriculture has been investigating seed conditions in Europe as well as at home. The following notes are taken from their findings:

Alfalfa Seed Scarce.

Alfalfa seed imports jumped from 100 pounds in the three months ending March 31, 1918 to 33,500 pounds in the corresponding period of 1919. The demand for alfalfa seed in the East Central section of the U. S. which never produces enough for its own use seems certain to greatly exceed the stocks available there. The price of good seed now is $23 to $25 per cwt. The North and Middle Atlantic divisions report indications of better demand than last year, but rather large stocks carried over. The North Central division reports stocks lower and demand greater than last year. The Missouri Valley has had fairly large stocks, but the heavy demand for best grades is making them scarce. In the North Pacific division a good general demand is found with heavier than normal buying in irrigated districts and some planting of alfalfa instead of high-priced red clover seed. All of the counties of U. S. which produce enough seed for their own use lie west of the Missouri river, with one exception. Total shipments of 1918 alfalfa seed already made or to be made were estimated in February at 10,344,171 pounds in U. S.

Sugar Beet Seed.

The United States was able to produce about one-third of its requirements and has more than enough seed on hand for this season's planting. Russia and Germany practically supplied the world before the war. England, France and Italy are all looking for sugar beet seed in order to increase their production of sugar even over their pre-war tonage. Italy alone would normally plant 2,500,000 pounds of seed. This is hard to get and she is planning to establish beet seed production at home. Much of the European and American stock has been kept some years and is getting low in germination.

Trade with Germany.

The Seed Trade Association of the United Kingdom passed a resolution in January agreeing not to trade with Germany for five years, but individuals are generally seeing that such a policy would be only cutting off their own noses. Germany must recover if she is to pay damages, and certain seeds produced there are needed outside. However, most sales to France, Russia and other countries before the war passed through German dealers' hands at Hamburg. Many varieties have been renamed by them. If we want to establish direct connections with the European consuming demand, we will have to indicate the identity of our varieties with those known by other names.

Garden Vegetable Seeds.

American-grown garden vegetable seeds are now competing in the principal markets of the world with those grown in France. Pacific Coast growers of U. S. have the advantage of a climate conducive to producing and harvesting a better quality of seed as to germination and appearance; but not all of our varieties are adapted to European conditions or tastes and we cannot expect to dump there the surplus of all varieties which are popular here. France is aiming to plant at least a little more than normal acreage for seed, anticipating a good demand from central Europe. Italy seems to be well supplied with all the field and vegetable seed she needs.

Sudan Seed Production

A map published by the Seed Reporter shows that practically all of the counties of U. S. which normally produce a surplus of sudan grass seed are located in Kansas and the Texas Panhandle. One county in Iowa, two in Illinois, two in Missouri, one in Alabama, and a few in New Mexico, Colorado, Nebraska, Wyoming, Utah, Idaho, Oregon, and California complete the list of surplus producers.

NEWS ITEM

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SAN FRANCISCO, CAL.

See CASE TRACTORS Perform Sacramento Demonstration, May 6-7-8-9-10-11

Market Comment

Pear Prices Rising.

"There has been a big stir in Lake County Pears for the past three weeks, and prices have risen from $50 a ton orchard run, to $75 a ton orchard run. Most growers have sold. Prospects right now are most promising for a bully crop of both prunes and pears. Prune blossoms are just falling (April 21), and pears are in full bloom. The bidding for pears is most spirited, 20 cents is offered for our dried pears—orchard run; taking everything "decent." This invigorating report comes from Fred G. Stokes, Horticultural Commissioner of Lake County.

Dried Fruit Prices Awaited.

The trade is still waiting for the Prune Growers' Association to announce its prices for the coming crop. In the meantime the dealers have bid up the price to 12 cents. The demand seems insatiable and it may go beyond 12 cents, although local dealers feel that is the limit they will be justified in paying. Peaches continue to be bought at last week's quotations, 13½ to 14 cents. As yet no other prices have been named.

The New Wool Crop.

It is difficult at this writing to predict what the price of the coming wool crop will be. It is said the quality will be super-excellent, but that the shearings will not be so large as in some previous years. S. W. McClure, Secretary of the National Wool Growers' Association, expects prices to range from 40c to 55c per pound. Some recent sales in California have been made on a 35c to 45c basis. The world's need for wool is great.

Fruit Men Sound Warning.

The California Prune and Apricot Growers' Association fear that the increased acreage planted to prunes and apricots in California will tend to reduce profits to the grower and imperil the future of the industry by overproduction and glutting of the market. The association has invited all growers of prunes and apricots to attend meetings to be held throughout the State for the purpose of discussion of prices, etc.

Returns on Raisin Crop.

The net returns on the 1917 crop to growers as shown in the associated statement of September 30, 1918, gave $132.34 a ton for Muscats; $90.71 for Malagas; $90.72 for Feherzagos; and $132.53 for Valencias. The net weight of all raisins sold by the California Associated Raisin Company for that year was slightly over 123,248 tons, which netted growers a total of $17,697,785. These amounts cover contract growers only.

Rice Price of 4 Cents Predicted.

It is forecasted that the situation is favorable for a price of 4 cents for the 1919 rice crop. Federal officials, while not guaranteeing a price on rice, yet are optimistic regarding the outlook for all foodstuffs. They claim that 75 per cent of the world's people are looking to the United States for a portion of their food supply.

Advance Apricot Price Above Average

Canneries are already offering $80 per ton for apricots, due to the shortage of crops which was caused by the light rains which fell at blossom time, destroying the pollen just as it was ready to fly.

Spinach Prices Too Low for Profit.

From Sacramento comes the report that, owing to heavy crops and consequent low prices for spinach, many growers are turning their crops under, and will seed the land to more profitable crops.

Profitable Pea Prices Prevail.

Owing to rains and cool weather, the pea crop has been maturing poorly in the vicinity of Oakland. This probably accounts for the high price of 11 cents per pound wholesale now obtaining.

Rhubard Prices Satisfactory.

Commission merchants report that rhubarb is bringing a good price. Contracts are being closed for the large crop now on hand.

THE MARKET REPORTS

Figures Given Are Independent and Reliable. Prices Quoted as Paid to Producers.

SAN FRANCISCO.

San Francisco, April 22, 1919.

WHEAT.

The following prices were announced by the Federal Grain Corporation last year and are still in effect. They are figured f. o. b. San Francisco, Los Angeles, Seattle, Tacoma and Portland and guarantee the grower a minimum of $2 f. o. b. shipping point:

Per bushel—	
No. 1 hard	$2.20
No. 2	2.17
No. 3	2.13
No. 1 soft	2.18
No. 2	2.15
No. 3	2.11
Club or Sonora, No. 1	2.16
Do, No. 2	2.13
Do, No. 3	2.09
Recleaned for seed, per ctl.—	
California Bluestem	$4.25@4.30
Early Baart	None

BARLEY.

Barley futures sold at $2.55 for May and $2.35 for December and these advanced quotations had the effect of making a higher spot market. It is now believed that those who have held their barley stand a chance of making a good profit for their patience, as Europe seems ready to take all that shipping accommodations can be found for.

OATS.

Oats are neglected and were weaker this week. Unless a better demand develops the price will soon be shaded by the dealers.

Red feed, per ctl	$2.25@2.30
Red for seed	Nominal
Black for seed	Nominal
Recleaned Red or Black for seed	Nominal

CORN.

California yellow corn showed good strength this week, with very little offered. There was some local demand, and the price was bid up in an effort to satisfy it.

California	$3.00@3.25
Egyptian, choice	Nominal
Milo	Nominal

HAY.

Receipts of hay for the past week were 1,495 tons compared with 1,693 the previous week. Although the market in the city is dull, a slight improvement has been noticeable which is likely to show to better advantage shortly. The feature of the week was the placing by the Government of orders for shipments to New York of 3,000 tons of double compressed hay, together with the placement of orders for like amount for shipment to Manila and Honolulu. These purchases, together with shipments to Arizona, New Mexico and Texas during the past two weeks of several thousand tons more, are bound to have an effect on the local market, even though the demand for local consumption is light. The Government is also in the market for 1,700 tons for the Pacific cantonments.

No. 1 wheat, per ton	$17.00@19.00
No. 2 wheat, per ton	13.00@16.00
Choice tame oat, per ton	17.00@19.00
Wild oat, per ton	12.00@15.00
Barley hay, per ton	12.00@15.00
Alfalfa, per ton	16.00@20.00
Stock hay, per ton	12.00@14.00
Barley straw, per bale	.50@ .80

FEEDSTUFFS.

With the exception of cracked corn there was no change in feedstuff quotations this week. Cracked corn was moved up a dollar in sympathy with the advance in the price of whole grain, and still further advances are looked for in this product.

Cracked corn	$64.00@65.00
Rolled barley	50.00@51.00
Rolled oats	48.00@50.00
Alfalfa meal	34.00@35.00

POTATOES, ONIONS, ETC.

While there was no change in the price of onions this week; the number of inquiries for shipments of large quantities showed an increase. Potatoes were slow and heavy for old stock. New Garnetts are now sold on the street at 6 cents a pound, and are coming in in good quantities. Lettuce is receding in price and will probably go lower as the season advances. Asparagus is also selling for less, and is not being so carefully selected as earlier in the season. Mexican tomatoes are arriving in better condition and good stock was advanced over the quotations of last week.

String beans	Nominal
Peas	7@11c
Lima beans	None
Carrots, per sack	$2.00@2.75
Asparagus	4@7c
Rhubard, Strawberry, box	$1.25@1.75
Cucumbers, hothouse, box of 30	3.00@3.50
English, per dozen	$2.50
Eggplant, per lb	None
Lettuce, per crate	$1.00@1.75
do, Watsonville	.75@1.00
Celery, crate	Nominal
Spinach, crate	$0.75@1.00
Tomatoes, Southern, per crate	None
do, Mexican	$2.00@3.00
Sprouts	Nominal
Summer squash	$1.75@2.00
Potatoes—	
Rivers	$2.00@2.40
Oregon	2.00@2.40
Washington	1.95@2.25
Idaho	2.00@2.40
Garnets new on street	6c
Sweets, per sack	$4.50
Onions, Warehouse Stock—	
Yellows	None
Australian Browns	$3.50@4.00
Green River	1.00@1.25
Green Alameda	2.00@2.25
Garlic	50@60c

BEANS.

Movement of 150 carloads of California beans, purchased direct from growers by the Food Administration, is under way. Activity by various foreign relief agencies, together with the known shortage of foodstuffs in Europe, is expected to cause a further movement of California beans. The local market is stated by dealers to be "quiet but strong," an unusual combination probably brought about by the large purchases made through agencies other than the dealers. Pinks were advanced in price, but otherwise there were no quotations.

Bayos, per ctl	$6.25@6.40
Blackeyes	$3.40@3.60
Cranberry beans	$4.75@5.00
Limas (south, recleaned)	7.00
Pinks	5.75@6.00
Mexican Reds	4.75@5.25
Tepary beans	2.50@2.75
Garbanzos	11.00@11.25
Large whites	5.75@5.90
Small whites	6.60@6.75

POULTRY.

Small broilers and hens were lower this week on account of the passing of the holidays and the arrivals of Eastern stock on the market. The latter part of the week and early next week three Eastern cars are expected to arrive and this will doubtless reduce hens to a basic price of 38 cents. Fryers and young roosters are still high.

Turkeys, live, young spring, lb	30@38c
do, old	34@36c
do, dressed	42@44c
Broilers, 1½ to 2 lbs	50@55c
do, 1¼ lbs	40@42c
do, ¾ to 1¼ lbs	35@36c
Fryers	52@55c
Hens, extra, per lb., colored	39@40c
do, Leghorn	38@39c
Smooth young roosters, per lb. (3 lbs. and over	48@50c
Old roosters, colored, per lb.	25c
Geese, young, per lb	38c
do, old, per lb	38c
Squabs, per lb	65c
Ducks, young	38c
do, old	36c
Belgian hares	17@20c
Jack rabbits	$3.00@3.50

BUTTER.

The San Francisco Wholesale Produce Exchange has adopted a resolution effective April 24, to the effect that Rules 1, 2, 3 and 4, adopted in conformity with the requirements of the U. S. Food Administration, November 14, 1917, are now null and void, as the emergency which then existed no longer attains. These rules are summed up in the statement, "Offers to sell must be made before a bid is entertained." By their abolition the exchange goes back to the usual trading methods of exchanges. Also effective on April 24, the exchange has adopted a new rule which reads: "Any goods classified as the same grade and style of package can not be offered or purchased for re-sale during the same call board session, directly or indirectly." These changes in rules apply to eggs and cheese as well as butter. Butter was stronger and showed a steady advance throughout the week.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extra	.50	50	51	51	....	51½
Prime first	..		Nominal			
Firsts	.....		Nominal			

EGGS.

Eggs were higher throughout the week for both extra and pullets. When the price of the latter is reached the price set for extra firsts the latter were no longer quoted and dealing was confined to the two classes. Eggs are still going into storage at a rate of over a thousand cases a day, and the latest report shows 44,044 cases in cold storage in this market.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	43	44	45½	46½	....	46½
Extra first	.41	41	41	Nominal		
Firsts	.....		Nominal			
Ex. pullets	.40	41½	42½	43½	....	43

CHEESE.

Cheese was more active this week, although it sold at lower quotations all along the line. These declines on an active market are said to be evidence that the prices have been too high for general consumption, and continued prices lower than the top of a week or two ago are predicted.

Fancy California flats, per lb	27c
First	Nominal
California Y. A. fancy	30c
Oregon Y. A.	34c
Oregon Triplets	34½c
Monterey cheese	22½@24c

FRESH FRUITS.

The apple market continues steady at unchanged prices. Strawberries are now coming in from about the bay and other sections of Northern California and a good supply is looked for from now on. The crates are selling at $12 to $15 and the chests from $2 to $2.50. Loquats continue to sell lower, with a not very vigorous demand.

California apples	$2.50@3.75
Northwest apples	3.00@4.00
Winter pears	2.50@4.00
Persimmons	None
Loquats, per lb	8@10c
Strawberries, crate	$12.00@15.00
do, chest	2.00@ 2.50

CITRUS FRUITS.

Certain grades of navel oranges were advanced in price 25 cents this week. Otherwise there were no changes in the market, although as a whole it is regarded as strong.

Oranges, navels	$3.50@5.75
Mandarins	3.00@3.50
Tangerines	2.50@3.50
Lemons, fancy	4.00@4.50
do, choice	3.50@4.00
do, standard	3.00@3.50
Lemonettes	2.00@3.00
Grapefruit	2.50@3.50

RICE.

No more fancy rice is being offered by the California millers and trading is confined to the commoner grades. This trade, however, is very active and indicates the confidence the dealers have in the future of the industry. There has been some inquiry for rice flour on account of the high price of wheat flour, but as yet this busines has not developed any volume. Local mills announced an increase in the price of wheat flour this week and the rice men feel that that wheat flour will go much higher. This is bound to develop a demand for rice and rice flour. Paddy rice, Nos. 1 and 2, $4.32; 3d and 4th grades, $4.16; clean, fancy Japan, 7½c per lb; choice Japan, 7¾c per lb.; screenings, 5⅝c per lb.; brewers, 5¼c per lb.; rice polish, $50 per ton, car lots; rice bran, $30 per ton, car lots; early prolific, $4.47.

HONEY.

A shipment of Australian honey is due to arrive at this port within the next thirty days and dealers say that a considerable amount of it will go into the trade here at 9½ cents to 10 cents.

HIDES.

The market for country hides is fairly strong. For light hides there is a steady demand.

Wet Salted—Native steers and cows, 50 lbs. up, 16@18c; 30 to 50 lbs. up, 16@18c; kips, 15 to 30 lbs, 21@22c; calf and veal, under 15 lbs, 31 @32c; bulls and stags, 13@14c.

Horse Hides—Wet salted, large prime, each, $5@$5.50; medium prime, $4@4.50; small, $2.50@$3.50; dry, large, prime, $2.50@3; dry, medium, $1.50@2.50; colts and ponies, 50c@$1.

LOS ANGELES.

Los Angeles, April 22, 1919.

BUTTER.

An advance of 1c since last week's report is noted in this market. Receipts continue good. The damand and consumption holding up well. Shipments for the week, 312,200 lbs.

We quote:

California extra creamery	52c
do, prime first	50c
do, first	49c

EGGS.

Prices in this market holding firm. An advance of ½c on pullets is the only change noted since last week's report. The demand continues to be good. Receipts for the week, 2,726 cases.

We quote:

Fresh ranch, extras	46c
do, case count	44c
do, pullets	43c

POULTRY.

This market shows all prices declining since last week. Fryers and broilers coming on in good quantity causing a drop in price, which is expected at this season of the year. All stock reported to be moving better. Demand and receipts continue good.

Broilers, 1 to 1¼ lbs	30c
Broilers, 1½ to 1¾ lbs	34c
Fryers, 2 to 3 lbs	40c
Roosters (soft bone), 3 lbs. and up	35c
Stags and old roosters, per lb	14@35c
Turkeys	39@40c
Hens	35@36c
Ducks	34@35c
Geese	28c

VEGETABLES.

Potatoes still showing decline. New potatoes now on the market. Peas advance 3c. Onions slump off. Imperial Valley shipments now coming on the market and prices show changes since quotations of a week ago. The market reports the demand for all staples to be very good.

We quote from growers:

Peas, per lb	10@12c
Potatoes—	
Oregon Burbank, per cwt	$2.25@2.35
Idaho Russets, per cwt	2.00@2.25
Sweet potatoes, per cwt	4.50@4.75
Garlic, per lb	50
Onions—	
Australian Brown, per cwt	$3.50@3.75
White Globe, per cwt	3.00
Imperial Valley silver wax, crate	$5.00
Cabbage, per 100 lbs	$3.50@3.75
Celery, local, per crate	4.00@7.00
Celery, northern, per crate	8.00@9.00
Cauliflower, standard crate	2.00@2.25
Rhubarb, per 30-lb. box	2.25
Summer squash—	
Imperial Valley, 4 basket crates	$1.75
Asparagus, per lb	8@12

FRUITS.

There is no change in prices to report in the deciduous market since a week ago. The demand continues very good. The supply however, is getting quite short.

We quote from growers:

Apples—	
Black Twigs, Northwest pack	$3.50@3.75
Baldwins, Northwest pack	3.25
White Pearmains, 4-tier	3.50@3.75
Yellow Newtown Pippins, 4-tier	3.25@3.75
Winesap, loose, per lb	7½ @8½
Roman Beauties, Northwestern, per peck	3.50@3.75
Loquats, per lb	7@15
Strawberries—	
30 basket crates, fancy	$6.00
Poor to choice	$4.00@6.00

BEANS.

This market continues very dull. Very little movement is reported. Quotations remain the same as reported last week.

We quote from growers:

Limas, per cwt	$6.50
Large white, per cwt	5.50
Small white	5.50
Pink, per cwt	6.00
Blackeyes, per cwt	3.00
Tepary, per cwt	3.00

HAY.

This market shows more activity since last week's report. Northern alfalfa advances $1 and $2, while alfalfa on the local market reports advances of $1. Other quotations remain the same.

We quote f.o.b., Los Angeles:

Barley hay, per ton	$21.00@24.00
Oat hay, per ton	23.00@25.00
Alfalfa, northern, per ton	21.00@23.00
Alfalfa, local, per ton	22.00@24.00
Straw, per ton	9.00@10.00

COTTON.

The cotton market in New York closed last Wednesday steady, at a net advance of 15 to 35 points. Spot cotton is quiet.

Special Livestock Market Reports.

San Francisco, April 23, 1919.

CATTLE—Grass cattle are not coming freely because owners are holding for higher prices than packers think they are worth. Calves are scarce and the market strong.

Steers—
- No. 1, weighing 1000@1200 lbs. 12@12½c
- do, weighing 1200@1400 lbs. 12@12½c
- do, thin 9@10c

Cows and heifers—
- No. 1 9½@10c
- do, second quality 8½@9c
- do, common to thin 4@7c

Bulls and stags—
- Good 6½@7c
- Fair 5½@6½c
- Thin 4@5½c

Calves—
- Lightweight 11½@12½c
- Medium 10@11½c
- Heavy 8@10c

SHEEP—The sheep market is firm but the lamb market is weak. The drying of feed is causing a heavy movement of lambs.

Milk lambs 13@15c
Yearlings 12@12½c
Sheep, wethers 11@11½c
do, ewes 9@9½c

HOGS—A further increase may be noted next week in the price of hogs if the Chicago market keeps strong. Many soft hogs are still coming from alfalfa pastures with only two or three weeks of grain feed. They need six to eight weeks of grain to properly harden the meat.

Hogs—
- Hard, grain fed, 100 to 150 18½c
- do, 150 to 250 19c
- do, 250 to 300 18½c
- do, 300 to 400 18c

Los Angeles, Cal., April 22, 1919.

CATTLE—Quotations in this market are unchanged since reported last week. Offerings are of fair quality. Steers dull but cows are in fair demand.

Per cwt., f. o. b. Los Angeles:
Beef steers, 1000@1100 lbs... $11.00@13.00
Prime cows and heifers ..... 9.50@10.50
Good cows and heifers ..... 8.00@9.00
Canners $6.00

HOGS—The demand continues only fair in this market. Prices remain the same as quoted last week. Receipts up to normal, with quality of offerings good.

Per cwt., f. o. b. Los Angeles:
Heavy, avr'ging 275@350 lbs. $16.00@17.00
Mixed, avr'ging 225@275 lbs. 17.00@18.00
Light ..... 18.00@18.50

Rough docked 20 lbs., piggy sows 40 per cent.

SHEEP—This market reported dull. No change in prices since a week ago noted. The demand is only fair and receipts sufficient to meet the trade.

Per cwt., f. o. b. Los Angeles:
Prime wethers ..... $ 9.50@10.50
Prime ewes ..... 8.50@9.50
Yearlings ..... 10.00@11.00
Lambs ..... 14.00@15.00

CHICAGO, April 22, 1919 (U. S. Bureau of Markets).—HOGS—Receipts 27,000; market mostly 10c to 20c higher; late top, $21; estimated tomorrow, 16,000. Bulk of sales, $20.70@20.85; heavyweight, $20.80@20.95; medium weight, $20.60@20.95; light weight, $18.85@20.40; sows, $18.75@20.25; pigs, $16.75@19.00.

CATTLE—Receipts 16,000; best steers and feeders steady; in-between grades slow; 25c lower; low-priced she-stock and bulls steady; others most 25c lower; calves slow, 50c to 75c lower; estimated tomorrow 7,000. Heavy beef steers, $11.75@20.40. Light beef steers, $10.50@18.50; Butcher cows and heifers, $8.15@15.75. Canners and cutters, $6.40@$10.50; veal calves, $13.00@14.50. Stocker and feeder steers, $8.75@16.00.

SHEEP—Receipts 19,000; lambs unevenly 20c to 35c lower; best sheep steady; others and yearlings weak to 25c lower; estimated tomorrow 17,000. Lambs, 84 pounds or less, $17.75@19.65; 85 pounds or better, $17.50@$19.50; culls and common, $13.50@14.50; ewes, medium and good, $11.75@15.50; culls and common, $6.00@11.75.

WEEKLY BUTTER AVERAGES.

Cents per pound for Extras.

Week Ending	San Francisco 1918	San Francisco 1919	Los Angeles 1918	Los Angeles 1919
Jan. 2	50.40	66.19	50.16	63.16
" 9	51.08	61.00	50.00	64.00
" 16	52.33	61.70	50.50	64.16
" 23	52.50	55.83	52.00	62.16
" 30	53.00	44.91	51.83	49.00
Feb. 6	50.80	43.58	49.66	47.33
" 13	52.00	46.80	48.00	47.60
" 20	51.41	51.58	48.00	53.16
" 27	51.30	53.90	49.33	55.00
March 6	50.66	56.16	50.00	59.00
" 13	51.16	55.58	49.50	58.00
" 20	47.83	54.41	47.00	56.00
" 27	46.30	56.41	43.30	58.00
April 3	43.16	54.23	42.16	55.50
" 10	39.25	57.16	39.50	56.00
" 17	39.00	50.70	36.83	52.30
" 24	40.50	....	38.16	....
May 1	40.83	....	39.00	....
" 8	40.66	....	39.00	....
" 15	40.46	....	39.00	....
" 22	40.33	....	41.00	....
" 29	42.30	....	39.00	....
" 29	42.30	....	39.00	....
June 5	43.90	....	41.58	....
" 12	44.92	....	40.58	....
" 19	46.50	....	41.75	....
" 26	47.42	....	43.00	....
July 3	43.08	....	46.00	....
" 10	48.90	....	47.50	....
" 17	50.83	....	48.66	....
" 24	52.66	....	45.16	....
" 31	52.16	....	51.00	....
August 7	52.16	....	50.83	....
" 14	51.66	....	49.00	....
" 21	52.25	....	49.58	....
" 28	53.00	....	50.00	....
Sept. 4	53.00	....	50.00	....
" 11	54.90	....	50.33	....
" 18	57.80	....	51.67	....
" 25	61.33	....	56.17	....
Oct. 2	64.75	....	58.00	....
" 9	64.50	....	59.33	....
" 16	62.50	....	60.00	....
" 23	61.75	....	60.00	....
" 30	60.50	....	59.50	....
Nov. 6	59.60	....	58.83	....
" 13	60.00	....	57.00	....
" 20	61.00	....	57.25	....
" 27	61.60	....	58.75	....
Dec. 4	62.60	....	60.00	....
" 11	63.00	....	60.10	....
" 18	63.50	....	61.01	....
" 26	64.60	....	62.16	....

WEEKLY EGG AVERAGES.

Cents per dozen for Extras.

Week Ending	San Francisco 1918	San Francisco 1919	Los Angeles 1918	Los Angeles 1919
Jan. 2	52.80	75.60	48.16	69.50
" 9	60.91	69.91	50.66	66.66
" 16	65.66	58.70	55.00	62.41
" 23	65.66	52.58	58.00	54.66
" 30	61.25	48.75	54.00	52.33
Feb. 6	58.50	42.00	51.66	43.00
" 13	44.40	40.90	44.83	37.80
" 20	44.75	36.41	40.83	39.33
" 27	42.40	37.40	39.58	33.60
March 6	36.83	37.58	35.00	37.00
" 13	37.91	37.16	38.00	37.00
" 20	40.66	38.16	39.63	42.00
" 27	39.50	40.41	40.00	42.00
April 3	38.19	42.41	38.33	45.00
" 10	37.58	42.91	36.33	45.00
" 17	39.16	45.10	36.83	46.00
" 24	40.80	....	39.66	....
May 1	41.66	....	39.33	....
" 8	40.08	....	37.00	....
" 15	39.16	....	38.83	....
" 22	40.50	....	39.00	....
" 29	38.66	....	37.41	....
June 5	40.80	....	38.83	....
" 12	41.00	....	33.75	....
" 19	43.33	....	33.00	....
" 26	44.32	....	39.08	....
July 3	44.91	....	41.75	....
" 10	48.30	....	45.00	....
" 17	47.66	....	45.50	....
" 24	47.91	....	45.16	....
" 31	48.83	....	46.56	....
August 7	49.50	....	46.58	....
" 14	52.08	....	48.00	....
" 21	56.33	....	50.17	....
" 28	59.20	....	53.00	....
Sept. 4	62.40	....	56.33	....
" 11	63.70	....	58.67	....
" 18	61.30	....	59.00	....
" 25	60.17	....	55.67	....
Oct. 2	65.42	....	59.75	....
" 9	65.08	....	60.00	....
" 16	71.30	....	62.66	....
" 23	78.88	....	70.33	....
" 30	86.41	....	79.33	....
Nov. 6	87.90	....	78.00	....
" 13	86.00	....	78.00	....
" 20	77.25	....	72.00	....
" 27	79.80	....	72.33	....
Dec. 4	82.00	....	73.00	....
" 11	82.08	....	74.33	....
" 18	79.65	....	72.33	....
" 26	82.00	....	71.66	....

STOCK INTERESTS ORGANIZE.

Representatives of livestock and meat packing interests throughout the State met at San Francisco April 18 for a conference with L. D. Hall, chief of the livestock division of the Bureau of Markets at Washington. As a result, an organization was formed for the purpose of solving the problems that confront the stockman, the packer and the consumer.

Ralph P. Merritt, former Federal Food Administrator for California, will be asked to serve as chairman and to appoint a committee consisting of five members each of the California Cattlemen's Association, the California Sheep and Wool Growers' Association, the California Swine Breeders' Association and five representatives each of the packers, the retail butchers, consumers, and one representative from the department of animal husbandry at the University of California, a representative of the division of rural institutions, and a representative of the transportation companies. The meeting is to be held early in May.

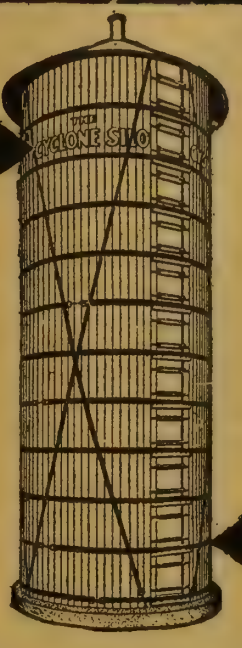
HOW ABOUT MONTEZUMA COMPANY?

To the Editor: In a recent issue you told about the failure of one of the hog syndicates. I am interested in one of the units of the Montezuma Improvement Company, and I want to know if this concern is in the same class with the others you mentioned? —Mrs. E. G. G., Santa Cruz.

We have before us a circular letter sent out to the unit holders of the Montezuma Improvement Company by Frank W. Sawyer, an attorney at 1095 Market street, San Francisco, stating that an action has been commenced in the Superior Court on behalf of the unit holders against the company and its president, E. D. Baker, for a judicial investigation of this hog venture. Mr. Sawyer states that he is attorney for the unit holders and the action is being prosecuted for the benefit of all. We suggest that you correspond with him. He probably can tell you about the present condition of the company and also assist you in protecting your interests, if protection is necessary.—Livestock Editor.

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"Cyclone" Silo

POLAND-CHINA BRED SOW SALE.

John M. Bernstein and W. L. Haag and Son announce their bred sow sale at an early date in September. Some of the best sows in California will be offered at this sale. Some are recent arrivals from the leading herds of the east. A breeder will be hard to please indeed, if he cannot find something to satisfy him in this offering.

There will be gilts sired by such noted boars as President and Young Jumbo, and bred to the two sensational recent arrivals, Yankee Junior and Lendorris Liberty Bond. These two young boars are the best from the best, and will take an important place in the Poland-China industry of the future.

There will also be sows bred to President and Young Jumbo. It will be hard to make a choice, as all in this offering will be of the best. Watch for further particulars.

PROBABLY PROPERLY VALUED.

"I was endeavoring," says the teacher of a night school in a country town, "to instill into the minds of certain of my discouraged pupils some notions of ambition.

"'Do you know,' I asked a disreputable lad of 19, that every boy in this country has a chance to be President?'

"'Is that so?' asked the boy, reflectively. Then he added: 'Say, teacher, I'll sell my chance for a quarter.'" — Pittsburgh Chronicle-Telegraph.

DUROCS OF THE
Best Blood Lines
Bred sows, gilts bred and open. Have one very nice O. C. K. boar 9 months old. Dam sold for $1,100 and sire for $1,000 in last month's sale.
Jersey Queen Farm, San Jose, Cal.

Dealers in PAPER
BLAKE, MOFFITT & TOWNE
37-45 First St., San Francisco
Blake, Moffitt & Towne, Los Angeles
Blake, McFall Co., Portland, Ore.

Administrator's Sale
50 Choice Berkshine Sows and Gilts
NORTH SACRAMENTO, TUESDAY, MAY 6.

The offering consists of sows and gilts of popular breeding owned by the estate of Theodore Wiesendanger. Every animal must be sold.

Sale starts at 1:30 p. m.

For Further Particulars Address

D. McDOUGAL
Public Administrator
or
COL. ORD. L. LEACHMAN
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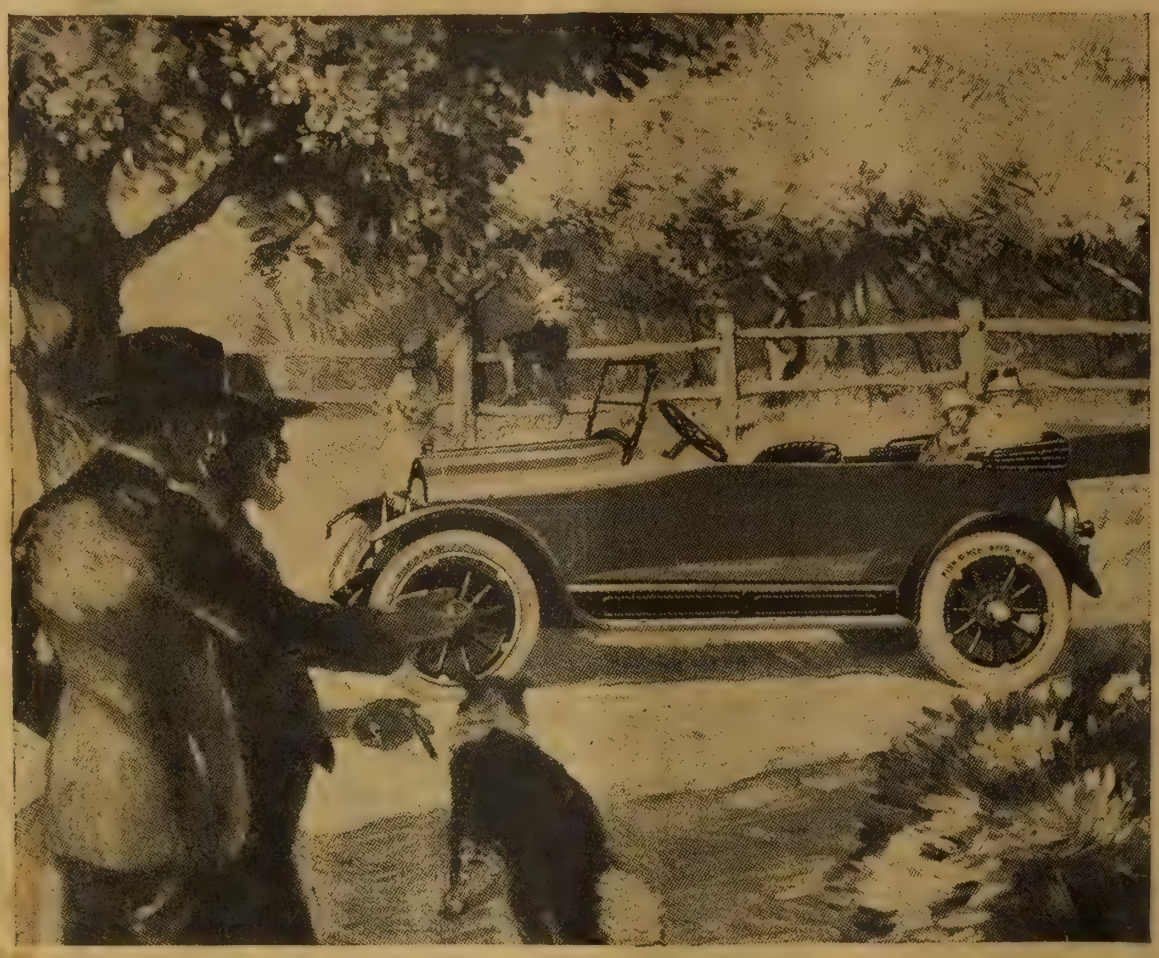
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Vol. XCVII—No. 18 THE PACIFIC RURAL PRESS Forty-ninth Year

SAN FRANCISCO MAY 3, 1919 LOS ANGELES

How Can We Keep Help on Dairies?

Written for Pacific Rural Press by M. H. Herspring, San Francisco.

The help situation on California dairy farms is becoming critical. Over 600 Portuguese have recently gone back to their native country from this state and will not return. There are no other foreigners coming in to take their places. Does this mean that we must depend upon American men to furnish the labor on dairy farms hereafter? If so, will they do the work? The prevailing wages are good—$85 to $110 per month and board—but will American men put up with the housing conditions, the long hours and the 7-day working week? How about the inducements that city jobs offer?



"Ninety per cent of the farm workers who are being released from military service are seeking employment in cities," comes the alarming report from the U. S. Employment Service. Why? We should find out the reason, for if we need the boys we must take the necessary steps to get and hold them. Women have been taking their places to some extent, but they will not put up with conditions that men cannot stand, so to solve the problem we must find out what is driving help away from the farm and take the necessary steps to make conditions even more attractive than those found in cities.

I HAVE BEEN in the Navy for two years. When I first landed at the training camp I slept on a cot. Every Friday we had to take our cots out into the sun and spread the bedding so it would be well aired. The cots remained outside from 5:30 A. M. until 4 P. M. Mattress covers, bedding and cots were inspected the following morning. If found dirty the word "Scrub" was written on them and our names were entered in the report book. All "gobs" knew what that meant—our liberty was restricted for that week-end. After the armistice was declared I was transferred to another camp. Here we slept in hammocks. There was a railing fixed so that the hammocks with bedding could be aired and we were required to hang our hammocks and bedding outside daily, weather permitting.

Now let us consider sleeping conditions on the ranch. For about three years before the war started I did official testing, so having a furlough recently and the office being short-handed, I consented to test for the two weeks. The ranch that I was sent to is one of the largest and best equipped in the state, and has some of the finest stock! The milkhouse, test barn and milking barn are ideal and are kept scrupulously clean, but they put me in a small, old, three-room shack. My room was very small, but there were two beds in it, one for me and one for the man who milked the test cows. The mattresses were filthy, evidently never having been aired. If I was in the Navy I would have been quarantined for thirty days for the condition of that bedding. The milker's bedding was even worse. He did not have sheets, slept in most of his clothes, and his blankets were filthy. When I first went into the room the odor nearly knocked me down. In the other two rooms were teamsters who perspired outside all day in the hot sun, and then gave out the odor in their room at night, and one of the worst features of all was that there were no bathing facilities.

How can dairymen expect to produce sanitary milk if the cows, no matter how clean and free from disease, are milked by men living under such conditions? I was assistant Dairy Inspector for the City of Alameda for a number of years, and we always looked after this side of the dairy inspection, but how many city or state inspectors do? As Dr. T. Carpenter, chief milk inspector of Alameda, says: "The housing problem of dairy employees, and their comfort and cleanliness, need more serious consideration. We require an employee to do all in his power to assist in producing sanitary milk; to be consistent we should evidence more interest in his personal welfare. Foreign immigration will not in the future supply the major portion of dairy employees. It is up to the American boy to become the dairy workman, and unless he is given more consideration for his personal welfare he will not adopt the dairy business as his vocation."

Why have there been so many foreigners working in dairies? I remember when one of the largest breeders of Holsteins in the state first started in business. He was compelled to better the housing conditions of the milkers, or he would not be allowed to ship his milk into the city. Nevertheless, his milk-barn scored the highest of any under the Oakland inspection. I, as an American, would not tolerate such conditions, and I am not the only one. I recently met two boys who attended the State Agricultural College with me, and who have also done official testing. They were recently discharged from the Army. I asked one of them what he was doing. He stated that he had gone back to testing for two weeks, but that was enough. He mentioned certain conditions which he did not like, and one of them was housing facilities. The office demands college men who are reliable and trustworthy, and who also understand the feeding and fitting of test cows, in order that they may help beginners, but the farmer will not even give us a decent place to sleep in.

In another place where I did testing I was given a room in a bunkhouse with about twenty Portuguese. The air was none too sweet and there was no stove in the room, so I had to go in the cook house to keep warm. The owner asked me what I thought of the place, and I told him. The next day the cook told me that the next tester would eat with the family, instead of in the bunkhouse, and would have a small house to himself. I found, however, that the owner planned this house for the Chinese cook, but the latter refused to sleep there and insisted on having a room in the main house in order to take a bath every morning. He demanded it and obtained it. But we supervisors of Advanced Registry tests, most of us college graduates from good families, are put in dirty bunkhouses. Does the farm expect to obtain a better class of young men under such conditions? Does it seem right to pay us only $90 per month and then dock us for the four or five days usually consumed in traveling, when young men without college education get higher pay and better living conditions at other work in the cities?

It is contended by some that milking machines will solve the labor problem on dairy farms, but will they? A young man with whom I attended college has a dairy, and he recently told me that he was having a hard time keeping milkers. I asked him why he did not put in a milking machine. He replied that he could not find a man to run one. Why? I know, for I am familiar with the conditions on his ranch. A man to run a milking machine successfully must be a good milker so as to strip cows properly, and also must be of a mechanical turn of mind. He must be more intelligent than the average milker, yet my friend expected such a man to put up with the same living conditions pro-

(Continued on page 713.)



"As a food producer the dairy cow is our mainstay and dependence. Indeed, it may be truly said that of all animals that contribute to the support of mankind none rewards us so promptly and so liberally for kindness, food and care as the homely cow."

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EDITORIAL.

GREAT THINGS IN THE AIR.

We do not refer to aeroplanes, dirigibles, international zones of aerial navigation, or anything of that sort. Neither do we have in mind the league of nations, which this week seems to be bowling along, not only at a greater altitude than any more realistic air-craft has attained, but to be floating in an atmosphere of considerably more than normal sky temperature, and promises to enwreathe our President Wilson as the greatest "ace" above the earth. Possibly these things constitute the "atmosphere," as the artists say, of our present portrayal, but we have nothing to do with their embodiment of it.

It is, however, quite possible that the impulse to look aloft, which air-ship achievements have suggested, may really have engendered the current disposition to take to the industrial sky in search of opportunities for investment-activities which hitherto have been sought upon the surface of the earth or under it. And, of course, these celestial forms of industrial enterprise require motors of exceeding force and lightness and fuel of less weight and instantaneous combustion. Fortunately for these aerial phases of industrial development, such tenuous agencies are now abundant. There is on the public mind, as a product of the war, a ruling sentiment which, to change but a simple letter of the Shakesperean text, assures us that—

"Trifles, light as air
Are to the zealous confirmations strong
As proofs of holy writ."

And if one has zeal enough in pressing these lofty aerial affairs upon the minds of others until their zeal burns to receive them, "Your young men shall see visions and your old men shall dream dreams."

FLAMING METEORS IN BUSINESS SKY.

We seem to have really entered a zone of business activity and point of view in which the electroliers of sentiment are displacing the tallow-dips of sordidity. Perhaps more concrete and impressive declaration of the new illumination can be made than that which was given last week in Chicago to the Lumber Manufacturers' Association by Frank Carnahan, secretary of the organization's traffic committee. He said:

"You men will no longer be permitted to look upon your industries as strictly private business. The only way the great industries can remain in public favor and advance is by common counsel for the betterment of all."

This is a lofty, progressive sentiment. There can be no doubt in the mind of any reasonable man that public utility is a higher concern than personal or corporate advantage. If this is not true then the multiplication table is a delusion, for one times one is never more than one while one times many rises to the population of the earth or of the universe. But the multiplication table is true and the principle of human relationship which we illustrate by reference to it is also true. The practical question is will it work—now or when? It is the principle involved in the league of nations applied to a league of mankind and the question is: will the latter work any better when it strikes the individual than the former has worked since it struck Italy? The answer is: it must be made to work: but that only brings in another question: how?

So far as we can see into the matter there is only one way in which either league can work and that lies in converting the individual to a new point of view which will lead to the adoption of new actuating principles. Can you convert nations and throw the new light downward into individuals? That is what the world is wondering at this week. Can you convert individuals and throw the new light upwards into their constituted governments? You surely can, but—oh Lord, how long?

JACOB'S LADDER UP TO DATE.

Perhaps the first man to see in detailed vision the pathway of mankind to mankind's highest life was the patriarch Jacob. None of our modern celestial-elevator builders has anything on his ladder. In fact, we believe his vision is as true to life now as when it came to him with his head pillowed on the rocks of Haran. He saw men going aloft by climbing, each for himself, not by being whirled up singly or in groups by aeroplanes—those chariots of fire of our day. Therefore we are coming to have a conservative doubt whether certain agencies proposed as a menace of lifting mankind in masses to new trading or producing enterprises, projected as great avenues to profit for investors, are well grounded upon sound economic and business anticipations. On the whole, they appear to us to be rather seizures of current altrustic sentiment to run aerial motors for money-gathering by promoters and organizers who will themselves safely drop by parachutes, leaving their clients to stay by the ships—some to fall precipitately to destruction; some, perhaps, to glide to earth, frost-bitten and discouraged.

Of course this danger has always existed in things professionally promoted, and many financial casualties have occurred, but it seems to us there has never been so great and imminent danger as now threatens because of the recourse of the promoters to the popularity of altruism to float their schemes. There are two reasons why dangers resulting from this recourse justify public comment. One is the fact that ordinary people induced to invest money in schemes for altruistic agricultural promotion are likely to lose it. The second is of wider importance, and that is the likelihood that agricultural security, which has during the last few years advanced in public estimation more nearly to its just appreciation, because of wise and safe financing of agricultural loans and investments, may be now thrown back by wildcatting even beyond the darkness from which it has been recently emerging. We refer of course to the various syndicates, associations, etc., which endeavor to secure membership or shareholdings from city people in enterprises which are held up to the ignorance of such people as great opportunities for profit to themselves and as great obligations on their part to render public service also. It does not seem to matter to the promoters that if there were such profits as they describe it would be wholly unnecessary to say a word about public service. Nor is it reasonable to speak of this alleged public service from any other point of view, for it cannot be urged even as a compensation for the sacrifices which such investors are likely to make because there is no public service but plenty of public detriment in them. There is no more of Jacob's ladder in them than there was in the Tower of Babel—the first high-sky scheme by aerial promoters—and you know what happened to that!

HOW ABOUT WISHED-ON FARMS?

We are not criticising any projected enterprise nor trying to impeach any humanitarian motive which projectors are now claiming. Our purpose is simply to ask our readers to look and think and discern if possible if we are not getting a little too high up in the sky on this matter of

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wishing farms and working capital upon people who think they want them. Prominent farmers' organizations at the last have protested against the use of public money to endow people with the same producing facilities which they attained themselves by struggle and sacrifice and against using their taxes to force more competition upon them. Perhaps our industrial doctors may think they need a dose of the same medicine which was administered to the lumbermen at Chicago, as we have cited above. We are not prescribing for that complaint. A more fundamental matter is the soundness and safety of the conception that people should be almost forcibly drawn into farming by the inducements and endowments which are now being let down from the sky in the guise of contributions to the public welfare. This is our judgment that the amount of public welfare and the degree of private prosperity of those who thus have farms wished on them, depend more upon the way to which the business is done than upon the popular idea of the desirability of it. Let the contrast appear by two citations of current transactions:

The legislature which adjourned last week provided for an appropriation of $1,000,000 for the immediate improvement, development and sale of small farms by the state; and arranged for a popular vote on a proposed $10,000,000 land settlement bond issue to finance farther developments by the state—all the money to be returned to the state in the long-term payments by which settlers will come into ownership of the farms developed by the state.

Another transaction, currently reported in the press dispatches, is this:

There has been organized a Fourteen Counties Protective Association which will offer thousands of acres of fertile land payment for which is to be made out of the crops they produce—the Association even going so far as to finance, where necessary, the new settlers while waiting for their crops to grow, and meanwhile to assist them in the cultivation of their land by furnishing tractors and other modern machinery for preparing the soil and reaping the crops.

The valley land companies in association with the banks and land owners offer the land to the would-be farmer without cash payment of any kind. They propose to buy his farm equipment and build his house for him, according to his own plans, and hope thereby to establish a great all-American colony in the Sacramento valley.

HOT-CAKE CONVICTION.

Here are two distinctly separate sky-line undertakings. The first is the logical extension of the work of the Land Settlement Board organized by the legislature of 1917 under the leadership of Dr. Elwood Mead of the University as a demonstration of the practicability of public effort for land settlement, which within two years engendered such a popular confidence in its ultimate success that the legislature decided to greatly extend the experiment. The second transaction is a declaration on the part of promoters, capitalists and land owners that they already have such confidence in the State way of settlement that they propose to apply it immediately—utterly forsaking the old way of land subdivision and sale which they formerly made use of.

From one point of view it may be said that probably never in educational history was a University lesson so quickly learned and overwhelmingly applied as this land settlement lesson. Its theorem had been plainly stated, but its demonstration had only just been entered upon when the pupils rushed from the class room crying out: "Never mind the demonstration, we will make the demonstration for ourselves; the theorem is good enough for us to start on!" It strikes us as an educational phenomenon beyond anything hitherto realized on the surface of the earth. Its only

parallel is the "sign in the sky" which the ancients were always watching for and sometimes thought they saw!

This instantaneous conversion of the promoters and developers from the old policy of getting away from the settler everything he could scrape up, to the new policy of seeking settlers who have nothing and giving each of them everything he needs, is so sudden and startling that we must suggest that it is up to the public to wait and see if they "bring forth fruits meet for repentance." The State Land Settlement enterprise is safe-guarded by careful selection of settlers who have not only farming desire but training to qualify for indulgence in it. Hitherto also there has been requirement of a small money investment as testimony of serious intention and ability in saving and accumulation—both of which are guarantees of paying out. It remains to be seen how safely these can be dispensed with. Farms on the sky-line boulevard promise to yield as their first produce a crop of interesting economic and financial problems.

A POMOLOGICAL CONSTELLATION.

It is probably unreasonable to expect that the Sacramento valley will ever put anything over Los Angeles in the line of agricultural astronomy. It is not surprising then that while the northern valley is skirmishing around the horizon of land settlement Los Angeles should rise to the zenith. This is the way of it, according to a recent press dispatch:

A citrus grove and apple orchard merger said to involve property worth $100,000,000 in the United States and $20,000,000 in California alone was announced here by J. S. Crutchfield of Pittsburg, Pa., who is said to be the largest individual grower of apples in the United States. The plan, is to merge citrus interests of California and Florida, and apple interests of various sections, to remove the hazards associated with the fruit business by neutralizing the losses of any given district in an off year by pooling the profits of the entire territory covered. The merger will not include small growers and will be made up of large commercial properties, but its promoters believe it will better the small growers' condition by improving market conditions.

This seems to be a great altruistic scheme and a repudiation of the philosophy of retaliation which the classic poet embodied in these lines:

The man who gives no good o-ran-gees
When I have apples none;
Shall not have any of my good apples
When his o-ran-gees are done!
Oh, that will be joyful, joy full, joy full,
When his o-ran-gees are done!

It is fitting of course to banish this barbaric doctrine from our fruit handling. Perhaps it is as important, though in less degree, as it is to banish conquest and retaliation from the handling of nations, but would it not be even more difficult? The league of nations may possibly fail because the leaguers will not; the league of fruit growers may possibly fail because the growers cannot. As we understand it, the growers are not under the Sherman law because they are organized as non-profit associations which only help each member to get what belongs to him from joint sales. We do not quite see how to organize under that provision so that a grower can get part of the returns from another man's oranges when he has no apples to sell. Suppose all members prove their different fruits and take dividends from the net proceeds from all sales, does not your arrangements become a profit-yielding concern—a trust which gives a participant money for producing nothing, and is not that one of the worst things about trusts? Besides, how long will it be after you get to restraining trade for the altruistic ends proposed before some outsider, finding himself injured in some way, will get a court order to miscramble your combination?

But we do not claim to know much about such things. Perhaps some corporation lawyer has already given Mr. Crutchfield a passport to enter the port of Fiume. Still it seems to us that any such merger is an impeachment of the system of pure co-operation which producers are developing, and a menace to the beneficent success which they are entering upon. We are really scared at the amount and variety of sky-farming which is being proposed. It seems to us more desirable to keep the industry on the earth and strive for fair play, sanity and security which have always been the main objectives of American agriculture.

QUERIES AND REPLIES

By the Editor.

Inquirer Must Give Full Name and Address.

Chemical Weed Killing.

To the Editor: We have quite a lot of Bermuda grass on our place and it is spreading very rapidly. It is mostly on sub-irrigated land. Will salt kill it, and how should it be applied? How long will it take the soil to be productive after being salted? Will distillate kill it and how much will be required?—S., Turlock.

There is no chemical known to us which will kill weeds which will not also kill useful plants of the same botanical group. There are chemicals, like the salts of copper, iron, arsenic, etc., which when sprayed on the foliage will kill broad-leaved plants, and not kill narrow-leaved plants—like grains and grasses. The successful use of these discriminating plant-killers depends upon not getting enough into the soil to "kill the land," but still enough applied to kill the leaves and root-crown perhaps—the lower roots being killed by cutting them off from their aerial parts. Bermuda grass belongs to the group which is not seriously injured by application of dilute chemicals to its narrow leaves, therefore to kill it with chemical salts, enough must be applied to leave a residuum in the soil which will kill it for other plants also. How long the soil will remain sterile depends upon the behavior of the particular chemical in the presence of water. For example, arsenic has little liking for water, and will refuse to be washed out indefinitely, while common salt and alkali are readily soluble in water and the length of time required to wash them out depends directly upon how much fresh water is applied on the surface, how fast the soil will allow it to pass through and out below and how free the drainage is to carry it away. If the water below your sub-irrigated land is moving it might be practicable to force the dissolved salt down into its current and freshen the land in a year or two, if you applied fresh water enough to the surface. If the water below is not moving, the salt with which you kill Bermuda will move down by rainfall and rise again by surface evaporation and may remain strong enough to kill the land for many years. Bermuda will stand more salt and alkali than most other plants—therefore it will die hard and the poison required to kill it will be so great that other plants cannot live for a long time. In fact, conditions will return to toleration by Bermuda sooner than toleration by other plants and your old enemy may be the first plant you see when the soil comes to life again.

There are other chemicals which will kill plants and yet not kill the soil. They are carbon bisulphide, gasoline, etc., which resort to volatilization, but the cost of such treatment is great when they are used in sufficient quantities. Distillate is only partly volatile and leaves a residuum which will be hostile to plant growth for some time.

Eucalyptus Seedlings.

To the Editor: I would like some instructions about planting eucalyptus seed. Those around here who planted last year failed to get it to grow? —H. T. B., Orland.

If the seed is fresh and viable it will give seedlings readily by the usual methods of handling small seed. It is handiest in growing small lots to use seed boxes about four inches deep filled with sandy loam not disposed to surface cracking. Shake down the soil, removing lumps, etc., which come to the surface, scatter the seed thinly, press down the soil gently with a flat block and cover the seed with a light sifting of sand; assembld the boxes under lath frames or a brush cover, giving about half shade. Water frequently with a fine sprinkle and keep the soil always moist but not too wet. Seedlings from eight to twelve inches high transplant well either to permanent place, if protected with several small stakes to prevent trampling, or may be reset in boxes to get more size before planting out.

Alfalfa and Bermuda.

To the Editor: In several checks where I have recently sown alfalfa, there is a strip two or three hundred feet long, about eight feet wide, along the ditch where Bermuda grass is coming up with the alfalfa. Will the alfalfa choke it out, or can I plant something there that can be cultivated and kill it that way and sow it to alfalfa later? Will alfalfa seed germinate by the side of the older growth? I plowed the Bermuda grass under dry last fall.—F. J. H., Escalon.

Alfalfa will make a better fight with Bermuda than any other useful plant we know of, if it has a fair chance, but it has a poor chance when it is just starting on a bed of Bermuda roots. We should weed-cut that strip three or four inches deep once a week all summer and never let anything green come to the light on it. Then resow the strip next October with alfalfa and it will have a fair chance. Any cultivated crop you grow will simply give the Bermuda a better chance to survive, for your cultivation cannot be clean enough to get in the rows of other plants. Old alfalfa plants are frequently surrounded by seedlings, but they have a hard time to hang on usually, but there will be no trouble in resowing such a strip as you describe alongside older plants.

Will It Pay to Kill Aphides?

To the Editor: I send some aphis. Our vegetables, potatoes, etc., are full of them. What can we do to get rid of them?—H., Turlock.

Your question is more economic than entomological. Aphis can be easily killed with soap tobacco sprays if you spray with force and hit them with the dope, and they can be kept dead if you spray often enough to catch up with the reproduction of the few which you always will not hit by the preceding treatment. The question then becomes thus: Will the crop be worth the cost of saving it? In the case of field crops it seldom will be. Fortunately the case is rarely as hopeless as this, for natural agencies may take a hand in the game. Aphis-eating insects may come to the relief of the grower; a hot wind may destroy the pests, or they may get some sort of an aphis-flu which will cause them to disappear. The comfort in the case of a crop of low money value is that it is very seldom that a lousy situation ends as badly as it begins. Such was the case with the great war and it may be the same with your spuds.

A Man and Forty Acres.

To the Editor: Can a 40-acre irrigated orchard be kept in good condition by one man and a team and a spring-tooth harrow? The soil is a heavy loam with several acres of black adobe in patches. —E. S., Pasadena.

A good man and a good team can do the soil work of forty acres of orchard, but they need a heavier battery of implements if they are expected to worry the soil much, get much water into it and keep it in. If the idea is simply to run the water over the land, scratch the irritation and roll the clods over, your outfit can do that easily.

What is a Rider?

To the Editor: Some time ago it was stated in the papers that a prohibition measure was placed as a rider on the agricultural bill in Congress. What is a "rider," and what is the "agricultural bill" for?—F. T., Lincoln.

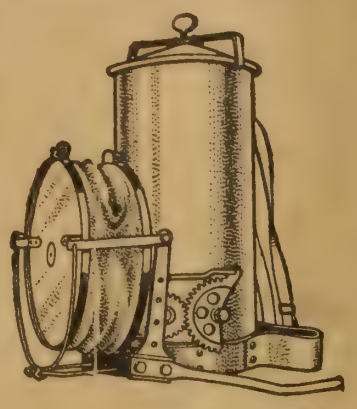
A "rider" is a section or clause inserted in a bill for a different purpose which has the right of way, or other advantage toward passing, for the sake of getting the purpose of the rider enacted. The "agricultural bill" is a proposed law providing instructions and appropriations for the agricultural work of the government.

California Weather Record.

The following rainfall and temperature record is furnished the Pacific Rural Press by the United States Department of Agriculture Weather Bureau at San Francisco for the week ending at 5 p. m. April 29, 1919.

Stations	Rainfall: Past Week	Rainfall: Seasonal To Date	Rainfall: Normal To Date	Temperature: Highest	Temperature: Lowest
Eureka	0	38.12	42.34	56	42
Red Bluff	0	26.07	23.70	86	46
Sacramento	0	17.17	18.92	86	46
San Francisco	0	23.64	21.20	67	48
San Jose	0	18.82	16.01	74	36
Fresno	06	6.80	8.91	88	48
San Luis Obispo	08	17.89	19.46	70	44
Los Angeles	16	8.38	15.06	72	48
San Diego	10	8.29	9.54	66	46
Winnemucca	40	6.46	6.50	82	36
Reno	14	8.43	9.46	80	36
Tonopah	08	4.83	8.28	72	34

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CHICO, CALIFORNIA, U. S. A.

The "Long" System of Pruning

(Written for Pacific Rural Press.)

In quite a number of orchards lately we have been shown instances of "long" pruning—on apricots and peaches particularly, which the owner claimed was a try-out of the system expounded this winter by members of the pomological department of the department of the University of California. In many instances this trial was most unfair and looked either like an enedeavor on the part of the demonstrator to discredit the system in order to uphold his own pre-expressed opinion or else a misconception of the principles clearly outlined in the field by the scientists.

A Review of Demonstrations.

Let us go back to the beginning and review the first demonstrations—of building young deciduous trees up to the fourth year. Most commercial growers we have met who have attended the demonstration at he Davis Experimental Farm are convinced of the results obtained on all trees by the new method, with the exception of young pear trees. We want to see more of the application of the principal expounded and perhaps some modification of it before we are convinced on the pear. But in the other trees most growers were much impressed and will be doing a lot of thinking now as to whom to entrust the handling of their baby trees next month and next winter. All those men whom the writer has seen who are applying this new method on their young trees seem to be following the University methods closely and doing excellent work, which will undoubtedly speak for itself. Usually they have the idea of eliminating the long centers from pears, perhaps to a strong lateral the second year—after some spurs have formed at perhaps four years old and keeping the trees strong, open and symmetical that way. And this looks like sound judgment. But when it comes to long pruning on old bearing trees as being tried out by some men —my hat!

"Horrible Examples."

In three orchards the writer was shown from two to five or six peach trees left as a demonstration. They were practically unpruned. Everything was left on. In others that had been thinned, twice as much fruit wood was left in, as common sense dictates should be left—to any man who knows the game. In apricots the same thing is happening, though this year little suffering would be shown because of the short crop.

What We Really Learned.

We feel sure that this method of long pruning on peaches and apricots and other fruit is coming to stay and the sooner we give the method a fair trial and perhaps modify its principles to our own locality and conditions, the better. We learned that this long system meant: (1) Keeping very little more fruiting wood than formerly but leaving it unclipped. In this way it hangs down within easy reach for picking, thus reducing the cost of harvesting. (2) The fruit is not inclined to set so thick on a long twig as a clipped one, which reduces cost of thinning. (3) It just about cuts the cost of pruning in half. (4) There is less drain on the vitality of the tree which will thus mature a larger quantity of merchantable fruit. (5) The tree can be kept down to an easily handled height and carry fruit inside and out, clear to the ground, and the trunks and large branches are better nourished by the distribution of fruit wood. That is what we learned by keeping the tree thinned and open.

Experience Teaches.

Now every green fruit man knows about what his trees can do and how much fruit they can carry without the quality suffering or the trees showing distress in unirrigated sections. He knows better than any stranger can tell him and he cuts his trees accordingly. Perhaps he relieves his apricots of all heavy superfluous wood and water sprouts right after the crop is off, and then if it is very dry and the buds are still weak in the fall, he "hits" them a little harder in the winter than he otherwise would. The new system of pruning does not mean that he has to jettison his judgment. Quite the reverse. He has to exercise that judgment as much as or more than ever, and he will know better after a season about what average to strike. Any fruit grower knows that to leave all the wood on an apricot or peach tree means disaster. The tree overbears and generally has an excessive amount of small fruit of small value. Its vitality is impaired, which results in spasmodic, instead of regular and even crops. And finally it bears almost the entire crop on the outside of the tree ,a large portion of it out of reach. If a peach-tree it will fall asunder sooner or later.

System Entitled to Fair Trial.

Let us be reasonable and give this system a fair unbiased trial. In this way we are bound to learn—can't help it. Where we have four or five shoots in bunch, let us thin them down to one and use horse sense in the matter. It is not too late to do this now and the few trees that I have mentioned will not take long to thin out, and, if possible, thin down to a shoot that will hang down under its weight of fruit without breaking—there are plenty to chose from.

THE GOOSEBERRY FRUIT-FLY.

Anyone who was troubled in his gooseberry patch last year with the gooseberry or currant maggot, might try digging around the bushes now, especially if he has a flock of chickens to follow him around. It is pretty late, for the flies begin to emerge about the middle of May. Anyway, the bushes have to be dug around, and it won't hurt to enlist the aid of the chickens to lower the infestation. There is only one brood a year, but it is very difficult to control.

SERIOUS DAMAGE FROM THRIPS LARVAE

Thrips larvae have done a lot of damage the last week and are still at it (April 28). The writer counted 17 on one cherry leaf and has looked at many prune leaves showing eight or ten. The prune trees affected have a naked, unthrifty appearance, the young leaves are blackened at the edges and the small leaves are taken. They are brown and dead. The young leaf buds are being destroyed wholesale—buds that would be fruit buds next year. They are not apparently going to affect this year's crop beyond scarring the fruit, but they are going to affect next year's crop where bad infestations have appeared. Men who have been spraying against them will be ahead of the game though so many started only when a lot of damage was apparent. We have seen long twigs with every bud gone except a bunch of strong ones at the end. We have seen numbers of young grafts entirely killed from the same cause this last week. The little shoots just started and were then killed and there they are brown and dead—a year lost. We have noticed young apple trees with the buds severely injured, though these will come out later—the prunes won't. We have noticed peach leaves with their leaves folded up so tight that it is a job to open them, and buds injured from the same cause. Peaches can stand it but prunes can't. We have seen a lot of cherries lately with the stems scarred and the leaves perforated like a sieve. Those cherries will drop off.

So far as prunes are concerned the larvae spraying of a year like this is more important than for the adults. In our issue of April 19 we had and article, "Who is Going to Spray for Thrips Larvae?" From the appearance of the orchards as we drive along through the orchard sections, very few elected to do it.

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Los Angeles, California

Men who are seeking new ground for planting out apricots and almonds are "wising up." They are now beginning to ask, "Will they bear regularly?" in stead of judging by the size of the tree that good growth is made. There is plenty of ground in thermal belts suitable for these trees without going to stronger ground where temperatures are unsuitable.

Seasonal Reminders to Orchardists

(Written for Pacific Rural Press.)

That Newly Planted Orchard.

Is worth taking care of—otherwise you would not have taken the pains to set it out. Have you whitewashed the young tender trees, or provided them with protectors? Because if you have not you will lose some of them sooner or later, and all may become injured on the south and west sides by sunburn. It is not only the direct burning that is injurious but the refraction of burning heat from the soil that does such a lot of damage, within a foot of the ground. After the tender young bark is cooked brown clear through to the wood, Mr. Flatheaded borer gets in and often finishes the tree up. Then the new man breaks it off, finds four or five flat-headed borers and sometimes think they came to him from the nursery. Sometimes a city man thinks he has discovered a new bug and sends it to the University as a curiosity."

Getting Ready for Spring.

Now is a good time to get those picking ladders out to nail on new braces, tighten up bolts or replace steps. Nobody can pick much fruit or reach far from a rickety ladder—he is too busy guessing. If you are buying, it pays to get one that will stand up "solid," and one that can be placed anywhere in the tree in the quickest time and with the least possible effort and adjustment. But whatever you have, take up the slack now, and save time and expense and possible accident. Remember all the pickers are not kids who can balance themselves on an eyelash. And to nail too many chunks of one-by-three on a broken side makes the thing too heavy to handle without playing out the youthful picker.

Don't Rub Off Those Shoots.

All down the young tree, leaving only two or three at the top, where they are not needed, just pinch the shoot back while it is tender and succulent, leaving two or three leaves at the base to protect the tree and maybe give you a few fruits later. Don't rub off anything now; just pinch, but don't pinch the leaders you want to build the framework of your tree from.

Nobody Will Forget.

To give that arsenical and scab spray to apples and pears at the proper time, with the strong demand and remunerative prices now being offered for sound fruit, we cannot allow much to go to the by-product factory. The new law says wormy fruit can not be marketed except at such factory, and the law will doubtless be scrupulously carried out.

The Great Tractor Demonstration.

At Sacramento, from May 6-11 will attract hundreds and thousands of orchardists who are prospective buyers. Free admission, free camping ground, free auto parking. Bring along the wife—and the boy—and the hired man, if you can spare him. All kinds of tractors and tools.

The Grape Leaf Hopper.

Vineyardists who "had them bad" last year may want to spray against the grape-leaf hopper this year. Use one pint of Black Leaf 40 and 24 pounds of Atomic Sulphur to the tank (200 gallons), or four pounds of fish-oil soap may be used instead of the atomic sulphur—though the latter is best because of its usefulness with the mildew. About the last week in May is the time to spray or before the little fellows can fly. After this, control is a pretty hopeless proposition. Not less than 150 pounds pump pressure should be used for a good clean job.

Don't Mix Soap and Acid Lead Arsenate.

The soap in miscible oil in conjunction with acid lead arsenate leads the latter to break down and burn foliage. Only neutral lead should be used in such a mixture.

CARE IN CHERRY PICKING.

One of the greatest sources of loss and annoyance to the grower is the rough way in which inexperienced or careless pickers tear off whole spurs—or rub them off, or even deliberately break them. It is practically impossible to avoid some loss, especially in very large trees, when the setting of ladders among the branches always knocks off a few. But the field boss should explain to the assembled pickers at the start how to pick with the least possible injury. He should show the long naked areas on bearing branches that once had spurs on but will never have any more unless they are cut back perhaps for entirely new wood.

When a fruit spur is knocked off of a bearing branch it is gone. It will never be reproduced. Knock off half a dozen or more in a row and you will have reduced the bearing area by a foot or two of productive wood. When reaching up with the crooked stick to pull down a bough a very little care will reduce damage to those little spurs that bring the money back. It is hard to get pickers to do just as you want but a word in season can be very helpful without upsetting the gang.

ROEDING'S FRUIT GROWERS' GUIDE.

George C. Roeding of Fresno, the well-known fruit growers and nurseryman, has just published his Fruit Growers' Guide—a book of 100 pages. It is elegantly printed and teaches largely by sight, because about half its space is filled with beautiful engravings illustrating all California fruits and the handling of them in commercial production and preparation for the market. Mr. Roeding has had wider personal experience in doing the things he describedes than have any other of our fruit-book makers, and he has seen more of the experience of others than practical fruit growers usually compass. In this way he becomes a qualified teacher of most concrete things and presents his lessons through most direct pictorial demonstrations with text enough to point out the features which he considers essential to attaining the best results. The publication can be had from the Fancher Creek Nurseries, Fresno, at $1 per copy.

THE APPLE SITUATION—HIGH PRICES

There is every prospect for a heavy crop of apples in the Watsonville section. Everybody has been taking good care of his orchard this year in spraying pruning and general clean-up. The weather, as in other sections, has deferred plowing on the heavier land, but this is a detail and so far no one is suffering.

Some good sales are recorded. The crop of the G. W. Bird apple orchard in the Railroad District (40 acres) has been sold for a lump sum of $12,000 on the trees. The trees were in fine bloom when we were here. Mr. Bird, under the contract we understand, undertakes all spraying and cultural operations until the crop is ready to harvest, but purchaser gathers and packs the fruit. J. B. Holohan in Green Valley has 100 acres of apples full bearing and 20 acres coming into bearing. This crop has been sold for $25,000. The crop from 60 acres of full bearing apples belonging to Mrs. Mary Menasco at Correlitos has been sold for $10,000. The usual thing in buying a crop on the trees at blooming time or later is to pay down one-half of the purchase price. The above prices are an indication of great prosperity for the coming season at Watsonville. And the eagerness of packers to do business in competition gives the neighborhood an atmosphere of invigorating activity.



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Berkeley, Cal.

REMINDERS

Get that poison bait out for the cutworms before they do too much damage. A bit of baling rope tied round a tree with tree-tanglefoot smeared on it will be found useful in isolated cases.

A good suggestion comes from George C. Roeding, the Fresno Nurseryman. It is to use strips torn from the leaves of the California Fan Palm for tying up vines or canes to wire or other support. It is very strong and durable and does not chafe the tender growth. The leaves really ought to be cut two weeks before using in order to cure them by exposure, which renders them tough.

By keeping at it with the weed cutter every two weeks and not allowing it to show its nose through the soil, will get rid of your morning glory in one year. But let it set a few green leaves once or twice and it will probably take two growing seasons to overcome. The same applies to Johnson grass. The continual use of the weed cutter will pack the ground beneath so that you may not have over a couple of inches (or less) of mulch left, but that need not bother. If there is only a patch or two of it here and there, tie some rags on the trees or vines to mark the place so as not to have to go over the whole ground unless necessary. Hedge nettle, narrow-leafed milk weed (or Jacob's ladder) can be eradicated by the above method if it is faithfully carried out. Remember—the little shoots must be cut off each time before they see light—while still under ground.

The Thinning of Peaches

(Written for Pacific Rural Press.)

Many years ago the writer was with a friend who was instructing the boss of a gang of Japanese pruners. He said, "You are leaving too much fruit wood in; the trees won't carry it. Thin out till you don't think you have very much left and then you will probably have twice too much." This man is a fruit-class fruit man and stays with his men till they get down to work on his own prescribed system—then he leaves them to it. And his orchards produce maximum crops of the first quality.

This is by way of introducing the subject of peach thinning. The above mentioned grower religiously thins peaches and apples (except White Astrachans) and has practically no waste. The thinning of the fruit is always an important matter, but how much more so this year of record prices. With regard to how far the fruit should be thinned, it depends so much on the size and vigor of the tree, the amount of moisture available, the strength and fertility of the soil. On strong bottom land a fairly safe thinning is to leave the peaches about a hand's breadth apart. On thin hill ground or bench land more space might be given between fruits. But if you examine the trees on the ground this year after thinning and then look at what are left on the tree, you may think you have been overdoing it, whereas you will probably have left too many on! It is generally found that the set of peaches on the long fruit wood system requires less manipulation in thinning than when the wood has been shortened, especially Muir's. They do not cluster so much except at the terminal, where there is always a bunch. Thinning can be started as soon as you know what peaches are going to stay set. This is an exceptional year. For the promise of a goodly yield is apparently assured, yet record prices are set. 1919 is the year of opportunity. There will be lean years in the future as there have been in the past and this year will help to even things up. As Jupiter replied to the praying waggoner whose wheels were mired, "It's no use you're bothering Olympia with your players. Put your own shoulder to the wheel and Ill start the team. The gods only help those who help themselves. Get in there and scratch gravel and cut out the hard-luck story." It is reported by a man named Aesop, who claimed he was there at the time, that the man did as he was bid and the wagon rolled easily out onto hard ground. And we know that Jupiter's advice is sound because we have learned it by ages of experience.

ORCHARD AND VINEYARD IN TULARE COUNTY.

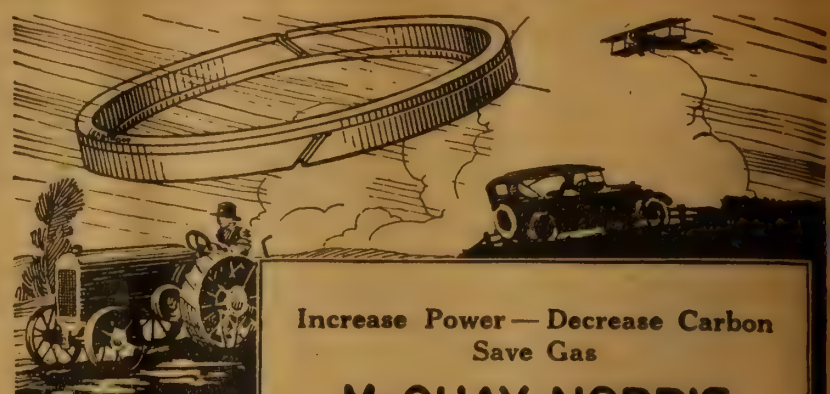
"Crop conditions in this part of Tulare County are favorable for a record-breaking crop," says Alfred Gunnarson, a director of the Farm Bureau who lives near Kingsburg on the Dinuba road. "Peaches are heavily set and thinning has already commenced. There will be a larger crop of prunes all over the county. While apricots are good in many places, there are some orchards that will have a very small crop. Apricots and peaches are being irrigated now (April 28); a time in June. At present indications point to a large crop of Muscat, Malaga and seedless grapes, so far as it is possible to judge before they have bloomed and set as there might be unfavorable weather during this period. Considerable sulphuring is being carried on at this time, especially on seedless in order to control the mildew. This early sulphuring seems to be very important. One of our most successful ways of applying the sulphur is with a machine drawn by two horses, which sulphurs two rows of vines at the time and can be set for one or two wires for seedless sulphuring."

CROP CONDITIONS IN MADERA COUNTY.

In reply to our enquiry regarding special conditions in Madera County, George Marchbank said: "I estimate peaches at 85 per cent of a crop, almonds 65 per cent, apricots 55 per cent, plums 70 per cent, and prunes 85 per cent. The prospect for grapes, figs and olives is very good at the present time, and Muscats show good "forms." Peach thinning will begin about the 7th of May. Vineyardists are busy sulphuring now (April 28).

VITICULTURAL COMMISSIONERS OFFER HELP.

The State Board of Viticultural Commissioners extend its good offices to vineyardists in an effort to effect sales of wine grapes and culls of table grapes for the coming season by submitting offers of individual growers to some three hundred purchasers and handlers of California grapes in all sections of the U. S. and Canada. To this end men will be sent to personally interview each grower, and report to the Secretary of the Board the names of all who desire to sell their tonnage.



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MISCIBLE OIL NO. 2 FOR THRIPS

This is a high gravity oil with the greatest penetration. It kills thrips in all stages—eggs, larvae, and adult. It saves your crop from the ravishing of this pest. And properly applied it will not injure the tenderest buds and will not spot fruit or leaves.

Our expert entomologist, Paul R. Jones, is a thrips specialist with years of government and commercial experience. He is in the field to help you with your spray problems. His services are valuable—and free! Write him.

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UNIVERSITY FARM PICNIC THOROUGHLY ENJOYED.

The Eleventh Annual University Farm Picnic took place at Davis last Saturday (April 26), at which time there was the usual large attendance, though less than last year, perhaps. The demonstration exhibits were very complete, many of them constituting complete lectures by just following them through in sequence. In the seed house there was a fine exhibit of field crops and a demonstration was given of the dressing of seed for the control of smut. Also a demonstration of separating barley from seed wheat.

Horticulture.

An exhibit that attracted large interest was a demonstration of the use of the spray gun instead of the long rod. Bean's newest gun and the Hardie were used and the pressure was kept at about 225 pounds. The effectiveness of the mist in tall trees produced by the guns was clearly shown.

In the Horticultural Building good illustrations of pruning were demonstrated by draft and by the exhibition of trees and limbs actually pruned. Also results were outlined of cross pollination in almonds, pears, plums and prunes. Crown gall and curled leaf in peaches (which latter seems extra virulent this year) were shown, together with the method of avoiding damage from them. One very timely and striking exhibit was a branch of apricot badly infected with brown rot. Because in our travels round we have had very positive opinions expressed that the injury was due to (1) frost, (2) rain, (3) injury from spraying material, (4) sour sap, (5) injudicious pruning, (6) scale. And—

"A man convinced against his will
Is of the same opinion still."

The new disinfectant (cyanide of mercury) for pear blight and method of using it were shown; also all kinds of spraying salts, infusions and emulsions together with pruning saws, shears and grafting tools.

Root stocks of many varieties were shown: preserved, so that the color and texture of the bark might be apparent, also many photographs of actual results obtained by different conditions of usage. Exhibits of varying quantities of sulphur and a demonstration of sulphuring machines was given in the same building.

Power and Implements.

In the shops a very complete exhibit of farm machinery of all kinds was set forth in such a manner as to show the user very clearly the inward workings of his machine and how to remedy troubles. These included tractors, stationery engines and pumps as well as plows, disks, binders and all the various tools that go to make up the farmer's outfit in any line.

The veterinary science exhibit of instruments, apparatus, medicaments and other paraphenalia was also very complete and well attended. Models and plans of farm buildings and silos that have been perfected by science and of which blue prints can be obtained were shown in sufficiently large size to be demonstrated without explanation, because the smallest details were shown.

A great many parties visited the pruning demonstration tracts, though little can really be learned from them unless a demonstrator is along to explain. Because it must be remembered that they are experimental and not by any means all demonstrations of perfections—many "horrible examples" have been left, but not for emulation.

The usual parade and the usual splendid weather was ours and we departed, thankful for the fine system of highways that now connect us with what must become the Mecca of all earnest sons of the soil in California.

Some of the handsomer waists are made of double Georgette crepe—two thicknesses of crepe being used of contrasting color.

NASH



QUICK AND ECONOMICAL TRANSPORTATION

ON the farm the Nash Quad, which which drives and brakes on all four wheels, is especially suitable. With practically double the traction efficiency of ordinary trucks, it hauls its load over plowed fields and through soft stubble without difficulty.

In hauling grain the Quad with proper trailer equipment cuts the number of trips necessary in half and so saves the farmer both time and labor.

We will exhibit at the Tractor Demonstration, Sacramento, May 6-11.

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NASH TRUCKS

One-Ton Chassis, $1875 Two-Ton Chassis, $2440 Nash Quad Chassis, $3600

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OUR
1919 SEED CATALOG
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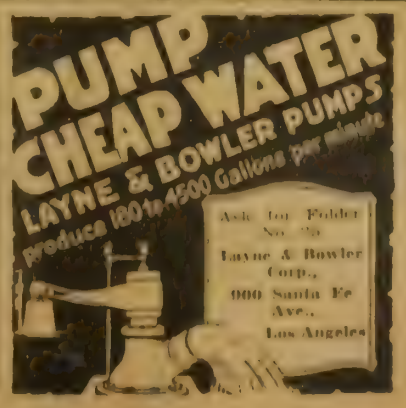
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NEW YORK BELTING & PACKING CO.
519 Mission Street, San Francisco.



Here and There in the Fruit Business

[Written for Pacific Rural Press.]

The Woodland Almond Crop.

The almond crop at Woodland will apparently yield 100 per cent this year. George Atterbury, who has a large acreage northwest of Woodland, will have the largest crop he ever had. He irrigates so that the trees are never suffering from lack of moisture and are therefore always in vigorous condition.

Canned Cured Prunes.

The California canned prune has "caught on" wherever it has been sent. The cooking it receives at the Prune and Apricot Growers' Canning factory sends it to the consumer's table ready to eat and in the most perfect condition. With the fruit in good shape the possibilities in the South American markets and the Orient, especially tropical sections, should be greatly increased. For the fruit can be kept thus indefinitely, and is ready for the table without the trouble, expense and inconvenience of cooking.

Record Plantings in Stanislaus.

"More trees have been planted this year in Stanislaus county than any year in its history," says Horticultural Commissioner A. L. Rutherford. The chief planting has taken place around Modesto, Waterford, and Oakdale irrigation districts and in the Patterson district. Almonds, figs, peaches and apricots were the chief varieties of fruit set out.

Orchard Piped for Spraying.

Mrs. Cochran of Healdsburg, who has some 135 acres in prunes on the "island" between Dry Creek and the Russian River, has her orchard piped for spraying though it was not necessary to use it this spring. We noticed in the old orchard, which is 30 years old, that the branches were supported by wires. Instead of wiring each branch to its opposite, the wires are all fastened to a central ring, so that if a wire breaks, only one branch is released. There is a fine irrigation well on the place with electri power, which is used for irrigating truck land along Dry Creek. The quality of the prunes raised here is unsurpassed.

Fall Irrigation Pays.

"Fruit sets better in the interior valleys anyway where late fall irrigation is practised," says George H. Hecke, State Commissioner of Horticulture. If the leaves drop too early, trees do not enter the winter in vigorous enough condition to set a crop of fruit. Mr. Hecke, who is a fruit grower on an extensive scale at Woodland in Yolo county, is now giving his trees the second irrigation (April 25), the first one having been given nearly two months ago. The trees were irrigated after the crop was off generally, though last year's rain did the trick for 1918.

Old Apricot Trees Unpruned.

We recently went into a 25-year-old apricot orchard near Hollister belonging to the Boynton Bros. It was claimed that this orchard has not been pruned for years though the trees were started well. There is a very light crop on it this year for such large trees, whose size may be imagined from the fact that some of them bore as high as 36 boxes to the tree last year. A seven-year-old orchard belonging to the same growers are in fine shape to bear large crops.

Installing Dehydrater for Prunes, Etc.

Fred Ewer, a wine and grape-grower of Rutherford, will install a Casey Dehydrating Plant for the purpose of curing prunes and trying it out on wine grapes. A great deal of wine of good quality was made up from dehydrated grapes last year and provision is being made for a much larger shipping this year. Mr. Ewer's experiments will be watched with interest by the vineyardists of Napa county, whose wine grape industry exceeds all others in production.

Twelve Western States

Have promised to send representatives to the great Fruit Growers' and Farm Convention at Riverside to be held May 26-31. These states want to league themselves with us for the protection of plant industry in every way and to adopt uniform regulations to that end.

Strawberry Acreage and Demand.

As we mentioned last week the strawberry acreage in the United States is said to have declined 30 per cent from last year. There is also an exceptionally heavy demand from canners this year in California, not only for strawberries, but for bush berries as well, which will result in high prices throughout. California's acreage for the year is estimated at 4,000 acres, and Oregon's at 445 acres (as compared with 3,184 acres in 1916!). New Jersey's strawberry acreage has fallen from 5,015 acres in 1916 to 24 acres for 1919. The total acreage in strawberries in the United States was 107,000 in 1917; 83,139 acres in 1918, and is only 58,159 in this present year of grace.

Standardized Apples.

Two Australian States, Tasmania and Victoria, have adopted standard grades in apples. Both of these states are heavy suppliers of the New South Wales markets. The latter state has not yet adopted the standard, but unless they want to sell their fruit at the C grade their markets will be entirely captured by their progressive brethren.

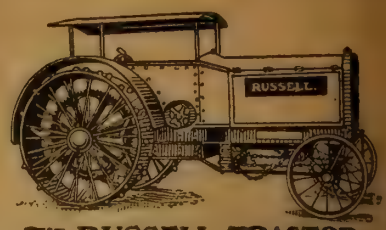
The Canning Industry "A-boiling."

The Pacific Coast canning industry is sailing along on the frothing current of prosperity, created by a deluge of orders from all parts. This great industry now ranks third in the number of people employed in producing supplies. It is estimated that 10,000 acres of additional fruit and vegetable land will be planted this year for the canneries.

It is said that an oversupply of canned fruits and vegetables is not possible for a number of years. California's canning, curing, drying, preserving, pickling and by-product establishments are making us famous the world over.

Erosion and Water Supply.

Dr. M. H. Simons of St. Helena (Rancho Manzanita) says that the applied science of forestry should go hand in hand with instruction in land improvement. He instanced the erosion that has taken place in his own vicinity by denuding the steep hills of all vegetation and even where unplowed, the soil is washed off clear down to clay. Springs have dried up and percolation, which would be beneficial to lower lands, has ceased the water running away on the surface.



THE RUSSELL TRACTOR

BUILT IN ALL SIZES



THE RUSSELL THRESHER

BUILT IN ALL SIZES

RUSSELL ENGINES BOILERS SAW MILLS THRESHERS TRACTORS

BEAN AND PEA THRESHERS

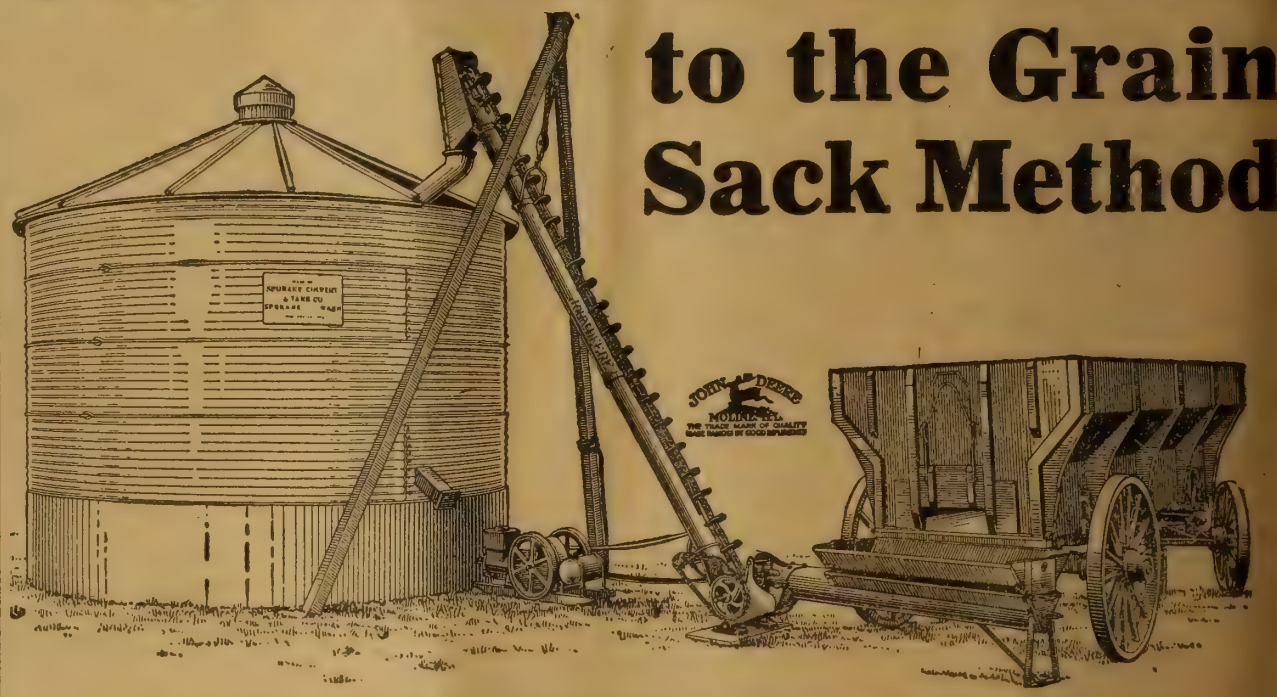
— CLOVER HULLERS —

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SAN JOSE, CAL.

You Will Never Go Back to the Grain Sack Method



No matter how low the cost of sacks may be, the bulk method of handling grain will always be more practical, more effective and more economical than the sack method—especially when you use the

JOHN DEERE
Tubular Steel Grain Elevator

You save the cost of sacks; you save the cost of sacking; you handle your grain in less time and with less help when you use the John Deere Elevator.

Fifteen to twenty bushels of grain per minute—that is the big capacity of the John Deere Elevator with a three to six-horse-power farm engine. You control the capacity by means of an adjustable gate in the hopper, to adapt the elevator to the power applied—a big advantage.

The hopper folds up out of the way. You drive up the load and lower the hopper—no backing of the load.

Built of steel almost entirely, there is no warping or decaying—the John Deere will last almost a lifetime. The elevator, built of 3/16-inch steel well tubing into which fit round flights, handles all kinds of small grain without wasting or cracking.

John Deere Tubular Steel Elevators are furnished in two types—the John Deere Portable, a twenty-three-foot mounted outfit, and the John Deere Pony, a seventeen-foot unmounted outfit. Choose the type that meets your needs.

Cross Sacks Off Your Yearly Expense List

Adopt the bulk handling method, get a John Deere Elevator and let it save you money for years to come. We have a booklet that tells all about John Deere Elevators. Write for it today. ASK FOR PACKAGE T-3. 25

JOHN DEERE, MOLINE, ILLINOIS

GET QUALITY AND SERVICE — JOHN DEERE DEALERS GIVE BOTH

Field and Garden Suggestions.

Auto Tax Would Pave Roads.

Mr. Eggleston, of the Iowa Highways Transport Committee, in speaking of their proposed State bond issue of 50 million dollars points out that these bonds could be retired in 20 years from the automobile tax alone, which would include not only the 50 million dollars principal, but about 37 million dollars besides to pay the interest and upkeep on roads. The point is also made by the National Automobile Chamber of Commerce that in Iowa the 365,000 automobiles traveling an average of 3,000 miles per year would save 10 million dollars a year if they saved 1 cent a mile by driving over paved highways rather than dirt roads.

Western Hay Markets.

Firm demand for hay seems general throughout all of the western markets, except in Texas, according to the market review of the U. S. Department of Agriculture. San Francisco received heavy shipments to fill government contracts. Los Angeles reports stocks light, but the market firmer. Fallon, Nevada, reports the market $2 higher than the week previous. Yuma, Arizona, had a firm hay market, but a dollar higher than the week previous. Ogden reports strong demand, and smaller stocks. Kansas City, Missouri, reports choice hay very scarce and the market showing a firmer tone.

Bean Vine Piler Saves Cost.

Sometimes in harvesting beans with a sled cutter an occasional vine remains uncut. Then the man who forks the vines into piles will strip all the pods from that vine, according to H. E. Harris, of Santa Barbara County. In 1916 Mr. Harris bought a "piler machine." This cuts all of the roots under two windrows at once, slightly under the ground, and draws the windrows together. Thus the piling men can do so much quicker work that Mr. Harris now charges himself less than half of the previous cost for piling, and only very slightly more for the windrowing and cutting.

U. S. Seeds to Reforest Nations.

Owing to devastating floods, China has begun an active policy of reforestation, and has asked for co-operation by the American Forestry Association. The plan is to start a system of seed exchange with the United States. The American Forestry Association has plans under way to assist in the reforestation of France, Belgium and Italy. Something like one and one-half million acres of forest was the toll of war in France alone, while Belgium lost practically all of its timber. Great Britain used one-half of her total forest area—about 450,000 acres—for war work.

Kern County Pima Cotton.

To the Editor: I congratulate your paper on your presentation of the cotton question. Yeu certainly gave the idea in a nutshell. I am very much interested in what you said about the Firestone Tire Co. About 130 acres of Pima Egyptian cotton are being planted here. No other varieties are being planted, for which I am thankful as it will give us a better market for our product. The Interstate experiment will be conducted at our place this year. There will be twenty-four varieties of cotton planted in a small plot of ground.—W. F. Gerrans, Shafter, Kern county.

Poisoned Grain for Prairie Dog Pests.

One million acres or six counties of Arizona will be sprinkled with carloads of poisoned grain this month, which is expected to kill 15,000,000 prairie dogs. These rodents annually destroy thousands of dollars' worth of crops and forage on the cattle ranges. Thousands are already being killed daily by state and federal workers, but as the pests propagate so rapidly, a concerted effort has been planned to exterminate them.

Squirrels Also to Bite the Dust.

The Biological Survey of the Department of Agriculture has prepared twenty tons of poisoned wheat for the destruction of squirrels in Nevada. The poisoned grain is being put up in four, ten, and fifty pound containers. The cost to farmers is five cents a pound, about one-third of the cost of preparing the poison. There is a big demand for it, and orders are coming in rapidly.

Farm Hands Returning to the Land.

Since the ending of the war, according to reports from the Department of Agriculture, the farm labor supply has increased to 83 per cent of the demand. The West is said to have a labor supply of 88 per cent of the demand. California leads with 91 per cent of the total number needed. These reports are most welcome to the wheat growers who forecast the greatest wheat crop in the world's history.

California grows 90 per cent of the onion, beet and carrot seed produced in the United States. It took nearly 35,000 acres of land to grow the $3,500,000 worth of vegetable seed last year.

Dependable

"Red Crown" is straight-distilled, all-refinery gasoline. Look for the Red Crown sign before you fill.

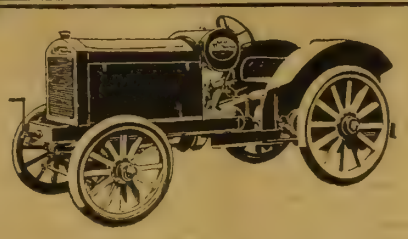
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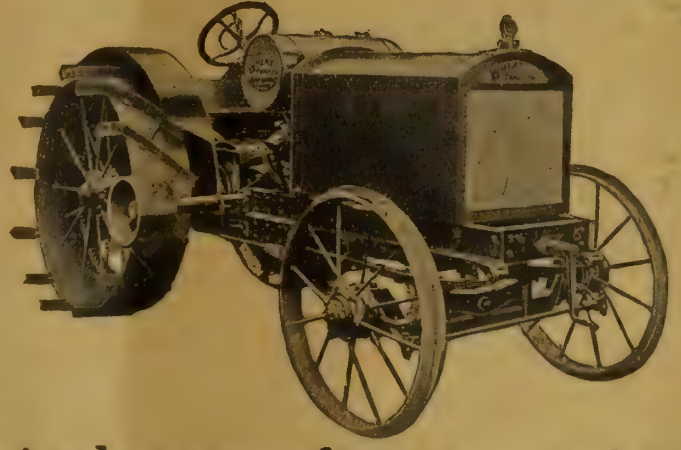
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WHEAT TRACTOR
WORLD'S STANDARD
Hession Tiller & Tractor Corporation Buffalo, N.Y. U.S.A.





The Wheat Tractor (operated by one man) pulls three plows with ease—in every kind of weather, through all kinds of soil.



You can haul your crops to market by changing in a few minutes to these rubber-tired road wheels. This is an EXCLUSIVE "Wheat" feature.

A practical tractor for practical farmers

The Wheat Tractor has earned its title "World's Standard"—just as truly as wheat has earned the right to be called the world's standard of food-stuffs. That is the reason why you should not invest your money in a tractor until you have seen and investigated the Wheat Tractor. The tractor every farmer will eventually want to own, is the one that:

1. Does all his field work perfectly, yet with the greatest possible saving of man-power (the "Wheat" is a one-man tractor.)
2. Furnishes ample power, easily applied, for for every stationary power need on the farm.
3. Handles his road work—**including the hauling of his crops to market.**
4. Stands up under the continuous hard usage that any tractor receives.

Because the Wheat Tractor is the **only** tractor that meets all these requirements you will want to know more about it for your own protection before you decide on your tractor. Write today for our new book, and the name of the nearest Wheat Tractor dealer.

Send for this free booklet before you buy your tractor.



Published by a farmer—for farmers, it contains a wealth of information about the things you should demand in the tractor you buy; includes complete description; price, and illustrations of the Wheat Tractor. For your own protection write for this today.

Hession Tiller & Tractor Corporation Buffalo, N. Y.

WHEAT TRACTOR

HESSION TILLER & TRACTOR CORPORATION, BUFFALO, N. Y., U. S. A.

HORTICULTURAL JOTTINGS.

The Tulare County Horticultural Commissioner is about to commence mapping the orange district for grey scale. About 6,000 acres come under the survey.

The first box of cherries shipped East from Vacaville was sold in Chicago for $50—nearly $5 a pound. The box came from the Edith A. Buck ranch and weighed eleven pounds.

Over 5,000 olive trees have been planted in Yuba county this season. Olives lead all other fruits for the year in this county, according to George W. Harvey, County Horticultural Commissioner.

D. B. Grap of Fowler has installed a "Sahara Dryer" to finish curing his raisins. The manufacturers of this dryer say that it will do the work and results will be watched with interest by his neighbors.

This is likely to be one of the worst "locust years" on record, according to the U. S. Department of Agriculture, but California is not named as one of the States where they are to appear in alarming numbers.

Last year Georgia shipped about 8,000 carloads of peaches. The estimate for this year is from 5,000 to 6,000 carloads. Texas shipped 1,000 carloads, which will probably reach a 10 per cent increase this year.

California oranges are in strong demand in European markets, it is reported, "Fancy" oranges selling overseas for $15 a box. Fancy Navels are selling as high as $7.15 a box in New York and California lemons at $4.50 a box.

The reason that the Muir peach has become the favorite of the freestones with dried peach men is because it is the only variety which the Peach Association finds peels perfectly. And the Association controls the patent of the peeler.

There are 22 mills in California engaged in the manufacture of redwood lumber, with a total capacity of about 500,000,000 feet a year. The total redwood shipments in 1918 amounted to about 390,000,000 feet, of which some 24,000,000 feet were shipped to foreign countries.

George D. Kellogg and Sons, who have been in the fruit packing and shipping business at Newcastle for nearly forty years, have sold out to the Producers' Fruit Co. Kellogg was one of the first men to urge standardization of fruit.

Higher prices and better quality of canned goods is predicted for the coming season by Frank E. Gorrell, Secretary of the National Canners' Association. The scarcity of labor and the high cost of material were named as the chief causes of increased prices together with the H. C. L. in general.

Two new black scale parasites brought from Australia by the State Commission of Horticulture are being bred at the State Insectory—the Coceophagus orientalis, which breeds on the half grown black scale, and the Aphycus lounsberyi, which also breeds on the young scale—easy names to remember.

Every tree is a potential wireless tower, according to General Squire, Chief Signaller U. S. A., who tells how the American Army in France with a string of tree-top stations, read messages from ships at sea and the principal European radio stations. Eucalyptus and California redwoods would serve the purpose admirably.

Prunes and almonds seem to be generally well set in the Chico district (Butte County) and "people look for it to be a great fruit year," says says John Guill, Jr., Vice-President of the Federal Land Bank. Chico is a live busines town in the midst of a highly productive land area. Its denizens know how to "make hay while the sun shines."

The Associated Raisin Company has reduced the price of its shares of stock from $100 to $1 a share, and increased the number of shares from 25,000 to 2,500,000. This is due to plans for expansion in 1919. The Company will increase its capital stock $1,350,000 in three years. This will make a total of paid-up capital of $2,500,000. The growers will be required to take a small percentage of payment for raisins in capital stock.

The majority of Sutter County peach growers, who happen to have their crops tied up on five and ten year contracts at prices ranging from $22.50 to $27 a ton, will have these prices raised to $35 a ton this year by agreement with the California Canners' League members. Midsummer clings, however, are excepted, the price on them to be $32.50 a ton. Growers who are not under contract are expected to make anything from $70 to $85 a ton.

A sulphuring hood for grapes has been devised by A. E. Way, Viticulturist of the University of California at Kearney, and W. A. McCutcheon, Assistant Farm Adviser of Fresno The apparatus was called forth by the damage sufiered from rain last September.

PLANT THE RIGHT SEED AT THE RIGHT TIME

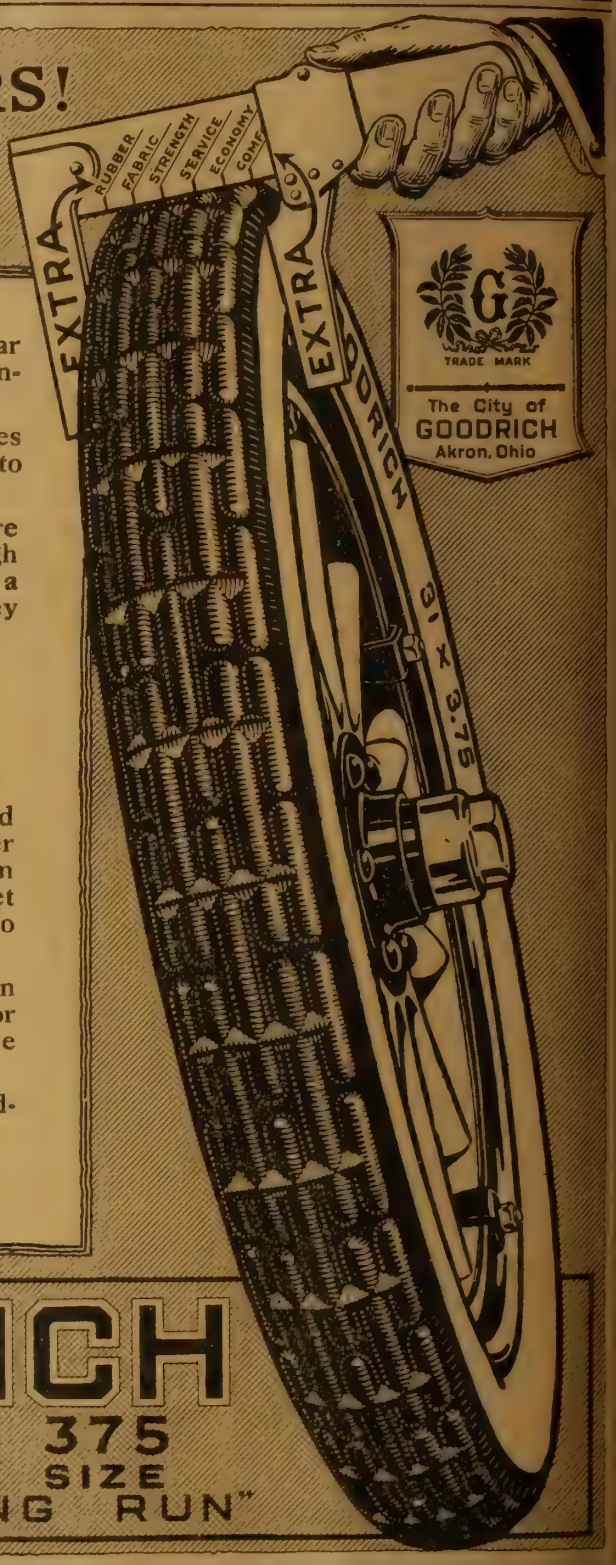
Plant the right variety for your purpose, whether you are growing for home or market, or whether you are growing for cattle, horses, hogs, goats, rabbits, or poultry.

See the 1919 Catalog of the

Aggeler & Musser Seed Co.

620 SO. SPRING ST., LOS ANGELES.

FORD CAR OWNERS!
You Need Goodrich "Three-Seventy-Fives"



BECAUSE they make more of your car to you and your work, in comfort, economy, and power to do.

"Three-Seventy-Fives"—their name comes from their size, 31 x 3¾ inches—are built to meet the peculiar needs of Ford cars.

Made bigger than ordinary size tires—more fabric and rubber in them, bulkier through and through, with *wider tread*—they lift a Ford car to a new field of efficiency. They lessen stress and strain on your car.

Though they are an inch larger in circumference, and a full 3¾ inches in cross section, they fit 30-inch Ford car rims. They come only with the five safety bar tread.

Their slightly higher cost is quickly wiped out in greater comfort, and in their longer life. Go to a Goodrich dealer and ask him for "Three-Seventy-Fives" and you will get an easier riding, finer looking car, able to do more and harder work for you.

For a higher power car, Goodrich Silvertown Cord Tires give more power to you. For a truck, a growing factor on the farm, use Goodrich Truck Tires.

Remember always, that a farm on a Goodrich basis is saving money in its tires.

Buy Goodrich Tires from a Dealer

GOODRICH
375 SIZE TIRES 375 SIZE
"BEST IN THE LONG RUN"

Jr. Monarch Presses

(Portable, Belt or Horse Power)
Are guaranteed to excel any other baler made.

JUNIOR MONARCH HAY PRESS CO.

SAN LEANDRO, CAL.



PAPER-MESH AND BURLAP BAGS.

(Written for Pacific Rural Press.)

Raisers of onions and similar crops, not including potatoes, may well take advantage of the three or four cents per bag lower cost for open-woven bags which are now in the market. For the past year or two a few onion shipments have been made in paper net bags of about ⅜ inch mesh. These are made in the East, and are highly satisfactory to dealers and shippers, being plenty strong and giving good ventilation. Dealers use them with great satisfaction for onions just taken out of cold storage. Such onions are very likely to sweat, and if stored or shipped in common tightly woven bags they are likely not to dry out, but may rot. With open woven bags they dry out very promptly and in fine shape. They also show up well on display. But the paper net bags prove quite unsatisfactory if they get wet either by rain or by the juice of products contained in them, which may become bruised.

We have in mind one large bag manufacturer of San Francisco who says he can quote and least a third cent lower price on open woven lightweight burlap bags, which will not be so badly affected by moisture, and are safe from bursting in ordinary shipments.

Most ordinary bags come from India, and require a 50 or 60 day journey on the water. About fifty million "Calcutta bags," as they are called, are available for the present season's crops in California. Between thirty and forty million of these are already bought and mostly on the way. Burlap bags additional to the 50,000,000 could hardly be made on orders given now, in time to deliver them before the California grain harvest is over, although perhaps they could be delivered in August. The market at this writing is quoted at 12c for ten-ounce grain bags, 11c for the 19½x34 twelve-ounce burlap bean bags 18 x 32 and 8¾c for ten-ounce burlap bean bags. It will be noted that the price of grain bags has gone up during the past month, the low price having been 10c. These quotations are in wholesale quantities for cash f. o. b. San Francisco.

CALIFORNIA WHEAT CONDITIONS.

California on April 1 had the best showing for a wheat crop since 1905, according to the report of J. E. Rickards, field agent of the U. S. Department of Agriculture. The acreage sown for 1919 was the largest in recent years, totalling 899,000 acres. For the past ten years about 90 per cent of the wheat sown has been harvested. Figuring the abandonment of 0 per cent of the present year's planting, its condition on April 1 would have indicated a yield of about 6,400,000 bushels. About 330,000 acres were sown in the Sacramento Valley. Its condition on April 1 was 91 per cent of normal. In the San Joaquin Valley about 234,000 acres were sown, and its condition was about 97 per cent. In the Coast counties, from Alameda to San Luis Obispo inclusive, about 108,000 acres showed a condition of 106 per cent. South of the Tehachapi about 80,000 acres showed a condition of 92 per cent. Since April 1 there has been a notable need for more moisture, and some reports have shown an alarming state of mind regarding the acreage likely to be abandoned.

LARGE BULK GRAIN STATIONS DESIRED.

Practically all of those who answered the advertisement of the Calco bulk grain 4-bin loading station which ran in the Pacific Rural Press a few weeks ago, requested information for a loading station of greater capacity; and a system of bins such as described in our issue of April 26th, has met considerable popularity. At least three of these seem sure to be built this season.

The ranges are now reported in excellent condition, as the late rains have done a world of good. The sod is thick set and the indications are that there will be plenty of hay. Even so, a large number of silos are being built by progressive stockmen.

Cleveland Tractor

More work, more days in the year

H. G. Saddoris of Fort Dodge, Iowa, reports that the use of his Cleveland Tractor made it possible for him to harvest his grain last Summer in half the time required when he used horses, and with less help. In fact, his 14-year-old boy operated the tractor, pulling one binder, and accomplished as much in the same time as could have been done by two horse-pulled binders, each pulled by a four-horse team.

This man, like thousands of other farmers, requires a tractor that will do a variety of farm work. A tractor—that is economical in operation

—that is built rugged enough to stand up under the strain of hard, gruelling work

—that is capable of doing the whole job from plowing to harvesting.

The Cleveland is built to supply practically all the power needed on the average farm. It is designed and built by practical men who know what a farm tractor must stand.

It is economical in its use of kerosene and oil—and is small enough to be used profitably on both *light* and *heavy* jobs.

And when it comes to the preparation of the seed bed—*plowing, harrowing, seeding* and *planting*, the Cleveland Tractor's track-laying construction enables it to go over soft, plowed ground that causes the ordinary machine to "wallow" and "labor". And, it does the work more efficiently than can be done with mules or horses. The power of the Cleveland is used to *pull the implement* not to "dig out" the tractor itself. Its broad traction surface and light weight per square inch enables the Cleveland to "step lightly," and so it *does not pack down the soil behind it.*

The Cleveland also will reap, bind, thresh, haul, drag dead weights, cut ensilage, fill silos, saw wood and do the scores of other jobs about the farm that require tractive and stationary power.

There's a great, expanding market for the Cleveland. Every day more and more farmers are discovering its real worth. Write for catalog.

The Cleveland Tractor Co.
19079 Euclid Ave. Cleveland, Ohio

Largest producer of tank-type tractors in the world



Mr. C. E. Everett of North Cambridge St., Orange, Calif., writes under date of March 17th, 1919:
"My Cleveland Tractor, bought in June, 1918, has given me every satisfaction. In my opinion it is the only tractor on the market suitable for orchard work, being easily handled, gets closer to the trees, without injury, than with horses. So far my upkeep expense is negligible, while the cost of operation is surprisingly low."
Send for "The Story of Cleveland Tractor Company," Illustrated. Free as long as our supply lasts.

"30 Minutes from Service"

SMITH BROTHERS
DISTRIBUTERS
PEERLESS - CLEVELAND TRACTOR - BRISCOE
1616-1624 S. FIGUEROA ST. - LOS ANGELES, CAL.

MOLINE GRAIN BINDER

Absolute dependability during rush of harvest season, plus service without delays or breakdowns makes Moline Grain Binders popular with every farmer who uses one. For over 50 years, Moline Grain Binders have been giving such service in all parts of the world.

Owners tell us without reservation or condition that Moline Grain Binders are positively dependable—that they are exceptionally light in draft, and that they do good clean work in all sorts and conditions of grain.

Moline Grain Binders give every owner the same dependable service.

There are sound reasons why they do—

Cutting apparatus is the heaviest and strongest made. Heavy guards do not bend or break when striking obstructions in a close cut.

All working parts are direct driven, the work is equally divided, no over strain on any part.

The knotter has few parts, is simple and easy to adjust—a sure tyer.

Triangular driving arm on binder attachment takes place of troublesome, power-wasting, complicated gears, shafts and sprockets.

Single lever controls the reel in all operations.

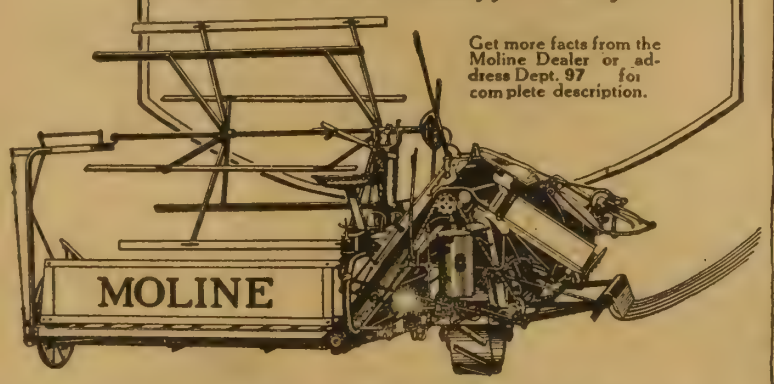
Main frame made of two pieces instead of four.

These are just a few of the many superior features of the Moline Grain Binder.

The more you expect from a binder the better a Moline Grain Binder will satisfy you. Ask any owner.

The Moline Line of Implements

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land similar to that which through many years has averaged from 20 to 45 bushels of wheat to the acre. Hundreds of cases are on record where in Western Canada a single crop has paid the cost of land and production. The Governments of the Dominion and Provinces of Manitoba, Saskatchewan and Alberta want the farmer to prosper, and extend every possible encouragement and help to

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Though Western Canada offers land at such low figures, the high prices of grain, cattle, sheep and hogs will remain.

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APRIL-MAY decidedly best months to plant for coming winter crops. If interested in Rhubard or Berries, write for special prices, J. B. WAGNER, Rhubarb and Berry Specialist, Pasadena, California.

The California Delta is Different

(Written for Pacific Rural Press by R. E. Hodges.)

In prehistoric times the Golden Gate was closed. Melted snows from the Sierras filled the San Joaquin and Sacramento Valleys with a mighty inland sea whose waves battered ceaselessly against its mountain-girt rims. Longing to fling itself again into the lap of its peaceful mother ocean, this inland sea with its searching beating waves and its surplus water piling up from season to season finally overflowed in a joyous cataract below the great gate post of Mt. Tamalpais. From that time on, it was only the work of centuries to tear out the narrow gash now known as the Golden Gate; and the great valleys were drained to the sea level. Through those centuries the snows had continued to pile up on the Sierras, and in melting they carried down the bits of rock which had been frozen or ground to pieces or dissolved to bits. Thus most of the sides and upper ends of the two Great Valleys were built up with varying soils and each came to be drained by its one main channel for water to flow to the sea. The valleys were so great that most of the soil the water carried was deposited far from the point where the two channels met. Their junction was made in an area which was lower at the beginning than the rest of the inland sea bottom and was not favored with soil deposits to build it up. This area is to this day below sea level, and owing to its level flatness, as well as to its lack of heavy soil, the river floods have at various times made for themselves new channels until today hundreds of thousands of acres of islands in three counties comprise what is known as the Sacramento-San Joaquin Delta.

(The writer was not present when all this is suposed to have happened. He would not dispute the ghost of any old earthquake which might claim to have opened the Golden Gate, but the results are substantially equivalent, anyhow.)

Distinctive Soil Advantages.

The surface of this Delta is today ten to fifty feet higher than it was in prehistoric times, but it has been built up less by mineral soil than by the centuries of growth of water plants, tules, grass, etc. These plants being buried so much under water and under successive seasons' growth, did not decay as most vegetable matter decays, but followed more the course of coal making. It turned into peat, light and fluffy when dry, but porous and easily penetrated by water in any direction.

The various channels made by the two great rivers through this peat have been leveled by men and horses and by machine dredges within recent decades. Immense pumps have been installed to throw the water over the levees and dry out the land enough to farm. Overflows had deposited more or less fine silt along the borders of the various channels through these islands so there is not only peat which is rich in nitrogen, but also sediment which carries more or less of the mineral fertilizing constituents. As the islands dried off, the peat shrunk to a certain extent, so that where it was originally practically level all over, the older islands are now somewhat saucer shaped, due to less shrinkage around the edges where sediment had been deposited. The peat itself, where it is dug out of drainage and irrigation ditches reminds one very strikingly of old dried manure.

Natives and operators of the vast farms speak of the "old lands" and the "new lands." The old lands are those islands which have been farmed for many years. The others are those more recently reclaimed. Not all of the overflowed land is yet protected by levees. One great island was flooded a few years ago by a break in the levees and great pumps have been running continuously in a race to get the water off in time for a crop this season. The old lands need rotation of crops and addition of mineral fertilizers with which they were originally scantily endowed. The high nitrogen content of peat soils has generated such exceptional plant growth that the scant stores of phosphates, potash, and lime have been mostly so depleted that the crops are reduced. Experiments in various parts of the island in adding such elements have shown that former yields can easily and profitably be restored.

Water Table to Order.

With such soil and navigable streams and sloughs on all sides, whose water level is above that of the areas within their levees, it can easily be seen that the water table under these new peat farms would be rather close to the surface. To hold it down, great drainage ditches are dug across the islands with laterals from all parts. These are easily dug by ditching machines and dredges with but little engineering skill required. A big centrifugal pump at the end of a main drainage canal keeps the water level down satisfactorily at little cost. Gas engines run the pumps in the isolated places where electric power is not available.



A land that rivals the famous Nile delta in productiveness and excels in the variety of crops it perfects.

Irrigation Siphoned from River.

In summer time when evaporation is great, water is pumped from the channels, over the levees by the same pump, or is siphoned over where practicable, into the same drainage canals which thereby become irrigation canals.

The water table could be raised this way to any level desired, but that would not be irrigation. It would exclude air from roots of crops and would be as bad as no irrigation at all. The soil is of such loose nature that it has very little capillarity. It does not soak upward as coffee does in a cube of sugar. In order to moisten the ground where crop roots are, without drowning them, irrigation is applied intermittently through ditches dug with narrow spades or ditching machines at frequent intervals across the field. These ditches are filled from the canals, and not long afterward the moisture will be found meeting that from the next ditch. This is enough and the water is shut off or drained off. By such irrigation on this soil, the surface rarely shows the moisture and does not bake. It requires less cultivation than soils in other irrigated or non-irrigated parts of California, and the soil works easier.

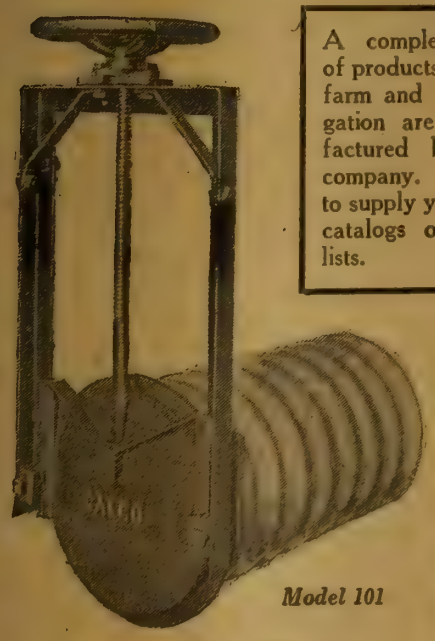
The CALCO BIN is easy to erect



ILLUSTRATED above are pages from the folder, "Instructions For Erection of a Calco Grain Bin." From the first operation, laying out the guide stakes, to fitting on the roof—every step in the erection of the durable Calco Bin is simplicity itself. Every piece is punched and shaped to fit—exactly. They go together—and fit—as naturally as putting a wheel on your wagon. No skilled labor is needed to erect a Calco.

Calco Bins are made of Armco Iron—strong and durable. Write for the free "Calco Grain Bin" booklet.

A complete line of products for the farm and for irrigation are manufactured by this company. Ask us to supply you with catalogs or price lists.



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Calco Slide Headgate

A WATER-TIGHT, cast iron gate for reservoir or levee work—for use under varying heads of water up to 20 feet. Diameters from 8 to 72 inches. Gate frame made any height required. Write for price list.

Armco Iron Lateral Headgates

EASILY operated, durable metal gates, Diameters from 8 to 36 inches. Hand or screw lift. Supplied with either type of bulkhead. For use under varying heads of water to a maximum of 6 feet.



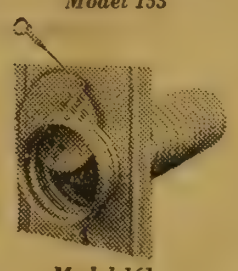
Model 150



Model 153



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WATER-TIGHT, sensitive, reliable Cast Iron Drainage Gate, automatically operated. Diameters from 8 to 84 inches. Write for a circular showing how gate is operated.



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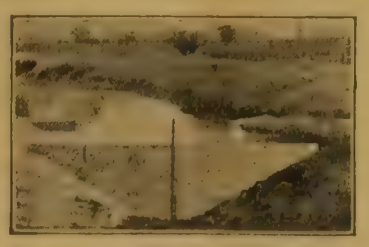
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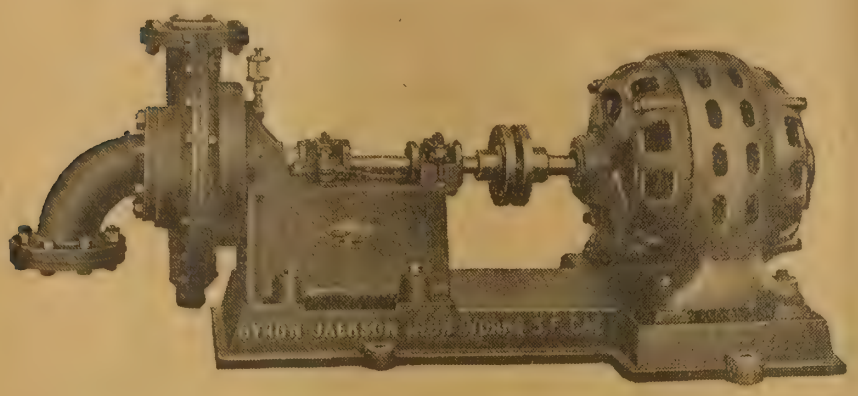
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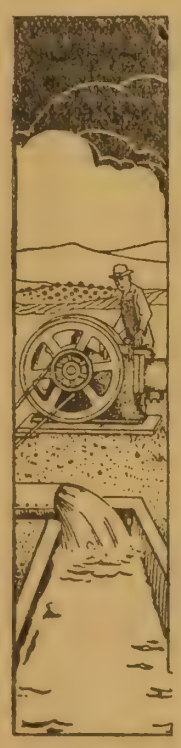
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60 lbs. PER H.P.

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Any engine that weighs more than 60 pounds per horsepower is too heavy for farm work. It **wastes gasoline,** material, time and energy.

Cushman Engines weigh only one-fourth as much as ordinary farm engines, but they are **balanced so carefully** and **governed so accurately** that they run even more steadily and quietly. No loud explosions—no fast-and-slow speeds—but smooth, steady running like automobile engines.

CUSHMAN Light Weight Farm Motors

4 H. P. weighs only 190 lbs., being only 48 lbs. per horsepower. Besides doing all ordinary jobs, it may be attached to any grain binder, saving a team, and in a wet harvest saving the crop. Also it may be used on corn hipders and potato diggers.

8 H. P. weighs only 320 lbs., being only 40 lbs. per horsepower. For all medium jobs. Also may be attached to hay presses, corn pickers, saw rigs, etc.

15 H. P. weighs only 780 lbs., being only 52 lbs. per horsepower. For heavier farm jobs, such as 6-hole corn shellers, ensilage cutters, large feed grinders, small threshers, etc.

20 H. P. weighs only 1200 lbs., being only 60 lbs. per horsepower. For heavy duty jobs, such as shredders, shellers, grain separators, heavy sawing, etc.

Cushman Engines do not wear unevenly and lose compression. Every running part protected from dust and properly lubricated. Equipped with Throttling Governor, Carburetor, Friction Clutch Pulley and Water Circulating Pump. Ask for Book on Light-Weight Engines.

Easy to Move from Job to Job



Cushman Motor Works 956 N. 21st Street Lincoln, Nebraska

A recent telegram from President G. A. Turner, of the California Bean Growers' Association, indicated that the 90,000 bags of beans recently bought by the Government from the Association and from independents at about 8½ cents a pound, were being loaded into four solid train loads, which would be run direct to St. Louis to be distributed there to various markets. Each car carries on each side a banner of the Association. Most of the beans come from Central California.

Agricultural Review Notes

The California Lima Bean Growers' Association, which recently combined forces with private brokers to form a selling agency, which is to continue until all of the limas now on hand are disposed of, announce that they have received orders for 215 carloads for April shipment at $6.75 f. o. b. shipping point. While many inquiries from foreign buyers are appearing and a lively export business is expected to develop soon, none of the orders mentioned above are for export, and not more than two cars were sold to any one dealer.

A schooner which recently brought 4,000 tons of wheat from Australia has been chartered to carry a full cargo of California barley to Scandinavian countries at a freight rate of $40 per ton. The U. S. Shipping Board rate of $30 a ton on full cargo lots of barley in wooden vessels to the United Kingdom is not helping the West coast, because there are no wooden ships assigned to these ports.

President J. H. Stephens, of the California Rice Growers' Association, has just returned from the East. He is quoted as saying: "The grain corporation has recommended to Herbert Hoover, federal food administrator, that the proposed contract by the government for 15,000 tons of rice be increased to 25,000 tons, and went further, agreeing to purchase for the government all the damaged rice the California mills will grind."

Complaint has been made by Oregon authorities that asparagus shipped from California was found to weigh 4 pounds less per crate than the marked contents. State Superintendent of Weights and Measures C. G. Johnson has asked packers of asparagus and other vegetables to mark the true net contents on all packages, whether for State or interstate shipment.

The price of San Quentin grain bags for the season of 1919 has been fixed at 12 cents. Applications may be made to Warden J. A. Johnston, San Quentin. All orders will be filled in rotation. This price is 1½ cents above the Calcutta bag price. Three million bags are on hand at the prison.

A Yuma, Arizona, alfalfa seed grower says that 21 carloads of alfalfa seed averaging 50,000 pounds per car were used in the Imperial Valley during the season just closed. This is said to be more than all of the rest of California and Oregon combined. Eighty per cent of the seed planted this year was Hairy Peruvian.

Machinery and processes for the production of cottonseed oil in the United States are claimed by the U. S. Department of Agriculture to be superior to those of any other country. Plants of American design and construction are in operation in Europe, Asia Minor, India, and China.

Food Administrator Herbert Hoover is quoted as having said that during three and one-half years America sent to Great Britain, France, Italy, and Russia 384 million bushels of wheat or its equivalent in flour, 444 million pounds of beef, 2 billion pounds of pork, and 30 milion pounds of butter.

California is to lead the United States in rice production in the opinion of Major J. C. Geiger, of the U. S. Public Health Service. California will sooner or later be shipping rice to Japan, the oriental home of this cereal, in the opinion of Count Y. Ozaki, member of the Japanese parliament.

It is claimed that over 20 million pounds of the 1918 crop of Colorado pinto beans have not yet been marketed. About 40 per cent of the Colorado crop was sold to the government at 6 or 7 cents a pound. It is claimed that 1,254 carloads of beans were shipped out of Colorado in 1918.

Stocks of potatoes in the hands of 4,051 concerns other than retailers and consumers reported to the U. S. Bureau of Markets totaled 400,963,667 pounds January 1, 1919. This was 121 per cent of the quantity in the hands of the same number of concerns a year previous.

Yolo County farmers have sold some barley at $2.35, but many of them are holding for still better prices. They are banking on the greatly decreased acreage of barley, and do not fear the good yield per acre which is now in prospect due to fine weather conditions.

Spinach grown on 150 acres near Oakdale is being canned by the Pacific Pea Packing Company at that place for the first time. The experiment of growing spinach there has been entirely satisfactory.

Spinach canning operations commenced April 9 at the Lodi Canning Company's plant. About 200 acres of this crop were grown in the districts not far from Lodi.

Delta asparagus canneries started operations early in April. Eight separate factories are located on the islands. Production last year was over 56,000,000 pounds.

The Sperry Flour Company expects soon to build a $400,000 mill, elevator, and warehouse in Fresno, where they can handle bulk grain conveniently for the ranchers.

Onions in the United States January 1, 1919, totaled but little more than half as many as January 1, 1918.

Horticultural Week.

The 51st State Convention of Fruit Growers and Farmers, to be held at Riverside from May 26-31, will doubtless be the most important business meeting of its kind ever held in this or any other state. For it comprises:

(1) The Annual Convention of Fruit Growers and Farmers.

(2) The Vegetable Growers' Conference.

(3) The State Association of Nurserymen's Convention.

(4) The State Association of Horticultural Commissioners.

(5) The Pacific Slope Branch of the American Association of Economic Entomologists.

The greatest gathering of horticultural experts, both growers and professionals, will be assembled at this series of meetings. Governor Stephens has written the governors of nine western states requesting that representatives be sent here to meet with representatives from this state, Canada, Lower California, Hawaii and Florida, to discuss problems regarding our plant industries.

All the large Growers' Marketing Associations of the state will be represented by their leading officers, who will address the growers on the marketing end of their fresh and dried fruit and nuts, grapes and raisins. Therefore the business and educational nature of the speeches and discussions being so fully shown, the attendance by men who can't afford to lose anything bearing on their own profession will surely be large.

A league of Western States is proposed to protect our own interests by co-operation.

The need for more and better vegetables and fruits will be set forth, and why.

Standardization, Protection and Co-operation will take a front seat.

Every grower who has an auto or the price of a ticket should attend this great federation of conventions: should hear, "read, mark, learn and inwardly digest" the whys and the wherefores of the problems to be discussed or set forth.

Let us call it a vacation. For we shall not only be enlightened on many matters of moment to us from the lips of successful growers and business men, but we shall see a gem of a city in a lovely setting and be comfortably housed and fed.

They Fit All Tractors

Clark "CUTAWAY" DISK HARROWS

THIS Double Action Light Tractor Harrow is designed for use with all light tractors. It embraces every important feature of our heavy engine type. Once over thoroughly pulverizes every inch of soil — rear disks splitting furrow turned by front disks.

All CLARK "CUTAWAY" Disks, both cutout and solid style, are made of high grade cutlery steel, *forged* sharp. They dig deeper and pull easier, and without breaking, bending and cracking like ordinary disks.

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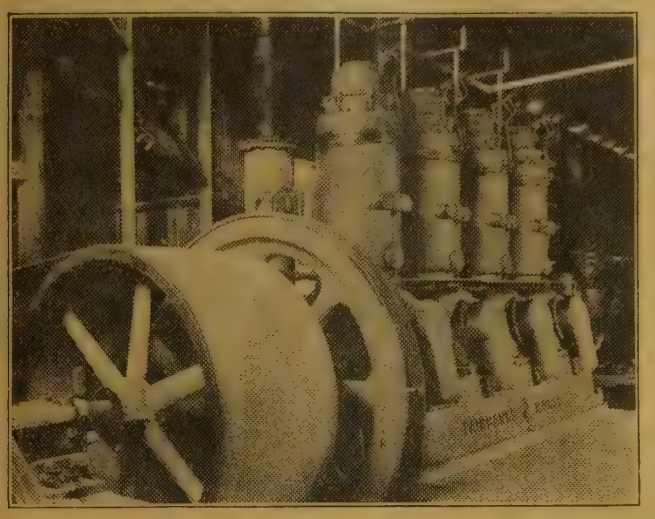


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which economically uses low priced fuel oils. Our equipment here also includes generator—exciter—four vertical ball bearing motors that drive deep well pumps—and control apparatus. All equipment guaranteed by Fairbanks-Morse quality.

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Here's the Splitdorf Spark Plug, the "Plug with the Green Jacket." It *can't* possibly chip or crack. It *can't* score cylinders, it *can't* leak oil or gas and it *can't* short circuit. It will not burn out or wear out. And it may be cleaned and recleaned indefinitely since oil cannot penetrate its India ruby mica core.

The green jacket may be cracked or broken—or entirely missing—without affecting the insulation of the mica core or the efficiency of the plug.

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May 6 to 11
AT ARDEN ACRES

TRACT OF 650 ACRES. ADJOINING COUNTRY CLUB.
SIX MILES FROM POST OFFICE.

Come prepared to stay. The demonstration of all the up-to-date machines will be of great interest. Tractors — Plows — Harrows and power-farming accessories of every kind will be on exhibition. You will see tractors at work, doing exactly what they will do for you on your farm. COME!

Round trip tickets at one and one-half fare will be on sale by Oakland-Antioch & Eastern and Sacramento Northern Railways.

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FREE CAMPING GROUNDS NEAR BY.
EXCELLENT RESTAURANT FULLY EQUIPPED.
Additional Information Upon Request.

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The General Motors Corporation has announced plans for investment of over $37,000,000 in extensions to its various plants.

Mechanical Power on the Farm

Users of tractors, engines, pumping plants, motor trucks, automobiles, electric motors, and other mechanical farm power are invited to make this department an exchange of their experiences and troubles.

MOTOR TRUCKS HAUL AT LESS COST.

[Written for Pacific Rural Press.]

A cost of 15c per ton-mile for hauling corn and wheat by motor truck, as compared with 30c per ton-mile for hauling wheat by wagon, and 33c for hauling corn by wagon, has been found to be the average, as shown by 898 County reports made in 1918 to the U. S. Bureau of Crop Estimates. These reports covered all sections of the United States, and they curiously showed a higher cost in the Rocky Mountain and Pacific Coast States than in the Northern States east of the Missisippi River.

We give following items developed in the inquiry: Cincinnati, Louisville, and Indianapolis markets receive a large part of their hogs directly from farmers by motor truck. At Omaha, during the first nine months of 1917, 52,129 hogs were hauled in this way. In the corresponding part of 1918, 143,220 hogs were delivered by truck. During July, August, and September, 1917, 12,189 head of cattle were hauled to the same market by truck, while during the same three months of 1918 the figures were 17,681 head. On one morning last winter, between 5:30 and 8 a. m., forty truck loads of livestock were delivered at the Omaha yards. Nineteen of these were owned by farmers. In a single day at St. Joseph, Missouri, last year 190 motor trucks delivered 1400 hogs, 200 cattle, and a considerable number of sheep. Livestock are frequently carried on double-decked motor trucks. One such load at the Cincinnati yards consisted of three 850-pound cattle, seven 150-pound calves, and eleven 185-pound hogs. Another truck carried seven 150-pound cattle.

Secretary Eggleston, of the Iowa Highways Transport Committee, says that trucks hauled to packing houses in Iowa, eliminating the use of railway cars; 225,600 hogs, 23,408 cattle, and 61,402 sheep. The trucks in hauling these animals covered 2,513,210 miles of road travel.

Trucks and Trailers Market Crops.

The reports to the U. S. Bureau of Crop Estimates showed that the average length of haul by motor truck was 11.3 miles, while that by team was 9 miles. The average number of round trips per day by truck was 3.4 as against 1.2 by wagon. The average truck load was 58 bushels of corn on the cob, or 84 bushels of wheat, as compared with 39 bushels of corn, or 56 bushels of wheat per wagon load.

Trucks used by farmers usually were one to two ton capacity, and in many instances were converted passenger cars. Trailers were used frequently to increase the capacity, and in some States, including North Dakota and California, tractors were employed to draw several wagon loads at once.

Motor Truck Advantages.

Motor trucks showed special advantages in hauling livestock, milk, fruit and vegetables by delivering them in better condition with less shrinkage and deterioration, so they brought better prices. Berries, soft fruit, delicate vegetables, and dairy products reach market in a few hours by motor truck, and are in fresher condition than when shipped by rail or hauled by wagons. The rates charged by most express companies were about the same or a little less than railway express rates. The advantage was found in that the produce was picked up at the farmers' gates and delivered directly to markets, with no loss of time.

With livestock it was noted that movements to the stockyards by wagon and on hoof during the past forty years were from distances of five to twenty-five miles, but the hauls of motor trucks are now from distances up to fifty miles and more. One shipper at Cincinnati reported to the investigator that he had hauled 25 hogs 43 miles in four hours, and that the actual shrinkage was only six to ten pounds per hog. Fat stock travels in greater comfort by motor truck and is not so long on the road as when shipped by rail. It is claimed by the truck owners and farmers that the amount saved in shrinkage alone has more than paid for the price of the hauling, giving a net gain in the saving of time, man power, and price, which would have been paid for hauling by other means. Certain individual reports on the advantages of trucks are given below:

"The truck has been the greatest labor-saving business proposition we have ever had, without which we would have had to stop shipping milk. We could not get the necessary labor to haul milk to the railroad (4 miles) which necessitates earlier rising and leaving home at an earlier hour than present day farm help is inclined to favor. The truck means one man less and one horse less, and more time to work on the farm."

"The goods can be hauled cheaper by motor truck in several ways. Every order that we get on the railroad is broken open, and there is lots of stealing that is uncommon on the trucks. Freight on the railroad and drayage from the station totals considerably more than trucks charge, and the trucks handle the stuff only once."

"Labor is scarce and the people in this neighborhood would have to go out of the dairy business if motor service were discontinued."

EASY TO CRANK COLD FORD.

Last winter we were advised by a friend to try a method of making the Ford crank easier on cold mornings. It had worked so delightfully at times when we have seen drivers of other machines working their tempers to a frazzle, that we pass it on for the benefit of readers of the Pacific Rural Press. When you stop the machine at night leave it in high gear. This keeps the clutch disks together and keeps the oil squeezed out from between them. In the morning when the emergency brake is put on ready for cranking, it separates the disks, and whatever cold oil there is between them does not interfere with the ease of cranking.

FIGURING TRACTOR HORSE-POWER.

To the Editor: This office is unable to enter into any discussion as to the method of computing the engine horsepower of tractors which might be used for publication. We are, of course, aware there is much confusion and lack of uniformity and that there is a great amount of work which might be done along this line which would be of great benefit. The two present systems in use at this time, the Prony brake and the dynamometer, give satisfactory ratings for all tractors.—L. A. Reynoldson, Office of Farm Management U. S. Dept. Agr., Washington, D. C.

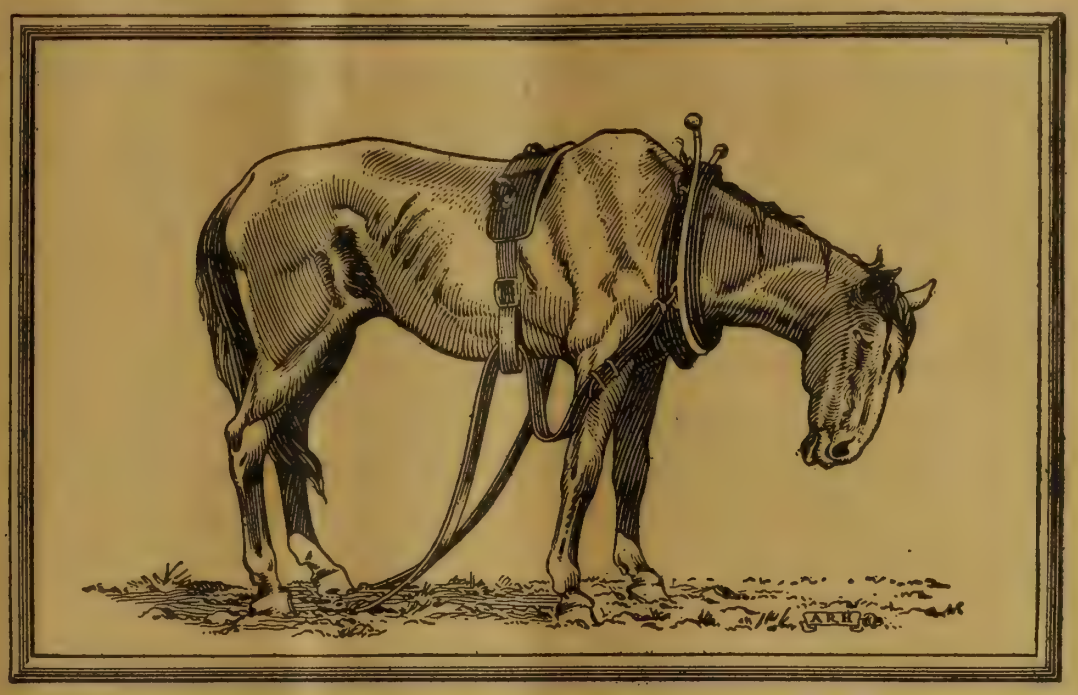
POWER NOTES.

The Yuba-Sutter Tractor Association, including the tractor and implement dealers of the counties named, propose to hold a parade in Marysville on May 6, as a publicity aid to the Sacramento Tractor, Truck, Trailer, and Implement Demonstration, May 6 to 11. This Association expects to hold a demonstration near home in September with the approval of the State Association, which has already been granted.

"The less time spent on the road the more time for work in the field" is the slogan adopted by the International Harvester Company in advertising their motor trucks.

Practically no rural motor truck route has ever been successful where it has depended for its profits on a one-way load returning empty, according to the U. S. Department of Agriculture.

Oil and Sweat do not Mix



CROSS THE STREAM FROM HORSES TO TRACTORS IN ONE STRIDE

"A drop of sweat to grow a grain of wheat!"—that was true when perspiring men and lathered horses toiled in sun-beaten fields.

But modern machinery has helped to lift the dreary burden of horse and man drudgery. To-day a drop of oil raises a hundred stalks of wheat!

But make the change from horses to a tractor in one step—not in two! You will soon be dissatisfied with the limitations of a cheap machine. Is it any better to sweat over a tractor than behind a horse?

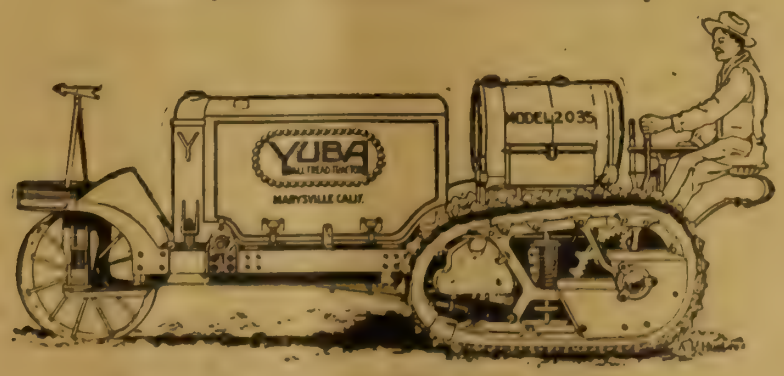
The *"Ball Tread"* has in seven years developed from an experiment to a triumph! Discriminating farmers now buy the YUBA because it relieves them from the worry of field breakdowns—because it makes them independent of soil or weather conditions—because, though not inexpensive, it is a lasting investment.

The YUBA is as free from wear and trouble as human ingenuity can today devise.

Cross the stream from horses to tractors in one stride—not in two! Get the best machine.

Let oil raise your crops—oil and distillate!

Ready for Immediate Delivery



There are three sizes of YUBA Ball Tread Tractors:

12-20 " 20-35 " 40-70

Write us for the catalogue of the size you need; tell us how many acres you farm, and the kind of soil.

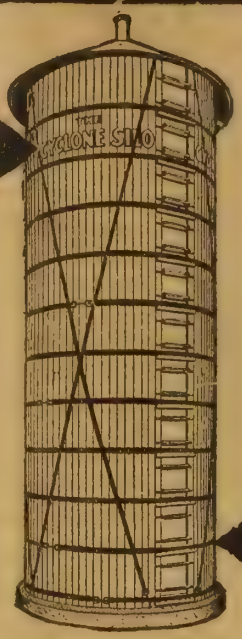
Yuba Manufacturing Company

Marysville California

YUBA DEALERS:

Henry Spring, Inc.	Sacramento	Ketterlin Bros.	Santa Rosa
Pengilly & Clarke,	Stockton	Young Hardware Co.,	Napa
San Jose Truck & Tractor Co.,	San Jose	Mayfield & Long	Suisun

No other Silo has 'em!



Famous Trussed Steel Bracing

The Cyclone Silo is unequalled for strength and durability. Can't twist, lean or blow down. The strongest silo made. Wind proof, storm proof, twist proof.

The Cyclone Silo Trussed Steel Bracing is fastened to the top of the silo and firmly anchored in the concrete foundation. Each stave is not only stapled to each hoop but also to the bracing. Every staple fits into notches pressed in each edge of the steel, so there can be no slipping, no twisting or sagging. Every stave must stand upright regardless of shrinkage or expansion.

Cyclone Hoops Need no Tightening

This is the silo for you. Write for details of Early Buyers' Discount and our Free Book on Silos and Feeding. A postal will do.

National Tank & Pipe Co.

275 D OAK ST., PORTLAND, OREGON.

"Cyclone" Silo

—Always Signifies Highest Quality

E. C. SIMMONS KEEN KUTTER CUTLERY TOOLS

This trade-mark on tools and cutlery tells you positively that they are of the highest quality. The best materials, the most modern design, the highest efficiency in use are always found under the KEEN KUTTER brand.

SIMMONS HARDWARE COMPANY

"The recollection of QUALITY remains long after the PRICE is forgotten." —E. C. SIMMONS

Trade Mark Registered

JERSEY BREEDERS

N. H. LOCKE CO.

LOCKEFORD, CAL.

Choice young bulls of King's Valet Blood, backed by Records.

Call at the ranch and make selection.

VENADERA HERD REG. JERSEYS

Herd headed by Altama Interest, Grand Champion 1918 State Fair. Awarded two other championships and 10 firsts, including Aged Herd Breeders' Young Herd, and get of sire. Young bulls for sale from dams and granddams in Register of Merit.

GUY H. MILLER, Modesto, Cal.

LEONARD FARM JERSEYS

Bulls for sale from Register of Merit Cows. Write for information.

W. J. HACKETT,

Ceres, California

T. B. PURVINE & SONS

PETALUMA, CALIFORNIA.

Breeders of

Registered JERSEYS

Young bull calves for sale. Fine individuals with Register of Merit backing.

RANCHO SANTA MARGUERITA, D. F. Conant, Prop., Modesto, Cal.

Register of **MERIT JERSEYS** A limited number of bulls for sale

FOR LARGE AND ECONOMICAL PRODUCTION

Get one of my young Jersey bulls from a high producing dam. They are rich in the blood of Gertie of Glynllyn and Lady Letty Lambert. Occasionally one old enough for service.

A. A. JENKINS, TULARE, CAL.

McAlister Holsteins Tone Up Herds

May 21st and 22d will be the big red letter days in the history of Holstein cattle in California, for it will mark the date when the famous McAlister & Sons' herd will be dispersed at the ranch near Chino. This herd has been one of the oldest and most prominent in the entire West during its existence for the last ten years. In 1917 it



K. P. Idyl Segis, butter 7 days 35.66 pounds, 30 days 132.05 pounds—state 4-year-old record. To be sold in McAlister & Sons' dispersal sale.

achieved the distinction of having broken more state butter records than any other two herds in California, yet in 1918 even larger records were made.

The main idea has always been kept in mind to build a herd composed solely of large milk and butter producing Holsteins that would be profitable throughout the entire year. In the three-time string the average production per cow has been over nine gallons per day, while the cows in the two-time string have done proportionately as well. Individuality has not been neglected, however, for at the local fairs where the herd has been exhibited most, if not practically all, of the first prizes and championships have been won with ease. The breeding of the stock is in the lines of the most popular and greatest transmitting strains of the breed. There will be found more of the blood of Pontiac Clothilde DeKol 2d in the herd than in any other herd in the world, and she is still the most famous cow that ever lived in respect to her former world records of from seven days to two years and of the records made by her sons and grandsons.

There will be sold without reserve twenty-seven cows that have given over 25 lbs. of butter in a week, and a large number of their daughters by the great sire "It," the only bull in the world to contain 100 per cent the same blood as two cows that have given over 1000 lbs. fat in a year. Never before in the West has a herd of 200 head been dispersed where there has been given the opportunity to every dairyman to buy such uniformly great producing cows at his own price.

Success of Farm Bureau Sales

At one of the meetings of stockmen held last month at the University Farm, Davis, someone predicted that the farm bureau auction sale method of selling hogs would not prove a permanent solution of the marketing problem. Perhaps not, but it certainly is a great improvement over methods previously employed, and at present it is riding on the highest wave of success.

Sales are now being held by the San Joaquin Valley Farm Bureau Marketing Association in the five counties of Kern, Kings, Tulare, Madera and Stanislaus, (and nearly every day in the week, except Monday, a sale is held at some point. D. H. Bettner of Bakersfield, secretary-treasurer, and L. C. Trewhitt of Hanford, the official grader, attend all sales and much of the success is due to their efforts. Mr. Trewhitt personally grades all of the hogs that are brought in and he does it in a very skilful and efficient manner.

These sales are becoming very popular and it is stated that in Tulare county seven of every eight cars of hogs that are shipped from the county are sold by the association. It is estimated that the method has increased the net receipts for each car of hogs sold at Tulare during the past year at least $150 over the old method, and the same satisfactory results have been obtained at all other points. The association has really established a market price for hogs—the first and only one of its kind in the state. It has also increased quality greatly and it is the opinion of Roy A. Filcher that the hogs now being marketed through the association are 200 per cent better than those offered when the first sale was held.

The commission charged by the association is 1 per cent of the gross amount of money which the hogs bring when sold, not 1 per cent of live weight as is understood by some hog raisers. If a 200-pound hog sells for $18, the gross amount is $36, and the commission would amount to only 36 cents.

BERNSTEIN'S PIGS PLEASE PURCHASERS.

The feature of the W. Bernstein Poland-China sale held at Hanford, April 26, was the dance around the ring by Mr. Bernstein himself when the sow, Wonder Kings, sold for $600—the top price on the Pacific Coast for a sow at a public sale. Mr. Bernstein's elation was not because he felt that the sow brought more than she was worth, for she represented excellent value; it was because this was a fitting tribute to Mr. Bernstein's skillful breeding and handling of hogs. He personally has made his herd what it is and the establishing of this Coast record shows that he is working along the right lines.

Generally the first animal put up is almost given away, but all precedents were broken at this sale and the first animal offered—the tried sow, Beautiful Rosebud 1st—was struck off to W. E. Martin of Visalia, for $310.

The average of all animals sold, was $107.95, which is excellent considering that there were 24 weanling pigs as against only 5 tried sows, the rest being bred and open gilts and service boars. Buyers did not seem to want boars and this made the average lower than it otherwise would have been.

Many young people attended the sale and participated liberally in the bidding. The Ladies' Special created lively interest and the weanlings of which it was composed, brought good prices.

The condition of the stock offered reflects great credit on the feeding and management of W. T. Dice, who has had Mr. Bernstein's herd in charge for the past six weeks. Col. Bell of Tulare cried the sale in an able manner and was assisted in the ring by Col. Cochran of Hanford.

UNIVERSITY FARM JERSEY STANDS HIGH.

It is getting to be a common occurrence for the University Farm to appear in the limelight through the records made by the animals in its herd. At one time we hear of a world champion steer, at another time the highest priced beef bull on the Pacific Coast, at another time champion barrows or wethers, and now we learn that in the list of the best five Jersey yearly records accepted for the month of March, 1919, the University of California heifer, California Insie, appears as a leader in the class for cows between three-and-a-half and four years old, with a record of 590.75 pounds butterfat from 9,991.8 pounds milk.

This is the second Jersey cow in the University Farm herd to make a high record, the other being Imp. Jap's Santa. In addition to the places of honor held by California cows it is a significant fact that 22 of the 40 cows listed in the last Jersey Bulletin are Western cows, one being from New Mexico, one from Montana and the rest from Oregon, Washington, and California.

The Clear Strength



Of The Giant Pines

IS BUILT INTO THE SIMPLEX SILO

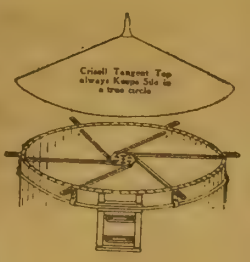
One-Piece Oregon Pine (Douglas Fir) Staves are used in the Simplex. Not even the 40-foot lengths are spliced. That makes the Simplex strong, airtight, watertight.

The Simplex Interlocking Anchoring System



binds roof, staves and foundations so rigidly together that winds cannot wrench them loose. It does away with all possibility of vibrating twisting or collapsing, and insures permanency.

Crissell Top Maintains True Circle



Final protection against all strains is insured by the Crissell Tangent top device. It keeps the Simplex in a perfect circle. Staves cannot creep. Silage in a Simplex settles evenly and sticks close to the walls.

These are reasons why farmers all over California are investing in

SIMPLEX SILOS

There are other reasons, too. You should know them. Sooner or later you will build a silo. Get all the information you can on the subject. Write for our illustrated folder, which explains in detail every feature of the Simplex. Let us answer any questions you care to ask. We shall be glad to co-operate with you and give you the benefit of our years of experience in building silos to meet every requirement.

Santa Fe Lumber Co.

16 California St., San Francisco, Cal.

FILL YOUR SILO RIGHT

Get the best possible use of your Simplex by filling it yourself. Put in a part of the crop, allow it to settle, then fill to the top again.

PAPEC ENSILAGE CUTTERS

are built as strongly as Simplex silos. They are inexpensive to run, handy to use. Mail that coupon in the corner.



MAIL THE COUPON NOW.

SANTA FE LUMBER COMPANY,

16 California St., San Francisco, Cal.

Please send me folder describing Simplex Silos; also information about Papec Ensilage Cutters.

Name .....

Address .....

Purebreds Prevail in Humboldt

(Written for Pacific Rural Press by A. J. Robson, Eureka.)

Humboldt county is not lacking in quality pure-bred dairy cattle. In a few years, if the dairymen continue their breeding plans, the scrub will be the exception and herds will either be highly graded or consist entirely of pure-breds. The breeder of pure-breds is making money, and at the same time is doing his community a great service. Since our dairyman has came to realize that his cow is simly a "milk producing machine," he has been keen to bring up this "machine" to the highest efficiency. He has absorbed leaflet upon leaflet sent out by the university; he has paid close attention to the dairy department of the Rural Press, and he has attended lectures by dairymen of national reputation. All these things have contributed to his higher education in the matter of intensive dairying and greater production.

The argument of the owners of pure-bred sires was based on truth, and it has at last prevailed. It has been no easy matter to jolt the average dairyman out of his age-old traditions and operating methods, but his enterprising neighbor's increased cream check has been a powerful argument which mere talk could not eliminate from the final conclusions. Mr. Average Dairyman has been "shown" and is climbing onto the band wagon in twos, threes and dozens. Where formerly it was a case of merely keeping a bunch of cows, it is now a matter of making the cows produce a certain income or go to the block.

Up to last year nearly all the pure-bred sires were imported from other parts of the state. For several years some of the more progressive dairymen had been producing a limited number of pure-bred bulls and heifers which were disposed of locally. Inbreeding, without the aid of line-breeding, resulted in the deterioration of many herds. Several others were brought up to a high state of production by the consistent use of pure-bred sires on the grade cows. One instance is notable: the Hanson herd at Loleta, which has been bred up for the past twenty-five years, was the champion grade herd of the state in 1916. This herd today is one of the best-paying ones in the county, and the introduction of new blood, through the use of pure-bred sires, is largely responsible for the high efficiency.

C. S. Rasmussen, proprietor of the Pacific herd of Guernseys, is one of the pioneers who have stuck to the theory that pure-breds pay. The Pacific herd has contributed in no small degree o the high production of Humboldt dairy cows. Mr. Rasmussen started in for pure-breds in 1911, and at that time brought into Humboldt such good ones as Glenwood of Rosendale and Glenwood Girl 6th. Besides these he has the direct line descendtnts of Galaxy's Sequel and Pride of Day, two of the best bulls ever imported from the Island of Guernsey.

Dr. Harold Gross has for years maintained a pure-bred herd at his Butler Valley ranch, a beautiful place in the hills of Northern Humboldt. Being too far removed from creameries, Dr. Gross has established a small creamery of his own and makes an excellent quality of butter, which finds a ready market locally. This is the home of Butler Valley Echo, a fine Jersey with royal blood lines, whose progeny have made butter records of merit. About forty head is the average of this institution, the young stock being disposed of in the county.

Another fine herd is that of F. M. Smythe at Brock Creek, near Fort Seward. Mr. Smythe has furnished this farm with all modern conveniences, such as silos, electric plant, and milking machines. His Jerseys are of the best blood lines and are in charge of a herdsman lessee, while the owner superintends the making of cheese at the Arcata plant. Several other fine dairy ranches, isolated from the creamery centers, are producing both good stock and high butterfat records.

Without doubt the most important herd in Humboldt, or in Northern California for that matter, is that of the Cottage Garden Nurseries at Carlotta. Two years ago Charles Willis Ward purchased from the Waterloo Jersey Farms seventeen head of Van Pelt's finest Jerseys. At the head of the herd is Noble Lorne Financial, a half-brother to the famous bull, Financial Sensation, a half-interest in whom was sold to the Edgewood Farms for $30,000. In this herd is also Financial Beauty 2nd, a champion butter cow and half-sister to Financial Sensation, Fontain's Buttercup and many other record cows. At the present time, when the affairs of the company are in the hands of a receiver, the final disposition of this herd is a question. It is now under lease with the farm to Henry Devoy, a local breeder, whose contract calls for the return of the lease within six months. The federal government and the state may make a proposition to take over the cattle and farm, and establish here a breeding and experimental farm. Also there is current a rumor that a well-known Jersey breeder of the valley is negotiating for the purchase of the place. In

(Continued on page 713.)



Scenes at Riverview Farm, Carlotta, Humboldt County. Home of the Sequoia herd of registered Holsteins.

Absolutely Without Parallel

McAlister & Sons

DISPERSION SALE

200 REGISTERED HOLSTEINS

on their farm 5 miles south of Chino, Cal.

May 21-22, 9 a. m.

90 GREAT, HEAVY PRODUCING COWS

5 with records over 30 lbs. butter in 7 days.
28 wih records of 25 lbs. butter in 7 days.
Mostly in calf to It, our famous herd sire—son of the first cow to make over 37 lbs. butter in 7 days and 1250 lbs. in one year.

60 OF THE SWEETEST HEIFERS YOU EVER SAW.

Sired by such great bulls as It, King Korndyke Sadie Vale 22nd, King Korndyke Sadie Vale 27th and other great sires.

BULLS! BULLS! BULLS! FORTY OF THEM!

A bull for every breeder and dairyman in California at 25 cents on the dollar!

"IT" Will be Sold"

KING PAUL KORNDYKE VALE, a 31-lb. son of King Korndyke Sadie Vale will be sold.
KING WINNIE, a son of a 1200-lb. yearly record cow, will be sold.
PRINCE GELSCHE KORNDYKE SEGIS, a son of Prince Gelsche Walker and from the same dam as the $3100 heifer will be sold.
Two sons of It, from Star Rena Wayne Pietertje 2nd, a 34-lb. 3-year-old daughter of a 29.93 lb. cow, will be sold; two other bulls from 3-lb. dams, and not to mention the 35 or so others.
CAN YOU BEAT IT?

DON'T FORGET THE DAYS: MAY 21-22, 9 a. m.

GUARANTEED TO BE BREEDERS NOT TUBERCULIN TESTED

CHAS. L. HUGHES, Sacramento, Cal., Sales Mgr.

COL. B. RHOADES, HAROLD B. RHOADES, Los Angeles, Cal., Auctioneers.

Write For Catalogue Now

Large Production and Fine Type



are combined in the get of

Prince Riverside Walker

Aaggie Acme of Riverside 2nd and Miss Valley Mead De Kol Walker, his two sisters, made the highest official yearly butter record and the highest butter record for three-year-olds, respectively, for 1917-18. His get won first prize at Sacramento last year. We are breeding his daughters to

King Korndke Pontiac 20th,

our young $6,500 sire, whose young $6,500 sire, whose great individuality, fine type, and backing of an unbroken line of great producing dams are hard to beat. Come and see the result of this breeding or write us for further particulars.

Our Entire Herd is Tuberculin Tested.

TULARE HOLSTEIN FARM

W. J. HIGDON, Owner TULARE, CAL. H. L. REDD, Herdsman



Champion Ram, P. P. I. E.

SAN RAMON SHROPSHIRES

WINNINGS P. P. I. E., 1915

Aged Ram, First and Second. Yearling Ram, First. Ram Lamb, First, Second and Third. Champion Ram. Yearling Ewe, Second. Ewe Lamb, Second and Third. Get of sire, First. Pen of three Lambs, bred by Exhibitor, First and Fourth. Pen of Four Rams, bred by Exhibitor, First and Fourth. Flock, any age, Second. Flock, any age, bred by Exhibitor, Second. Flock, one year old, First. Flock one year old bred by Exhibitor, First. Flock under one year, First. Produce of Ewe, First, Second and Third. Premier Championship for Breeder. Premier Championship for Exhibitor. A total, including American Shropshire Specials, of 15 Firsts, 9 Seconds, and 6 Championships.

Purebred Registered Rams and Ewes.
Individuals or Carload Lots.

BISHOP BROS., Agents, SAN RAMON
Contra Costa County, California.

"What a nice juicy bone?" said the stray dog. And he proceeded to carry hog cholera to his owner's farm.

Moral—Keep your dog at home, or if he happens to stray away, keep him out of your hog pens.





"A Great Aid to the Labor Problem"

—so says D. O. Brant, manager of the Dairy Department of the Elliott-Brant Rancho, the well-known breeders of Registered Guernsey Cattle (see letter on right). Their 70 cows are handled by two men, and 50 of these 70 cows are milked three times a day instead of twice! It simply couldn't be done regularly by two men by hand milking.

Again, the Elliott-Brant people, in contest with winners from the National Dairy Show, were awarded **the highest score ever given any milk or cream in this country** at the recent milk test conducted by Government Officials at the Liberty Fair at Los Angeles, Cal. The Empire Milking Machine is without question a big help in the production of high-grade milk, since contact with stable air and dust is eliminated—the milk flows directly from the teats to the air-proof milker pails. Decide now to get better, cleaner milk and to cut the cost of producing it. Write for our catalog No. 45 or see the nearest Empire dealer.

ELLIOTT-BRANT RANCHO

Breeders of Registered Guernsey Cattle,
D. O. Brant, Manager Dairy Dept.

Owensmouth, Cal., Oct. 22, 1918.

EMPIRE CREAM SEPARATOR COMPANY,
Denver, Colorado.

Gentlemen: We have been using our "Empire" Milker for five months and you may be interested in the results we have had with it.

It has been a **great aid to the labor problem** during these war times when all labor and especially hand milkers are very unreliable. All our cows are registered and half the milking herd are on official test, being milked three times a day, which practice we have found gives us about a 20 per cent increase in production. Two men with three single units milk 50 cows three times a day and 20 more cows twice a day, weigh their milk and record it and take care of their machine with great ease. Two men could not do this amount of milking and stick at it long, by hand.

But there is something more than just the amount of work they can do with the machines, it makes their work easier and more pleasant, it takes away their "I've got you where I want you" attitude and it removes that constant worry that all cow owners experience—the fear of being left in the lurch, for any one of a number of men about the dairy can operate the machines on a minute's notice. The same man is a better man with the machine.

If the machine is carefully washed each time it is used and the pail sterilized in steam and the rubber parts kept in chlorinated water, milk with very low bacteria count is produced and it contains much less stable dirt.

As for production, we have found that heifers milking for the first time, take readily to the machine and there is some evidence that they do even better than they would by hand, probably because they do not have to go through a change in the style of milking and because short teats do not matter. Heavy producing cows take to the machine with less drop in their production than other cows that are not producing heavily. Our cows took very readily to the machine on the whole but some were slow. The machines will operate satisfactorily if the man operating them will make them.

(Signed) D. O. BRANT.

The above is just one out of hundreds of letters endorsing the EMPIRE MILKING MACHINE



The EMPIRE Double Vacuum Milking Machine. Also in Single Ends.

EMPIRE CREAM SEPARATOR COMPANY, Bloomfield, N. J.

Chicago, Denver, Atlanta. **Montreal and Toronto, Canada**

Also manufacturers of EMPIRE Cream Separators and Gasoline Engines.

EMPIRE
MILKING MACHINES

Livestock and Dairy Notes

Livestock breeders all over the state are invited to send on postal cards, notes regarding their sales, State and County Fair intentions, new stock, etc.

LIVESTOCK NOTES.

May 3—Napa State Hospital, Napa, Grade Holsteins.

May 6—Estate of Theodore Wiesendanger, North Sacramento, Administrator's sale of registered Berkshires.

May 21-22—McAlister & Sons, Chino, Registered Holsteins.

July 10—Carruthers Farm, Live Oak, Registered Shorthorn sale at San Francisco.

Dairy.

E. E. Freeman, Modesto, sold a registered Holstein service bull to G. G. Wenger, Modesto; also to John Saxer of Modesto, a heifer that is now on test.

The Liberty Loan Committee of the Ferndale District in Humboldt county has made a quota of $12.50 per cow for valley ranchers and $7.50 per cow for hill ranchers.

It is reported that the Canadian cow, Rolo Mercena De Kol, owned by J. B. Hanmer, of Norwich, Ontario, has broken the seven-day butter record with a production of 51.93 pounds.

Steel shavings in sacks containing cocoanut meal are causing the death of a number of cows in Humboldt County. The sheriff and county farm advisor are making investigations.

L. D. Smith, proprietor of Claremont Farm, Berkeley, reports that the Guernsey cow, Mysie's Star of Claremont, has completed a G. G. (junior two-year old) record of 568 pounds fat from 10,050.8 pounds milk, placing her third in the United States, and only a fraction of a pound behind the second cow. Star was first prize winner in her class at the State Fair last fall.

It is reported that the Holstein heifer, Dora Walker, owned by Mrs. Annie Donders of Fresno, has broken the state record for combined milk and butter production in the senior two-year old class by producing 24.14 pounds of butter from 664.4 pounds milk in seven days. It is claimed also that this is the second highest record in the world. The test was conducted at W. J. Higdon's Tulare Holstein Farm, under the direction of H. J. Redd, the expert herdsman.

A gigantic merger of dairy interests extending from Bakersfield to Merced, and involving an annual output of $15,000,000, was recently consummated at Tulare by the San Joaquin Valley Milk Producers' Association. It is proposed to erect a $1,000,000 plant in Tulare for the manufacture of all the by-products of milk. About fifteen creameries are involved in the transaction and most of the local plants will be kept up for collecting and skimming stations.

A. W. Morris & Sons, Woodland, will consign some of their best Holsteins to the national Holstein sale, which will be held at Philadelphia in June in connection with the annual meeting of the Holstein-Freisian Association. This will be Morris & Sons' initial bow to eastern audiences in the sales ring, but the wonderful records made by their cows have preceded them, and as the animals they will consign will be backed by big yearly records, they should bring high prices.

Beef Cattle.

W. D. Duke, owner of the Alamo Herd of Herefords at Likely, is planning to move to a ranch near Dixon. He expects to hold a sale of Herefords next fall.

Frank Brown of Carlton, Ore., and Joe. Turner of Meyers Falls, Wash., have purchased the great Brook Nook Shorthorn herd in Montana, consisting of 510 head. This is reported to be the biggest single transaction of its kind in Western beef cattle history.

Swine and Swinemen.

W. L. Haag & Son, Hanford, have sold a bred Poland-China gilt to Ehman Olive Company, Youngstown, and one to Arlington Smith, Visalia.

W. M. Way & Son, Duroc breeders of Modesto, recently sold to Dr. Belknap, of San Jose, 2 bred gilts, 1 fall gilt and 3 weanling sow pigs. They also sold 2 fall gilts to Mr. Phillips of Empire.

E. S. Myers of Riverdale, has sold one of his herd boars, King George, and while the purchaser's name is not announced, he certainly got an animal to be proud of. Mr. Myers has purchased one of the fine gilts that John M. Bernstein of Hanford brought out from the east.

Sheep.

Emil Coffee of Oakdale, has recently received 2 registered Shropshire rams from Iowa. They weighed 135 pounds at 9 months and are to be used at the head of his herd.

There are prospects of having a wool scouring plant in California according to J. H. Holman, representing the Federal Wool Company of Boston, who attended the recent meeting of the California Wool Growers' Association. He said that the plan would be to buy the wool in this state on a scouring basis.

ROC STEIN RANCH
DUROCS

Have for sale two boars, one of **GOLD MODEL** and one of **CRIMSON MONARCH** breeding.

Both are about a year old, weighing 400 lbs. Also eight open gilts and four bred gilts. These gilts are the pick of last year's litters.

W. M. WAY & SON

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TAMWORTHS
(The Bacon Hog)
Largest Herd in the State
DURCO-JERSEYS
Mature Stock and Weanlings of both sexes. Sure to please.
SWINELAND FARM
W. O. Pearson, Prop. Woodland, Cal.

DUROCS OF THE
Best Blood Lines
Bred sows, gilts bred and open. Have one very nice O. C. K. boar 9 months old. Dam sold for $1,100 and sire for $1,000 in last month's sale.
Jersey Queen Farm, San Jose, Cal.

RHOADES & RHOADES
EXPERT LIVESTOCK AUCTIONEERS
Purebred Stock Sales a Specialty
Sales Conducted in All Parts of California.
BEN A. RHOADES, Auctioneer
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We have issued a convenient little book for the keeping of breeding dates of cattle, hoping to aid the breeder and cattle owner in maintaining accurate records. We will gladly mail you a copy free if you request it.
BREEDING DATE BOOK HERE
CALIFORNIA BREEDERS SALES AND PEDIGREE CO.
C. L. HUGHES, Sales Manager, Sacramento, Cal.

REGISTERED HOLSTEINS
Creamcup Herd offers service bulls and bull calves of 34-lb. breeding. Females offered for foundation stock. Tuberculin tested.
M. M. Holdridge, San Jose, Cal.
R. D. "A," Box 437.
Two miles out North First Street.

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BLAKE, MOFFITT & TOWNE
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Rate in this directory 3c. per word each issue.

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CASTLEVIEW

GIANT TYPE BERKSHIRES

We are booking orders for spring pigs from Grand Champion Sows and sired by Mayfield Roockwood, sire of Champion Barrow at 1919 Western Berkshire Congress.

CASTLEVIEW RANCH, SANTA ROSA.

CROLEY'S BALANCED HOG FEED—The cheapest feed to fatten hogs. Write Geo. H. Croley Co., Inc., Livestock Supplies, 8th and Townsend Sts., San Francisco, Calif.

BERKSHIRES bred at Imperial Stock Farm are the kind that satisfy. Write us or call and be convinced. R. J. Merrill & Son, Morgan Hill, California.

NICK GENTRY

Dean of the Berkshire Breeders, breeder of Baron Duke 201st, Grand National Champion, says: "I never saw a better width of loin than he has. If more breeders would produce the type of Baron Duke 201st there would be many more Berkshires raised and sold. Every animal on both sides in pedigree of Baron Duke 201st for many generations back were good ones; every one of them. His great size, good heart girth, very smooth shoulder, back and loin, legs and feet, are hard to equal in one animal. If he is not a good one and a well-bred one there is no other. I am glad to give you my opinion of Baron Duke 201st.
N. H. GENTRY.

You can buy his three months old weanling pigs from 650-pound prolific sows for $35.00. They are going fast. Order now. Sandercock Land Co. In charge of Natomas Land Sales, 23 Montgomery St., San Francisco, Calif.

GRAPEWILD FARMS BERKSHIRES
A few spring boars and fall pigs by Big Leader, Grapewild Farm Leader and Majestic King.
A. B. Humphrey, Prop., Escalon, Calif.

What Is Lactein?

Lactein is a scientific condensed milk product for poultry and hogs. Made from pure buttermilk and whey, by our own process which retains all the health-giving food values and a uniform acidity without the useless bulk of water.

Largest Poultry Farm in the World Recommends Lactein

Corless Bros., Mammoth Poultry Farm of thirty thousand laying hens and now making elaborate preparations for an additional twenty thousand more, and by far the largest poultry farm in the world, says:

"We have used Lactein and we are satisfied that it is a first class article, a fine tonic and egg producer. For baby chicks we consider the feeding of Lactein indispensable. You may refer anybody to us and we will heartily recommend Lactein."

Swine Breeders' Association Recommends Lactein For Hogs

A resolution urging every resident in the county to "keep a pig" was adopted by the Stanislaus Duroc-Jersey Swine Breeders' Association yesterday afternoon. The action was taken in view of the appeal of the goverment to increase the supply of hogs.

The association also declared itself as favoring the use of Lactein, manufactured by the Lactein Company, for the feeding of hogs. Several directors who stated they had used the Lactein for hog feeding highly recommend its use.—Modesto Herald.

LACTEIN is put up in wood barrels holding: five, ten, twenty-five and fifty-two gallons. Should your local feed dealer not have Lactein, write us direct and we will see that you are supplied without delay, or better still send us $3.50 and we will ship you a five gallon trial order by express prepaid. This, when diluted with water as per directions, makes 150 gallons of feeding solution, and is sufficient to acquaint you with the wonderful merits of Lactein. The price in fifty-two barrels is 50 cents per gallon, or about 1½ cents a gallon when water necessary for feeding is added. Write for our booklet "MAKING EVERY CHICK A CHICKEN."

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920 E Street, Modesto, California

GREAT STOCK REDUCING SALE
PUREBRED STOCK
Bred and Unbred
CHESTER WHITES, DUROCS AND BERKSHIRE SOWS
Also Gilts. 19c per pound.
Young stock of above breeds, two months old up, $10.00 and upwards.
MARIN STOCK CO., San Rafael, Cal.
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OAK KNOLL FARM
LAKEPORT CALIFORNIA
We have sold all our young boars and are now booking orders for toppy weanlings. **Highlander,** the $1,000 Grand Champion Boar, heads our herd of
CHESTER WHITES
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Send for Sensible Folder on Feeding Hogs
WESTERN MEAT COMPANY
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REGISTERED DUROC-JERSEYS
Every point the buyer demands for a profit-making hog is found intensified in the Duroc. We can supply you with weanling pigs, either sex, and gilts from 7 to 10 months. Our herd boar has the blood of Ohio Chief Defender, Crimson Wonder, Jack's Friend, Joe Orion, Etc.
ROUTE 4, BOX 735 THE GARDINER RANCH, SACRAMENTO, CAL.

ANCHORAGE FARM.

MONEY-MAKING BERKSHIRE—The pro-ific, easy-feeding kind that make the highest riced pork from the lowest priced feed. They will increase your profits. Prices reasonable; atisfaction guaranteed. Write for free book-et, describing our worlds reserve champion, TAR LEADER. We are now making a pecial offering of bred sows and gilts. Anchorage Farm, Orland, Calif.

BERKSHIRE BOAR PIGS—From large lit-ers. Order one if you want the best. Satis-faction guaranteed. R. J. Merrill, Morgan Hill, California.

RIVER GARDEN FARM BERKSHIRES—Weanlings and gilts. They'll surely please you. E. H. Whiting, Route 2, Box 631, Ukiah, Cal.

BERKSHIRES IN PERRIS— They make money for me. Write for catalogue and prices. F. L. Hall, Perris, California.

BERKSHIRES—Sired by Star Leader, the $1500 boar. Kounais Registered Stock Farm, Modesto, Calif.

BERKSHIRES by Ringleader 20th, greatest son of Grand Leader 2nd. Geo. M. York, Modesto, Calif.

FOR REAL GOOD BERKSHIRES write Frank B. Anderson, B. 724W., Sacramento, Cal.

CARUTHERS FARMS BERKSHIRES — Cholera immune. Live Oak, California.

REGISTERED BERKSHIRES—Write R. D. Hume, Dos Palos, California.

BERKSHIRES—Fair Oaks Ranch, Willits, California.

Poland-Chinas.

EL PROFITO—Our great herd boar, will put profit-making qualities into your herd. His offspring have size, stretch, bone, good backs and feet, and easy feeding qualities. To make the right start with big-type Poland Chinas, get one of his boar pigs. Prices right. Correspondence cheerfully answered Viola L. Renwick, Santa Barbara, California.

SOW BARGAINS—We are offering some ex-ceptionally nice tried sows, bred and open gilts, at attractive prices. They are all sired by the undefeated and world's grand champion Su-perba and out of big type sows, which cost me $200 and over. Investigate before buying else-where. Rough's Greenfields, Arlington Station, Riverside, California.

POLAND-CHINAS—Am booking orders for Eprinb boars sired by King's Massive, Orange and from such noted sows as Rosebud Quality 1st, sired by President and out of King's Rosebud, grand champion sow of 1917 and other big sows. H. D. McCune, Lemoore, Cal.

MAKE BIG MONEY with Cloverdale Farm big-type Poland-Chinas—the prolific, fast-growing, easy-feeding, money-making kind. We purchased the famous Whitten Ranch herd including great boar Jumbo Model. High-class stock for sale—farmers' prices. Write us. Cloverdale Farm, R. F. D. 1, Escondido, Cal.

NOW BOOKING ORDERS for spring pigs, either sex from my prize-winning, large type Poland-Chinas hogs. Also will book a few orders for bred gilts, February and March farrow, and a few good serviceable, aged boars. Hale I. Marsh, Modesto, California.

ELDERSLY FARM—We are offering some excellent tops from our fall, and spring pigs at attractive prices, sired by one of America's best-bred boars, Big Black Bone Wonder, with grand championship breeding on both sides. He is a real 1000-lb. boar. J. H. Ware, Live Oak, California.

THE BEST IN THE WEST—California Greatdale and President's Equal are my herd sires. Fall and spring boars now ready to move—each one a corker. Dr. J. A. Craw-shaw, Hanford, California.

BIG TYPE POLAND CHINAS—5 boars far-rowed March 24. Sire King's Big Bone Leader. Dam Hancerdale Pride from Cook's Hancerdale Jones. Carstens & Holloway, Route A, Ma-dera, Cal.

BOOKING ORDERS for spring pigs sired by "Bob Big Bone" 281289, litter brother of the Junior Champion of Sacramento, 1918, P. E. Mitchell. Atwater, California.

OXBONE HERD offers March boars for sale from King's Big Bone leader, grand champion at State Fair, 1918. Write F. E. Ox. Tipton, California.

SPRING PIGS—Big type Polands. Best blood in State. Write for particulars. White Oak Farm, A. F. Busch, Prop. Potter Valley, California.

POLAND CHINAS — Late October boars only for light service, sired by President out of Beautiful Belle. John M. Bernstein, Han-ford, Cal

FALL BOARS by a son of Caldwell Big Bob of bargain prices. Also booking orders for spring pigs. Forest View Ranch, J. H. Cook, Cadiz Cal.

WAUKEEN HERD POLAND-CHINAS—Big type herd boar, the $700 Grand Champion of California Les McCracken, Prop., Ripon, Cal.

BIG TYPE POLAND-CHINAS—Stock from best herds of the Middle West. N. Hauck, Hanson, Humboldt County, California.

20 HEAD of Big Bone Bob, Grand Model and I. B. A., Wonder stock for sale. J. W. Wakefield, Acampo, California.

LAKE SIDE STOCK FARM—Large smooth big boned Poland-Chinas. Geo. V. Beck-man & Sons, Lodi, California.

REGISTERED POLAND-CHINA SWINE—Prize winners. Finest stock in the State. M. Mellett, Hanford, California.

BIG-BONED POLAND-CHINAS—From East-ern prize-winners. D. H. Forney, Route G, Fresno, California.

POLAND-CHINA PIGS WITH RIBBONS—Yes sir, right. Johnnie Glusing, Winton, Calif.

POLAND-CHINA PIGS—Bernstein Trew-and Ross blood. B. M. Hargis, Tulare.

POLAND-CHINAS—A few young service boars for sale. R. F. Guerin, Visalia, Calif.

REAOAKS RANCH herd of registered Poland-Chinas, W. J. Hanna, Gilroy, Calif.

BIG BONED POLAND-CHINAS—Stock for sale. E. S. Myers, Riverdale, California.

POLAND-CHINAS—Young stock for sale. Edward A. Hall, R. 1, Box 39, Watsonville, Calif.

POLAND-CHINAS—Young stock for sale. H. E. McMahan, Lemoore, California.

Chester Whites.

BILLIKEN CHESTER WHITES—Just a few left to offer. One 1917 fall boar and one 1918 fall boar; both cholera immune. Spring farrows are all sold except 10 boar pigs. Will have 10 more sows farrow dur-ing May, June and July and will book orders now from these coming litters, delivery at weaning time. C. B. Cunningham, Mills, Calif.

Duroc-Jerseys.

REGISTERED DUROCS—While my hogs carry blood of the breed's best lines, they are not too proud to get down on their hands and knees in the alfalfa and make money for me at 18 cents a pound. All sows are culled whose pigs fail to reach 200 pounds at 6½ months. Weaned pigs, gilts and sows for sale at reasonable prices. Geo. L. Horine, Winton, Calif.

DUROC-JERSEYS AT IRELAND—Home of Cherry Volunteer II., Grand Champion Boar at Riverside. Ireland's Orion Defender and Orion's King of Ireland are excellent sires in service. Booking orders for spring delivery. Ranch at Owensmouth. City office, 1219 Brockman Bldg., Los Angeles, Calif.

THE JOHNSON HERD OF DUROCS—Two yearling service boars for sale at farmers' prices. These are well grown out, rugged animals. Weaned boar pigs, $25. Frederick M. Johnson, Napa.

SWEETWATER DUROCS—The most popu-lar herd in the West. Our Durocs make money for us—they will do the same for you. Winsor Ranch, Bonita, San Diego Co. Address R. K. Walker.

WE WON MORE MONEY on Durocs at the State Fair than any other exhibitor. Why not buy some of this winning stock? June Acres Stock Farm, Davis, California.

REGISTERED DUROC JERSEYS — Open and bred gilts. August and November boars. Great herd headers. Weanling pigs, both sexes. Stock of the big strong type so much desired. Jack Borge, Dos Palos, Cal.

DUROC-JERSEYS—Burke's Good Enuff, Golden Model, King's Colonel and Pathfinder blood. Derryfield Farm, National Bank build-ing, Sacramento.

REGISTERED DUROC JERSEY WEAN-LINGS—$15.00 each, 3 for $40. Satisfac-tion guaranteed. First come, first served. A few brood sows for sale. Red Rock Ranch, Glen Ellen, Cal.

DUROC WEANLINGS for the farmer. Easy feeders. 200 lb. at seven months. W. W. Everett, River Bend Farm, St. Helena, Calif.

THREE FINE SIX MONTH BOARS—$25 and one three-year-old $40. All registered. L. R. Adams, Island Mountain, California.

A FEW CHOICE BRED GILTS, spring boars and gilts of the best blood lines. H. P. Slocum & Sons, Willows, California.

HEAVY-BONED DUROCS—A few service boars for sale. Ormondale Co., Route 1, Redwood City, California.

DUROC-JERSEYS—A few choice Septem-ber gilts—Weanlings either sex. H. E. Boudier, Napa.

REGISTERED DUROCS—All from prize-winning stock. W. P. Harkey, Gridley, Calif.

REGISTERED DUROC-JERSEY GILTS for sale. D. Fricot, Angels Camp, California.

REGISTERED DUROCS—Stock for sale. W. J. Fulgham & Sons, Visalia, California.

Yorkshires.

LLOYTON HERD REGISTERED YORK-SHIRES—Bred gilts and pigs from eight weeks up. Lloyd & Tointon, Llano Road, Santa Rosa, California.

Hampshires.

HAMPSHIRES—Fine quality Weaned pigs, dandy young boars. Uneeda Hampshire Swine Farm, Tom M. Bodger, Prop., Gardena, Cal.

MY HAMPSHIRES are money makers Stock for sale. Buy now. L. W. Denker, Saugus, California.

HAMPSHIRE SWINE—Young stock for sale. Ira Hart, Dos Palos, California

MISCELLANEOUS.

LARGE YORKSHIRES—The ideal hog for the progressive farmer. Young stock for sale. A. L. Tubbs Co., Calistoga, Calif.

O. I. C. BREEDERS' NOTICE—I will sell Ohio Boy, two-year-old imported boar; none better. Also boar pigs ready for spring breeding (sire Ohio Boy, dam Toddler's Beauty, imported). Write for full informa-tion. Jas. Little, Wasco, California.

MULE-FOOT HOGS—Large type. H. T. Bailey, P. O. Box 37, Lodi, California. "The Blue Gums."

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Guernseys.

GRAPEWILD FARM GUERNSEYS.

A 21-months-old bull out of dam with record of 615 pounds in A. A. class, and a few young bulls up to 1 year of age.

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HIDDEN VALLEY FARM offers for sale 2 young Guernsey bulls, ready for service, out of high record advanced register dams. A. J. Welch, proprietor Redwood City, California.

FOR SALE—Guernsey bull two years 6 months. Registered. $1000 if taken at once. F. A. Zane, 411 Insurance Exchange, San Francisco.

OUR 28-MONTHS OLD herd boar, sure breeder, 15c. lb. Two open and bred gilts. Weaned pigs. Write Uneeda Hampshire Swine Farm, Tom M. Bodger, Prop., Gardena, Calif.

EDGEMOOR FARM GUERNSEYS — First in the show ring and in official records. Few animals of either sex for sale. Edgemoor Farms, Santee, California.

PALO ALTO STOCK FARM, Palo Alto—Breeders of registered Guernseys; both sexes; prices reasonable.

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ELKHORN FARM AYRSHIRES— Choice young bulls at reasonable prices J. H. Meyer, 440 Montgomery St., San Francisco, Calif.

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SUNSHINE FARM JERSEYS—Tuberculin tested. Production counts. E. E. Greenough, Merced, California.

YOUNG BULLS from Register of Merit cows. W. G. Gurnett, Orland, California.

MILKING SHORTHORNS.

BREEDERS OF REGISTERED SHORT-HORNS—Milk strain; choice young stock for sale.. John Lynch Ranch, Box 321, Petaluma.

INNISFAIL DAIRY SHORTHORNS—Regis-tered young bulls for sale. Alexander & Kellogg, Suisun, California.

Holsteins.

A PRICE ON EVERY ANIMAL.

Herd free from tuberculosis. All sales sub-ject to sixty days' retest. Sons of **Finderne Soldene Valdesa**, whose dam is not only a world record cow in seven-day division, but has two sisters holding world's records for yearly production.

Toyon Farms Association.
679 Mills Building San Francisco.

WHEN IN THE MARKET for young bulls and females, write me. My herd sire and show bull, El Prado Wayne Colantha, is also for sale. Every animal in my herd is priced. J. W. Benoit, Route C, Modesto, California.

HIGH-CLASS HOLSTEINS—I have for sale some sons of Sir Veeman Korndyke Pontiac from A. R. O dams. Write for particulars or come see them. R. F. Guerin, Visalia, Calif.

PALO ALTO STOCK FARM, Palo Alto, breeders of registered Holsteins. Heifers and service bulls. Reasonable prices.

REGISTERED HOLSTEINS—We breed for production. Leeman and Kilgore, Ripon, Cal

HOLSTEIN BULLS and bull calves from A. R. O. cows. O. A. Mills, Ripon, California.

REGISTERED HOLSTEIN BULLS with world's record backing. Kounias' Registered Stock Farm, Modesto, California.

CREAMCUP HERD—Registered Holsteins, Pontiac bull calves. M. Holdridge, Rt. A. Box 437, San Jose, California.

BREEDERS OF REGISTERED HOLSTEIN cattle and Berkshire pigs. Whittier State School, Whittier, California.

F. H. STENZEL, SAN LORENZO, CALIF.—Breeder of Registered Holsteins. High test producers.

REGISTERED HOLSTEINS—A. W. Morris & Sons Corp., Importers and Breeders, Wood-land, California.

REGISTERED HOLSTEINS — Best blood lines of the breed. R. L. Holmes, Modesto, Cal.

GOTSHALL & MARGRUDER—Breeders of registered Holstein-Friesians Ripon, Calif.

CHOICE HOLSTEIN bulls for sale. No. females. Millbrae Dairy, Millbrae, California.

BREEDERS OF REGISTERED HOLSTEIN cattle. McAlister & Sons, Chino, California.

BEEF CATTLE.

BEEF CATTLE!! BEEF CATTLE!!—Going East again in a few days. What do you need in Beef Cattle? Let me use my thirty years' experience in supplying just the animals you require and save money for you. Write me at Hotel Land, Sacramento—R. M. Dunlap.

OVER 200 Good Hereford and Shorthorn bulls, carefully selected from some of the best herds in the Middle West. Rare chance for breeders. For further particulars apply: Davis Horse & Cattle Co., Davis, Cal.

PABST STOCK FARM—Registered Short-horns. Herd Sires, Maxwalton Style 564168 and Maxwalton Lavender 626612. For Sale Maxwalton Style and four of his sons. L. N. Pabst, Cedarville, California.

RANCHO SAN JULIAN SHORTHORNS—Purebred range bulls, unregistered, for sale Estate Thos. B. Dibblee, Santa Barbara or Lompoc, Calif. John Troup, Supt.

ALAMO HERD REGISTERED HEREFORDS (founded by Governor Sparks). Herd and range bulls. Reasonable prices. W. D. Duke, Likely, Modoc county, California.

REGISTERED YEARLING SHORTHORN BULLS—Heavy-boned, thick-meated Scotch and Scotch-topped breeding. Ormondale Co., Route 1, Redwood City, California.

REGISTERED MILK AND BEEF SHORT-HORNS, bulls and heifers for sale; catalogue free. Thomas Harrison, Santa Rosa Stock Farm, Santa Rosa, California

HEREFORDS—Sierra Vista Herd, Minturn, California. Over one hundred registered ani-mals. Fairfax and Repeater bulls head the herd. On highway.

THE NEVADA HEREFORD RANCH, Jno H. Cazier & Son Co., Props., Wells, Nevada Registered Hereford cattle. Breeding stock for sale.

REGISTERED SHORTHORNS—A few choice young bulls, grandsons of Fair Knight. Prices reasonable. Fair Oaks Ranch, Willits, Calif

HOPLAND STOCK FARM—Registered Short-horns. Prices on application Hopland Calif

REGISTERED HEREFORDS—H. H. Cable Diamond G Ranch, Esparto, California.

SIMON NEWMAN CO., breeders of Regis-tered Hereford Newman, California

GEORGE CALLAHAN, breeder of registered Herefords Milton, California

GEORGE WATTERSON—Breeder Registered Herefords, Bishop, California.

HEREFORDS—Mission Hereford Farm, Mis-sion San Jose, California.

SHORTHORN—Carruthers Farms. Live Oak, California.

REGISTERED HOLSTEIN CATTLE—E. E. Freeman, Route B, Modesto, California.

EL DORADO HERD OF HOLSTEINS—Alex. Whaley, Tulare, California.,

HORSES AND MULES.

WORK HORSES FOR SALE—10 large, sleek, fat brewery horses. Good workers, kind, gentle and true to pull. Weigh 1200 to 1700 pounds. Also one buggy horse. Prices $50 to $135. Wieland Brewery, 240 Second St., San Francisco.

SHIRES —Broodmares— Stallions. Also stallion and filly colts $100 to $700. Jack London Ranch, Glen Ellen, Cal.

FOR SALE—930 high bred yearling ewes. J. A. Youngreen, Orland, Cal.

FOR SALE—A-1 Breeding Jack. Bargain. Have quit raising mules. W. P. Harkey, Grid-ley.

SHEEP AND GOATS.

F. A. MECHAM ESTATE, Petaluma, Cal.—Breeders and importers of Shropshire, Ram-bouillets and American Merinos, both sexes. Also Red Polled cattle. Take electric car at Petaluma or Santa Rosa for Live Oak Ranch.

R. J. BLOOM, DIXON, CAL.—Breeder of Shropshire rams out of pure blood ewes and imported registered rams. Single and car load lots.

DORSETS AND ROMNEYS—Dorset ram lambs for sale. John E. Marble, South Pasa-dena, California.

PASTURAGE for 600 to 800 goats on in-closed land. Address Mrs. Lulu Briggs, Ukiah, Cal.

BISHOP BROS., SAN RAMON CALIF.—Breeders and importers of Shropshires.

KAUPKE BROS., WOODLAND, CALIF.—Breders and importers of Hampshire sheep.

CHAS. KIMBLE—Breeder and importer of Rambouillets. Hanford, California.

CALLA GROVE FARM, MANTECA, CALIF.—Breeders and importers of Hampshire sheep.

C. J. L. STONEBRAKER, Route A, Chico, Cal. Breeder of Shropshire Sheep.

MISCELLANEOUS.

AUCTION

250 HEAD OF DAIRY COWS AND HEIFERS 250

WORK HORSES YOUNG MULES

On the McNeil Dairy Ranch, 4 miles west and 3 miles south of

FRESNO

On North and Cornelia Aves.

FRIDAY, MAY 16th, at 9 a. m.

Herd includes 200 choice dairy cows, Hol-steins, Jerseys and Durhams, many with first and second calf, a large number fresh and some extra good springers.

50 HEAD OF CHOICE HEIFERS selected from the best cows in the herd and sired by pure bred, registered Holstein bulls This will be an exceptional opportunity for dairy-men to purchase some extra good dairy stock owing to the fact that this is a large herd, carefully culled and owner has instructed us to dispose of the entire herd.

POSITIVELY WITHOUT LIMIT OR RESERVE

TERMS: $100 and under cash, over $100, one-third cash, balance on 30, 60 and 90 days with bankable note.

A. McNeil, Owner.

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Auctioneers

BUTTE CITY RANCH—Shorthorns, Shrop-shires, Berkshires and Shetland ponies. Write for prices and descriptions before buying. Butte City Ranch, Box P, Butte City, Glenn county, Cal. W. P. Dwyer and W. S. Guil-ford, owners. **Special Notice: Second Farm Sale Shorthorns; Shropshires; Berkshires; Ponies. August 2, 1919.**

FOR SALE—15 thoroughbred unregistered Shorthorn heifers, yearlings. Absolute bar-gains. Also offering one 14 months old dual purpose bull, grandson of P. P. I. E. cham-pion and out of Idlewood 12th, who weighs 1750 and has milked 3,000 lbs. of milk in last ninety days and is still milking 40 lbs. A real herd header. Chas. L. Weaver, Tulare, Cal.

WANTED—Thirty or more good grade Hol-stein cows. Must be young and sound. Send description and price to G. R. Guthrie, Long-wood Farm, Napa.

REGISTERED HOLSTEINS and Duroc Jerseys. Stutzman Stock Ranch, Tulare, Calif

10 HEAD Grade Jersey Cows. R. D. Beebe, Lemoore, Cal.

HAUSER'S DIGESTER TANKAGE

Gives Great VALUE for LEAST MONEY. IT MAKES THEM FAT.

HAUSER PACKING CO. LOS ANGELES

Rubbing Elbows with Other Breeders

[Written for Pacific Rural Press by Thos. F. McConnell.]

Where Producer and Consumer Come Together.

At the eastern terminus of J Street the real city of Sacramento ends, and the real country begins in a real ranch. This ranch, owned and operated by White and Terry, is composed of about 600 acres of fertile bottom land along the American River, quite an acreage of which is devoted to hop-raising, but the major portion producing grain, alfalfa, and last but not least, Shorthorns of excellent type and breeding.

The present herd sire, Snowball, is a grandson of Whitehall Sultan, and has proven his worth as a sire in not only the present crop of very promising calves, but also in a grand bunch of yearling and two-year-old heifers, mostly roan in color. Mr. White says it is the aim of the firm to have 100 females of breeding age as good or better than these heifers. When this objective is gained the herds in California that excel them will be few and far between.

A recent addition to this herd is Hillcrest Count, by Count Amaranth, from the herd of Thornton S. Glide at Davis. This young bull is to be mated with the heifers mentioned and the cross certainly ought to produce animals of supreme merit, as this bull is a most excellent son of a great sire.

De Vilbiss and Durocs.

J. M. De Vilbiss of Patterson says he is out of the show business when it comes to breeding Durocs, but judging from what he has it seems as though he might continue and win. Mr. De Vilbiss has thought of raising nothing but market hogs, but he has 25 head left that it would seem almost a crime to sell for slaughter when the blood of such individuals is needed for improvement by so many.

The aged sow, Effie, is a granddaughter of the grand champion at the Panama-Pacific, and is a worthy descendant of such an illustrious sire. Another individual that looks good is Model Chief's Lady, who always raises big litters and is to farrow a litter by J. M.'s Effort, a youngster who looks as though he was one of the coming boars. He promises to make a high-class individual of the large size desired by breeders of the most modern type.

Mr. De Vilbiss is quite a hog surgeon. He discovered that a very fine young pig in one of his best litters had received an injury to the abdominal wall which allowed the intestines to protrude so they were dragging on the ground. After carefully washing the injured parts with an antiseptic solution, they were returned to their proper place and the peritoneum and outer walls properly joined and sewed. In a very short time the youngster was as lively as ever and since has made a complete recovery.

Keep All Eligible Stock Registered.

In passing through the outskirts of a village, a beautiful dairy type bull was seen and so pronounced was the individuality and breed characteristics that the writer returned thinking he had made a find well worth while. The disappointment was keen when it was found that the bull and also a heifer just as true to type and breed, and really a beautiful pair, were just high grade stuff. Another case where some nice red pigs about six months old were discovered in a barley pasture, but upon investigation it was found that the animals were not registered, but it was thought they could be. Keep all your stock registered that is eligible and worth it.

Should Cattlemen Buy Grade Bulls?

To the Editor: In a recent issue you expressed surprise and indignation that a farm advisor should advertise for a Durham grade bull in behalf of a farmer. May it not be possible that there still remain a few farmers who cannot afford to buy thoroughbreds? We all have thoroughbred appetites, but many of us have only grade pocketbooks. The inference is that the buyer is a farm bureau member and as such he surely has the thoroughbred appetite, so probably he has graduated from the scrub class into the grade class, and later on, perhaps, when he can afford it, he will step into the thoroughbred class.—W. B. H., Applegate.

Most assuredly, if the buyer is progressive he should be encouraged. Yet at the recent beef cattle sales at Davis the writer saw 6 registered Hereford bulls sold for an average of $235, several for $250 and quite a number under $300. And taking the average case it is doubtful if a cattleman can make either progress or profit unless he can afford to pay this amount for a bull. On account of the increased cost of land, labor and feed he must have his animals mature quickly and produce meat of high quality so that it will sell at a higher price. Probably he would not be in the market for a bull unless he had at least 10 females. A registered bull at $250 would put at least 250 pounds extra weight on each calf by the time it was marketed, so as his first crop of calves would amount to 10 head, the extra returns, figuring steers at 10c per pound, would be $250. Thus this registered bull would pay, not only his extra cost over a grade bull, but his entire cost from his very first crop of calves.

We do not mean to intimate that a man should simply get a bull with papers. There are many inferior registered bulls, and there are cases where bulls without papers are better than those with them. But taking the average bull of each class and the average breeder, we believe it can safely be said that the man who has enough cows to justify buying a bull can afford to pay the price necessary to get a registered bull. He will be holding himself back if he does not.—Livestock Editor.

Stock Poisoning from Oak Leaves

Belief among many stockmen in grazing regions that cattle were poisoned by oak leaves caused investigations to be made by experts, and their conclusion is that continuous grazing on oak leaves may produce a sickness which perhaps will result fatally, but that in order to cause sickness the leaves must make up a large percentage of the ration.

If oak leaves are eaten with other feed the animals are not injured, and the specialists believe that oak-brush ranges can be used for grazing during the summer, not only with no harm to cattle but with positive benefit. However, before turning cattle on a range in the spring its condition should be examined to make sure that the grass has gotten a good start.

Most cases of poisoning occur in the spring, because at that time there is a scarcity of other forage on the range. According to Farmers' Bulletin 767, an affected animal appears gaunt; its coat is rough, and its nose becomes dry and cracked. The attitude, both standing and walking, is peculiar; the head is extended forward, and the animal shows depression, discomfort, and sometimes evidences of pain. It grows weaker rapidly, and may die at any time from a few days to a few weeks. As a rule, affected animals lose their appetite at an early stage of the disease, they refuse food but have a craving for water.

Don't pay any attention to the old-fashioned talk that silage will rot the teeth of cattle. It is a piece of misinformation that has caused many a farmer to go without a silo. At the Nebraska Agricultural College there is a cow 17 years old that has been fed silage ever since she was a calf. There is nothing wrong with her teeth or with those of any of the rest of the herd, although all of them have been fed silage for years.

A subscriber writes: "I had a hole come in the side of a cow's teat. I waited until the cow was dry, then burned the opening with a hot iron. When it healed up the hole closed entirely."

There little brewery, don't you cry! You'll make condensed milk by and by.

Imported and American Bred

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Stallions

A Large Collection of Stallions ready for service this season.

Heavy boned, ton types, with plenty of style and action. Prize-winners and descendants of prize-winners. No better in America. State certificate of soundness and life insurance furnished with every horse. If your community is in need of a high-class stallion, come to Patterson, California, and see the largest and best collection in the West.

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Visitors Welcome. Correspondence Invited.

N. W. THOMPSON, Patterson, California



Imported stock from the best blood lines in America.

KIMBLE RAMBOUILLETS

will make money on any farm. Pure bred, large and smooth, with heavy fleece of fine, long staple white wool. Yearling and older rams. Breeding ewes. Any quantity. Prices attractive.

Chas. A. Kimble, Hanford, Cal., Breeder and Importer.

Carruthers Farms

LIVE OAK CALIFORNIA

Second annual **SHORTHORN** sale will be held on July 10th, at San Francisco, at which time and place 60 head of bulls and females of rare breeding will be offered.

BRIGHTON FARM SHORTHORNS

One three-year-old bull bred by H. R. Clay.
Two outstanding yearling bulls sired by Sir Type, a son of Cumberland Type.
A few yearling heifers of same breeding.
Also registered Berkshires of both sexes of best breeding.

H. L. & E. H. MURPHY, Perkins, Sacramento Co., Cal.

ORMONDALE SHORTHORNS

All are heavy boned, and of Scotch and Scotch-topped breeding.
Suited for either the range grower or breeder.
EVERY ANIMAL POSITIVELY GUARANTEED.
Whether you buy or not, visit our ranch, 7 miles from Palo Alto on Woodside Road.
We welcome inspection. Prices and pedigrees on application.

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DUROC-JERSEY SWINE

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Largest herd in America with the best connection. Many cows weighing 1,700 lbs. and above with records of over 10,000 lbs. of milk. Winners at the recent Congress sale owned by us or of our breeding. Sale cattle in carload lots or single. Calf clubs a specialty.

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Santa Rosa Stock Farm, Santa Rosa, Cal.
California Representative.

COMMISSION AGENT

I can offer the best of service in assisting you to buy or sell registered

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My large experience as a breeder, knowledge of blood lines and values, and a close connection with all the principal Eastern breeding establishments warrant you securing my services when contemplating any important live stock transaction. References furnished.

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BRAHMAN BULLS

High grade Brahman bulls from our full-blooded Brahman bulls, which were imported from India. Write for prices and description.

FRED G. LOCK
PALACIOS, TEXAS

How Can We Keep Help on Dairies?

(Continued from first page.)

ided for foreigners. It is no wonder he could not find a man.

Again, I believe most young men ntend to marry, and it is right that hey should. But do you think the verage young man would want his vife to put up with the conditions on he average ranch, even if he could tand them himself? Married men re the most stable and dependable, et the average ranch does not have roper quarters for them.

You probably will think that the maller ranches need criticism more han the larger ones, but such is not he case. In my experience I have ound conditions on most of the larger anches even worse than on the maller ones. There are many ranches n the state which do not need this riticism, but I believe the majority f them do.

Why has this side of ranch life een so sadly neglected? The milker nows enough to keep the milk-house, ows and stables clean because he nows that both the dairy inspector nd the owner are watching him. But e does not keep his bunkhouse that vay because nobody ever comes round to inspect it. We have heard f the State Immigration and Housing Committee, but I have never seen any f their inspectors on a ranch. The ity health officers do not tolerate ny filthy conditions in the city; why neglect the country with its farms and employes?

To Improve Conditions.

In building a bunkhouse, how many wners look after the social side? I would like to see a large living room with a nice fireplace, card tables, reading matter, and a victrola or some ther musical instruments. The owner has all these comforts; why not give the men a few of them? The house need not be elaborate—just plain and comfortable. Each man should have his own room, and be responsible for its good condition. Modern toilet facilities should be put in. There should be wash-stands with both hot and cold water. There should be showers with both hot and cold water, and heat. Suitable cots, or iron beds, and furniture should be provided. Sheets should be furnished and washed weekly. If the men bring their own blankets, they should be in good condition or rejected, and if rejected the men should be loaned other blankets. I believe the better plan is for the owner to furnish the bedding and see that it is kept in good condition, charging the employee for any repairs that may be required while in his use. Employes should be made to air their bedding daily, as in the Navy, and take their mattresses outside at least once a week. Also, the owner or his superintendent should inspect the bunkhouse daily, and in a nice way tell the employee about anything that is not right. It is still better to have a set of rules posted in a conspicuous place for the men to follow.

Then, instead of seeing a dirty bunkhouse, and filthy clothes on the men, I believe you would see a neat, tidy place, and personal pride in the men. A great many of you farmers will say, "Well, that is a dream," and will let it go at that. But this is not a dream. I could construct such a place for a very nominal sum. If you had such a place you would keep the better class of men for a longer time, and the extra work and better results you would get from them would soon pay for the cost of giving them proper living and working conditions.

Purebreds Prevail in Humboldt

(Continued from page 708.)

ny event, it is hoped that this valuble herd will be kept in this county here they will be given every opportnity of breaking records, and where he young stock is needed to grade up ie dairy herds.

One of the most beautiful farms and uality herds in Northern California is ie Sequoia herd of Holsteins owned y the Riverview Farm, Inc., of Carutta. Mr. F. C. Fisher is president nd manager of the farm and has done uch to popularize the black and hites in this region. His herd is eaded by Creamcup Pontiac Prince, by Creamcup Pontiac Burke, out Enselogess of Sleepy Hollow, with record of 717 pounds butterfat. rincess Zozo Pietertje 2nd is one of e high record cows. This farm has oduced two of the best young bulls the state, Sequoia Colantha Cornipia and Prince Zozo Topsy. The ung stock is in great demand. All ws are under the official test of the niversity and are registered.

The organization of the Humboldt rsey Cattle Breeders' Association as the first step in the direction of troducing and encouraging the eeding of better cattle. Gilbert rg, Coppinni Bros., Iver Iverson d Bonnickson Brothers own fine rsey foundation stock and are workg along scientific lines in order to prepared for the invasion of forgn buyers, as well as to improve e breed in this region.

There are a few registered Ayrires, some Durhams, and a few of ier breeds, but the Jerseys predomte. The climate seems to agree th this breed and their butterfat ords entitle them to the first place the consideration of the dairymen reabout. The Guernseys seem to rive on roughage and stand the win- cold with less effect on milk proction; the Holsteins are hardy and mbine the virtue of milk and beef oduction. After all, it is purely a tter of choice of breeds. If a dairyn fancies one particular breed he l make a success. The real secret to secure good stock, test regularly, feed scientifically, and then he will make money.

If you are thinking of showing next fall it is time to begin work on the mature animals. Only by taking plenty of time can you fit them without injury.



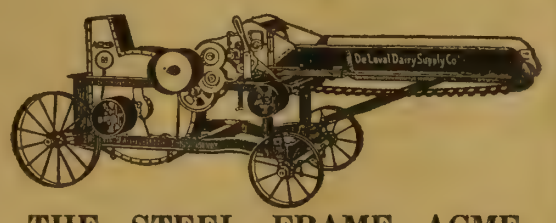
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Now's the time to begin saving money by chopping your dry feed.

The ACME Cutter

THE COMBINED SILO FILLER, HAY CHOPPER AND ALFALFA MEAL MACHINE

THE saving you can make by chopping your dry feed will more than pay for an Acme Cutter this season besides placing at your disposal a superior silo filler and alfalfa meal machine.



THE STEEL FRAME ACME
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The Acme is a light-running durable **steel frame** cutter. Its **spiral knives cut clean.** An Acme will chop any kind of feed—will fill the tallest silo and is absolutely safe to operate. Regular equipment includes steel wheel mounting.

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"Money-Maker" Cutters Reduce Your Silo-filling Costs



These are the best all around silage cutters made. They have a shock-proof cushion drive protecting the machine; auxiliary feed roll for feeding uncut bundles of corn from the wagon; springless compression force feed rolls; angle steel frame, plate steel housing, solid base—free from vibration. These are essential features for successful cutting. All machines ought to have them—few do.

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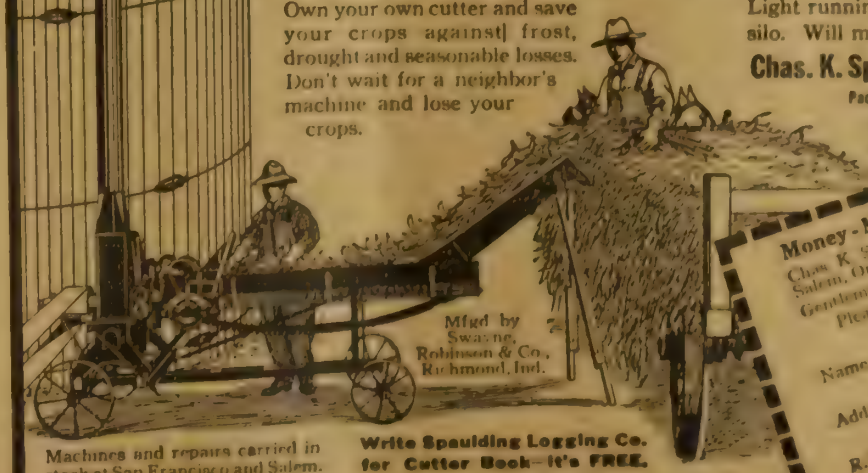
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Poultry and Rabbits for Profit

Conducted by R. H. Whitten.

GET RID OF SCALY LEGS.

There is nothing more unsightly in the appearance of a fowl than scales on the legs. No matter how attractive the bird may be otherwise, these scales condemn it. However, many farmers who are busy with other matters never notice this trouble until their attention is called to it, yet they probably have been complaining because their hens have not been laying better.

Hens with bad cases of scaly legs will not lay satisfactorily. The condition is due to a small parasite which burrows under the scales, generally beginning at the toes and working upward until the whole foot and shank become affected. Both legs are usually attacked about the same time and to the same degree. At first there is only a slight roughening of the surface, but the continued irritation causes the formation of a spongy or powdery substance beneath the scales, which raises them until they are nearly perpendicular.

Hens with scaly legs cannot be expected to perform their duty as layers or breeders. The trouble not only saps their vitality and strength, but in advanced stages produces a high fever and causes great pain and annoyance. In the most severe cases the joints become inflamed, and the birds are lame and hardly able to walk. A joint or an entire toe may drop off, and the birds, unable to scratch for food, lose flesh and die from hunger and exhaustion.

Scaly leg is not as bad a disease to combat as some others, but it is more of a disgrace to the poultryman because it is always a sign of neglect. It can easily be checked when first seen, and a little care will prevent its return.

For treatment, wash the bird's feet and shanks with castile soap, warm water and a brush, and let them soak until the scales are softened and loosened. Remove as many as can be rubbed off, but do not pull them off, as this leaves a bleeding base, which results in a scar.

Then plunge the feet and shanks into a half-and-half solution of warm water, and Zeroleum, Kreso, or any other good coal tar dip, holding them completely submerged for two or three minutes. Or, after washing and soaking, dry the feet and shanks and apply a mixture of equal parts of sulphur and lard, with enough kerosene to make it thin. This can be put on with a brush. Be sure to work it up under the scales as much as possible.

Another good remedy is equal parts of kerosene and raw linseed oil. Dip the feet and legs or stand the birds in this mixture. In very severe cases, a repetition of any of these treatments may be necessary in about five days. Also, after treatment is discontinued, it may be well to apply carbolated vaseline every two or three days until the new scales begin to grow.

Remember, however, that all the remedies in the world will not effect a permanent cure where filth is tolerated. The evils that produced the disease will produce it a second time if they remain, so clean up, scatter lime, disinfect, paint the roosts, put fresh straw in the nests—in short, overcome filth and you will overcome scaly leg.

ANIMAL PROTEIN NECESSARY.

A striking example of the importance of animal protein feed in the ration of laying hens is very well brought out by a test in which pullets were divided into three lots. Each lot received the same ration except that one had no animal protein; one had the addition of skimmilk, and the other beef scraps. The consumption of food of the meat scrap pen was approximately 98 pounds per fowl. The no meat food pen consumed 83 pounds and the skimmilk pen 202 pounds. However, of the latter, 116 pounds was milk. The birds tended to consume a similar amount of grains and mash regardless of whether or not they were good or poor layers. It was the addition of skimmilk or meat scraps to the ration that increased the efficiency of the grain.

These figures show that it costs less to feed pullets when no skimmilk or meat scraps are fed, but it costs more to produce a dozen eggs. The amount of dry matter required to produce one pound of eggs in the skimmilk pen was 4.9 pounds, in the meat scrap pen 5.14 pounds, and in the no-meat pen 9.57 pounds. The egg production averaged 140 eggs per pullet for the skimmilk pen, 136 for the meat scrap pen, and 61 eggs per pullet for the check pen.

Although the test was carried out during the years 1915-16-17, when the price of both feed and eggs was much cheaper than now, nevertheless the feeding value of skimmilk was found to be $1.60 per 100 pounds, and of meat scrap $20.03 per 100 pounds. This test seems to point out the great value of this animal protein feed in either the form of skimmilk or meat scrap if eggs are to be produced economically.

Farmers who use tankage for hogs can use it for poultry also in place of beef scraps. It varies considerably in quality, and this should be taken into consideration. In case of doubt as to quality it is advisable to start with a comparatively small quantity—not more than 10 per cent—and increase gradually. It is not advisable to use more than 20 per cent of tankage, except when a wheatless ration is fed, in which case 25 per cent should be used. This applies to both laying and breeding hens.

For young chicks, where the proportion of mash consumed usually is greater than in the rations of adult fowls, and where the unfavorable effects resulting from the use of low-grade tankage will be more quickly felt, it is advisable to keep well below these percentages.

GIVE CHICKS FREEDOM.

Let the chicks out. A chicken instinctively seeks the earth. A board floor tires him. Even nice clean litter does not satisfy the heart's desire. Nothing short of old Mother Earth can give him solid comfort. As soon as conditions will permit, the young chicks should be allowed to run out of the brooder in the open and on the ground. A small mesh wire netting may be run around a circular park space. They will follow the fence and soon get around to the home coop again. Get them to pulling green grass as soon as possible. Exercise them in the open when fit.

DON'T FORGET OYSTER SHELL.

Ground feeds are necessary for most efficient digestion in poultry. Hopper feeding saves labor and furnishes the necessary supplementary feed at all times. There is no danger of poultry over-eating on ground feeds fed dry in a hopper. Oyster shell is also necessary. A laying hen requires large quantities of shell-making material, and nearly all of this must come from the grit and shell she eats. It is poor economy not to keep a liberal supply accessible. One extra egg a year will pay the bill. It returns the money invested a hundred fold.

COUNTING CHICKS IN ADVANCE.

The old proverb reads, "Don't count your chicks before they are hatched," but how else can a poultryman plan his work? For a successful hatching season it is necessary to estimate the number of laying pullets that can be secured from a given number of eggs. Extensive investigations indicate that it takes 100 eggs to get 50 chicks and 50 chicks to mature 40 head of young stock. Only 20 of these will be pullets and probably 10 per cent will have to be culled. So it is not safe to estimate more than one strong, well-matured pullet for every six eggs set.

A quick fattening food, used by some poultrymen, is composed of equal parts of cornmeal and barley-meal, scalded and fed in a warm state. It is claimed that this food also gives more solid flesh, and a finer golden color than any other known ration.

Poultry Breeders' Directory

YOU ARE NOT TOO LATE—Our early maturing, winter laying strains, May, June hatch develop quickest into profitable winter layers. "My thirty pullets laid at four, sixth month (January) cleared $31." Why? Bred 20 years to lay winters, 200-290 eggs yearly. White, Brown, Buff Leghorns; Reds; Anconas; Rocks; Minorcas; Orpingtons; clearing customers $5. Valuable circular with proof free. 70,000 egg hatcheries supplying chicks. Thousands shipped promptly, below ordinary chicks. Eggs; Half price. Hatcheries overflowing. Breeders (Pullets), Sale beginning. J. Beeson, Pasadena, Cal.

THE MISSION HATCHERY can not supply for May and June delivery White, Brown, Buff Leghorns. Baby chicks of quality breeding, hatched right and priced right and shipped to arrive safely, parcel post or express, large or small lots. Also booking orders for late May and June delivery of Barred and White Plymouth Rocks, Rhode Island Reds, Black and White Minorcas. Circular and prices for the asking. The Mission Hatchery, Box 17, Campbell, Cal.

WHITE LEGHORNS are the most profitable breed of poultry. If you are in the business for profit, you will eventually have them. Early broilers; early layers; early profits; we sell only **White Leghorn Baby Chix** from heavy laying **Hoganized** hens. Safe delivery of full count live chix guaranteed. Prices per 100: February $15; March, $14; April, $12.50. The Pioneer Hatchery, 408 Sixth street, Petaluma, California.

SINGLE COMB BROWN LEGHORNS—The large, modern, heavy-laying type that won high honors for us at the National Egg-Laying Contest. No better layers, none others so hardy. For 20 years our strain has won highest prizes at New York, Boston, Chicago, San Francisco, etc. Absolutely the finest Brown Leghorns in America. Eggs, $3 and $5 per $15; $15 per 100 Williams Bros., Fullerton, California.

BARRED PLYMOUTH HOCKS—Champion prize winners and wonderful layers. Choice cockerels, hens and pullets for sale. Hatching eggs from twelve grand matings. I have made a specialty of Barred Rocks for over twenty years. That's why I win at all leading shows. "Nothing Better In Poultry" than Vodden's Barred Rocks. Catalog free. Chas. H. Vodden. Box 396, Los Gatos, California.

SULLIVAN'S FAMOUS BUFF ORPINGTONS—Line bred for 20 years. Oldest flock on Pacific Coast. Hogan System for 15 years. Eggs $3.00 and $5.00 for 15, $12.00 and $15.00 per 100. Limited number of breeders for sale; write for prices. Mr. and Mrs. W. S. Sullivan, 100 Market Road, Agnew, Santa Clara Co., Cal. Telephone S. J. 5205 R 5.

S. C. WHITE LEGOHRN CHICKS—Any quantity, from A-1 Hoganized and trapnested stock, winners of 1st, 2nd and special for pullet and 1st cockerel at Pacific Coast Land Show. Booked up for March delivery; orders taken for April 18th. A. O. & P. M. Foster, 2918 Otis St., Berkeley, California.

ATKINSON'S PEERLESS ANCONAS lay more and eat less than other breeds. 50 big husky cockerels $5 and up, 200 pullets, trios and pens for sale. Hatching eggs. Catalogue free. J. W. Atkinson, Box B, 130 Willard Street, San Jose, Cal.

FINEST HATCHERY IN THE WORLD—CHICKS, White Leghorns, Rhode Island Settings—1000's—hatched right in our $60,000 brick and concrete hatchery from our Hoganized heavy layers. Stock, eggs, Pebbleside Poultry Farm. Sunnyvale, California.

RHODE ISLAND REDS—Rose and single comb Rhode Island Red hatching eggs from 220-egg record layers. Cockerels, rose and single comb. Pens. Improve your color, type, and egg capacity. Write for mating list. Wm. Larm, 3915 39th Ave., Fruitvale, Calif.

OUR FINE FEMALES—Can supply you with eggs at 30c each and up that will hatch just what you want in general purpose fowls. Write for mating list. O. B. Hunt, White Rock Fancier, 1244 Burnett street, R. Berkeley, Cal.

FOR SALE—We have a pen of six, five and better fingered White Leghorns hens and a four-fingered cock, all beauties. A chance to breed a three hundred-egg hen. Will receive offers. C. B. Atterbury, Turlock, California.

BABY CHICKS—Barred Plymouth Rock, R. I. Reds, Buff Orpingtons, Black Minorcas, Brown, White and Buff Leghorns from Hoganized stock, bred to lay. Tobener Poultry Ranch, Washington Ave., San Jose, Cal.

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BREAKING UP BROODY HENS.

A setting hen at one season of the year cannot be prized too highly, yet a few months later she is the most despised creature in the flock. There is nothing that gets on a poultryman's nerves quite so much as a hen that persists in setting when she is expected to stick to her job of shelling out eggs. He loses his temper and kicks and slams her arounds, perhaps thinking that he can change her notion, but probably thinking nothing at all—except a few cuss words.

There is no use in abusing the hen just because she obeys the dictates of Nature. She has no choice in the matter; she simply can't help it. So in breaking her up, go about it with the kindliest thought for the hen, and use good judgment.

A number of ways to overcome nature in this respect are recommended, such as staking the hen out on a grass plot, putting a yoke around her neck, and standing her in water. But the best cure of all is a swinging crate. An ordinary crate or box may be used, but a crate especially made for the purpose will soon pay for itself. Have it large enough for four or six birds, according to the size of your flock. Have the bottom of 1x2 inch slats, flat side up. Have a door occupy all of one side, hinged at the top. This door and two other sides may be covered with wire netting or or slats. The fourth side should be slatted, with the slats running up and down, and far enough apart so that hens can get their heads through. Outside of the slats two cups should be hung, and water should be provided in one and light feed in the other. The top should be of solid lumber—watertight if the coop is to hang out of doors. There should be a metal loop in the center of which a rope should be attached for suspending the coop.

When a hen is put in the coop it will tip and she will frantically clutch the bottom slats in her endeavor to maintain her equilibrium. The coop will swing with every new movement she makes, and she will be kept so busy figuring on how to keep her balance that she will soon forget all about setting.

Furthermore, nature decrees that a hen shall have a higher temperature than normal at this time, and by hanging the crate up in a cool, open place, the free circulation of air will tend to reduce her temperature, and consequently her desire to set. This method breaks a hen up a day or two sooner than any other humane method—generally in from 24 to 36 hours.

TIMELY TOPICS.

The premium list for the State Fair is out and copies may be obtained by writing to Chas. W. Paine, secretary, Sacramento. The Fair will be held August 30 to September 9, and Robert V. Moore and C. G. Hinds, will do the judging of poultry. W. J. Head will judge pigeons and Hale Prather will judge rabbits. The premium list is similar to that of years past, with special prizes and sweepstakes in addition to the regular classification prizes. It will cover everything from hens to rabbits and pigeons.

The Department of Agriculture has gotten out of its rut and is now issuing some bulletins that are really good. Send to the Division of Publications, Department of Agriculture, Washington, D. C., for a copy of Farmers' Bulletin to. 1040, entitled, "Illustrated Poultry Primer." There are no long-winded articles in this bulletin, but it is full of illustrations, the object being to give the fundamentals underlying the production of poultry by means of photographs and brief statements.

Because a hen is so small in comparison with a cow, we naturally think that the poultry industry is small as compared with the dairy industry, but last year California's egg crop sold for $36,480,000, while her butter crop brought only $27,199,112, and she produced $12,600,000 worth of chicken meat. Looks as though the poultry business has at last become a job for real men.

From all that can be gleaned from egg market centers all over the country, it seems sure that egg prices are going to stay up and even go higher, according to the Tulare Co-operative Poultry Association. Provided the present movement to European markets continues to flood and gather weight there will be no drop in prices.

California hens are bringing record prices of from 40 to 44 cents per pound. The shortage of live poultry is now so great that price seems to be no object and the trade is bidding prices to the sky.

It took 36,000,000 rabbits to make the hats now worn by the United States army. Since the war began Uncle Sam has bought 6,000,000 hats and each contains the fur of six or eight rabbits. In other words, every soldier is going about with six bunnies on top of his head.

Poultry husbandry, or in plain English, practical chicken raising, is being taught in the Fremont High School, Oakland. The class meets every Tuesday and Thursday night with G. L. Hensley, a practical poultry expert, as teacher. A large number of men and women who raise chickens in their back yards, or who plan entering the poultry field as a business, are taking the course.

In the Imperial valley, capons are being used instead of setting hens to hatch eggs, with very good results. It is reported that they make fine setters and generally hatch a large number of chicks.

NOT TOO LATE FOR HATCHING.

Have you hatched all the chicks you intend to bring out this season? If so, why are you stopping? Is it because you have hatched all you can take care of, or because you are afraid that late hatched chicks will not prove profitable? If the latter is the case, think again. It is true that early hatched chicks make the best show birds, but it is also true that late hatched pullets have proved their claims to enthusiastic praise through trapnest records, which show them to be just as industrious layers as their spring sisters.

Hatching eggs do not cost as much in May as in February. It does not take the brooding care for May hatches that it does for those of February and March. The feed is less expensive; chicks get lots of bugs and worms and grow faster; the death rate is less. And pullets from a May hatch, if well cared for, will commence to lay in the fall and give a good account of themselves when eggs bring the highest prices.

During May and June eggs are plentiful and bring a low price. They are worth a lot more money hatched into chickens than sold as eggs, as the cockerels are marketable at good prices as fryers. Carry your hatching at least through May this year and you will be surprised at the good results.

PUT RABBIT IN MINCEMEAT.

Mincemeat, that toothsome filler for pies, has been blacklisted the last year or two by economical housekeepers because of the high cost of beef—an important ingredient in this delicacy. Numerous "meatless mincemeat" recipes have been suggested, but to the discriminating taste mincemeat needs real meat in order to have real flavor.

You can enjoy genuine mincemeat pies and at the same time have the feeling of being economical. Just use rabbit meat in place of beef in your old mincemeat recipes. The pie filling will have a genuine mincemeat flavor and you will like it. And once more you can reckon mince pies as household necessities instead of luxuries.

Don't forget to put a little charcoal in the chick mash. Not all chicks need it, but they all like it, and it may prevent digestive troubles.

Chicks that are on a sandy or adobe soil must have chick grit constantly before them. Those on granite soil usually do very well without grit.

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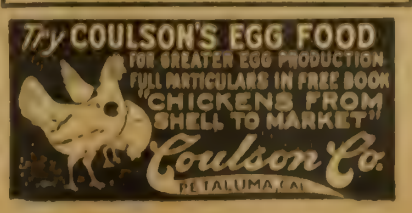
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THE HOME CIRCLE

OUR SOLDIER DEAD.

By Annette Kohn.

"In Flanders fields, where poppies blow,"
In France where beauteous roses grow,
There let them rest—forever sleep,
While we eternal vigil keep
With our heart's love—with our soul's pray'r,
For all our Fallen "Over There."
. . . . . .

The earth is sacred where they fell—
Forever on it lies the spell
Of hero deeds in Freedom's cause,
And men unborn shall come and pause
To say a prayer, or bow the head,
So leave these graves to hold their dead.

Let not our sighing nor our tears
Fall on them through the coming years,
Who on the land, on sea, in air,
With dauntless courage everywhere,
Their homes and country glorified—
Stood to their arms, and smiling died.

Great France will leave no need nor room
That we place flowers on their tomb—
And proudly o'er their resting-place,
Will float forever in its grace,
O'er cross and star, and symbol tag,
Their own beloved country's Flag.

The morning sun will gild with light,
The stars keep holy watch at night,
The winter spread soft pall of snow,
The summer flowers about them grow,
The sweet birds sing their springtime call,
God's love and mercy guard them all.

GINGER AND THE CATS.

Ginger is a big shaggy dog the exact color of ground ginger. He is such a pet of the family that he is allowed to sleep in the house. His bed is on the kitchen lounge, and Mistress made him a little mattress to keep him warmer. This is kept during the day at the foot of an unused stairway. When it is bedtime, Master says, "Come, Ginger, it's time to go to bed."

"Bow-wow," says Ginger, and off he trots, seizes his mattress, drags it across the floor, then pulls it up to the foot of the lounge. It is funny to see him chase around in a circle two or three times before he curls himself up for the night. In the morning he drags his mattress back to the stairway.

Buff and Peggy are two coon cats who live in the same house. Buff is big and goodnatured; but Peggy is little, old, and somewhat spoiled. Ginger has been taught to be kind to the cats, and they in turn are more friendly than cats usually are, still they are more or less jealous of his greater privileges. They have to sleep out in the barn.

One cold winter morning Master had business for Ginger before he had time to do his chamber-work. When Ginger came in again, Buff and Peggy had taken possession of his bed. Buff was jubilantly working her paws up and down, and purring like a big automobile. Peggy was curled into a fluffy gray ball, and merely opened one eye when Ginger appeared. Ginger looked at the cats, then pranced and whined. No doubt he was trying to say, quite politely, "Excuse me, but it is time to put my bed away." He whined once more to make sure they heard him.

"Now there'll be a scrap," declared Mistress. "I'll bet on Peggy."

"I'll bet on Ginger, if it is two to one," contradicted Master. "Here, Ginger, go put your bed away."

"Bow-wow, bow-wow," barked Ginger, going a bit nearer the cats.

Buff stopped treading and purring, huffed up her back and spat defiantly. Peggy didn't move at Buff's warlike attitude, but it was noticed that she was watching Ginger from her two slits of eyes.

"Go put your bed away," repeated Master.

"Bow-wow, bow-wow," answered Ginger, dashing forward, then back with the speed of lightning, while Buff spat and Peggy tightened her paw for a stroke. They had the coveted bed and seemed willing to fight to keep it.

"I told you to put your bed away," threatened Master.

Ginger groveled at his feet, looking up as if to ask, "What can one poor dog do against two cats?"

"Ginger!" and Master stamped his foot.

Ginger stopped, straightened up, then took a fighting position. Peggy got to her feet in haste, and both cats had a paw raised expectantly.

"U-r-r-r," growled Peggy.

"Spit, spit," went Buff.

Ginger didn't bark, he was waiting. When he saw that Peggy's paw had relaxed a bit, he made a rush, grabbed a corner of the mattress, and down it came, cats and all.

What a mix-up there was for a few minutes! Mistress jumped upon a chair to be out of the way. What a squirming, twisting, and waving of gray tails and yellow tails, for Peggy and Buff were taking their revenge on Ginger. Then the air cleared. Ginger dragged his property away to safety, and Buff and Peggy scuttled under the stove, where they nursed their injured feelings and glared out to see what would happen next.

"Good dog," praised Master, when the bed was in place.

"Good dog? You mean poor dog," protested Mistress, getting down. "Look at his nose." Ginger whined and laid his nose on her lap. He felt as he did last year when he had a fight with the porcupine. He had three long, deep scratches down his nose.

"Never mind, Ginger," said Master, patting him, "those saucy cats will never get on your bed again," and they never did.—Annie Balcomb Wheeler, in Zion's Herald.

FASHION NOTES.

Separate skirts continue to be very good style for spring wear and are shown in baronette satin, tricolette, crepe de chine, satin and crepe in combination, as well as wool plaids and serges. There are pleated and tucked styles as well as those gathered or with hemstitched or bias folds.

Gingham, which came into popularity during the war, is a leading favorite this spring and is shown in most extensive range and beauty of color and pattern.

White footwear in kid, nubuck, calf or fabric, is to be much worn this summer.

Tricolette bags are said to be the last word in bag fashions. They are made in regular bag shape, but with little individual touches that make them appealing.

Fichus of muslin, tulle or organdie are used to finish the simple afternoon frock and may be purchased in the shops.

Voile in soft colors and guaranteed not to fade in the wash makes pretty afternoon dresses. Narrow velvet ribbon is used for trimming.

A black costume can be lightened by two touches of henna—in the hat feather and the silk stockings.

Irish crochet insertion is seen on lingerie blouses and larger pieces of the lace are being used for vestees.

Tricollette in navy blue embroidered in wool in henna color makes a very effective combination.

THE OUTDOOR NURSERY.

Any mother with a baby or small child to care for this coming summer should make every effort to have some place outdoors that the child may be kept for a large part of the day. Waking or sleeping, the child needs fresh air in abundance.

If there is an available porch, part of it should be partitioned off with a railing, where the child may be left safely. A soft rug or blanket for the floor that can be easily washed is the best floor covering.

It is important that the baby's porch be insect proof, therefore, it must be carefully screened, preferably with a firm wire netting, but mosquito bar may be made to answer.

The bed for the child must be sheltered from wind and too intense light, and that may be done either by awnings or by porch shades. The porch shades are hung on the inside of the netting so are easy to adjust.

For the older child, toys should be provided, so to interest it during waking hours.

The effort and expense of preparing such a porch will be more than repaid by the comfort of the mother in knowing that her child is safe and happily occupied.

DIET FOR CHILDREN.

Milk should be the principal article of food up to two years and should form a part of each meal up to ten years.

Oatmeal should cook from two to three hours. Other cereals should cook one hour.

All bread should be at least two days old. Graham crackers or milk toast may be given, but not hot bread, biscuits or griddle cakes.

Eggs should be soft boiled, poached or coddled, but never fried.

Meats should be roasted or broiled.

All vegetables should be put into boiling salt water and well cooked. If coarse, put through a puree sieve or mash well.

Good ripe fruit should be given daily. Mashed pulp of peaches and pears may be used after the second year. Never give uncooked bananas.

Deserts should consist mainly of fruit. Tapioca, rice, cornstarch and bread puddings may be used.

The water should be cool, pure drinking water never ice water. If in doubt about the purity of the water, boil it for ten minutes, put in a covered pitcher and keep in a cool place. The child should drink plenty of water between meals.

Until two months old, the child should sleep about twenty hours out of the twenty-four. During the first year, it should average sixteen hours of sleep. During the second year, it should average fourteen hours of sleep. The sleeping room should be quiet, with plenty of fresh air. Do not take children into crowds. Children grow best at home and are not so likely to catch disease.

ONLY ONCE.

Director Raymond Wells, who besides producing motion pictures, is one of the directors of the Hollywood Officers' Training Camp, tells of an encounter between Instructor Captain Eastman and a recruit.

"You've fallen out of line not less than five times. You should not be in this regiment at all," cried Eastman.

"Where should I be," demanded the recruit.

"In the flying corps, and then you'd only have to fall out once."—From the Atlanta Journal.

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In the next grade we have the **Krakauer, A. B. Chase,** and **Weber**—these are high grade instruments—old and famous makes.

Then comes the **Steinway**, the **Standard** by which all pianos are judged---to have a Steinway is to have the Best.

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THE JOLLIER.

He may not mean just what he says,
But still he wears a smile.
The kind that gladdens weary hearts
At least a little while.
And with his grin he spills a tale
That's meant to make you laugh;
It isn't long until you find
You're not so blue by half.

You've failed, perhaps—you know it, too,
Yet he your work will praise.
And when he moves along you'll find
Your hopes have had a raise.
The slap he gives you on the back
Will kill most any frown,
His little jolly helps a lot
When troubles have you down.

The world could use more of his kind,
For he's an optimist,
Who loves to grab the Worry Imp
And slap him on the wrist.
He may not mean just what he says,
But still he wears a smile,
The jollier, by ginger, is
A fibber who's worth while.

THE RESULTS OF THE CHILDREN'S YEAR.

The greatest lesson of Children's Year in California is shown in the following statistics; in an examination of 40,800 children under 6 years of age, 47 per cent show correctable defects; 31 per cent show tonsils and adenoids, which are abnormal; 6 per cent show defective and neglected teeth; 29 percent are below the height and weight of the national scale.

The opportunity for a careful discussion with a nutrition expert of how to correct the child's diet is an important part of every health center. Advice should be given to the mother of the correct dishes to feed a child as well as general suggestions.

It has been called to the attention of those in authority that the weaning period is poorly managed by many mothers and that by two years of age, the average child sits at the family table and eats the family diet, when a far simpler diet would make a more splendid specimen by six years of age.

The importance of dental work can not be too early impressed upon mothers, the six-year-old molars often being decayed and lost, thus weakening the chewing surface of the mouth.

Every community that emphasizes better health conditions and better intelligence in regard to health is laying up for its citizenship great possibilities of efficiency and happiness throughout life.

ESSAY BY RUSKIN ON NECESSITY OF BEING GOOD COOK.

To be a good cook means the knowledge of all fruits, herbs, balms and spices, and of all that is healing and meet in fields and groves, savory in meat. It means carefulness, inventiveness, watchfulness, willingness, readiness of appliance. It means the economy of your greatgrandmother and the science of modern chemists; it means much tasting and no wasting; it means English thoroughness, French art and Arabian hospitality; it means in fine that you are to be perfectly and always ladies, and you are to see that everybody has something nice to eat."—Ruskin.

Gov. Benjamin Strong of the Federal reserve bank said at a dinner at the Plaza:

"Germany, despite her diabolical crimes, is expecting us to forgive and forget. That is what she means by 'a just peace.'

"Germany reminds me of the little boy who said to his mother:

"'I've been an awful good boy since father gave me that licking, ain't I?'

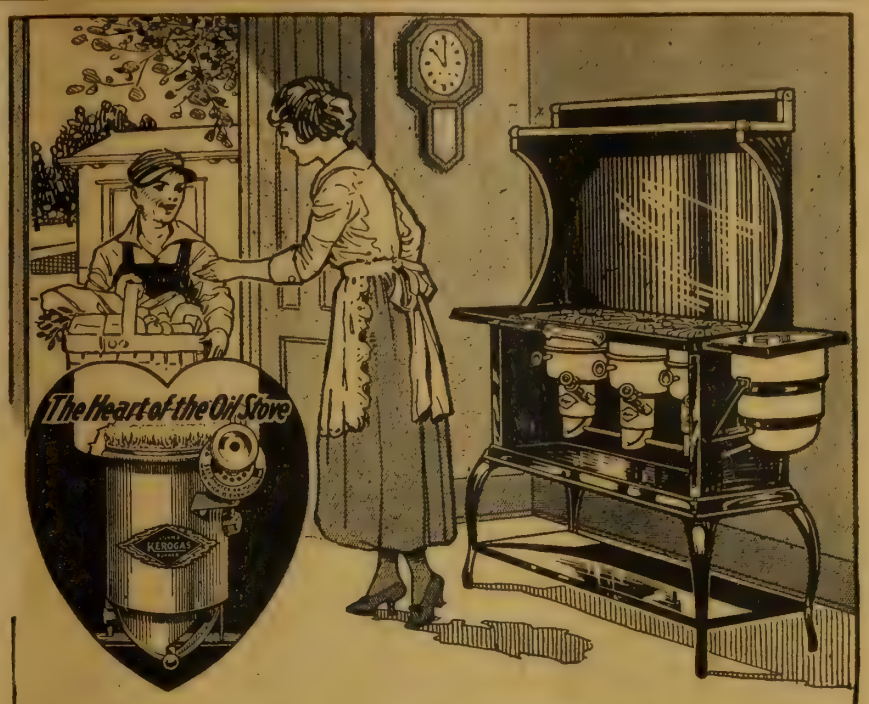
"'Yes, dear, I have had very little cause to complain since then.'

"'You don't distrust me any more, do you ma?'

"'No, dear. I trust you, now.'

"The little boy gave his mother a reproachful look.

"'Then why is it, ma, that you still keep the cake hidden and lock up all pa's cigarettes?'"



The Patented KEROGAS Burner Makes Good Oil Stoves Better

When you buy an oil stove, no matter whose make it may be, look at the burners. There is the 'heart' of the stove. If the name "KEROGAS" appears on the burners, you are making no mistake—you're buying certain satisfaction.

The KEROGAS Burner goes on reliable oil stoves—well constructed, honestly made articles and its unusual merit makes good stoves better.

First of all, the KEROGAS Burner gives an intense, concentrated flame within a flame right against the cooking vessel. This insures a quick heat which cuts cooking time in half. In addition to simplicity of control, fuel economy is a big feature. The KEROGAS Burner mixes a large quantity of air with the kerosene or coal oil it burns.

As to durability—well—one piece, all brass burner, leak, rust and trouble proof—simple, strong mechanism, all tending to make the KEROGAS last as long as the stove which carries it.

Look for the Word "KEROGAS" on the Burner. It is an Evidence of Quality in the Stove That Carries It

A. J. LINDEMANN & HOVERSON CO.
1219 First Avenue MILWAUKEE, WISCONSIN
Manufacturers of Burners, Ovens, Cooking and Heating Stoves and Ranges

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Standard Equipment on the Better Makes of Oil Stoves

-in cans only



Ghirardelli's Ground Chocolate is so good—so pure—and so rich in nutriment that it deserves nothing less than this quality-sealed can. That's why Ghirardelli's is not sold in bulk, but *in cans only*.

In ½ lb., 1 lb. and 3 lb. cans—at the store where you do your trading.

Say "Gear-ar-delly"

D. GHIRARDELLI CO.
Since 1852 San Francisco

Ghirardelli's Ground Chocolate

Convert *your old-fashioned* bathrooms

into modern bathrooms to which you can conduct your guests with a feeling of pride.

The combination of beauty and simplicity contained in Pacific Plumbing Fixtures make them the vogue. Their added convenience, and the amount of unnecessary work they save, will more than compensate for their moderate cost.

Write for a copy of the Book of Bathrooms. It's a 36-page book, brim full of helpful ideas on bathroom arrangement.

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Factories at Richmond and San Pablo, Cal.



THE STEPHENSON PATENT COOLER

Absolutely Sanitary
Perfect Ventilation

NO ICE REQUIRED



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MARTINEZ, CAL.

DAISY FLY KILLER PLACED ANYWHERE ATTRACTS AND KILLS ALL FLIES. Neat, clean, ornamental, convenient, cheap. Lasts all season. Made of metal, can't spill or tip over; will not soil or injure anything. Guaranteed effective. Sold by dealers, or 5 by EXPRESS, prepaid, $1.25.



HAROLD SOMMER, 150 De Kalb Ave., Brooklyn, N. Y.

THE MARKET REPORTS

Figures Given Are Independent and Reliable.
Prices Quoted as Paid to Producers.

SAN FRANCISCO.

San Francisco, April 22, 1919.

WHEAT.

The following prices were announced by the Federal Grain Corporation last year and are still in effect. They are figured f. o. b. San Francisco, Los Angeles, Seattle, Tacoma and Portland and guarantee the grower a minimum of $2 f. o. b. shipping point:

Per bushel—	
No. 1 hard	$2.20
No. 2	2.17
No. 3	2.13
No. 1 soft	2.18
No. 2	2.15
No. 3	2.11
Club or Sonora, No. 1	2.16
Do, No. 2	2.13
Do, No. 3	2.09
Recleaned for seed, per ctl.—	
California Bluestem	$4.25@4.30
Early Baart	None

BARLEY.

Barley continues to reach higher quotations both for spot and futures. Local dealers hold very small supplies of either the feeding or shipping grades, but they are acting as agents for the foreign demand, which seems limited only by the amount of shipping space available. France is the largest foreign buyer at the present time.

Feed	$2.50@2.60
Shipping	2.60@2.75

OATS.

While the demand for oats is not large in this market as far as local consumption is concerned, the continued advance in the price of barley has caused some of the users of the latter to turn to oats. As a result oats are stronger and quoted at a higher price.

Red feed, per ctl.	$2.30@2.40
Red for seed	Nominal
Black for seed	Nominal
Recleaned Red or Black for seed	Nominal

CORN.

Corn is showing strength in sympathy with the strength in barley. While some corn is said to have been sold at a higher figure than $3.25 and some at a lower price, this quotation is reported to cover the bulk of sales of first quality California yellow.

California	$3.25
Egyptian, choice	Nominal
Milo	Nominal

HAY.

Receipts of hay for the past week were 2,464 tons compared with 1,495 tons the previous week. These heavy receipts are accounted for by the large amount of hay brought into the city to fill Government purchases of the past week. Dealers are busy filling these orders, which move slowly on account of the fact that the hay has to be double compressed, for export and therefore requires much extra handling. Hay is still moving to the Southern States and most of the old alfalfa that was not rain damaged has been cleaned up in that direction.

No. 1 wheat, per ton	$17.00@19.00
No. 2 wheat, per ton	13.00@16.00
Choice tame oat, per ton	17.00@19.00
Wild oat, per ton	12.00@15.00
Barley hay, per ton	12.00@15.00
Alfalfa, per ton	16.00@20.00
Stock hay, per ton	12.00@14.00
Barley straw, per bale	.50@ .80

FEEDSTUFFS.

Both rolled barley and rolled oats were advanced in quotations this week in sympathy with the increased price of the whole grain. The demand is showing some increase.

Cracked corn	$64.00@65.00
Rolled barley	51.00@52.00
Rolled oats	49.00@51.00
Alfalfa meal	34.00@35.00

POTATOES, ONIONS, ETC.

The market for old potatoes is quiet at unchanged prices. New potatoes are now coming in in considerable quantities and prices are lower. On the street new potatoes sell from 3½ to 5 cents. Warehouse onions are higher on demand for eastern shipment while green onions except from the bay region are lower. Lettuce is getting plentiful and is coming in from a number of different sections. String beans are arriving more plentifully from the south and will soon sell much lower. Summer squash also is plentiful and sells at about half the price of last week.

String beans	15@25c
Peas	7@10c
Lima beans	None
Carrots, per sack	$2.00@2.75
Asparagus	4@7c
Rhubarb, Strawberry, box	$1.50@1.75
Cucumbers, hothouse, box of 30	3.00@3.50
English, per dozen	$2.50
Eggplant, per lb	None
Lettuce, per crate	75c@$1.25
Celery, crate	Nominal
Spinach, crate	$0.75@1.00
Tomatoes, Southern, per crate	None
do, Mexican	$2.00@3.00
Sprouts	Nominal
Summer squash	90c@1.00
Potatoes—	
Rivers	$2.00@2.40
Oregon	2.00@2.40
Washington	1.95@2.25
Idaho	2.00@2.40
Garnets, new on street	5c
Other new on street	3½@4½c
Sweets, per sack	$5.00
Onions, Warehouse Stock—	
Yellows	None
Australian Browns	$4.00@4.50
Green River	75c@1.00
Green Alameda	2.00@2.25
Garlic	50@60c

BEANS.

There were no particular developments in the bean market this week, and locally the market was much quieter. There was a little movement in limas, and that variety was marked up 25 cents. Cranberries were also higher. Otherwise last week's quotations will stand for today's prices.

Bayos, per ctl.	$6.25@6.40
Blackeyes	$3.40@3.60
Cranberry beans	$4.90@5.10
Limas (south, recleaned)	7.50
Pinks	5.75@6.00
Mexican Reds	4.75@5.25
Tepary beans	2.50@2.75
Garbanzos	11.00@11.25
Large whites	5.75@5.90
Small whites	6.60@6.75

POULTRY.

Heavy arrivals with a decided falling off in demand broke the poultry market in several descriptions this week. Large broilers, particularly and in a measure the medium sized, showed an unusual falling off, the larger going down from 5 to 10 cents a pound and the mediums from 2 to 4 cents. The small sized, which were not in demand last week maintained their last week's quotations. This drop in broiler prices caused lower quotations on squabs to be made and also affected Belgian hares. Hens also are quoted from 2 to 3 cents less than last week, while fryers and young roosters maintained their last week's prices on light receipts.

Turkeys, live, young spring, lb	30@38c
do, old	34@36c
do, dressed	42@44c
Broilers, 1½ to 2 lbs.	40@45c
do, 1¼ lbs.	38@40c
do, ¾ to 1¼ lbs	35@36c
Fryers	52@55c
Hens, extra, per lb. colored	36@38c
do, Leghorn	36@38c
Smooth young roosters, per lb. (3 lbs. and over	48@50c
Old roosters, colored, per lb.	22c
Geese, young, per lb.	38c
do, old, per lb	38c
Squabs, per lb.	60c
Ducks, young	38c
do, old	36c
Belgian hares	15@18c
Jack rabbits	$3.00@3.50

BUTTER.

Butter closed a cent and a half higher this week than last week. This also represents the extreme fluctuations of butter, which has been steadier than for some time past. For the month of April just closed, butter has shown a range from 49½ to 58½. Compared with last year for the month of April, butter this year is from 12 to 15 cents higher. Last year the April range was 37½ to 43, and during April, 1918, butter touched the lowest price of the year.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extra	52½	53	51½	52½	52	53
Prime first			Nominal			
Firsts			Nominal			

EGGS.

While extra eggs sold a cent lower at the close than a week ago, the averag price for the week was almost identical with that of a week ago. During the month of April eggs were high at 46½ and low at 42½ for extras. In April a year ago the fluuctuations were from 37 to 42½ cents. Considerable quantities of eggs still are going into the ice houses, and it is evident that dealers are not looking for materially lower prices this year. It is reported that 2,000 Chinese shelled eggs have just arrived in San Francisco, and these will doubtless be sold in the bakery trade. This is not enough to affect the local market, but if these shipments continue and grow in quantity they may eventually have a regulating effect on prices.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	46	45	44½	44½	44½	45½
Extra first	41	41	41	43½	..	43½
Firsts			Nominal			
Ex. pullets	43	42½	42	43	43	43½

CHEESE.

The cheese market was steady with an excellent demand for Fancy California flats, which resulted in an advance in the price of this variety. Otherwise there were no changes. During April California flats have varied in price from 26½ to 29. This is compared with 23 to 28 for April, 1918. California Y. A. varied from 29 to 34½ this April compared with 26½ to 28 last year. In the Oregon cheese, Y. A. dropped from 39 to 34 cents, while Oregon Triplet prices were not changed. A year ago the exchange did not quote Oregon cheese during April.

Fancy California flats, per lb.	29c
First	Nominal
California Y. A. fancy	30c
Oregon Y. A.	34c
Oregon Triplets	34½c
Monterey cheese	22½@24c

FRESH FRUITS.

The stock of ice house apples is showing signs of being exhausted and the prices, for both California and Northwestern were advanced this week. Strawberries are coming in in both better quantities and of better quality. By the chest they are somewhat lower and by the crate a little higher.

California apples	$3.50@4.00
Northwest apples	3.50@4.00
Winter pears	3.00@4.00
Persimmons	None
Loquats, per lb.	6@8c
Strawberries, chest	$12.00@14.00
do, crate	2.00@ 3.00

CITRUS FRUITS.

Valencia oranges are making their appearance in quantities on the market. While they are not quoted quite so high as navels for the best, their prices are well maintained and are higher than many of the navals now on the market. Tangerines and manderines both advanced in prices.

Oranges, navels	$3.50@5.75
Valencia	4.75@5.00
Mandarins	3.50@4.00
Tangerines	3.50@4.00
Lemons, fancy	4.00@4.50
do, choice	3.50@4.00
do, standard	3.00@3.50
Lemonettes	2.00@3.00
Grapefruit	2.50@3.50

DRIED FRUITS.

Buyers are purchasing all the prunes they can at 12 cents, but it is stated that this price has not been exceeded as a basis price. Action of the Growers' Association is being awaited with considerable interest. Peaches continue to be bought at 13½ to 14 cents. Other dried fruit prices will probably be named in the near future.

RICE.

There was no change in the condition of the rice market this week except that the dealers made some changes in prices, which they say will agree much nearer with actu transactions than previous market quotation Prices follow: Paddy rice Nos. 1 and $4.32; 3d and 4th grades, $4.16; early pr lific, $4.47; clean, fancy Japan, 7½c p lb; choice Japan, 7⅜c per lb; screening 5½c per lb; brewers, 3¼c per lb; rice polis $48 per ton, car load lots; rice bran, $28 p ton, car load lots.

HONEY.

There were no developments in honey du ing the past week, and no reported purcha of the California products by local dealers.

HIDES.

The market for country hides is fair strong. For light hides there is a steady d mand.

Wet Salted—Native steers and cows, lbs. up, 16@18c; 30 to 50 lbs. up, 16@18 kips, 15 to 30 lbs, 21@22c; calf and veal, u der 15 lbs. 31 @32c; bulls and stags, 13@14

Horse Hides—Wet salted, large prime, ea $5@$5.50; medium prime, $4@4.50; sma $2.50@$3.50; dry, large, prime, $2.50@ dry, medium, $1.50@2.50; colts and poni 50c@$1.

LOS ANGELES.

Los Angeles, April 29, 1919.

BUTTER.

This week's quotations show butter pri again advancing. Receipts continue heavy demand reported good. Shipments for week, 398,300 lbs.

We quote:

California extra creamery	
do, prime first	
do, first	

EGGS.

There is little change to report in t market. Prices continue to hold firm. advance of 1c will be noted on case co since last week's quotations. Shipments the week, 2,169 cases.

We quote:

Fresh ranch, extras	
do, case count	
do, pullets	

POULTRY.

Prices holding firm. Broilers and Fri selling fairly good and the market repo fair receipts. The demand is altogether l and the exchange reports very little poul going into cold storage at this time of year.

Broilers, 1 to 1¼ lbs.	
Broilers, 1½ to 1¾ lbs	
Fryers, 2 to 3 lbs.	
Roosters (soft bone), 3 lbs. and up	
Stags and olds roosters, per lb.	
Turkey	35@
Hens	33@
Ducks	34@
Geese	

VEGETABLES.

Peas firm and demand fair. Sweet p toes show slump in price. Summer squash clines. Onions advancing because of light ceipts. New potatoes now quoted, selling 5c and 7c per lb. Receipts are fairly he and demand good on all staples. Shipm from the Imperial Valley section are light

We quote from growers:

Peas, per lb.	8@
Potatoes—	
Oregon Burbank, per cwt.	$2.25@
Idaho Russets, per cwt.	2.00@
Sweet potatoes, per cwt	$3.75@
Garlic, per lb.	
Onions—	
Australian Brown, per cwt.	$4.00@
White Globe, per cwt.	
Imperial Valley silver wax, crate	$3.75@
Cabbage, per 100 lbs.	$2.00@
Celery, local, per crate	4.00@
Celery, northern, per crate	8.00@
Cauliflower, standard crate	$2.25@
Rhubarb, per 30-lb. box.	
Summer squash—	
Imperial Valley, 4 basket crates	$1.00@
Asparagus, per lb.	6@

FRUITS.

Quotations remain firm in this market change in prices to report on deciduous fr There is still a good demand but the su is short. Strawberries show a declin prices since last week.

We quote from growers:

Apples—	
Black Twigs, Northwest pack	$3.50@
Baldwins, Northwest pack	
White Pearmains, 4-tier	3.50@
Yellow Newtown Pippins, 4-tier	3.25@
Winesap, loose, per lb.	7½@
Roman Beauties, Northwestern, per peck	3.50@
Loquats, per lb.	7@
Strawberries—	
30 basket crates, fancy	
Poor to choice	$3.00@

BEANS.

Little improvement will be noted in th market. Limas make slight advance with small white and pinks. All other remain the same as last quoted. The ket is dull.

Limas, per cwt.	
Large white, per cwt.	
Pink, per cwt.	
Small white	
Blackeyes, per cwt.	
Tepary, per cwt.	

HAY.

Alfalfa hay in fair demand. Grain very dull. The quotations remain unchanged since a week ago.

We quote f.o.b., Los Angeles:

Barley hay, per ton	$21.00@
Oat hay, per ton	23.00@
Alfalfa, northern, per ton	21.00@
Alfalfa, local, per ton	22.00@
Straw, per ton	9.00@

COTTON MARKET.

NEW YORK, April 29.—Cotton closed steady, net 20 points higher to 8 lower. cotton, quiet; middling, 29.65c.

Prices on options ranged as follows:

Option	Open.	High.	Low.
January	24.35	24.30	23.90
May	28.90	28.90	28.40
July	27.16	27.29	26.66
October	25.40	25.55	24.79
December	24.75	24.99	24.82

WEEKLY BUTTER AVERAGES.

Cents per pound for Extras.

Week Ending	San Francisco 1918	San Francisco 1919	Los Angeles 1918	Los Angeles 1919
Jan. 2	50.40	66.19	50.16	63.16
" 9	51.08	61.00	50.00	64.00
" 16	52.33	61.70	50.50	64.16
" 23	52.50	55.83	52.00	62.16
" 30	53.00	44.91	51.83	49.00
Feb. 6	50.80	43.58	49.66	47.33
" 13	52.00	46.80	48.00	47.60
" 20	51.41	51.58	48.00	53.16
" 27	51.30	53.90	49.33	55.00
March 6	50.66	56.16	50.00	59.00
" 13	51.16	55.58	49.50	58.00
" 20	47.83	54.41	47.00	56.00
" 27	46.30	56.41	43.30	58.00
April 3	43.16	54.23	42.16	55.50
" 10	39.25	57.16	39.50	56.00
" 17	39.00	50.70	36.83	52.00
" 24	40.50	52.41	38.16	54.00

WEEKLY EGG AVERAGES.

Cents per dozen for Extras.

Week Ending	San Francisco 1918	San Francisco 1919	Los Angeles 1918	Los Angeles 1919
Jan. 2	52.80	75.60	48.16	69.50
" 9	60.91	69.91	50.66	66.66
" 16	65.66	58.70	55.00	62.41
" 23	65.66	52.58	58.00	54.66
" 30	61.25	48.75	54.00	52.33
Feb. 6	58.50	42.00	51.66	43.00
" 13	44.40	40.90	44.83	37.80
" 20	44.75	36.41	40.83	39.33
" 27	42.40	37.49	39.58	33.60
March 6	36.83	37.58	35.00	37.00
" 13	37.91	37.16	38.00	37.00
" 20	40.66	38.16	39.63	42.00
" 27	39.50	40.41	40.00	42.00
April 3	38.19	42.41	38.83	45.00
" 10	37.58	42.91	36.33	45.00
" 17	39.16	46.10	36.83	46.00
" 24	40.80	45.00	39.66	46.00



CALIFORNIA FARM BUREAU MARKETING ASSOCIATION.

The following tables give prices paid by packers at the two county swine sales held last week at Tulare and Visalia under the direction of the Farm Bureau Marketing Association.

Tulare—April 22, 1919

	Gross Wt.	Dock	Av. Wt.	Per 100 lbs.	Buyer
80 hogs	16360		200	18.25	Joe D. Biddle
50 "	12790		250	17.85	Joe D. Biddle
12 "	3885	325	325	16.85	Joe D. Biddle
60 "	10420		175	17.50	Joe D. Biddle
49 "	7120		150	17.00	Joe D. Biddle
78 "	17580		225	17.55	Joe D. Biddle
85 "	17680		207	18.35	Wilson & Co.
62 "	12875		209	17.75	Wilson & Co.
21 "	4030	30	185	17.25	Wilson & Co.

Visalia—April 23, 1919.

	Gross Wt.	Dock	Av. Wt.	Per 100 lbs.	Buyer
86 hogs	17710		206	18.00	Western Meat Co.
71 "	16770		235	18.90	Wilson & Co.
63 "	14570		231	18.00	Joe D. Biddle
91 "	16640		183	18.25	Joe D. Biddle
68 "	11420	70	170	17.90	Joe D. Biddle
68 "	16110		237	18.45	Joe D. Biddle
82 "	17120	30	208	18.10	Joe D. Biddle
33 "	11730	1034	324	16.60	Joe D. Biddle
41 "	8740		213	17.75	Joe D. Biddle
12 "	3490	160	280	17.25	Joe D. Biddle
10 "	2540	60	248	18.25	Joe D. Biddle

Special Livestock Market Report.

San Francisco, April 30, 1919.

CATTLE—The high Eastern market tends to buoy up the markets on the Coast, and packers and shippers have to bid generously for supplies, especially for well-finished steers. Medium grades of cattle, however, appear to be in most active demand.

Steers—
- No. 1, weighing 1000@1200 lbs. 12@12½c
- do, weighing 1200@1400 lbs. 12@12½c
- do, thin 9@10c

Cows and heifers—
- No. 1 9½@10c
- do, second quality 8½@9c
- do, common to thin 4@7c

Bulls and stags—
- Good 6½@7½c
- Fair 5½@6½c
- Thin 4@5½c

Calves—
- Lightweight 11½@12½c
- Medium 10½@11½
- Heavy 8@10c

SHEEP—The quality of both sheep and lambs arriving is good and prices are steady. It is not likely that present prices will fall for some time, if at all.

Milk lambs 13@15c
Yearlings 12@12½c
Sheep, wethers 11@11½c
do, ewes 8½@9½c

HOGS—There is no change in the hog market this week. Receipts are not heavy, and the price situation is strong.

Hogs—
- Hard, grain fed, 100 to 150 18½c
- do, 150 to 250 19c
- do, 250 to 300 18½c
- do, 300 to 400 18c

Los Angeles, April 29, 1919.

CATTLE—There is no change in prices to report in this market. Cows are in only fair demand. Receipts fair and the tone of the market is dull.

Per cwt., f. o. b. Los Angeles:

Beef steers, 1000@1100 lbs.	$11.00@13.00
Prime cows and heifers	9.50@10.50
Good cows and heifers	8.00@9.00
Canners	$5.00

HOGS—Prices in this market remain unchanged since last week's report. Receipts about up to normal with a fair demand only.

Per cwt., f. o. b. Los Angeles:

Heavy, avr'ging 275@350 lbs.	$16.00@17.00
Mixed, avr'ging 225@275 lbs.	17.00@18.00
Light	18.00@18.50

Rough docked 20 lbs., piggy sows 40 per cent

SHEEP—The tone of this market continues dull, and no change in prices is reported. There is very little demand noted—and not many wanted at this time.

Per cwt., f. o. b. Los Angeles:

Prime wethers	$ 9.50@10.50
Prime ewes	8.50@9.50
Yearlings	10.00@11.00
Lambs	14.00@15.00

Portland (Ore.), April 29.

CATTLE—Slow; receipts, 75.

Steers, best	$13.50@14.00
Good to choice	$11.00@11.50
Medium to good	$10.00@11.00
Fair to good	$ 9.00@10.00
Common to fair	$ 8.00@ 9.00
Good to choice cows and heifers	$10.00@12.00
Medium to good	$ 7.00@ 8.00
Fair to medium	$ 5.00@ 6.00
Canners	$ 3.50@ 4.50
Bulls	$ 6.00@ 8.50
Calves	$ 9.00@13.50
Stockers and feeders	$ 7.00@10.00

HOGS—Strong; receipts, 532.

Prime mixed	$20.50@20.75
Medium mixed	$20.00@20.25
Rough heavies	$18.30@18.75
Pigs	$18.75@18.20

SHEEP—Steady; receipts, 145.

Spring lambs	$16.00@16.50
Prime lambs	$15.50@16.00
Fair to medium	$14.00@15.00
Yearlings	$11.00@12.00
Wethers	$ 9.00@10.00
Ewes	$6.50@10.50

BARLEY CONTINUES ACTIVE.

From all over the U. S. barley districts an improvement seems shown in the market prices. At San Francisco the quotations are 15 to 20 cents higher, according to the U. S. Department of Agriculture reports of April 5. Sacramento quotations were 20 cents above the same date the previous week. Los Angeles stocks were reported light and demand good, and quotations showing an advance of 7½ to 20 cents. Stockton barley market advanced steadily five to 30 cents above the week previous. Minneapolis, Minnesota, reported a good demand and small offerings, causing the market to advance 9 to 12 cents. Milwaukee markets were buoyant and brisk, being quoted 12 to 15 cents higher, with receipts light and choice grades scarce. The removal of the ban against bottling beer created a brisk inquiry for good malt samples. In Kansas City, Missouri, many feeders are using barley feeds in preference to other ground feeds or alfalfa meal on account of the price, resulting in a free movement. It is only a few seasons ago that the use of barley as feed in the Central West was practically unknown.

A new record price for hogs at the Portland Union Stockyards, was made April 21, when $20.25 was paid. At Kansas City on about the same date a new record price of $21 was reached.

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TRACTORS FOR SALE—Holt Caterpillar, 30 H. P. Samson Seive-Grip 10-25. Good condition. Call and see them. Prices very reasonable. E. A Dunipace, Paicines, near Hollister, Cal

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FOR SALE — 840 acre grain and stock ranch, 3 miles from Pleasant Valley R R. station, Mariposa county, Cal. 70 acres in grain now, 200 acres cleared and tillable. Balance fine pasture land. 2 houses, 2 barns, blacksmith's shop and tools, windmill and tank. Plenty of spring water the year around. Ranch fenced and cross fenced, part hog-tight; nice orchard, fruit of all kinds. No alkali or hard-pan. Average rainfall, 29 inches. Elevation 1500. About 2000 cords of Oakwood on the ranch. One-half mile to school. Good roads and neighbors. Free outside range adjoining. Price $22.50 per acre, including horses, farm implements and household goods. $5000 cash, balance 10 years. A. F. Zurilgen (owner), Greenfield Dairy, Chowchilla, Madera Co., Cal.

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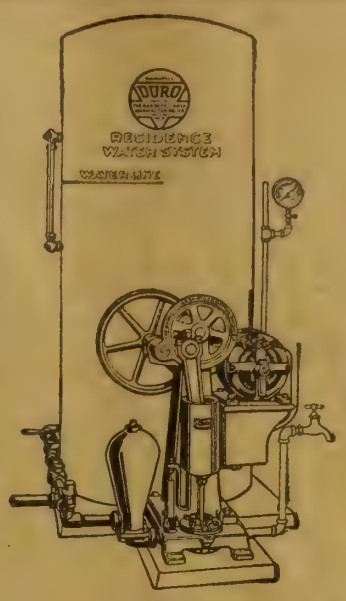
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SPECIALS IN FEEDERS:

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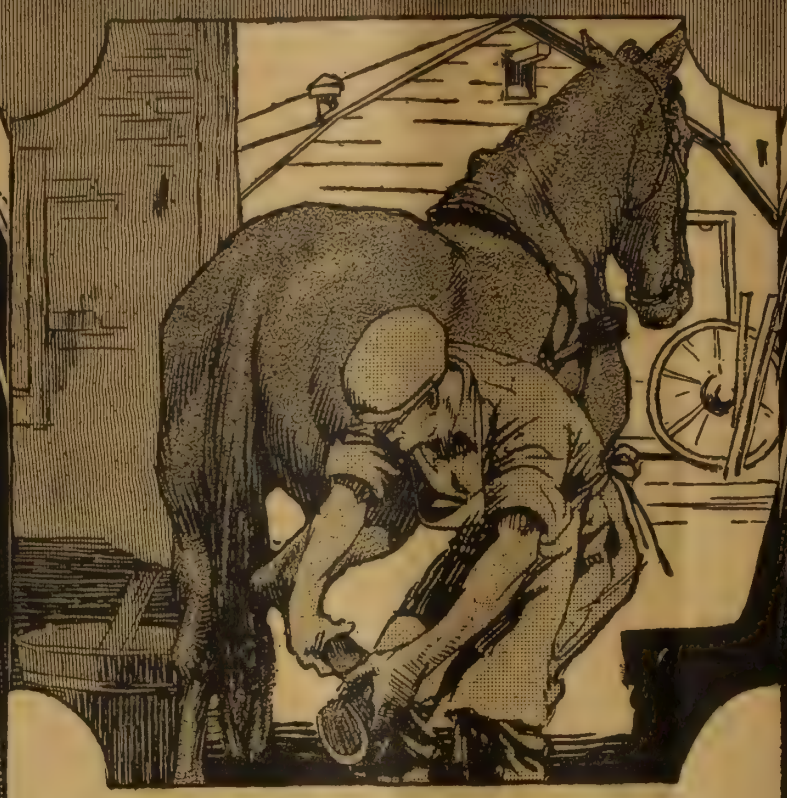
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Vol. XCVII—No. 19 THE PACIFIC RURAL PRESS Forty-ninth Year

SAN FRANCISCO MAY 10, 1919 LOS ANGELES

An Exceptional Spring for Orchardists

Written for the Pacific Rural Press by John J. Fox.

IN NORTHERN CALIFORNIA this Spring has been a difficult one for the orchardist and for the farmer. Because the rains have fallen so splendidly so far as moisture is concerned, and in fruit sections the weather has been cool without damaging frosts, yet the farmer and orchardist were set back in their spring work through these very conditions. Cover crops, which in February promised little, developed in many instances to such a degree that they became an embarrassment. We saw wild radish or kale and mustard nearly as high as a man's head and other weeds the same; much of it getting hard before it was possible to get on the ground. This will probably interfere with the function of the mulch. Some men who have such wads of stuff and successfully turned it under, are leaving it undisturbed. The intention is to keep the crop plowed under thoroughly covered, set the disk shallow enough not to bring any of it up, and follow with the pulverizer.

This Looks Like Sound Management.

One man turned up some matured barley stalks—rotten and brittle of course, but clearly outlined—that were plowed in two years ago. One man who disked his ground to hold it before it was dry enough to plow, said that he got onto the ground too soon with the disk, which resulted in its turning up rather cloddy at plow time except in spots that showed a very light cover crop and which were naturally the first to get hard on the surface. Other orchards in the same neighborhood which had been disked to hold have come up in fine condition and are holding their moisture though not yet plowed (April 27). Henry Wheatley of Salvador disked what orchards he could not get to plow in time. On the part he has plowed and finished he has

The Best Tilth I Have Seen in an Orchard

of such strong soil this year. The method he employed to get it was to follow each day's plowing with the double disk with a two-row Dunham pulverizer following. He draws these two tools with an orchard Yuba Ball-tread. When one orchard was all plowed and worked the same way with the above-mentioned tools, he crossed his work with the same two implements. He hasn't a clod left; the mulch is mellow and moist clear to the surface (April 27), and won't need touching for a couple of weeks. I have before mentioned that Sheridan Baker of Sonoma always follows his plowing each day with the pulverizer and gets good results.



A fine mulch is wrought and maintained by the use of the disk cultivators.



Easy manipulation on a short headland is desirable in small orchards. Note the short turn.

Used Pulverizer Both Ways.

Another man plowed and followed with the clod masher (wooden), then disked across and found quite a few clods. He has used the Cunningham pulverizer both ways on them and has a nice-looking orchard. But he says this is the first year for three years he has had to use this tool. Generally he breaks everything down with the old-fashioned wooden clod-masher. He used the clod-masher right after the plow, but couldn't ride it; the soil was too moist—and here is, no doubt, where some of his clods came from.

Works Out His Own Plan of Culture.

Scott S. Southworth on the Napa River has made an excellent job of his 50 acres of young prunes and cherries, plowing away from the trees with a moldboard gang and without the use of a single plow. He plowed away as close to the trees as anyone ought to go and he never barks a tree. He does all the work himself. He has an International Harvester Tractor and he follows his plowing each day with the harrow. He had an awful wad of green stuff to turn under this year, particularly down by the river. When we were there (April 27) he had nearly completed the second working and we noticed that the pulverizer (Dunham) was in the lead, a double disk hitched behind that with a wooden clod-masher (loaded) bringing up the rear. The cover crop was well turned under and the mulch as we saw it was in fine shape. The writer asked Mr. Southworth why he had the tools hitched that way; why not put the disk first and the pulverizer behind so as to cut out the clod-masher. "Well," he said, "I tried that—weighting the disk. I had to take the weights off because it cut more than it could handle. Even at that it threw so many clods behind that the pulverizer couldn't deal with them and buried itself behind a mound of accumulated clods and earth. Even as it is, I have to put a short hitch on that pulverizer to keep it from sinking too deep." The plan he had got worked out was certainly doing good work and the engine walks easily along with the load.

Old-Fashioned, Home-Made Rollers Obsolete.

Three modern "pulverizers" which I have seen at work were doing good work. The old-fashioned home-made roller is going out of fashion, and it is a good thing, too. For it packs the top of the ground where we don't want it packed and compacts it less below. It is more apt to push clods down at a certain stage than to break them. Then if a rainstorm comes along right after using the cement roller, and a whiff or two of wind from the North, the ground is like a solid rock before one can get it all stirred. And then it dries out to beat the band and we say, "Shucks!"

Brains Must Supplement Brawn.

In our wanderings about this fair state we are struck with the amount of brain-work that is being put into orchard management these days by different men, especially in applying the new power and the heavy tools employed. The same method employed on a heavy soil may not work on a light one. The various adobes are in a class by themselves. But the endeavor of all men is the same in one respect, and that is not to put a wheel on their cultivated land more often than is necessary. And yet they must not overload the tractor. It is therefore necessary for the owner or manager himself to find out and apply what is necessary for his own particular land, and his own desires. For instance, suppose a man finds he wants to draw a certain number of tools in sequence—following one another, so as to complete the whole operation without going over the ground a second time for awhile. He may want to draw a cutaway double-disk and a packer behind the plow, or perhaps a spring-tooth instead of the disk and a harrow and clod-masher. He wants to plow a certain depth, and his hitches and loads on other tools are to get certain results in depth and quality of tilth. How are such results attained?

Study the Capacity of Your Tractor.

Maybe he finds the load he has given is too much for his engine. He doesn't want to plow any shallower so he has to either—(1) take off a bot-

(Continued on page 727.)

PACIFIC RURAL PRESS

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JNO. J. FOX - - - - - Horticulture
R. H. WHITTEN - - - - Livestock

EDITORIAL.

COMBINATIONS.

IF WE HAD a cook-book handy we would rush through it to find out if there is any recorded combinations of spinach and tomatoes in current culinary creations. We seek such information because in our own experience with viands, which has been rather protracted but not cosmopolitan, we have never encountered tomatoes boiled with spinach or spinach sliced with tomatoes. And yet even such things may be somewhere found in the league of nations. It may be expected, of course, that these two esculents may come together in a salad, which in these days brooks no racial superiority, but welcomes all created things from the heavens above, the earth beneath and the firmament under the earth to intermixtures for nutrition's sake. Therefore we shall manifest no surprise if some day we really find spinach and tomatoes reveling together in saladitudinous reciprocity. We are not writing of these things for the purpose of arousing a dormant appetite. We invariably select subjects on the basis of their industrial importance and, believe us, spinach and tomatoes are now coming together on a foreground of considerable agricultural significance.

TO KEEP LAND BUSY.

One of the most interesting features of our current progress in crop-production is the new ways in which it is becoming possible to keep the land busy, by the succession of winter and summer growths in what is currently called "double cropping." For the most part it consists in extending to the field the demonstrations of feasibility which the market gardeners furnish. "What is there new about that: have not California farmers been learning from market gardeners ever since '49?" Yes they have. That is the way we lit upon our greatest bean, the Lima which under normal conditions constitutes about half our bean crop. But we only learned from the market gardeners that Lima beans would grow in the field. Two other more important things had to be learned without their help: first, that the Lima bean can be grown flat on the field in California; second that the outside world will buy all the dry Limas we can grow. And these same two things underlie the feasibility of field production of nearly all market-garden crops: viz, can they be grown cheaply and can the product be profitably sold?

BY MATCHING CROPS AND SALES.

And it is just here that we get back to spinach and tomatoes. Whether they are closely joined culinarily or not it will be very hard to put them asunder agriculturally because they involve not only the two points just specified, but because they are so closely complementary in their soil, moisture and temperature requirements. But first what are the facts of their broad affiliation? Take the accounts of double cropping in the Haywards region of Alameda county as they are this season being reported:

The first commercial crop of spinach from about thirty acres of land was delivered at Hunt Brothers cannery, beginning about March 22. The yield was an average of three tons to the acre and the crop was all canned before May 1, by which time most of the land which gave the spinach had been replowed and set with tomato plants. It is stated that there was profit enough in the crop to lead growers to arrange for the planting of spinach again next fall, as it not only pays, but is out of the way of the tomato product which has formerly been largely grown for canning.

The growing of spinach for canning is not original in the Haywards district. The crop has been grown and canned in other parts of the State for several years—more than 2,000 acres having been grown in 1917. The significance of the Haywards item lies chiefly in the emphasis placed upon its relation to tomato growing—both in filling the year and in relative crop requirements. Spinach is a winter-grower enjoying California valley temperatures during the rainy season. It requires plenty of moisture in soil and air to grow quickly and freely. The tomato is a summer and fall grower which, for fruiting well, should have only moderate moisture. Therefore, where the rainfall is generous, the spinach crop relieves the soil of its excess of winter-water and puts it in good shape for as early a start of tomatoes as the frosts permit. Relation of advantage from these correlations is, of course, determined by the fact that canners are using both crops in increasing amounts and dehydrators are counting upon using both largely. California is surely making marked progress in matching crops to keep the land always busy and is finding year by year new products to "nick" together and new ways to put them into durable form for continuous consumption. Nature gives us a long growing season: it is up to the preserving producer to have also a long selling season for what can be grown in a long season.

AND UNITING FOR LEGISLATION.

Attentive readers must have noticed that we have been shouting for months that those authorized to represent agriculture at Washington should forget their pet theories and visions and unite to secure from the government certain fundamental things which they all ought to be able to agree upon. In the course of this long tirade we had occasion to regret that our oldest farmers' organization in continuous existence, the National Grange, should have decided to establish its own bureau in Washington, notwithstanding the fact that there were already set up at the national capital a farmers' chiffonier and a farmers' sideboard—each fitted up with salary-drawers for agricultural usefulness, whose chief business seemed to be drawing away from each other and from the general good of the farming industries. We are glad to be assured that a better condition of things is approaching, as this letter testifies:

Cattawissa, Pa., April 26.

To the Editor: I just came across your editorial of March 15, entitled, "More Representatives, Less Representation." For your information I will say that the National Board of Farm Organizations and the National Grange have this day at a Conference made a working agreement on matters affecting farm interests that may come up in the coming session of Congress and other matters relating to agriculture.

WM. T. CREASY,
Chairman, Executive Committee,
National Board of Farm Organizations.

This is a very encouraging announcement. It means that the National Grange and the National Board (the temple builders) have found that they can work together on most of the thirteen points for which we made the National Board declare, on page 562 of our issue of April 12. Previously affiliated with the National Board was the National Farmers' Union under the presidency of Mr. Barrett, so that now, by the assurance of Mr. Creasy's note, we can say that the two greatest associations in the country, the Grange and the Union, have come together in the outer court of the temple—where we presume "working agreements" are properly domiciled, and we hope both will keep on working their agreement until both find themselves in the inner court with the temple walls all around them.

The announcement is particularly interesting in California because the State Grange and the California Farmers' Union are now our two greatest state-wide farmers' societies—pending the progress of the Farm Owners' and Operators' Association and the State Farm Bureau, both of which are pushing organization rapidly. The announcement also would indicate that the National Grange, presumbaly also the California branch of it, belong to the individualistic line of organization, while the Washington State Grange appears to be inclined toward a socialistic basis and more in sympathy with the Non-Partisan League of the Dakotahs, and therefore affiliated with the National Council at Washington, which seems now to be particularly busy throwing rocks at the temple. We are trying to line up these movements as well as we can, but our sight is dim at 3,000 miles distance. At closer range we seem to see better and to discern that our four California organizations (that is, two long on their feet and two to carry) are essentially alike in their ideas of what should be done in a public way for farming and generally in sympathy with such affiliation as Mr. Creasy indicates. If this is true why do we have four? Why not have just one, which is strong enough to do something? It is not up to us to answer that question!

WITH A CALIFORNIAN PRESIDENT!

Inasmuch as no Californian has announced himself as a presidential candidate on the Democratic side, and as it is unnecessary for any Californian to come forward as a prohibition candidate since general prohibition sentiment has lifted the prohibition party to a political paradise, we presume we may escape the charge of offensive partisanship if we indulge in state patriotism to the extent of saying that we are quite in sympathy with the declaration of the Sacramento Bee that Senator Hiram W. Johnson ought to be the next president of the United States. His record shows wonderful achievement in popular rights over corporate wrongs and special privileges and his current doings show forth his militant Americanism—even to his support of President Wilson in his effort to uphold the American policy and point of view in the face of a world of distrust and selfish opposition to them. Everyone has known where to find Johnson in the past and there may be expected an overwhelming Californian desire to determine where to find him in the future, viz.: in the White House.

This country has never had a President from west of the Mississippi river, though we must admit that Roosevelt was just as good as though he had lived all his life in the West. But now, why not go to the western edge of the West? California went to the eastern edge of the East in 1916 and by her electoral vote, lifted aloft the New Jersey mosquito so that he could sing and sting his way into all the bare spots of effete Europeanism! And California bade her own son wait a while until the East front of America was made secure. Now why not return the compliment to us, oh, you dwellers along the stern and rock-bound Atlantic coast and in all parts adjacent thereto, and give us a President from the sun-lit Pacific beaches who is wise and resolute upon all the problems which may possibly arise on the west-front of the continent? There seems to be abundant justice and reason in it!

QUERIES AND REPLIES

By the Editor.

Inquirer Must Give Full Name and Address.

Wishes Better Roses.

To the Editor: I get plenty of roses on my bushes but not good ones, large and with stiff stems like the florists' roses. How can I get mine to grow that way?—Reader, Oakland.

There are some roses which are naturally weak in the neck and unsuitable for cut flowers. Florists reject such varieties. Most roses, however will give larger blooms and hold them up better if they are pruned right to secure such flowers. This means cutting back and thinning out the top growth so as to throw the strength of the root into a few strong shoots instead of allowing it to be frittered away upon a great mass of small brush, no twig of which is strong enough to develop a fine bloom, nor to hold it upright. We take it for granted that your roses are on a good strong soil, that you are giving them plenty of manure and that they get water enough to make a strong growth of new shoots. Without these fundamentals you may perhaps get bushes which are fairly satisfactory garden decorations, but you cannot get fine, large, stiff-stemmed single flowers. If you have such decorative bushes, growing as they like and doing the best they can with what they can

to good flower-bearers you must cut them back everely during their dormant season, which is sually in December or January. If they are rowing in bush form, that is with several stems, elect three or four of the youngest of the strong nes, cut them back to a foot or two of the round and cut off the surplus weaker or older tems where they start from the root. You may ay your old rose bush is all gone—reduced to a w, short, bare sticks. Yes; but those sticks are he foundation of a better bush than you had be- ore and it will give you flowers in the spring, each which is worth a hundred of those which go-as- ou-please bushes can give you. If your roses re standards, cut back all the top growth to with- a few inches of the stem-head and select a few the newest, strongest shoots and saving the est-placed shoots to give symmetry to the new top. imilar treatment, though less severe, should be iven in July or August to get good large fall looms.

Death by Drying-Out.

To the Editor: I had about two acres of grapes. hey became infected with phylloxera, and were radually dying, so I dug them up and set out rune trees. This was about seven or eight years go. I have been resetting prune trees in this round ever since, as about twelve or more die very year. Sometimes one or two limbs on a ee will die first, but usually the whole tree dies; me of them sending up sprouts from the roots, nd others dying altogether. Some of the trees at die are old enough to bear, others are small ees, where I have replanted. The soil varies, the creage being made up of gravelly, loamy and lobe soils. I have other pieces of ground anted to young prune trees, and do not lose any them. Do you think the phylloxera have any- ing to do with it?—G. A. J., Santa Rosa.

The grape phylloxera does not infest the roots fruit trees. Even if the entomologists had not ade that declaration we would know the fact om the success of such trees which, during the st forty years in California, have been planted in ylloxerated vineyards. Your trouble is probably ue to the fact that the land cannot hold moisture ough from the winter rainfall to carry the trees ntil the rains come again. This is very likely to e the fact on upland loams in your district—also n flat lands with gravel-streaks—especially when rune trees are on myrobalan root, which does ot like coarse soils, apt to dry out. The tops the trees dry out first, get dieback of branch or hole top and the roots may hold on until more oisture comes and then may make shoots as the ld top cannot take sap—or the tree may die root nd branch if drying is severe enough. The par- cular piece of land needs at least one good sum- er irrigation. The other trees are probably on ore retentive soil.

Working Over Apricots and Peaches.

To the Editor: I have three Tilton apricot trees even years old which are not fruiting at all, while eside them are quite a number of Royals which uit abundantly, being of the same age. I would ke to graft these Tiltons with Royal grafts. How uch should these trees be cut back, and when; so when should they be grafted? Again, I have rly peaches which, although they have been rayed twice with Bordeaux mixture, persist in aving curled leaf. They were sprayed just as the ds were opening, but three days thereafter we had th. Two weeks ago I removed all the curled aves and sprayed them again, but more curled aves have appeared, which I have again removed. hat is best for me to do in the matter? Other rieties of peaches in the orchard which have not en affected as yet though they have only been rayed once. Would it be a good idea to graft ese early peaches with Royal grafts, and would e time and procedure be the same as should apply the apricot grafting?—Amateur, San Diego.

It is practically too late to cut back and graft er this spring. Even if the cut-back trees did t mind it you probably have no dormant scions to e. You could cut back part of each tree and if ckers started well you could bud into them next ly and if the buds took well you could cut back rest of the top and put in grafts next March, remove them entirely and make new trees from growth of the buds put into the suckers this mmer.

You could take the same course with the peaches xcept that budding this summer is rather more ential because the peach is a harder grafting position than the apricot, still a man who knows w can do it for you all right.

Policy with Almonds.

To the Editor: Does Drake need other almond varieties as pollenizers or not? I have Drakes 6 years old. They are nice big trees and they keep me busy every spring cutting out the wood. They all grow to wood and bloom enough every spring, but when the fruit gets about the size of a bean it drops off and keep me busy every spring cutting out the wood, and bloom enough every spring, but when the fruit gets about the size of a bean it drops off and the kernel inside has a brown spot. My neighbor across the road has a few I X L trees, and my Drakes have a few almonds close to his I X L trees. Would it be a good idea not to irrigate and cultivate them for a year?—G. K., Los Molinos.

Drake is usually a good bearer by itself as well as one of the most satisfactory pollenizers for other varieties. It has long been known as acceptable to the I X L, and your observation is that the game works both ways. Your six-year-old trees are just at the age for a crop. They might have had more nuts if you had not cut them back so long and are likely to come in strongly on the first season of favorable weather conditions. We should give them fair growing conditions this summer—neither pushing nor stinting them—and watching out for the red spider so they can hold their foliage active into early autumn.

Hard Spots and Cover Crops.

To the Editor: I am having a time plowing under a heavy cover crop. The only hard spots are where the cover crop is lightest. Don't miss that point! It kills some of the high-brow theories, but facts are facts.—H. A. C., Saratoga.

You are too subtle for us. We cannot get your point. It seems to us that the thing works the other way around. The cover crop is lightest because those spots are hardest and least suited to a good growth. At the same time those spots need the mellowing influence of a buried cover crop more than the rest of the land does. It is up to you to manure and break up those spots so that they will catch and hold more winter water to grow a cover crop with or if they are low places, to grade the surface so that they will not hold so much water that it kills out your cover crop. In either case the spots would now be hard as you find them and, worse than that, they will stay hard unless you treat them so that they will give you a good growth of cover crop and be improved thereby.

Catworms or What?

To the Editor: I planted about six weeks ago four acres of Blenheim apricots. Most of the trees are doing well, except about 20 to 25 trees, which are looking sick. My Italian help told me that some kind of a worm is doing the damage. He describes the worm as digging itself into the ground in the daytime and crawling up the stem in the evening, eating the young leaves or doing something to the young shoots. Can you tell me how to combat this evil?—O. T. D., San Francisco.

If the leaves are more or less eaten or bitten off at the stems your Italians are probably right and the pests are cutworms which live and move as they describe. In that case use the poisoned bran mash, often described in our columns. If the tree "looks sick" because the leaves are shriveling or drying without being eaten, the cause is otherwise and may be due to lack of proper firming of the soil around the roots or to too great drying of the tree before planting. Young trees planted in too dry or too wet spots may act that way, but that is not likely to be encountered this spring.

New Spurs After Brown Rot.

To the Editor: If fruit spurs (affected by the brown rot) were cut off close to the branch, would new spurs grow at that point this season? J. D., San Leandro.

If the killing of the short spur has proceeded downward so as to include the dormant buds at the base of it (as is apt to be the case), there is very little chance for a new break at that point. If the spur is longer and you can see living bark below the blighted part, there is a chance of a new start, though our observation is that the apricot is very wilfull and is more apt to break where it likes than where you wish it to. Dormant buds on apricots have better looks and more contrariness than on most other trees. We cannot guarantee that you will get what you want.

CUT ME OUT.

The folks in the office want a few more ambitious, energetic men to travel for them, attending to renewals and securing new subscribers. It's great work—a free, independent life in the open air. Pays well, too—straight salary. No investment necessary, except that you must have a flivver.

If you think that, with proper training, you could make good, cut me out and mail me to the office with your name and address. I'll see that they send you particulars of what may prove your opportunity to connect up with Great Success. Better investigate, anyway.

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Lime for Heavy Land.

To the Editor: I have very heavy land planted with fruit trees and grapes and have been thinking of applying lime rock to make this land more easy to work. I have applied lots of manure, but the soil keeps tightly packed. What do you suggest to make it more friable? Would the lime rock be better than hydrated lime or gypsum? When would it be best to apply the lime, now or in the fall? About how much per acre would it take?—T. W. M., Modesto.

Hydrated or air-slacked lime or gypsum would act more quickly and energetically than powdered lime rock and much less of would produce visible effects. Application at the beginning of the rainy season is rational. It will take a ton to the acre to make much change, and repeated applications to a total of several tons may be necessary if the soil is very refractory.

Muir Peaches Should Pull Through.

To the Editor: I have Muir peaches twelve years old which have had good care, but this year, owing to the wet spring, I was unable to spray at the proper time as the machine would sink in the soil. As a result I have a bad case of curly leaf. Is there still time to do anything in the way of a spray, or is it too late? The trees are heavily loaded with fruit.—F. B., Mountain View.

The Muir peach is almost resistant to curl leaf and it takes a very bad year for curl or a very curly place to affect it. This is such a year and you may have such a place, but still we expect that its natural resistance will pull the trees through and save the crop also. Some other varieties could not be expected to do this. It is too late to spray to advantage.

French Prune on Almond.

To the Editor: We have an eight-year-old almond orchard on peach root. Can we successfully work it over to French prunes?—C. K., Live Oak.

You surely can. Fifty years ago and more Californians started to grow almonds and, having only the Languedoc variety, wearied of it. Forty years ago the unproductive trees were largely grafted with French prunes very successfully. You can bud into suckers this summer if they come in good places, or you can cut back and graft over next winter.

Tree Protectors as Bug Collectors.

To the Editor: The tree protectors around my young trees seem to collect all kinds of worms and spiders. Shall I take them off and paint the trees white? Planter, Cupertino.

Tree protectors are not apt to gather insects which are of any account in connection with young trees. If, however, the museums of entomology which they constitute themselves, get on your nerves, you can substitute whitewashing, but do not put oil paint on young bark.

California Weather Record.

The following rainfall and temperature record is furnished the Pacific Rural Press by the United States Department of Agriculture Weather bureau at San Francisco for the week ending at 5 p. m. May 6, 1919.

Stations—	Rainfall: Past Week	Rainfall: Seasonal To Date	Rainfall: Normal To Date	Temperature: Highest	Temperature: Lowest
Eureka	0	37.18	43.05	66	44
Red Bluff	0	20.16	23.01	90	52
Sacramento	0	17.10	19.30	88	44
San Francisco	0	25.04	21.52	64	48
San Jose	0	18.86	16.90	78	48
Fresno	0	6.80	9.13	92	50
San Luis Obispo	0	17.90	19.85	70	46
Los Angeles	0	8.10	15.25	68	50
San Diego	0	8.40	9.70	64	54
Winnemucca	0	6.30	6.91	76	30
Reno	0	8.46	9.07	78	34
Tonopah	0	4.84	8.09	72	42



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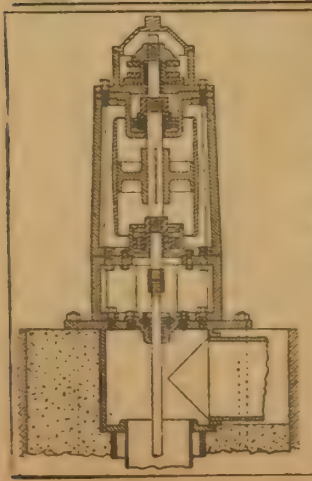
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Spraying for Red Spider

(Written for Pacific Rural Press.)

Fred J. Stokes, Horticultural Commissioner of Lake County, has quite a number of complaints from his growers this spring of injury to prune blossoms, which he investigated and traced to red spider. In one case—a five-year-old orchard—the eggs hatched out before the leaf buds swelled, and the spider, having no leaves to work on, attacked the blossom—an unusual condition. He examined an almond orchard that had been sprayed with lime-sulphur, winter strength (1-10) just as the buds were swelling and where masses of the little red eggs were visible to the naked eye. These eggs later hatched out but most of the mites died—evidently killed by the fumes of the sulphur. Spraying at this time is certainly an efficacious one for this destructive little pest. For though it may not get them all, it cuts down the number of early progenitors which reproduce in such myriads. Mr. Stokes says further that not more than two gallons of commercial lime-sulphur to 100 gallons of water should be used on almond foliage and not more than 2½ gallons per 100 gallons of water on pears in the same stage because above those amounts leaf burning takes place.

There is no doubt that a good deal more spraying of all trees would have taken place at this important period (at the swelling of the bud) if weather conditions had permitted it everywhere.

From now on almond and prune men will be watching the condition of their trees very closely and sulphuring as soon and as often as is necessary. Because, apart from the great drain on the vitality of the trees by early defoliation, the loss in quality of this year's crop from such a cause would more than pay for all the sulphur necessary and the cost of applying it.

Thinning Out Apricots

(Written for Pacific Rural Press.)

Apricot growers will now be getting busy thinning out the fruit. No doubt this will sound like a fiendish joke to some men who have only a sprinkling anyway, but there are many orchards where quite a lot of thinning will have to be done. Also in some orchards, even where the crop is light, it will probably pay to go over them and thin down clusters if the trees are not too high and the clusters not too scattering. There will be just as great a weight of fruit where they are thinned as where a number of undersized stuff is allowed to develop. The high prices assured this year will certainly pay a man to go after quality whether he is going to sell the fruit green or cut and dry it. When the fruit is the size of a pigeon's egg, it is ready to thin and the sooner it is off then, the more vitality is conserved in the tree for maturing what is left. The large quantity of tiny fruit that was produced last year really depreciated the market for all. The Prune and Apricot Growers' Association managed to get away with hundreds of tons of it satisfactorily through their by-product factory and peculiar conditions. But suppose there had been no Association what?

$80 a ton is now being offered, it is reported, for cannery stock. Your dried stock is sold on grade and so is the green. It costs as much to cut a small cot as a big one.

Cankerworms Appearing

(Written for Pacific Rural Press.)

Where canker worms are appearing in quantities on fruit trees they may be sprayed with six pounds of basic lead arsenate and eight pounds of stone lime to the 100 gallons of water. They are showing up now and the grower himself will determine whether he wants to spray or not. Some men shake their prune trees if not too big, after having put a tanglefoot band around the tree to prevent their crawling up again. Last year we saw a number of trees whose foliage looked like valley oak leaves they were so badly chewed and other trees were almost denuded of leaves before spraying. There has been a lot of torching done for the tent caterpillars and this has doubtless saved a lot of future injury. Don't forget the lime or there may be some burning of the foliage and don't use any soap with acid arsenate of lead.

The "Kindling Wood" Propaganda

(Written for Pacific Rural Press.)

To the Editor: I have recently noticed articles in several publications regarding the "Kindling Wood" propaganda by some eastern dealers against our California figs. Your last issue contained such an article. We can afford to let them howl themselves hoarse.

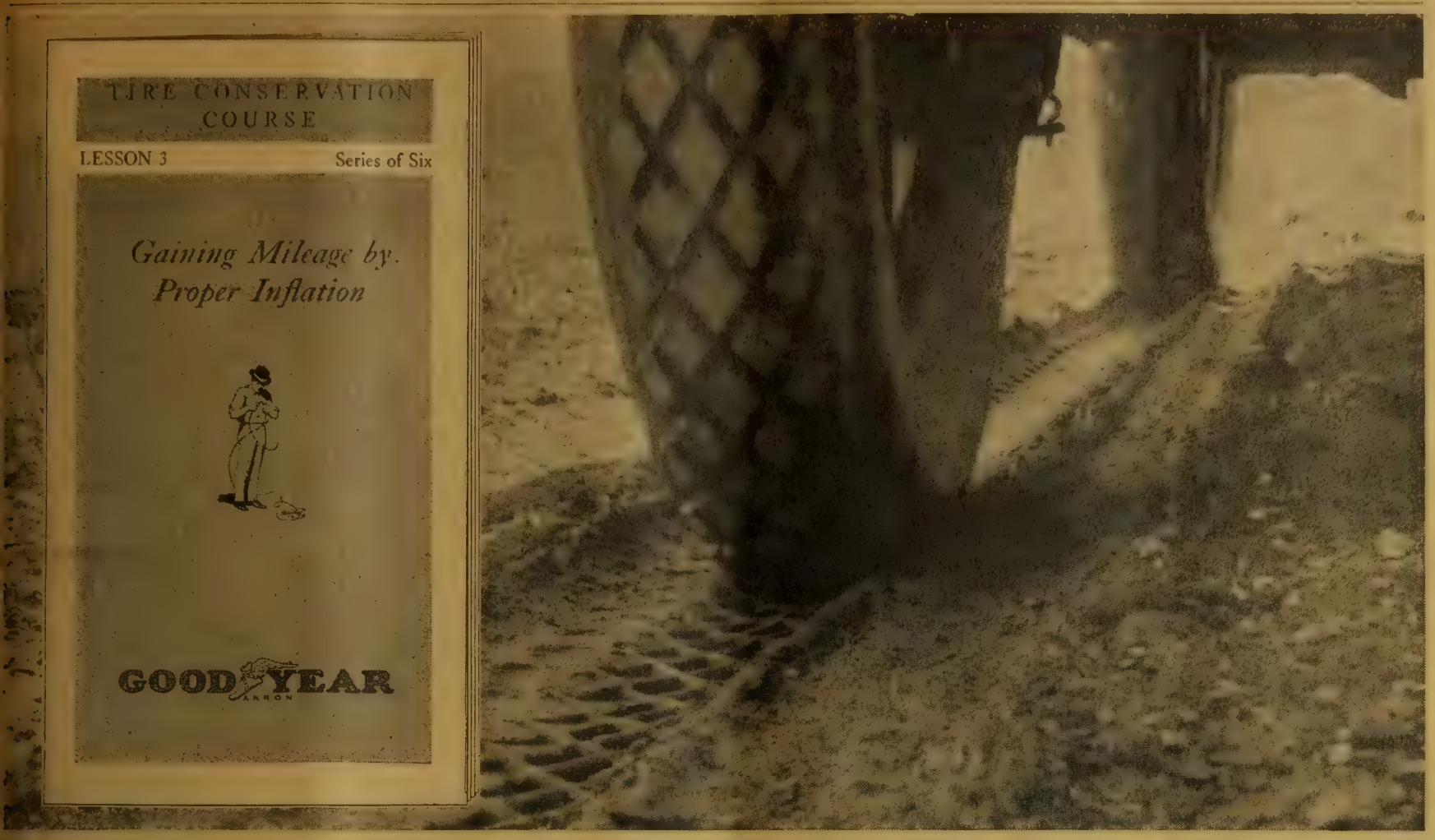
All they will do is stir up interest among the Eastern consumers. Then, when California puts her figs on the Eastern market, in a standard pack of first-class fruit, the public will be all primed for action. Every "knock" of the Eastern dealers knocks off dollars from our advertising bill, since one of the big items in advertising is to interest the public. When interest is aroused curiosity will prompt the average person to "Take a Chance." And after the Eastern consumer tries one package of real California figs we have a permanent customer; because a satisfied customer is usually permanent.—I. W. L., Davis, Cal.

INTERESTED IN EVAPORATORS.

As a number of people are showing interest in evaporators and dehydrating plants, we append the names of some California concerns who are manufacturing. We are not yet in position to advise in the choice of any one plant: The Banks Evaporator, C. Thorp, Auzerais Bldg., San Jose, Calif.; Thomas I. Casey, 512 Oakland Bank of Savings Bldg., Oakland, Calif.; J. T. Wann, 1421 Arch St., Berkeley, Calif.; California Dried Products Co., 149 California St., San Francisco, Calif.; Premier Machinery Co., Wynn H. Harris, 16 California St., San Francisco, Calif. F. H. Buchanan of Fowler has a home-built plant that has given satisfaction.

PRUNE REPORT FROM SONOMA COUNTY

"In the prune-growing sections of Sonoma County the older orchards do not show so heavy a crop as last year," says Sheridan W. Baker, Director of the Prune and Apricot Growers' Association. "Orchards where thrips were present and left unsprayed are very spotted. Young orchards seem to have a good setting (April 30) and they are the uncertain factor in estimating. I rather doubt if the crop in Sonoma will be larger than last year with betting at present that it will be lighter.



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LONG before they had delivered the mileages everyone expects from Goodyears, two tires on a heavy eight-cylinder car blew out. The car-owner, Mr. Ralph Booth, took them to a Goodyear Service Station near his office, on West 27th Street, New York. The Service Station Dealer examined them, asked Mr. Booth to what pressures they had been inflated, and then proved that according to the inflation charts the tires should have carried at least fifteen pounds more air. Mr. Booth wasn't quite convinced, but he put on two new Goodyears and kept them properly inflated. These tires have already given 6,300 MORE miles than the under-inflated ones and look good for as many more. Ask your Goodyear Service Station, or write to Akron, for Lesson 3 of the Goodyear Conservation Course—telling how to gain mileage by proper inflation.

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◇ ◇ ◇

IN certain cases, however, where the damage is not too great and the weakened fabric carcass has not actually broken, Goodyear Service Station Dealers find that by applying a Goodyear Reliner the tire can be made to deliver a thousand and more additional miles.

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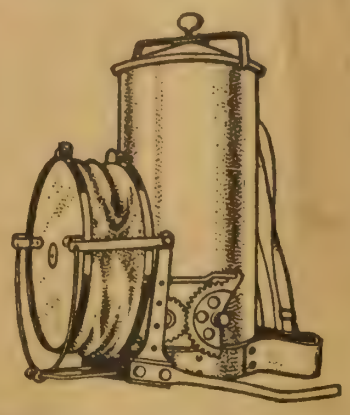
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Here and There in the Fruit Business

[Written for Pacific Rural Press.]

Placer's Peaches, Plums and Pears.

Over three and a half million boxes and crates of fruit were shipped from Placer County in 1918 without counting canning stock and about 11,000 tons of wine grapes. Peaches took the lead—then plums and pears. The first shipping of persimmons in commercial quantities amounted to 15,000 boxes from this county.

Early Irrigation of Walnuts.

Irrigation of Walnut orchards in Santa Barbara County is urged by Eugene S. Kellogg, County Horticultural Commissioner. He says the short rainfall may not affect this year's crop, but it will show on next year's unless the deficient rainfall is made up by irrigation. A number of new irrigation plants have been installed within the last year.

A Disquieting Thought!

It is asked, "How is Prohibition going to affect the walnut growers in their holiday trade?" In the hope that it may allay apprehension, the suggestion is offered that a little nice fresh whey may be served with the walnuts in the place of wine, so as to give them a smatch. A sprig of mint would garnish and give the beverage "class." The most valuable ideas are often those which are most simple.

June Drop of Oranges.

The University of California Press has just issued a book on the results of extended investigation into the cause of June Drop of Oranges. The investigation tends to show that the abnormal shedding is due to two causes: a fungus which gains access through the navel end of the fruit, and the certain harsh conditions of the interior valley against which the Navel orange tree is not sufficiently able to protect itself.

Spray Pumps to Citrus Districts.

The spray pump business in citrus districts is picking up surprisingly with no special effort, according to General Manager J. D. Crummey of the Bean Spray Pump Co: Florida growers have recently taken 125 of this company's power sprayers and Southern California citrus growers have been ordering heavily in recent weeks. It is reported that spraying seems more hopeful in the control of certain scale than fumigation.

Curled Leaf in Peaches.

Has shown up in great shape this year in trees that were allowed to take a chance. It was in some cases difficult to get on the ground before the trees were in the pink so that it was a little dangerous to use the lime-sulphur winter strength. But it could have been toned down to 40-1. Or Bordeaux could have been used with the trees right in bloom. M. E. Shippey of Santa Clara sprayed his last year when in full bloom and the leaves showing and controlled the curled leaf and the trees set a good crop.

Bougainvillea for a Fence.

Among the hedges used in Rhodesia (South Africa) is the Bougainvillea. Their Agricultural Department, in recommending this, say that it makes a good thick hedge and becomes high enough in time to give a good shelter from the wind, but would require a few strands of wire to make it strong enough to resist cattle. It "strikes" fairly readily from cuttings—taken at the right time and put in sand for a couple of months. As a formal garden hedge it can be trimmed to any height desired. It is a perpetual blaze of color, is most effective and stands clipping very well.

Heavy Plantings in Merced County.

Very heavy plantings have taken place in Merced County during the past season according to the report of Arthur E. Beers, the Horticultural Commissioner. Figs led with 38,000 trees; almonds, peaches and apricots following in the order named. Over 900 acres were planted to figs alone in the Tuttle-Planada district. On the sandy lands almonds exceeded peaches. Following is a list of trees planted taken from Mr. Beers' records. A large quantity of trees were shipped in by auto so these figures are below the actual number planted: Grapes, 150,113; figs, 38,093; almonds, 29,647; peaches, 22,876; apricots, 4,925; berries, 2,876; apples, 1,032; plums, 1,792; walnuts, 504; prunes, 539; pears, 355; cherries, 353; oranges, 154; lemons, 42; miscellaneous, 5,096; ornamentals, 1,375; roses, 254.

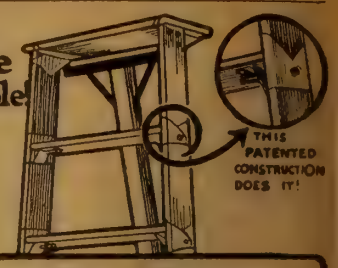
TO MAKE WETTABLE SULPHUR.

To the Editor: Have you a formula for the sulphur paste advertised, and is it practical to make one's own paste? I have been using dry sulphur on almond trees infested with red spider, but it is always windy with dewless mornings when we want to use it. Also it is hard to get the work done because of the dry sulphur getting into the eyes of the operator. The following formula is issued in a University of California circular:

Powdered glue..... ¾ ounce.
Hot water ..... 1½ gallons.
Sulphur (flowers or powdered) ..... 5 pounds
Water to make ..... 100 gallons

Dissolve the glue in hot water or soak overnight in cold water. Add the glue water to the sulphur a little at a time and work up into a smooth paste free from lumps. Rubbing is better than stirring. Wash this paste into the spray tank through a fine screen, using the remainder of the glue water to wash it through and a stiff brush to break up the remaining small lumps. Then add plain water to make 100 gallons.

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PELTON

A SINGLE BASE CASTING
STRONG, COMPACT, DURABLE

PELTON Centrifugal pumps with a single base casting have the highest safety factor—they are strong, solid, compact and well-built.

Both bearings are held rigidly in alignment by the cast-in bearing housings and overheating is protected against. Wear on the bearings and the shaft is reduced to a minimum.

The PELTON single base-casting pump can be driven either with a belt or direct connected to a motor. Belt strains do not affect its life nor operation.

See your nearest PELTON dealer..

McCormick Saeltzer Co., Redding.
George W. Roberts, Marysville.
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J. H. Herring, Parlier.
Sanger Plumbing House, Sanger.
Devenney & Prather Co., Wasco.
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Ophir Hardware Co., Oroville.
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A. R. Gilstrap, Kingsburg.
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Ulmer Machinery Co., Porterville.
Alexander & Wright, Palo Alto.
California Mechanical & Electrical Engineering Co., Sacramento.

THE PELTON WATER WHEEL COMPANY,
1900 Harrison Street, San Francisco, California.

HORTICULTURAL JOTTINGS.

Almonds in the district around Paso Robles look fine and a good crop is in prospect

Tent caterpillars, which have shown up so alarmingly again this year have been and are being fought vigorously.

C. C. Staunton has been appointed Farm Advisor of Ventura County. He was formerly County Horticultural Commissioner.

Ventura County has about 85 per cent of a normal crop of apricots, according to A. A. Brock, Horticultural Commissioner.

H. E. Woodworth, a graduate of the University of California, has been appointed Horticultural Commissioner of San Mateo County.

Stanislaus County will have 2,000 acres planted to watermelons this year, and Imperial County comes to the top with 14,000 acres of cantaloupes.

The James Madison vineyard of 520 acres, between Reedley and Dinuba, has been sold to a syndicate for $250,000. Many large acreages are being sold on the contract plan.

There are about 12,000 apple and pear trees in bearing in the Yucaipa and Victorville sections (San Bernardino County). The crop is reported to be promising a heavy yield.

Nevada County will have a 70 per cent crop of pears; 100 per cent of peaches and plums, and 80 per cent of apples, according to D. F. Norton, Horticultural Commissioner.

The California Associated Raisin Company has planned building a drier to cost $140,000. It will cover an area of 140x180 feet and will be a reinforced concrete building of three stories.

Great Britain now allows importations of wine only from France, Italy, Portugal, Canada and Australia, though nothing is said regarding transhipment of California wines sent to these countries.

The efficacy of free nicotine sprays is found to be increased sometimes 50 per cent by the addition of soap, according to the State Commissioner of Horticulture. In the use of nicotine solutions the use of the emulsifier checks volatization.

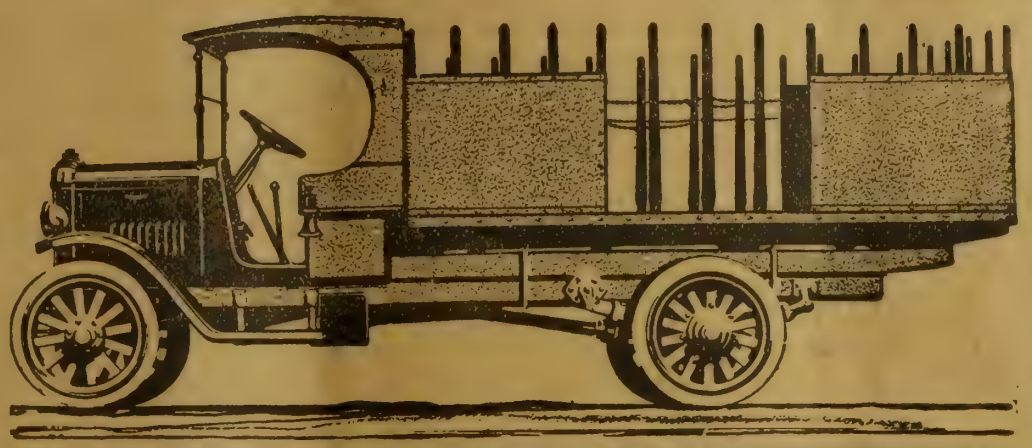
AN EXCEPTIONAL SPRING FOR ORCHARDISTS.

(Continued from first page.)

tom; (2) shorten the hitches and reduce draft on succeeding tools; or, (3) lighten their load. And every farmer has these things to work out for himself—perhaps change them every few days with the variation of soil conditions. But it has to be done and is done, and it is interesting to notice these things; also, perhaps, how he has to shorten hitches to make a turn on a 16-foot headland where a 20-foot one would be so much more convenient.

The chief thing the farmer has to learn, then, is, how much his tractor can justly be asked to pull, and never to exceed this. We have all of us perhaps plowed up an old alfalfa field, cutting off a succession of tough crowns as big around as the heel of your fist nearly. We know we have to keep the shares very sharp, not set the plow very deep and—rest the team often. The horseman knows at once when he is overdoing his team. If he doesn't, the horses' shoulders and wind soon teach him. But the tractor is different. The new man has to learn quickly when the tractor is laboring unduly and soon he will be just as unhappy when this is apparent as when his team shows distress, and will take immediate pains to relieve it. It has to be learned, if in no other way than through the pocket-book. And then a man may say, "Oh, I'm going to quit and go back to horses!" Or he may say, "I have not the alertness nor the patience to conquer this thing." But it will have to be conquered. For this spring of 1919 our orchards and fields would have been in evil plight without the aid of tractors and tractor tools. For it may be assumed that they have taken the place and done the work of 75,000 or 80,000 horses in California, according to late statistics!

NASH



QUICK AND ECONOMICAL TRANSPORTATION

TIME is a valuable asset to the market gardener. Nash rear drive trucks of one and two ton capacity enable him to make his round trip to market in one day with plenty of time left over for work at home and the loading of the next day's produce.

With pneumatic tire equipment Nash trucks can make as high as twenty miles an hour. Their automatic locking differentials prevent loss of traction by spinning of the driving wheels.

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NASH TRUCKS

One-Ton Chassis, $1875 Two-Ton Chassis, $2440 Nash Quad Chassis, $3600

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Ames Surface Pipe puts every drop where you want it. No levelling, no ditching. No grading. LOCK-SEAMED UNDER TREMENDOUS PRESSURE—four thicknesses of metal the entire length of the seam. Most durable surface pipe made.

Send for Folder P-1

Tells you how to irrigate at less cost and describes the most complete line of Surface Pipe and Pipe Equipment in the West.

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SURFACE IRRIGATION PIPE

Powerful on Soft Ground

The twin crawlers of the Bates Steel Mule lay a firm runway on the soft ground which runway is held from slipping by twenty-four cleats. This runway has a ground pressure of less than 3½ pounds per square inch and being geared to it, the tractor pulls as big a load on soft ground as it can on firm footing.

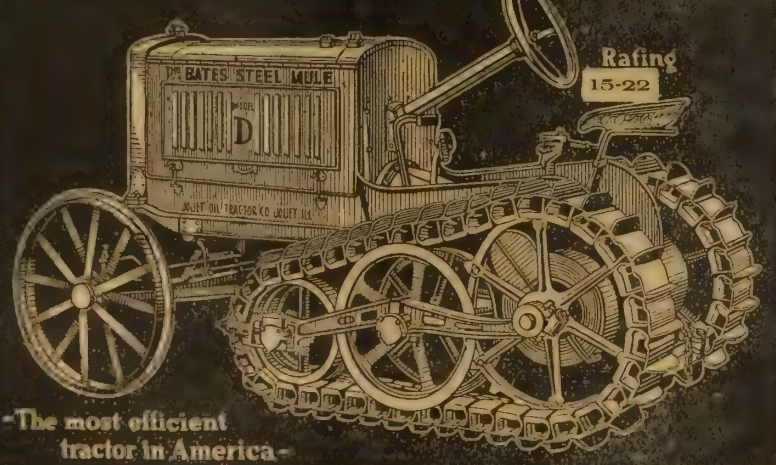
The absence of slipping is one of the many factors that go to make the Bates Steel Mule unusually economical in fuel. This feature, combined with the unit construction; Timken roller bearings; hardened cut gears running in oil; and heavy-duty valve-in-head kerosene motor, contributes to the great efficiency of this tractor.

THE J. M. CONLEY CO.
No. California Distributor
417-423 East Weber St.
Stockton, Cal.

F. T. BRILES
So. California Distributor
214-216 No. Los Angeles St.
Los Angeles, Cal.

Excellent Agency Proposition





IS $29.60 ADDITIONAL PROFIT A YEAR PER COW OF INTEREST TO YOU?

IS AN ADDITIONAL DAILY GAIN OF APPROXIMATELY FIVE-TENTHS POUNDS IN FATTENING HOGS OF INTEREST TO YOU?

IS THERE A LOT OF ROUGHAGE NOW ON YOUR FARM BEING WASTED JUST BECAUSE IT IS NOT PALATABLE?

You can make this additional profit; you can get this increased pork production, and you can turn what is now waste into profit by using that great CONSERVATION FOOD, PURE HAWAIIAN CANE

MOLASSES

Write us at once and let us tell you how.

W. H. YOUNG COMPANY

58 SUTTER STREET, SAN FRANCISCO

PLANT THE RIGHT SEED AT THE RIGHT TIME

Plant the right variety for your purpose, whether you are growing for home or market, or whether you are growing for cattle, horses, hogs, goats, rabbits, or poultry. See the 1919 Catalog of the

Aggeler & Musser Seed Co.

620 SO. SPRING ST., LOS ANGELES.

Farm Owners' and Operators' Association

(Written for Pacific Rural Press by R. E. Hodges.)

Since publishing in our issue of April 12th a sketch of the needs, aims, and system of organization of the Farm Owners and Operators Association, we have had additional information which encourages us to believe that the Association should be supported by farmers in the interests of conservative government and of proper regulation of the public aspects of farmers' business by the farmers themselves. Hereafter, we propose to publish various items of interest in regard to the Association and its activities. The next thing we would want to know, after reading the article of April 12, is, "Who are the men at the head of the movement."

In that article we mentioned the fact that the temporary State Organization Committee is composed of the leading farmers who engineered the organization of the first unit in San Joaquin county. We give below sketches of the farming interests of this Committee.

J. T. Langford: Orchardist and Vineyardist; one of the practical and progressive men in the Acampo-Lodi section; his father, the late Senator Ben Langford, developed the extensive "Langford colony," the pioneer orchard section of San Joaquin county; Langford is a man of extensive interests but devotes his personal attention to his orchard and ranch.

Albert Lindley: (Chairman), former secretary of the State Agricultural Society; owner of 1300 acres on Rough and Ready Island, first reclaimed island in the San Joaquin delta; diversified farming, dairying and stock; the Lindley farm was, in former ownership, the home of Juliana de Kol, the gold medal cow at the St. Louis exposition; Mr. Lindley was chief of the Food Production Bureau of the State Council of Defense and is active in agricultural and civic organizations

J. M. Bigger: Pioneer dairyman; one of the first farmers in the San Joaquin river delta; extensive farming and orchard interests, including holdings in Sutter county; late U. S. Food Administrator of San Joaquin county; president of the San Joaquin County Farm Bureau; authority on cheese making and dairying.

W. Q. Wright: Business farmer, owning and operating nearly 17,000 acres in counties from San Joaquin to Kings; grain and diversified crops; one of the first growers of celery in northern California; prominent in reclamation work and organization.

C. C. Woodworth: Peach and table grape grower; orchard of 280 acres is a model; has been leader among fruit growers in northern San Joaquin.

I. L. Borden: Director of State Agricultural Society; owns Victoria Island (7241 acres) in San Joaquin and farming property in other counties; producer of beans, onions, corn, etc.; good road builder; active in all movements for improvement of stock and farming industry.

Fred H. Rindge: Of the Rindge estate properties and personally operating large San Joaquin delta acreage; contracting farmer owning and operating twenty-five caterpillar units; practices deep and intensified cultivation; corn, potatoes, beans, onions, grain and hemp are principal crops. Mr. Rindge developed hemp culture in this section.

Ed Powers: South San Joaquin Irrigation district farmer and leader; melon raiser; leader in cannery development to stimulate fruit and vegetable production. Fostered organization of San Joaquin County Farm Bureau and was its first president.

Amon Swank: Farm Bureau director; successful walnut and deciduous fruit grower; also general farming; he is alert for interests of farmers, and his success has made him a recognized leader in his section; property in Linden section, which has long been strong agricultural section of San Joaquin.

W. C. Ferguson: Grain grower, owning several hundred acres on Union Island; also grows beans extensively; has with success paid close attention to cultivation, rotation, and stimulation of soil, securing crops of marked vigor and quantity.

S. A. Shearer: President and manager of West Side Irrigation Co.; grain ranch near Bethany; has been successful demonstrator of crop rotation, summer fallowing and seed improvement in increasing productiveness of his own and neighbors' land; director in Farm Bureau; active in all phases of agriculture.

Why Hay Prices Went Down

(Written for Pacific Rural Press.)

As the new crops of volunteer and alfalfa hay are being cut and grain hay will be in the making late this month, a backward look is interesting in that it throws light on the present situation and will influence the future. Last fall when the Government Food Administration gave preference to products of human food rather than alfalfa in the apportionment of irrigation water, hay dealers took the hunch and bought all they could. They paid well over $20 and then added storage, insurance, and taxes bringing their costs up several notches more. Stockmen were buying supplies in memory of their recent disastrous lack which had resulted in starvation of thousands of cattle.

Then one day in September and almost without precedent came the floods of rain that supplied all the water needed for alfalfa the rest of the season. They started feed on the ranges and stopped stockmen from buying hay. They brought on a volunteer hay crop which in the Hollister and Tres Pinos districts was waist high when it was cut in November. The rain started a landslide in the hay market where the wisest got out from under first at whatever sacrifice seemed necessary. Since the date of the rains there has been until recently a rather steady decline in the price of hay, due to the pressure by which dealers were trying to dispose of their stocks. This decline may be said to have culminated in March when as an example we may mention that out of perhaps a dozen bids on an order of the Government for 2,000 tons, the lowest bidder sold at $14 per ton, hay which had cost him in the neighborhood of $26 f. o. b. cars. The United States contract for April showed an improvement of $2 in the lowest bid. The Government has been taking a great deal of the old crop, not only for use in the remount camps of Texas, but also some for compressing to ship out of the United States proper. Most of the first grade old hay has been shipped already, and orders are pending for a large part of the remainder of the other grades. An improvement has been noted in the past few weeks, as there seems to be a scarcity in the southwestern and mountain markets which only California can economically supply.



GO' DEN GATE WEED CUTTER

Kills the Weeds and Cultivates the Soil

Greatest weed killer on the market. Cuts them off clean, under the surface, close down to the roots. Besides, it breaks up the ground so thoroughly that one user says he saved $200 in a single season because after cutting the weeds he did not have to plow. Cuts seven feet or less. Weighs but 230 pounds. Cut adjustable to any depth. Constructed of steel throughout. No other implement like it.

WRITE FOR CIRCULAR which illustrates and describes the Sigurd Weed Cutter and contains letters from many users.

C. G. SIGURD, Manufacturer
Capital Ave. and McKee Road, San Jose, Cal



First announcement of the Twin City 12-20 Tractor—new member of an old family—the already famous Twin City Line, the 16-30, 25-45, 40-65 and 60-90.

Twin City 12-20

We made this tractor prove its strength, power and stamina before offering it to you. And farmers may now be proud to own this tractor that carries the Twin City mark.

ONE of the largest and strongest tractor organizations in America is behind this Twin City 12-20 Tractor—assuring the stability of your purchase.

It is designed and built to do your work better than it has ever been done before, so we have provided a tractor with a greater margin of reserve power, greater strength to withstand strain, than any other tractor of equal weight or horsepower rating. At the same time it is remarkably simple in construction and extremely accessible.

It is not made to come within a certain price limit—it is designed to meet and master the work a tractor has to accomplish.

These features tell of its quality: For the first time in tractor history, the powerful four-cylinder, sixteen-valve engine is adapted to the low-speed work of the tractor. This engine is the Bloc type with removable sleeves. The counterbalanced crankshaft is also a feature of this motor. The ignition is Bosch high-tension magneto.

The transmission is the sliding spur-gear type, with two forward speeds, direct drive on both.

Write us today for full details of the Twin City 12-20—these are but a few of its outstanding features. Ask for our booklet, "The Factory Behind the Tractor."

At $1525 *complete* you will find the Twin City 12-20 the most thoroughly dependable and economical tractor for your farm.

Minneapolis Steel & Machinery Company, Minneapolis, U. S. A.

Manufacturers of the Famous Twin City 16-30, 25-45, 40-65 and 60-90 Tractors

BRANCHES—Denver, Colo.; Des Moines, Ia.; Fargo, N. D.; Great Falls, Mont.; Salt Lake City, Utah; Spokane, Wash.; Wichita, Kansas; Winnipeg, Canada.
EXPORT OFFICE—154 Nassau Street, New York City.

DISTRIBUTORS—Twin City Co. at St. Louis, Mo.; Dallas, Tex.; Houston, Tex.; San Antonio, Tex.; Amarillo, Tex.; Corpus Christi, Tex.; Crowley, La.; Baskerville & Dahl, Watertown, S. Dak.; Frank O. Renstrom Co., San Francisco, Calif.

TWIN CITY

12-20 Kerosene Tractor with 16-valve engine

The Fruit Growers' Convention

(Written for Pacific Rural Press.)

A very large percentage of fruit growers and representatives from other states attending the 51st Fruit Growers' Convention, to be held at Riverside from May 26-31, will be particularly interested in hearing the discussions on matters of local interest to California fruit growers. Every co-operative marketing association in the State will be represented at this convention and a brief talk on their activities will be made by each representative.

California is unique in the number, completeness and effectiveness of these marketing associations. She is so far ahead in the march of progress in this respect that all the other States want to learn her methods and to be instructed in her laws and procedure. There are more enquiries from other States with regard to the California growers' method of co-operative marketing than anything else. Why? Because our united efforts have dragged many of the fruit industries out of the slough of despondency and placed the producer behind the counter, to handle, advertise and dispose of his own products.

The world is coming to California to learn from our own Horticultural Commission its methods of quarantine and inspection, is, in fact, borrowing men for that purpose. The world also wants to learn our system of uniting our growers' associations for marketing our own fruit. They are not taking all this trouble out of curiosity, but in order that they too may profit by adopting our methods.

The State Convention of Nurserymen, being held with the Fruit Growers, will bring this important body of men into closer contact with the men whom they serve. The great fruit-growing industry of California owes to the Nursery its origin, and goes to the Nursery for its replenishment and extension. Their trials and tribulations can be known to few outside this very exacting industry. The judgment in selection, care in producing and delivering the goods, and the losses each year, can still less be appreciated by those who know naught of the nursery business. At this convention some of these matters will be set forth and an endeavor made to make more uniform the inspection and delivery of their wares to growers in different parts of this and other States.

At Hemet and Yucaipa meetings will be held limited to the problems of deciduous fruit growers at which representatives from other states are expected to take particular interest—especially apple and pear men.

BUILD NOW.

(Written for Pacific Rural Press.)

Was the first egg laid by a hen or was the first hen hatched from an egg? Labor says that wages must not go down until the cost of living recedes. Farmers and manufacturers agree on one thing, that prices of their products should not go down materially while wages and the cost of supplies stay up.

Quoting President George A. Ranney, of the National Implement & Vehicle Association from an address made January 14: "There cannot be any general recession of implement prices until the costs of material and labor entering into their construction are lowered, and there is no immediate prospect of that." Quoting Wm. Menry of the Pioneer Paper Company: "Organized labor says that a reduction in the cost of living, which is estimated at 60 per cent above pre-war times, must precede any reduction in wages."

Farmers will be the goats as heretofore, because they are not organized in most lines, to insure prices which include cost of production plus a profit.

This being the case, it behooves every farmer to take a farsighted policy and invest all the money he can get reasonably in equipment, which is fairly certain to bring back a greater return.

This means that money may well be invested in labor-saving devices, crop-saving implements and storage houses, animal-saving shelters, machine sheds, and the like.

A state official recently made a very emphatic assertion to the writer that it would be foolish for the State to indulge in any building activities at this time. He was speaking with respect to proposed appropriations for further increase in University Farm facilities. The writer at the time believed that whatever greater cost such buildings would encounter, the use of them for an extra two years would greatly out-balance the excess that they might cost this year over what they would cost two years hence. In other words we believed that the benefits to be gained from such buildings during the two years ought to be considered of far greater value to the State than any reduction that might occur in their cost. A similar condition would apply to farm equipment and buildings of productive or safeguarding nature.

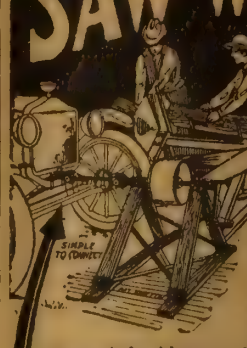
EARLY DELIVERIES OF FARM MACHINERY HELP SOLDIERS.

The problem of taking back nearly 5,000 men into employment, faces the International Harvester Company, which had been maintained as an essential industry at a high state of efficiency throughout the period of the war, according to its General Manager Alex. Legge. Mr. Legge emphasizes the fact that the company is going to do its plain duty by its soldier boys. The only way this can be done is to speed up construction and sales. He suggests that one way by which this would be made possible is to have the dates of delivery of this company's machines to farmers set at the earliest possible time.

The farmers will need their machines anyway earlier than many of them will be able to get them if they wait until the last minute to order. For two years farmers have been urged to repair old machines to avoid buying new ones. This has left the condition of farm equipment throughout the country below normal, and if the heavy crops now in prospect are to be taken care of properly, especially in case of unfavorable weather, machines will have to be bought which will not break down during the rush.

SAW WOOD

Use Your AUTO As a Stationary Engine.



There's a great fuel shortage—Protect yourself—saw your own wood. It's easy with our Equipment and your car to furnish power. A big labor and money saver for you. Does all a 14 H. P engine can do.

Fits: Ford, Fordson, Reo, Hudson, Studebaker, Overland, Dodge, Buick & others

Furnishes plenty of power for filling silo, running shredders, grinding feed, sawing wood, etc.

Get one NOW---hundreds in use--- Satisfaction guaranteed---only . . . $35.00

Write for Circular

LAWRENCE AUTO POWER EQUIPMENT

409 Minnesota Street. St. Paul, Minn.

LAWRENCE AUTO POWER CO.



Maud Muller Up To Date

"RAKING the meadow sweet with hay" loses none of its romance while it gains in its dollars-and-cents aspects by the use of up-to-date haying tools.

Haying time waits for no man. To guard against possible loss be prepared to mow, rake, ted and load your crop from hayfield or meadow at the proper moment.

For years you have been cheerfully complying with Government request to save materials by repairing your old machines rather than making replacements. Now that the need for this has passed, would it not be the part of real economy to buy a new machine and be assured of uninterrupted and maximum service at a time when a break-down would mean serious embarrassment and loss.

Deering, McCormick and Milwaukee Mowers, Rakes and Tedders and International and Keystone Side Delivery Rakes and Loaders

are doing satisfactory work on thousands of farms, needing little attention, and successfully meeting all hayfield emergencies. The combined side-delivery rake and tedder is a winner.

International and Keystone loaders lift the hay 10 feet without injury to blossom and leaves. Sweep rakes, stackers and combined sweep rakes and stackers clean up big fields in a hurry.

The use of these thorough-going, swift, dependable tools is making **haying** time **paying** time.

And hand in hand with every haying tool goes service. The I H C dealer is equipped to handle quickly your repair and adjustment needs. He is always in close touch with one of our 89 branch houses, whose resources and facilities are at your service.

Our organization, being an essential industry, has been speeded to top-notch efficiency. By anticipating your needs and ordering early, you make it easier for us to take back our soldier boys without disturbing our present organization.

Write us for catalogues and buy your haying equipment from the I H C dealer.

The Full Line of International Harvester Quality Machines

Grain Harvesting Machines

Binders, Push Binders, Headers, Rice Binders, Harvester-Threshers, Reapers, Shockers, Threshers

Tillage Implements

Disk Harrows, Tractor Harrows, Spring-Tooth Harrows, Peg-Tooth Harrows, Orchard Harrows, Cultivators

Planting and Seeding Machines

Corn Planters, Corn Drills, Grain Drills, Broadcast Seeders, Alfalfa and Grass Seed Drills, Fertilizer and Lime Sowers

Haying Machines

Mowers, Side Delivery Rakes, Comb. Side Rakes & Tedders, Tedders, Loaders (All types), Baling Presses, Rakes, Sweep Rakes, Stackers, Comb. Sweep Rakes & Stackers, Bunchers

Belt Machines

Ensilage Cutters, Corn Shellers, Huskers and Shredders, Hay Presses, Stone Burr Mills, Threshers, Feed Grinders, Cream Separators

Power Machines

Kerosene Engines, Gasoline Engines, Kerosene Tractors, Motor Trucks, Motor Cultivators

Corn Machines

Planters, Motor Cultivators, Drills, Ensilage Cutters, Cultivators, Binders, Pickers, Shellers, Husker-Shredders

Dairy Equipment

Cream Separators (Hand), Cream Separators (Belted), Kerosene Engines, Motor Trucks, Gasoline Engines

Other Farm Equipment

Manure Spreaders, Straw Spreading Attachment, Farm Wagons, Stalk Cutters, Farm Trucks, Knife Grinders, Tractor Hitches, Binder Twine

International Harvester Company of America

(Incorporated)

Billings, Mont. Crawford, Neb. Denver, Colo. Helena, Mont. Los Angeles, Cal. Portland, Ore. Salt Lake City, Utah San Francisco, Cal. Spokane, Wash.

Agricultural Notes

The flat rate of $10 per ton for sugar beets grown in Colorado is reported to have stimulated a great increase in the acreage there this year.

A reorganization of the Yolo Water and Power Company has been effected, which was said to be approved by 90 per cent of the bondholders. It is proposed to extend the development of water from Indian Valley.

To reduce mice and rats mix up some dry plaster of paris with the middlings and set it out for the rodents to eat. The plaster is said to set in their "toobs" and usually ends in their death. A rather stuffy death.

A yellowing of wheat in parts of Illinois, together with loss of vigor in the plant, is said by B. W. Snow, a crop expert, to be due to a fungus which attacks the roots. In Australia it is known as "take-all" and in France as "foot-rot," says Snow.

During the past week coming crops of hops have been contracted in Mendocino county at 30 and 30½ cents a pound. Two growers have contracted 20,000 pounds each for three years at 30 cents the first year and 25 cents the two subsequent years.

Investment of money in new roads does not become real economy until provision is made for keeping these new roads in condition after they are built. If a new road is built and then allowed to fall into disrepair, much of the original investment is simply wasted.

From Chualar south through Gonzales to Greenfields, alfalfa is being cut and the crop is large. More dairy cows show along the highway pastures than any similar pastures in the State. Large herds of fine-looking Holstein cows are in every field for miles along the road and show large gains in numbers during the past two years.

Five million bags of rice is the estimate of this year's field crop, or an increase of 1,500,000 bags over the 1918 crop. This year's plantings will aggregate 140,000 acres for the State, much new land having been put under rice cultivation. Plenty of water is reported for the season and some fields are already showing green. The crop will have a clear market.

A wheat crop to exceed the record-breaker of 1914 is predicted for this year in a report based on statistics from all wheat producing sections. Nine hundred million bushels is the forecast or 33 per cent greater than the year 1914. Twenty-five per cent is said to be south of the Mason and Divon line, an innovation. Wheat is said to be in splendid condition.

Because a large percentage of last year's bean crop remains unsold, and to save the industry for our own growers, a large meeting of the Bean Growers of Central California at Turlock has adopted a resolution urging a high protective tariff on beans. The importation of Asiatic beans had amounted to 192,000,000 pounds in competition with our own, and it meant ruin to American growers.

"The farm-to-table plan of the parcel post has not done what the department expected of it," says Director of Post Office Ryan. The plan was expected to bring the farmer and consumer of fruit, butter, eggs, poultry and what-not into contact, but it has been disappointing. Most people seem to prefer to go to the corner grocery rather than go to the trouble to order ahead.

Crop prospects in the southern coast counties are good, but a late rain would help barley and wheat. In the section from Watsonville to Salinas and south to Gonzales the grain fields look well. From Gonzales to Paso Robles grain will be poor, much of it now being cut for hay. From Paso Robles into San Luis Obispo county both wheat and barley crops look very well. A great many large tracts are being planted to beans in both Monterey and San Luis Obispo counties.

The California Delta Farms, Inc. (San Joaquin County), is keeping its swift passenger boat busy these days carrying persons interested in their peat lands to and from the Orwood Tract—the first of the acreage offered. This rich region of the Sacramento delta has excellent transportation facilities, through the rivers, cuts, and sloughs of the reclaimed sections which are the busiest water ways of the West. Landings can be made anywhere on the broad levees, though there are regular steamboat landings and elevated sites are provided for buildings.

CEREAL DAY PROGRAM.

The second annual Cereal Day will be held at the University Farm, Davis, Cal., on Friday, May 16, 1919. The purpose of the occasion is to publicly display the experimental work with field crops, especially cereals, at the Experiment Station. Many new crops and cropping experiments of special interest to farmers and stockmen are to be seen this season.

GIANT WINTER **Rhubarb**

APRIL-MAY decidedly best months to plant for coming winter crops. If interested in Rhubarb or Berries, write for special prices. J. B. WAGNER, Rhubarb and Berry Specialist, Pasadena, California.

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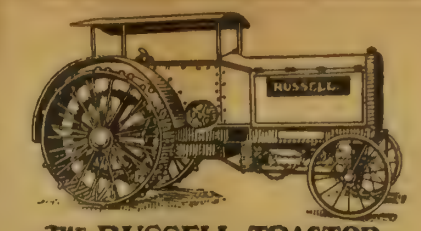
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Field and Garden Suggestions.

Cotton Crop Sold.

Robert Hulme, vice-president and general manager of the California Products Company of Fresno, reports the sale of 600 bales of cotton, which is part of the first commercial crop grown in this state north of Imperial county. The cotton brought $90,000, which was a profit of $100 to the acre.

U. S. Producing Rice.

The yield of rice per acre in California is equal to that of any country in the world. The U. S. is rapidly taking its place in the front of rice-producing countries, its acreage has grown from 869,000 acres in 1916 to 1,113,000 in 1918. Only certain Asiatic countries have a greater output of this commodity.

California Rice for Belgians.

Seven million pounds of rice will be shipped from Port Costa, California, to Belgium. It is estimated that this shipment will equal 100 freight carloads and is the last of the 20,000,000 pounds of rice bought by the United States food authorities in California over a year ago for relief in Belgium.

Oats Crop Shows Increase.

In 1906, there were in the U. S. 30,958,768 acres of land planted in oats. When the war broke out in 1914, the acreage was 38,442,000, and in 1918 it was 44,400,000, thus showing a steady increase. Illinois heads the list of oat-growing states in the U. S., harvesting 4,508,000 acres in 1918, or nearly double that of any other state.

Is Cotton Acreage Reduction Legal?

Secretary of Agriculture D. F. Houston questions the legality of the proposed acreage reduction by cotton planters for the purpose of holding up cotton prices, and has asked the U. S. Attorney-General to render an opinion. Do they object to the use of intelligent co-operation of farmers to avoid plunging in a crop that may otherwise be raised at a loss?

Convenient Gate Fastener.

After fumbling with the ordinary gate fasteners on many farms, it was refreshing to open the panel gate on the Paicines Orchard ranch in San Benito County recently. Between two of the 1x8 pieces of the gate was a common 1x3 board to slide into a notch in the post and hold it. A bolt through this, and another through the 1x8 above it held a 1x2 piece approximately vertical, and extended above the top of the gate enough for a good hand hold. This gives a person a leverage of about 20 inches in sliding the 1x3 back and forth, and does not involve getting slivers into his hands in opening the gate. This arrangement is built especially for the purpose of opening gates from horseback, and commonly has a lock on it to prevent cattle from opening it. The lock consists of a 1x2 bolted to swing over against the handle.

Bean Growers' Association Grows.

More than 80 per cent of the bean growers of the Lompoc and Santa Maria districts have recently become members of the California Bean Growers' Association. Beans from these districts furnished most of the 40 carloads of small whites recently shipped on Government order. George A. Turner, the Association's president has gone to New York to establish headquarters for the exporting of California beans.

Salinas Valley Barley Conditions.

Salinas Valley barley needs rain except on the lower ground, according to Donald Lazier, who has been over 20 years working in the Valley for the S. P. Milling Company. The acreage has considerably increased because of the delay in selling beans which has caused many farmers to lose their nerve on this crop. As much of the barley will be cut for grain as possible, because it is less work and brings much higher prices. Cutting of hay in the Salinas Valley is much less than it used to be anyway, although 25 per cent of the grain may be cut this year for hay if no more rain comes. Lowlands in the Valley grow mostly the Chevalier variety of barley. This is later than the common variety, partly perhaps because it is on the heavy soil. R. W. Anderson, of the S. P. Milling Company, recalls that last year a great deal of the Chevalier barley was bound in bundles lying on the ground during the rain. These were shocked after the rain to avoid molding and spoiling, but there was considerable loss at best. Barley in the upper regions of the Valley last year quite generally suffered from lack of moisture and was pinched to a very low weight. Mr. Anderson estimates that the acreage this year was about normal. The writer observed that a great many fields are already showing a serious yellowing of the lower leaves due partly to dryness and partly to fungus disease attacks. Due to the inroads of aphis also there are considerable spots in certain fields which cannot mature the grain. There is practically no wheat in this valley below King City.

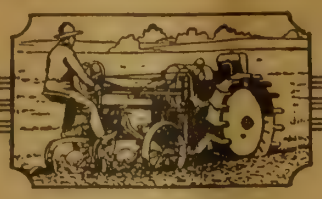
California Wheat Conditions

(Written for Pacific Rural Press.)

The writer's trip through the San Joaquin Valley in the middle of April showed an urgent need of rainfall at that time in the counties south of Stanislaus. This condition grew worse as dry weather continued until the rains late in April. These rains seem to have been widespread throughout the southern San Joaquin Valley and Southern California, so that the injury may still be minimized, especially if cool weather shall prevail. The Sacramento Valley had more rain early in the season, in fact, so much so that Yuba County Farm Advisor Wm. Harrison's report to N. F. D'Evelyn of the Sperry Flour Company, after a trip around the State, suggested that in his county about the middle of April wheat lacked color, as compared with that further south, apparently suffering from too much moisture earlier in the season, and lack of warmth later. He expected this to change with the warming up of the weather. On the other hand, Farm Advisor J. F. Grass, Jr., of Merced county, was hoping for cooler weather in order to compensate for the dryness there, and prevent burning up the crop. On April 24 Mr. Grass wrote to Mr. Rickards that he feared half of the 70,000 acres of wheat in his county would be abandoned. Farm Advisor, R. N. Davis, of Fresno County, wrote the second week in April that the seasonal rain to that date had been about two inches under normal, and summer fallow wheat might not yield well, but some early wheat and barley were already heading out and would soon be mature.

It was the writer's observation on his Valley trip that the grain which was already heading out in the middle of April had a good chance to make a good yield in the absence of further unfavorable weather; but late sown grain, of which there was a distressingly large acreage, was already beginning to turn color, and did not seem in general to have a very good chance unless more rain should fall.

Farm Advisor, Wallace Sullivan, of Kings County, estimated late in April that of the 100,000 acres of wheat in his county, probably 15 or 20 per cent would be abandoned, as the conditions were none too promising. A. J. Goldschmidt, of the Eagle Milling Company in Arizona, reported that Southern Arizona had a very good rainy season, and reports from all sections indicated nearly 100 per cent crop.



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When you buy a Moline-Universal Tractor the transaction does not end there. In addition you buy Moline Service—which is service that satisfies. This means that with intelligent operation you will be able to keep your tractor working to full capacity during its entire life.

Moline Service means exactly what it says—and we have perfected an organization which enables us to furnish Moline Service that satisfies. We can do this because:

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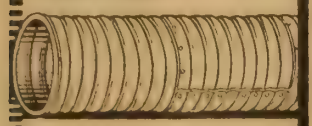
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The smooth outside surface of the sleeves and smooth inside surface of the collars make a water-tight connection possible without pounding or straining the pipe. This pipe is MADE-WELL and made right from end to end. The heavy Madewell lock-seam will not come apart or become leaky even after years of hard usage.

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Your ranch doesn't have to be level if you use Western Surface Pipe. You can carry your stream of water across depressions and onto the high ground you can't reach with an open ditch. There's no waste, either, from seepage or gopher holes.



Western Surface Irrigation Pipe is made from a single sheet of heavy galvanized steel. The seam, riveted and soldered, absolutely prevents breaking of the galvanizing. Write for price list and illustrative booklet today.

Write also for prices on: Riveted Steel Pipe, Riveted Well-Casing, and other Irrigation Supplies.

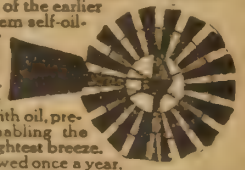
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Power machinery for cutting firewood offers a practical solution of the fuel problem on farms where wood is available.

San Benito Hay Conditions

(Written for Pacific Rural Press.)

"If it doesn't rain before the middle of May, lots of grain will be cut for hay," said James Slaven of San Benito county, whose warehouses at Tres Pinos have a capacity of 10,000 tons of hay. This year the volunteer crop will be short and poor, due to lack of late spring rains. "Volunteer" is the growth, mostly of wild oats, which comes on land which is rested alternate years without fallowing it. Grain here is about half wheat and half barley—a higher percentage of wheat than usual.

There is less of old hay on hand than usual and there will not be much left over when the new crop comes. But Mr. Slaven says it is moving at $13.50 to $14 for first grades f. o. b. cars at shipping point, much lower than last fall.

Overfelt Bros. of the San Juan district, who sold their grain hay last fall at $21.50 to $25, agree that the volunteer crop will be not much this year, and that if rains should come as needed for grain hay, the volunteer would all be spoiled.

There is a considerable less acreage planted for hay in San Benito county than heretofore, according to R. P. Lathrop, of the Lathrop Hay Company of Hollister. Acreage lost for hay is being used for increased seed growing, sugar beets, and vegetable growing. The California Packing Corporation has bought one of the hay storage warehouses at Hollister, and has leased great areas of land for the growth of vegetables to be canned at this plant, which will be installed before the season opens.

It will, of course, be to the interest of the growers in this district to make grain if they can, but Mr. Lathrop says that if an inch of rain falls right soon the hay crop will be double over what it can be without rain. He points out the fact that the ground has plenty of moisture below, but there is a crust on top, due to the sun and rain baking it, and this crust should be softened by rain. The growing crop looks fairly well now, but a month of continued dry weather before cutting time would have serious results. Mr. Lathrop also believes the old crop will be cleaned up, but the prices are problematical. Volunteer cutting started about the first of May, but regular grain hay will not be cut until late in the month, and then another month must pass for curing and baling before new grain hay can appear much on the market. First grade red oat and alfalfa hay has all been shipped chiefly to Texas for the Government, and orders are pending for other grades.

The Lathrop Hay Company has been authorized by the State Railroad Commission to increase its rates for hay storage. It has been charging $1.25 a ton for the first season and $1 a ton for each subsequent season. The increase amounts to 25 cents in each case.

Increased Sugar Beet Acreage

(Written for Pacific Rural Press.)

A 50 per cent increase in the acreage of sugar beets tributary to the Spreckels Sugar factory in Monterey County is being planted this spring, according to Resident Manager C. L. Pioda. The contract price this season is $10 for beets testing 15 per cent sugar, and 60 cents a ton more or less respectively for each percentage above or below that test. About 20,000 acres had been planted previous to the end of April, and there were about 10,000 acres yet to plant. Fifteen thousand of these are farmed by the company itself, the rest by tenants and outside farmers under contract. All of the beets planted by the company and a large percentage of those planted by others are irrigated ; chiefly by flooding the land before planting. Some growers check and irrigate by flooding after the beets are up, and some irrigate by surface pipes, but this has not been found entirely satisfactory. About 75 per cent of all the planting this season will have received at least one irrigation. The condition of the beets which are up is about normal. due to the winter's rains. However, Mr. Pioda notes that the September rains did not store much moisture in the ground, and the winter rains did not give quite enough moisture to fully provide for the beets' requirements, especially in the lower sections. The absolute lack of rain during April has been more of a detriment to all crops and to the preparation of land for crops than any other factor.

There is some blight or curly top in the Southern end of the Valley, and a few beetles, not very serious, as there always are when the surface of the ground is dry. The business of sugar beet seed growing in the Salinas Valley is well stabilized. Over 500 acres were grown last year and about 450 are being grown this year. Four hundred and fifty acres should normally yield about 400,000 pounds of seed. As the growers plant 8 to 17 pounds of seed per acre, this shows that the Spreckels people are growing more than one-half of the seed that is used in this district. Much of the remainder comes from Utah, and seems to be first-class stock. They have on hand considerable old seed. which holds its germination several years. The aim is always to use the oldest seed first, and but little trouble has been found with the germination. In growing seed, the aim is to produce a small-sized beet in the fall and transplant it during the winter to produce seed the following year. The seed to produce these mother beets is of the finest quality obtainable.

Imperial Cantaloupes Predominate

(Written for Pacific Rural Press.)

California is the greatest cantaloupe producer in America. The total number of cars shipped in the United States in 1918, as reported by the Bureau of Markets, was 13,277. Seventy-five per cent of this volume originated west of the Kansas-Colorado State line, 51 per cent originated in California, and 33 per cent originated in Imperial County. The three States which shipped over a thousand carloads each were California, Colorado and Arizona. For several years Imperial county has maintained a big lead among important cantaloupe districts in earliness, acreage, and total output. The acreage in Imperial county this year is greater than ever before, according to R. G. Risser, who furnishes the following figures on production and dates of shipment.

Imperial Valley Cantaloupes.

Season	Acreage	Shipments	Yield of Shipping stock
1915	8156	4722 cars	194 crates
1916	8492	4617 "	182 "
1917	12939	5041 "	130 "
1918	10896	4402 "	136 "
1919	13822	.....	.....

Records of past years show the data on shipping period to be as follows:

Year	First Car	Peak Load	Last Car	Length of Season
1913	June 4	June 24	July 30	57 days
1914	May 16	June 15	July 16	61 days
1915	May 25	June 23	July 21	57 days
1916	May 16	June 12	July 19	65 days
1917	June 4	June 26	Aug. 1	55 days
1918	May 25	June 18	July 26	60 days

The table indicates that the late seasons are the short ones.

More acres and more bushels of rye were harvested in 1918 than in any previous year in the history of the country.

Great Tractor Demonstration On

(Written for Pacific Rural Press.)

The Greatest Tractor and Implement Demonstration that ever happened in California is on in full blast as this is written. Glorious weather, a fine field a mile square or thereabouts, lots of hospitality, and busy tractors everywhere! Everybody has a tractor plowing, of course. Most everybody has tractors cultivating the plowed ground. A great number have tractors running threshing machines, hay choppers, silage cutters, and other farm machines. Motor trucks and trailers are there in abundance. Bulk grain handling is shown to be a coming feature by the number of grain wagons, motor trucks with grain beds, grain elevators, and grain bins. Unfortunately there are none of the bulk grain attachments to combined harvesters, such as we have seen here and there in fields about the State. The accessories tent is a whale of a big one and full of exhibits attended by live men. Tractors and farm implements are chiefly in the headquarters tents of the various companies on their own plots of land, which are to be worked up this week. These comprise practically all of the makes that have survived in California and at least a dozen which have overflowed recently from their Eastern homes and are now introducing themselves to the fields of California. All of the tractors shown have the latest equipment and improvements designed during the past year to overcome any faults which may have been found. They are the best that our present engineering skill has devised to save labor and increase crops on the farm.

STRAINING CRANK CASE OIL.

To the Editor: I am using a heavy tractor oil which costs around $1 per gallon and must lose 2½ gallons every time I change the oil unless I filter it. The life of bearings is greatly prolonged if oil is changed often, which one is not so apt to do unless he can filter and use it again. Is there a practicable way of doing this?—R. J. H., Beaumont.

You could warm the oil quite thoroughly to make it thin and run it through a half dozen thickness of fine cloth to get it reasonably cleaned, but we doubt the saving in this. Machinery is more expensive than oil.

Louden Barn Equipment

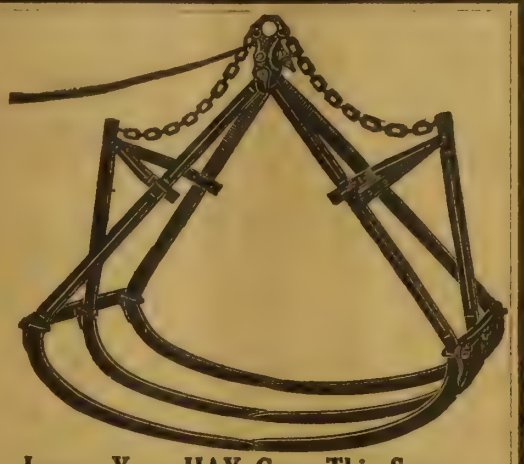
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reliable safe, convenient, a saver of time, labor, and money. Write for catalog.

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Get it under cover in record time. Cut down your labor cost. Eliminate repairs.

You can do it with Louden Hay Tools. Louden equipment costs less than the loss of a ton of hay. Try it out this season. It will save you time, labor, and expense. It will help you save the crop.

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The **Pacific** Silo is just the one you have always wanted. Talk to the farmer who owns one, or better still, talk to the man who owns two—a **Pacific** and some other. See what he says about it. His word is our best advertisement.

The **Pacific** is built of Redwood—that long-lived wood of everlasting qualities. Coming as it does from forest giants, this wood makes a perfect silo lumber. We use nothing but selected 2-inch Redwood staves.

Heavy round steel hoops, doubled at the bottom where pressure is greatest, tightly bind and lock the staves into place. Interchangeable doors, hingeless, and secured by four corner clamps. Self-supporting, water-tight cover fitted with hinged ventilator and manhole.

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A PACIFIC REDWOOD TANK will provide them with plenty of water when they need it—just like a spring.

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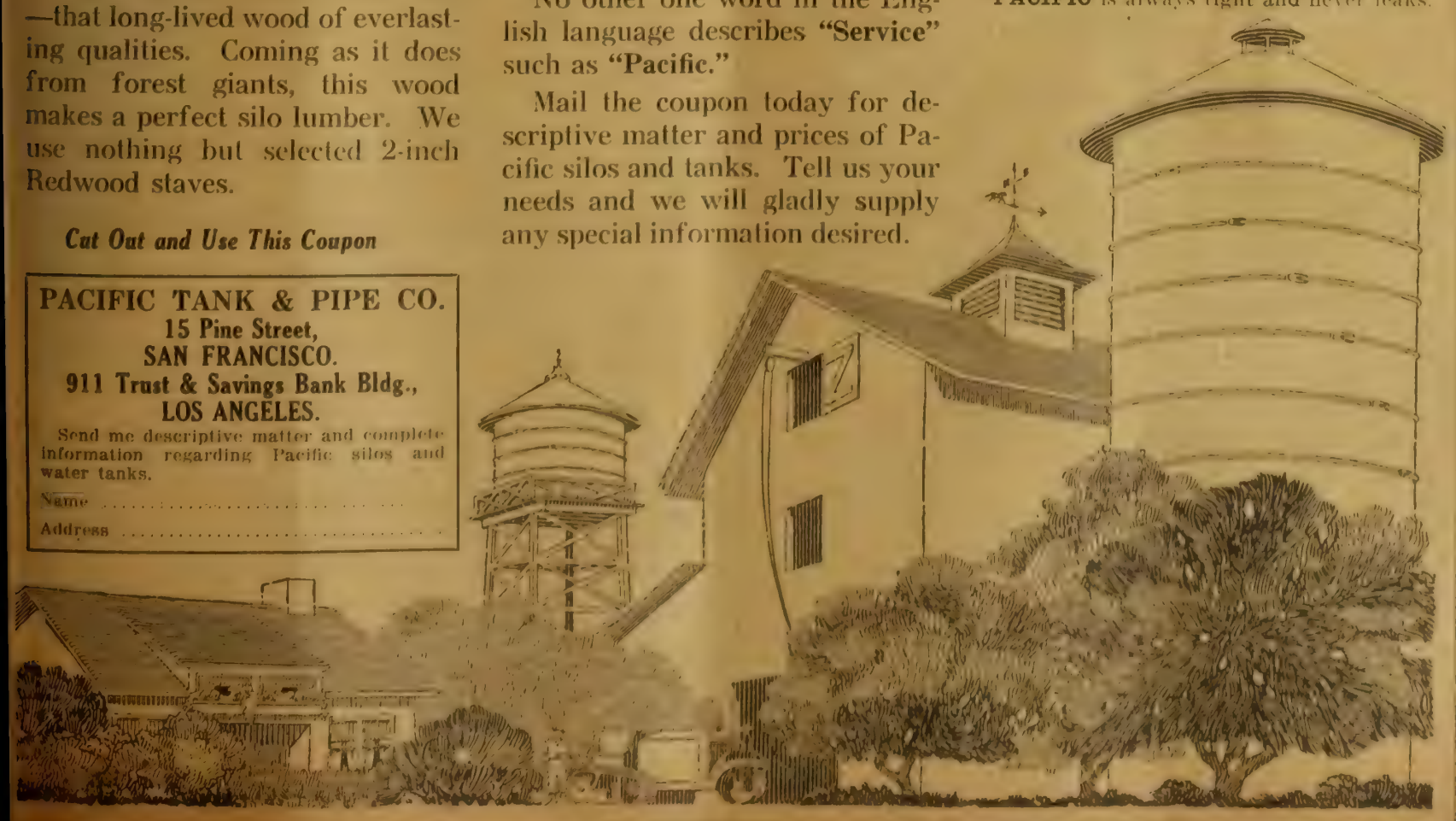
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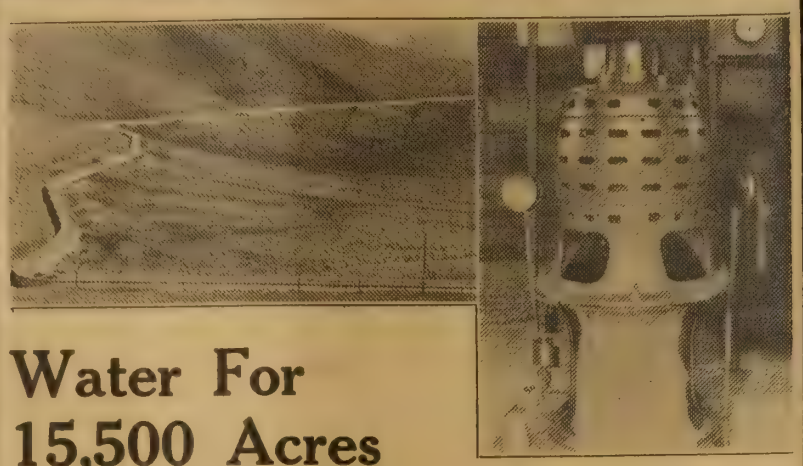
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37 Machines—1480 H.P.

These motors have circulating oil system of lubrication—rigid cast frame—one-piece solid metal rotor winding—means long, satisfactory service, with little attention—low upkeep. The highly successful performance of our motors on this and many other important projects, urges their selection by you the similar work. Guaranteed by Fairbanks-Morse quality.

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WILL WORK WONDERS ON YOUR FARM



Moving immense amounts of dirt daily, and working on ground too tough for horses and Fresnos to tackle, SCHMEISER POWER LAND LEVELERS are now being used with utmost success by a great many ranchers, large and small—also by contractors—saving their owners time, labor and money.

So extremely simple, a child could operate one, as a simple twist of the wrist raises and lowers the bucket or holds it stationary, as the case may require.

A GREAT ROAD MACHINE

Every road district should own one of these machines for constructing roads. They will cut down the high places and make fills quicker and cheaper than by any other known method.

YOU SHOULD

send for our latest catalog, J-600, which is full of interesting information on Labor Saving Devices and machines for moving the earth.

Southern California Agent,

F. T. BRILES,

214 No. Los Angeles St. Los Angeles, Cal.

Schmeiser Manufacturing Co.

12 Mechanic Street, DAVIS, CAL.

"Mid-Western roads are abominable pecially in winter," says L. E. Rice, from the automobile standpoint, es- local distributor for Mansfield tires.

Engine Overheats--What Is the Matter?

(Written for Pacific Rural Press.)

Overheating of an engine is due to the heat of explosion plus the frictional heat of moving parts, when not enough of that heat is removed by the radiator system. The highest efficiency of gas engines is obtained with the water in the jacket at about 180 degrees. Manufacturers design their radiator systems to keep this temperature as nearly as may be, and to avoid boiling the water. Overheating shortens the life of the motor, and causes undue expansion of working parts. To overcome this, much extra fuel must be used with a final result of sticking the pistons or breaking the rings, or scoring the cylinders, or all three.

Frictional Heat.

In case of excessive frictional heat, due to poor lubrication, carbon, overtight fitting parts, etc., the radiator is not designed to prevent overheating. This must be remedied by removing the cause, or the engine will not last long. Lubrication is designed to dissipate or prevent frictional heat. If the wrong oil is used, or if it is allowed to become dirty, or if not enough of it is provided, frictional heat added to the heat of explosion boils the water in the radiator.

Oil becomes dirty in practice by several means. With a new machine it is impossible to get all of the molder's sand and rough particles from the castings until they have undergone the shocks and heat of actual work. Such particles become loosened, fall into the crank case oil and form a grinding compound. Some operators are careless about getting dirt in the oil when filling the crank case. In former days, many a motor was injured by taking dirty air through the carbureter. Very few tractors used in California now are not provided with air cleaners to remove that dust. Since the piston head is at an extreme heat, any lubricating oil which is splashed against its underside has the tendency to bake and scale off into the crank case. Any time that the cylinders are worked dry there will be more or less shavings or chips dropping into the oil, due to the grinding of the pistons on the cylinders.

If lubricating oil is so light that it burns off from the cylinder walls or does not maintain a film over the wall which resists the pressure, the piston rings are certain to rub the cylinder walls with excessive friction, excessive heat and more or less grinding, if not sticking of the pistons. If the oil is so heavy or thick that it does not splash well on cold mornings, the cylinder walls are likely to get dry in that case with similar results. On the other hand, extremely heavy oil is sometimes believed to be necessary to hold compression. In such a case there is something radically wrong with the piston or cylinder walls, which should be immediately fixed, for lubrication is not designed to hold compression. In all of these cases the overheating which is caused is in excess of what the radiator system is designed to carry off, and consequently an overheated engine results.

Heat of Explosion.

Overheating due to the heat of explosion has about four or five different causes. The radiator system itself may be out of order; perhaps the hose is flattened so water does not circulate well through it; perhaps the radiator is not large enough; its tubes may be lined with scale so thick that heat cannot be sufficiently given off from the water it contains. Such scale or other dirt may have clogged up more or less of the water passages, so that insufficient circulation is obtained. It may be that the engine water jacket is so thickly covered with scale that it does not give off the excessive heat of explosion to the water. As the temperature of gas engine explosion is 2600 to 2700 degrees, and as about 30 per cent of this heat must be taken off by the water in the radiator system any reduction of the circulation or the radiation permits overheating of the engine. It may be that the fan belt is broken or slipping, or the fan blades have become so straightened that they do not pull enough air through the radiator. It may be that the pump system is not running, or is clogged up.

If none of these causes are responsible, the overheating may be due to retarding of the spark; a late spark causes the explosive mixture to burn more slowly, as the explosion chamber enlarges due to the withdrawal of the piston. The spark ought to occur just previous to the instant of maximum compression, so the charge will explode almost instantaneously, and with the greatest force just as the piston is ready to start toward the crank case. A weak spark overheats the engine, for the same reason an incorrect valve setting may prevent clearing the explosion chamber of burned gases in time for the explosion, and thus add to the heat. Very frequently overheating is due to a scale of carbon in the firing chamber. This becomes heated with the maximum of the explosion and retains its heat from one explosion to the other, instead of getting rid of it as a clean combustion chamber would do. If the scale in the firing chamber is pure carbon, and is not mixed with impure residues of lubricating oil, or with dust which has come through the carburetor, it can generally be burned out by adjusting the carburetor to run on the leanest mixture which will operate the engine. The leanest mixture workable should be used on general principles occasionally to prevent formation of carbon.

Bean Tractors for French Vineyards

(Written for Pacific Rural Press.)

A remarkable instance of the aid of motor trucks and trailers to the tractor business has recently transpired. In order to ship tractors to France permission must be obtained from the U. S. Shipping Board through the French High Commission. The Bean Spray Pump Company of San Jose had an order of 25 tractors, ready and waiting for three weeks. They finally got a telephone message at 3:40 p. m. to have the 25 tractors at the wharf in San Francisco by 8 o'clock the next morning. There was some scurrying around to get transportation. Seven trucks and eight trailers were secured, mostly from San Francisco, to run down to San Jose, load up the tractors, and haul them back. One motor truck had a load of wine on, and men had to be sent out in the night to unload this. The steamer had already left the wharf, but was held on Government orders out in the Bay. The tractors had to be loaded on lighters. The last one was put aboard at 8:35.

According to General Manager J. D. Crummey, there are 25 more to be shipped as soon as boat space can be obtained. Mr. L. Mertens, representing the French firm who bought the tractors, has just left California for France. These tractors are the standard Bean tractors, except that the rear axles are shortened six inches to work in the French vineyards, which are set closer together than those in California.

It is only recently that the Bean Spray Pump Company has had the capacity to produce for foreign trade. They now have equipment for 40 per cent greater production than 18 months ago. A representative is now in Australia with sample tractors to introduce. They recently bought one tool weighing 33,000 pounds at a cost of $11,000. This is the Ingersoll milling machine, which will save much time in the making of tractors and pumps. It mills the contact surfaces on two sides and the top of a casting at once.



The Farmer of '17 and the Farmer of '76

Each went to war in defense of his country and of the ideals which he held dear.

The farmer of Revolutionary Days beat his plow share into a sword with which to carve out a free America.

The modern farmer performed a similar and an even more important service, for by patriotically yielding to the priority of Government orders which limited the output of the Holt factories available for domestic delivery, he contributed one of the greatest mechanical agents of the war—the "Caterpillar" Tractor.

Through the genius of the military experts of this country and its Allies, this *peace-time* machine, designed to till the soil of a million farms, was adopted for the most strenuous *war-time* uses.

Adopted in armored form as the mighty armored "Tank," which is conceded to have saved 20,000 lives on the Somme in the Fall of 1916 alone.

Adopted as the standard heavy hauling machine by America and its Allies, being used to move guns and caissons and supply trains, making sure that no matter how fast the dough-boys might move, or how muddy or rough the terrain might be, their artillery would be right behind them, ready to lay a protecting barrage at a moment's notice.

Of course, only the "Caterpillar" Tractor would do for the armies' most strenuous work. That is why, when The Holt Manufacturing Company in 1914 put its facilities at the disposal of the Allies, the English and French took practically the entire output of its eastern factory. And that is also why the U. S. Ordnance Department, when it launched the most complete motorization plan the world had ever known, after severe tests adopted "Caterpillar" Tractors exclusively for all the heaviest and most severe work, taking not only the output of the Holt eastern factory, but also engaging scores of other eastern factories on the production of Holt tractors, assemblies and parts.

But at last the stress of war is ended and Holt factories are again on a pre-war basis, strengthened by their war-time service and experience, now again making immediate delivery of "Caterpillar" Tractors and parts.

The same efficiency of principle; the same rugged construction; the same self-track-laying design, turning engine power into draw-bar power with a minimum mechanical loss—all the qualities which won the "Caterpillar" Tractor honor upon the battle-fields of Europe—are at the disposal of American Agriculture as in the days before the war.

"Caterpillar" Tractors—built only by Holt or under Holt contracts and patents—the only track type of tractor adopted, after rigid tests, for the severe war service of America, England and France.

Reconstruction time should be tractor time. Write today for full information regarding the "Caterpillar" Tractor. Ask for Catalog 401.

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Reg. U.S. Pat. Off.

THE HOLT MANUFACTURING CO.

STOCKTON, CALIFORNIA PEORIA, ILLINOIS
SPOKANE, WASHINGTON
LOS ANGELES, CALIFORNIA

The Great Dispersal Sale

McALISTER & SONS'

FAMOUS HERD

Two Hundred Registered Holsteins

On Their Farm Five Miles South of Chino

Wednesday and Thursday

May 21 and 22, 9 a. m.

It Makes No Difference What They Bring—Every Animal Will Be Sold

They go into the ring our cattle and come out yours. Nothing held in reserve. That they will sell for less than their value is a mortal cinch. This is the greatest bargain sale ever held in Holstein Cattle, and your opportunity to buy them at your own price. The Catalog is ready—Send for it NOW.

Ninety Great Heavy Producing Cows

5 with records over 30 pounds butter in seven days
28 with records over 25 pounds butter in seven days

A Few of the Great Animals to be Sold

K. P. Idyl Segis (State Records) four years old	Butter 7 days Butter 30 days	35.66 132.05
K. P. Tola	Butter 7 days Butter 30 days	34.03 140.00
Allenvail Pauline Walker Four years	Butter 7 days Butter 30 days	32.18 119.64
Lady Briems Aaggie 2d Three years	Butter 7 days	31.42
Wavelet Segis	Butter 7 days	30.28
Lillith Lyons Pauline Segis	Butter 7 days	29.30
Allenvail Mary Walker Three years (first calf)	Butter 7 days	28.73
Westview Aaggie Colantha Three years	Butter 7 days	28.56
Orndyke Duchess Korndyke	Butter 7 days Butter 30 days	27.83 112.85
Etta Changeling Wildwood State record when made	Butter 7 days Butter 30 days	27.04 109.23
Allenvail Clothilde Walker Three years, State record when made	Butter 7 days	26.89
Korndyke Segis Star Rena	Butter 7 days Butter 30 days	26.66 107.83

Seventeen others, over 25 pounds of butter in seven days. Mostly bred to "It," son of the first cow in the world to make over 37 pounds in seven days and over 1250 pounds the one year. What will their calves be worth? Ask yourself that question.

Daughters of King of the Pontiacs, King Segis De Kol Korndyke, "It," King Segis 11th, King Korndyke Sadie Vale 27th, King Korndke Sadie Vale 22d and other famous sires; a daughter of Valdessa Scott 2d, 41.88, the first 40-pound cow of the breed!—the first time a daughter of a 40-pound cow has been offered at public sale in the West.

SIXTY SWEET HEIFERS, six out of 30-pound cows—daughters of King Korndyke Sadie Vale 22d and St. King Korndyke Sadie Vale 27th.

Bulls! Bulls! Bulls! Forty of Them!

The greatest, most stupendous and unparalled opportunity ever offered breeders and dairymen in the West to buy herd sires at twenty-five cents on the dollar.

"IT" WILL BE SOLD

KING PAUL KORNDYKE VALE, a 31-pound son of King Korndyke Sadie Vale, will be sold.

KING WINNIE, a son of a 1200-pound yearly record cow, will be sold.

PRINCE GELSCHE KORNDYKE SEGIS, a son of Prince Gelsche Walker and from the same dam as the $3100 heifer, will be sold.

TWO SONS OF "IT," from the Star Rena Wayne Pietertje 2d, a 34-pound three-year-old daughter of a 29.93-pound cow, will be sold.

Two other bulls from 31-pound dams, not to mention some thirty-five others.

DON'T FORGET THE DAYS—MAY 21-22

HEADQUARTERS, ANGELUS HOTEL, LOS ANGELES

Free automobiles will leave Angelus Hotel at 7 o'clock on the mornings of the sale and at 1 o'clock on the afternoon before the sale, for the ranch.

CHARLES L. HUGHES, Sacramento
Sales Manager

COL. B. A. RHOADES and
HAROLD B. RHOADES, Los Angeles
Auctioneers

Not Tuberculin Tested. Guaranteed to Be Breeders.

McAlister & Sons,

CHINO, CALIFORNIA

All Honor to the Helpmate

(Written for Pacific Rural Press by Thos. F. McConnell.)

When we think of ham we just naturally think of eggs too. This is because the firm of Ham and Eggs has been pulling together successfully for many years. Same with bread and butter, sugar and cream, and salt and pepper.

When we think of a successful rancher we should immediately think of his wife, for in all probability she deserves as much credit for his success as he does. We know of many breeders whose wives keep books for them, attend to the pedigrees, write the advertising, answer the inquiries; in fact, they are ready to do anything and everything within their power, even to the extent of actual manual labor in field or barn.

Then again, in times of disappointment and discouragement, when the road is rough and it seems almost impossible to make the grade, nothing can smooth the rock-strewn path and make the going easier than the sympathy, the encouragement, and the patient, confiding counsel of the life-partner.

Asy any successful rancher what factor has contributed most to his success, and if he is sincere and honest he will give the chief credit to his helpmate. That was the kind of a reply we recently got from A. A. Jenkins of Tulare. For eleven years they



Ruth Grimm 2nd, first registered cow in the herd of A. A. Jenkins, Tulare.

have been playing the dairying game together, and while nowadays quite a little is heard about the way Mr. Jenkins worked his way up from the bottom, we want to link the name of Mrs. Jenkins with every step in his progress.

About 11 years ago Mr. Jenkins and his wife started dairy farming on shares. Liking the business, they rented a place after about a year, bought a herd of "scrub" cows, and proceeded to make them pay dividends. At the end of 16 months the cows had done well enough to be sold for sufficient money to buy 40 acres of land.

This herd of so-called scrub cows contained some with Holstein blood predominating, some with Jersey blood and some just cow. Those having the largest percentage of Jersey blood gave so much better account of themselves for the amount of feed consumed that after the disposal of this herd of all kinds and colors, 12 high-grade Jersey heifers were purchased.

Dairying continued with such good results that soon two registered heifers were purchased and then a registered cow, Ruth Grimm 2nd, whose picture accompanies this article. She is still giving a good account of herself at the pail, is a Register of Merit cow, and is the dam and granddam of some of the best producers in the herd today. She is of the justly famed St. Lambert breeding, and now the herd is strong in that blood.

The herd has steadily grown from this small beginning by gradually eliminating the grades and replacing with registered animals, until now it counts 36 milking cows and heifers all registered, and all of excellent type and great performers at the pail.

To illustrate the persistence of the milk and butter production of the strain that Mr. and Mrs. Jenkins have developed, they have one cow who has been milking 12 months and is still producing an average of 20 pounds of milk daily with an average test of 6.08 per cent. At present they are milking 18 heifers, most of them with their first calves, that are producing 500 pounds of milk daily with an average test of better than 5 per cent.

To show what some of the individuals of the herd have done we will mention Irene's Cadora with a year's record of 647 pounds butterfat, and Gertie Lad's Rosa, who produced 408 pounds fat in one year with her first calf. The feed of these heifers is simply three-quarter pound rolled barley per day each, alfalfa hay and pasture.

In raising calves Mr. Jenkins finds that it is best to mix a small amount of warm water with the whole milk at first, commencing to add skimmilk in about one week after birth and gradually replacing the whole milk until at 6 weeks of age the calf is receiving only skimmilk. This skimmilk is continued until the calf is about 7 months old.

Mr. and Mrs. Jenkins are great advocates of the silo and were pioneers in their locality, although told by their neighbors that they could not raise Indian corn to fill it, and if they should succeed the silage would not keep in our California climate. However, the silo was built and filled with Indian corn, and it kept perfectly.

At this period in their dairying they were keeping 60 cows on what was raised on 40 acres. In order to do this it was necessary to double crop. Indian corn was first raised and put into the silo, the ground then plowed and sowed to oats, which were cut for hay. This oat hay was cut, baled and sold, and the proceeds used to buy alfalfa hay for feeding their dairy cows. At this time oat hay was higher in price than alfalfa and the alfalfa was needed to balance the ration of which one part was corn silage.

This young couple certainly have made great progress in spite of financial handicaps, yet they cannot but attain even greater success, for they work with their heads as well as their hands. When brains play an important part there is no limit to what may be accomplished, especially when the wife works hand in hand with her husband.

Guidon, comrade, golden spur—
The men who win are helped by her.

Molasses for Feeding Hogs

(Written for Pacific Rural Press.)

The value of cane molasses as a supplement to barley for fattening purposes was clearly proven in an experiment carried on at the Oregon Agricultural College. Fifteen grade hogs, averaging 183 pounds, were fed a ration of ground barley and ten per cent tankage, and to this was added one pound of cane molasses for every four pounds of the barley-tankage combination. The hogs were on a test 40 days and made an average daily gains of 2.12 pounds each. The total feed necessary to produce 100 pounds of gain was 499 pounds.

There are several items that should receive careful consideration. The daily consumption, which was 10.52 pounds each, was considerably above the normal. Eight pounds of a barley-tankage mixture is the normal daily consumption for hogs of this weight, while it will be noticed that the hogs exceeded this amount, and they also consumed 2.1 pounds of molasses per day. Again the average daily gain of 2.12 pounds is approximately one-half pound greater than the normal for hogs of this size fed a barley-tankage ration. The feed necessary to product 100 pounds gain was slightly less than that required by some lots fed on barley and tankage alone.

The total digestible nutrients indicate a feeding value for molasses of approximately three-fourths that of barley. When used as a supplement to induce greater consumption, the



THE easiest and quickest way to repair leaks in radiators, pumps, water jackets, gaskets, hose connections, etc., is with Johnson's Radiator Cement. It will seal leaks immediately without laying up the car. No mechanical experience required—all you have to do is remove the cap and pour the Cement into the Radiator.

JOHNSON'S RADIATOR CEMENT

Johnson's Radiator Cement contains nothing which can clog or coat the cooling system and is absolutely harmless in every respect. It blends perfectly with the water until it reaches the leaks. Just as soon as it comes in contact with the air it forms a hard, tough, pressure-resisting substance which is insoluble in water and consequently makes a permanent seal.

Use Johnson's Radiator Cement for automobile and tractor radiators, and for sealing leaks and cracks in boilers and water jackets of all kinds.

A half-pint of Johnson's Radiator Cement is ordinarily enough for a Ford or other small radiator. For sale by hardware and accessory dealers, and garages. Write for our booklet on "Keeping Cars Young"—it's free.

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Dept. PRP
Established 1882.

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Milking Shorthorns
WILLOUGHBY, OHIO.

BEEF MILK



LADY OF THE GLEN.

Bred by us and acknowledged the best and most valuable individual of the breed.

Largest herd in America with the best connection. Many cows weighing 1,700 lbs. and above with records of over 10,000 lbs. of milk. Winners at the recent Congress sale owned by us or of our breeding. Sale cattle in carload lots or single. Calf clubs a specialty.

Write T. H. Harrison,
Santa Rosa Stock Farm, Santa Rosa, Cal.
California Representative.



The World's Dairy Cows

The Holstein-Friesian Cow is found in more countries, occupying more territory, and probably producing more milk, cheese, and butter than all other breeds combined.

HOLSTEIN CATTLE

Send for our booklets—they contain much valuable information.

The Holstein-Friesian Assn. of America
Box 141 BRATTLEBORO, VT.

REGISTERED HOLSTEINS

Creamcup Herd offers service bulls and bull calves of 34-lb. breeding. Females offered for foundation stock. Tuberculin tested.

M. M. Holdridge, San Jose, Cal.
R. D. "A," Box 437.
Two miles out North First Street.

results indicate that the feeding value of cane molasses is equal pound for pound with barley.

The molasses was mixed with the barley and tankage and the combination fed in a self-feeder. In mixing, the molasses would break into small drops and the fine particles of ground barley would become attached, thus making a rather lumpy mixture.

Livestock Queries

OPERATION NECESSARY FOR STRINGHALT.

I have a mule that has developed a light case of stringhalt. What can be done for it?—F. S., Manteca.

[Answered by Dr. E. J. Creely, San Francisc]

Stringhalt comes from an injury of the hock joint. Medicine is of very litle use, although rest and the application of a good liniment in the beginning of an attack have sometimes worked a cure. All cases of stringhalt can be cured by a modern operation, no matter how long standing or aggravated the attack. Consult a good veterinarian if rest and your liniment fail.

HEIFER GRINDS HER TEETH.

To the Editor: What should I do for a heifer that grinds her teeth?—J. R., Grass Valley.

[Answered by Dr. E. J. Creely, San Francisco.]

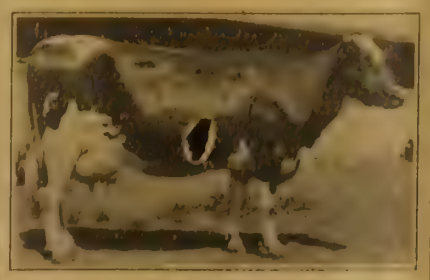
This is probably due to pain caused by acute indigestion or some foreign body in the rumen. Mix together the following: Raw linseed oil, 23 ounces; fluid extract ginger, 2 ounces; fluid extract gentian, 3 ounces; sweet spirits nitre, 4 ounces; oil peppermint, ½ dram. Give one ounce of the above every four hours and after last dose give one pound of epsom salts in a quart or so of water as a drench. This should overcome the trouble unless there is some foreign body in the rumen, which cannot be removed.

HORSE HAS KIDNEY TROUBLE.

To the Editor; I have a fine young mare that was taken sick very suddenly with severe trembling and profuse sweating and soon showed signs of great pain—getting up and down and pawing the ground. We sent for a veterinarian who ordered hot packs over her kidneys and she became slightly better, but eats and drinks only a very little. She passes only a small quantity of urine at a time, which is very thick. She has been fed barley, hay and alfalfa, but no grain. Neighbors advised giving her saltpetre and spirits of nitre. The veterinarian said to feed her alfalfa hay, but we always thought alfalfa bad for the kidneys.—W. J. W., Turlock.

[Answered by Dr. E. J. Creely, San Francisco.]

This case looks very much like a secondary kidney affection, the primary affection being acute indigestion. I would recommend plenty of flaxseed tea, in which has been placed one teaspoon of turpentine. I would not recommend alfalfa, saltpetre, or sweet spirits of nitre. If your veterinarian is qualified he is better able to advise you because he has had the advantage of a rectal exploration of both bowels and kidneys.



K. P. TOLA,

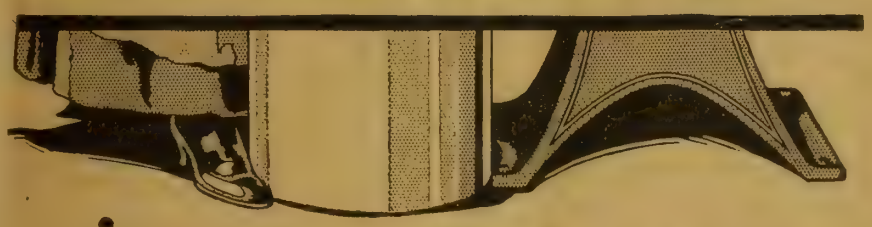
Daughter of King of the Pontiacs: Butter, 7 days, 33.98 pounds; 30 days, 140 pounds. To be sold with 199 other registered Holstein cows, heifers and bulls, at the McAlister & Sons' dispersal sale at Chino, May 21 and 22. An opportunity to buy the high-record foundation animals of this great herd, as well as many promising youngsters.

Hay stackers can be used to advantage on many farms west of the Mississippi River as well as east.



YOU

can't afford to use a second or third grade CREAM SEPARATOR



Get a DE LAVAL

Many users make the mistake of "saving" $10 or $15 in the first cost of a cream separator. More of them continue the use of an inferior or half-worn-out machine simply because it still separates.

These users fail to consider what it means if the sparation is not complete; if the capacity of their separator is so small that it needs to be run longer; if it is out of order a good part of the time, or if the quality of the product is not the very best it could be.

They fail to realize what a very little difference means in the use of a cream separator twice a day every day in the year, and what a difference it makes in first cost whether a machine lasts three years or fifteen years.

All these differences led to the great majority of experienced users buying De Laval machines when butter was worth 20c a pound, and they mean just three times as much when it is worth 60c. a pound and when every minute of time saved is worth so much more than it was a few years ago.

De Laval superiority over other cream sparators is no uncertain quantity that cannot be seen or measured. On the contrary, it is capable of demonstration to every separtor user, and every De Laval agent is anxious for the opportunity to demonstrate it.

If you don't know the local De Laval agent, write to the nearest De Laval office as below and we shall be glad to put him into prompt communication with you.

DE LAVAL DAIRY SUPPLY CO.

THE LARGEST DAIRY SUPPLY HOUSE ON THE PACIFIC COAST

ALPHA GASOLINE ENGINES
IDEAL GREEN FEED SILOS
ACME FEED CUTTERS
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VIKING ROTARY PUMPS
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EVERYTHING FOR THE DAIRY

Catalog of any of these lines mailed upon request

61 BEALE STREET SAN FRANCISCO

OVER 2,325,000 DE LAVALS IN DAILY USE

CO-OPERATION IN DAIRYING

Point One — Everyone should eat more milk and butter, ice cream and cheese—city people especially, but they don't know it.

Point Two — The dairyman should advertise his product same as other producers advertise theirs.

Point Three — He will sell more and at better prices and will then have more money with which he will get better cows that will give more milk per cow that will supply the increased demand caused by his advertising that will give him more money to get more cows and so on.

Point Four — For every advertisement for butter substitutes there ought to be one for milk or butter or ice cream or cheese.

Point Five — Not an advertisement for some one's Brand but a truth telling advertisement about the product itself.

Point Six — You say you are too busy to attend to it yourself; then combine with others in the same line and who are also too busy.

Point Seven — Subscribe a small sum of money; have someone on the job for you ALL THE TIME, telling the truth to the public, contradicting erroneous and false statements putting up YOUR side of the case and all under your own control.

Point Eight — The National Dairy Council and several State Dairy Councils are doing this.

Point Nine — California Dairy Council will be ready to do it too as soon as its membership and income are large enough.

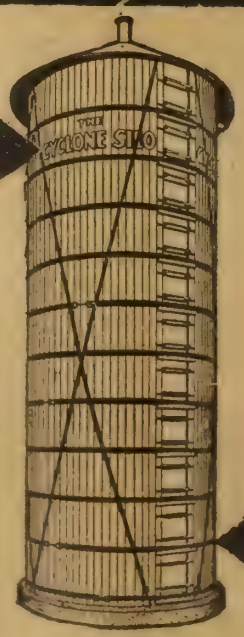
Point Ten — Write NOW. Say you want to join and ask what YOU are expected to pay.

CALIFORNIA DAIRY COUNCIL

268 Market Street (Room 242), San Francisco
2311 Fairfield Avenue, Hollywood

No other Silo has 'em!

Famous Trussed Steel Bracing



The Cyclone Silo is unequalled for strength and durability. Can't twist, lean or blow down. The strongest silo made. Wind proof, storm proof, twist proof.

The Cyclone Silo Trussed Steel Bracing is fastened to the top of the silo and firmly anchored in the concrete foundation. Each stave is not only stapled to each hoop but also to the bracing. Every staple fits into notches pressed in each edge of the steel, so there can be no slipping, no twisting or sagging. Every stave must stand upright regardless of shrinkage or expansion.

Cyclone Hoops Need no Tightening

This is the silo for you. Write for details of Early Buyers' Discount and our Free Book on Silos and Feeding. A postal will do.

National Tank & Pipe Co.
275 D OAK ST., PORTLAND, OREGON.

"Cyclone" Silo

Dipping a Small Flock of Sheep

(Written for Pacific Rural Press by R. H. Whitten.)

FIRST DUTY OF THE FLOCKOWNER

EVERY civilized country compels dipping for scab. Our most progressive sheep commonwealths—Wyoming, Utah and Idaho—enforce dipping for ticks and lice. Sheep boards in other states are using moral suasion, and thousands of flockowners who formerly seldom dipped for anything but scab, now make it a regular practice. No flockowner can look into the face of a ticky or lousy sheep, refuse to dip it and call himself an honest man, for the words honest and humane are synonymous. Your sheep have yielded you high dividends. Repay these loyal animals by giving them the full measure of health and comfort that a good bath affords. Then you can look into a glass and call yourself a white man.—American Sheep Breeder.

Pretty strong language, but perhaps it is necessary to rouse some farmers who intentionally neglect to dip their sheep. It is imposssible for sheep to make any progress when they are covered with ticks and lice which annoy them all the time and give them no rest. Aside from the injury to the wool by biting, scratching and rubbing, a great deal of feed is wasted and much flesh is lost when pests are present in a flock. They suck blood out of the sheep, and this blood must be restored through the feed, which should be used for growth. Therefore, a large amount of the feed consumed by the sheep really helps to support these pests.

The earning capacity of an undipped sheep is lessened; therefore, if there are any pests present the economy of the practice cannot be questioned. But there is another reason why dipping should be done at least once a year, which is that it is beneficial to the wool clip. It promotes the health of the skin and furthers the growth of wool. For this reason many sheep men dip every spring, even when they know that their flocks are free from vermin. Some dip twice a year—in Spring and Fall—because they realize that the stimulation of growth and the superiority of the fleece will more than pay for the cost.

Mr. R. H. Brotherton, of the National Shipbuilding Board of San Francisco, is a man of this class. At his Los Altos ranch he has the nucleus of a very fine flock of registered Hampshires—about twenty ewes purchased in Utah. He knows that he should dip, but he does not feel justified in building an expensive concrete dipping vat for such a small flock, and he has asked us what is the best method for him to use. As a result of the Liberty Flock drives conducted last year, probably there are hundreds of beginners with small flocks in the state today, so for their benefit we will answer Mr. Brotherton's question in these columns.

Dipping Bag for Few Sheep.

When there are a very few sheep a dipping bag can be used. It is made of heavy canvas, known as No. 40, and is constructed as follows: two strips of canvas 8 feet long by 26 inches wide are sewed together to form a bag 48 inches deep and 94 inches in circumference. Seams are triple-sewed, and top reinforced with a leather strip riveted on. Iron rings, held by leather ears, are riveted to this strip to provide something to hold on to. The bag is filled with dip; the sheep's feet are tied, and the animal is set down in the bag for the required length of time.

Portable Galvanized Iron Vat.

When there are too many sheep to use a bag, a galvanized-iron vat should be provided. These vats, commonly known as hog vats, can be purchased ready-made from most supply houses. Being portable, a vat of this kind can be stored when not in use, and therefore will last many years.

Sometimes such a vat is sunk into the ground so that the top is only about six inches above ground; other times it is placed on top of the ground.

Probably the first plan is the better. There should be a small pen at one end to hold the sheep awaiting dipping, and a draining platform at the other on which the sheep should be made to stand after they are dipped, to let the liquid drain out of their wool and run back into the vat. This platform is built of flooring boards; is placed at the sloping end of the tank, and is just slanting enough so that it will drain the dip back into the tank. If there is not an abundance of help, a fence will have to be built around the platform to keep the sheep in.

A narrow chute can be built as an approach to the vat, and a drop platform made for sliding the sheep into it. However, if the sheep are not let down lightly into the liquid a great deal of it will splash out and be lost, especially in a vat that does not have high sides, and in dipping small flocks it pays to lift each sheep and place it in the vat carefully.

When and How to Dip.

The whole flock should be dipped soon after the shearing has been completed, as the old sheep can then be dipped more successfully, and being out of their coats they will carry very little of the dip from the vat. Don't think that the lambs, being young, don't need a dipping. They really need it more than the old sheep, for after the latter are sheared the ticks will soon move off from them and find new homes and shelter on the lambs.

Select a warm, sunshiny day, and do the work in the morning, so that the sheep will dry out before night. Any reliable prepared sheep dip will answer. They are mixed with water, generally at the rate of one gallon of dip to 100 gallons of water. In dipping it is not necessary for the head to be submerged; in fact, it is not very good for a sheep to get the dip into its mouth, eyes and ears. Ticks and lice will very seldom be found around the head, as the sheep can rub its head easily and keep the pests off. All other parts of the body should be kept in the dip from one to two minutes, and then on the draining board for about the same length of time. The dipping will be more effective if the solution is lukewarm, and the sheep will not become chilled.

From ten days to two weeks after the first dipping the whole flock should be dipped again to kill the young ticks and lice that were in the form of eggs at the time of the first dipping. Also, in the Fall a careful examination should be made for ticks and lice, and if any are found the whole flock should be dipped twice as in the spring.

BULL NOSE IN PIGS.

To the Editor: Please give me a cure for bull nose or snuffles in pigs. —H. E. C., Paso Robles.

[Answered by Livestock Editor.]

Snuffles, or bull nose, in pigs may be a form of rickets, in this case being due to a deficiency of lime elements in the food, and which can frequently be overcome by the internal administration of the following mixture: Calcium phosphate, 1 dram; fluid extract of nux vomica, 20 drops; cod liver oil, 2 drams. This mixture is sufficient for 100 pounds of weight and should be given once daily in the feed.

A more frequent cause of snuffles or bull nose is infection with the necrosis bacillus or other germs. It is very difficult to cure this ailment after pigs are once affected, because the changes in the face are so extensive that it is impossible to bring them back to normal. If there are any sore places they should be cleaned and painted with tincture of iodine.

When cows are freshening every day, There's money down the milky way.

DO YOUR HOGS ROOT?

(Written for Pacific Rural Press.)

Why do hogs root? Is it necessary to ring them? These questions are frequently asked, and one successful breeder answers them by saying, "I have raised hogs for thirty-six years and never yet have I put a ring in a hog's nose or disfigured the nose by cutting the muscles. If a hog has an inclination to root he is driven to it because his system is out of condition, generally resulting from improper feeding. He is seeking to get something that he is not getting in his feed. Balance his ration properly and you will stop his rooting tendencies. Generally you will find that what is needed is tankage or oil cake meal."

Prof. John M. Evvard, of the Iowa Experiment Station, who has discovered a good many traits in the hog that nobody else ever suspected, says that the hog does not root because of "the nature of the beast," but because there is something he craves, and instinct tells him that it may be found in roots.

Prof. Evvard one day discoverer a bunch of his college-bred porkers plowing up the sod. Instead of decorating their snouts with rings he added some meat meal to their ration at the rate of one part of meat meal to ten of grain, and in three days they lost all interest in rooting. From this experience Prof. Evvard concludes that a hog with a properly-balanced ration may be allowed to graze on your front lawn with perfect safety.

It will be found a good thing to go a step further and keep a tonic before the hogs at all times. It should include charcoal, wood ashes, air-slaked lime, salt, powdered sulphur and copperas, and a little bone meal will improve it greatly.

TULARE COUNTY POLAND-CHINA BREEDERS ORGANIZE.

The Poland-China breeders of Tulare county were tendered a banquet by the Tulare Board of Trade, April 30. Enthusiastic talks were given by many of the 25 breeders present on the value of organization and the possibilities for increased production of better stock in Tulare county. The Tulare County Poland-China Breeders' Association was organized and it was decided to hold a sale in the fall. A selection committee will be appointed to pass on stock submitted so that only the highest class Poland-Chinas in the county will be included in the sale. Another sale will be held in February, both events to be in the Sales Pavilion now being erected.

Officers elected were: R. F. Guerin, Visalia, president; H. C. Shinn, Tulare, secretary; F. E. Fay, Tipton; A. J. Elliott, Tulare; J. K. Macomber, Tipton; J. H. Hauschildt, Tulare, and W. E. Martin, Visalia, directors.

FOR SALE!

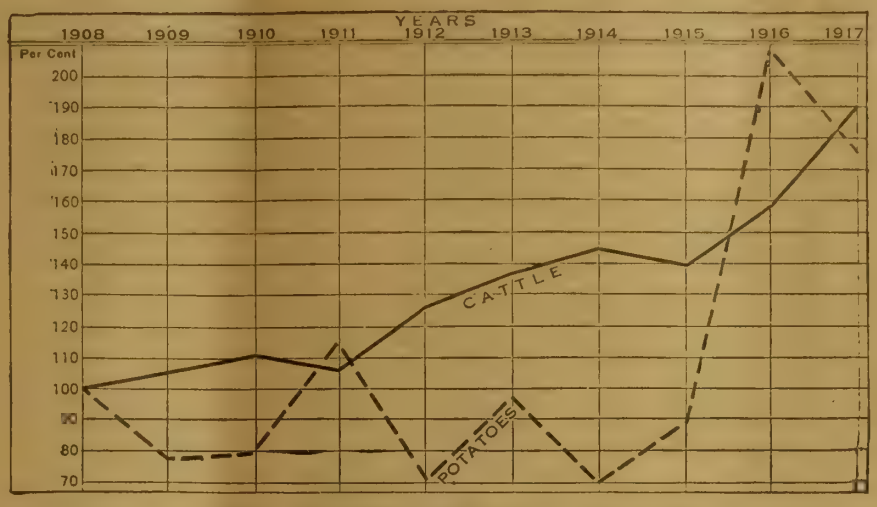
200 head Pure-Bred Shropshire Rams, 2 or 3 years old, in fine condition. Will make good price on large orders. Located near Los Angeles.

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912 Citizens Nat'l Bank Bldg., Los Angeles, Calif.

TAMWORTHS
(The Bacon Hog)
Largest Herd in the State
DURCO-JERSEYS
Mature Stock and Weanlings of both sexes. Sure to please.
SWINELAND FARM
W. O. Pearson, Prop. Woodland, Cal.

DUROCS OF THE
Best Blood Lines
Bred sows, gilts bred and open. Have one very nice O. C. K. boar 9 months old. Dam sold for $1,100 and sire for $1,000 in last month's sale.
Jersey Queen Farm, San Jose, Cal.



Cattle have been one of the steadiest products a farmer sells on the market. Compare them with widely soaring potatoes

Cattle—the safest "crop" on the farm

The farmer who plants potatoes cannot tell you within 30 per cent what he will get for the potatoes next fall.

They may be worth $6 to $8 a barrel. He may not be able to sell them for $2.50 a barrel.

But a farmer can tell within 10 or 15 per cent what he will get for his cattle.

Why? It is because the cattle business has been made fairly steady. In spite of the uncontrollable flurries from week to week, you can be surer of what you'll get for your "cattle crop" than you can for most of your other crops.

Swift & Company has helped to steady the market for you by providing a wide outlet. Refrigerator cars supply every town and village in the far corners of the nation. We distribute meat where it brings the most money; we ship abroad when prices are better there; and we will pay you in cash all that your animals are worth in the form of meat and by-products. Swift & Company's profit last year (including by-products) was less than 2½ cents on each dollar of sales.

Isn't that a low enough commission for a service that guarantees the highest possible price for livestock?

Swift & Company, U. S. A.

Founded 1868

A nation-wide organization owned by more than 25,000 shareholders

4 Good Young Boars—Excellent Prospects.
—from California's leading herd of Duroc-Jerseys. They are sired by ORION'S GOLDEN COL. and UNEEDA WESTERN HERO. Priced reasonable but they have the quality. Write for full particulars.
SOME CORKING GOOD WEANLING BOARS.
ALLEN THOMPSON, Tulare, Cal.



OAK KNOLL FARM
LAKEPORT CALIFORNIA
We have sold all our young boars and are now booking orders for toppy weanlings. Highlander, the $1,000 Grand Champion Boar, heads our herd of
CHESTER WHITES
SAN FRANCISCO OFFICE, 601 BALBOA BLDG.



REGISTERED DUROC-JERSEYS
Every good buyer demands for a profit-making hog is found intensified in the Duroc. We can supply you with weanling pigs either sex, and gilts from 7 to 10 months. Our herd boar has the blood of Ohio Chief Defender, Crimson Wonder, Jack's Friend, Joe Orion, Etc.
ROUTE 4, BOX 735 THE GARDINER RANCH, SACRAMENTO, CAL.

ROC STEIN RANCH
DUROCS
Have for sale two boars, one of GOLD MODEL and one of CRIMSON MONARCH breeding.
Both are about a year old, weighing 400 lbs. Also eight open gilts and four bred gilts. These gilts are the pick of last year's litters.
W. M. WAY & SON
Route 1, Box 320, MODESTO, CALIF.

Livestock and Dairy Notes

Livestock breeders all over the state are invited to send on postal cards, notes regarding their sales, State and County Fair intentions, new stock, etc.

LIVESTOCK SALES DATES.

May 21-22—McAlister & Sons, Chino, Registered Holsteins.

July 10—Carruthers Farm, Live Oak, Registered Shorthorn sale at San Francisco.

The Dairy.

Palo Alto Stock Farm, Palo Alto, has sold to Walter Adams, Modesto, a 14-months-old son of King Pontiac Segis Korndyke.

At Hidden Valley Farm, Redwood City, the two-year-old Guernsey heifer, Miss Tostevin of Edgewater, has made a yearly record of 475 pounds butterfat.

Gomez and Treat of Concord are getting ready for a Holstein dairy. The herd was purchased from W. O. Russell of Davis, and will be headed with a pure-bred bull from J. H. Harlan of Woodland.

F. H. Stenzel of San Lorenzo has sold a registered Holstein bull sired by Dutchland Sir Pietertje Creamelle, out of a 25-pound three-year-old cow, to Mrs. Fox, Pleasanton; also bulls to A. Phillips of San Leandro and M. Gray, Irvington.

Palo Alto Stock Farm cows continue to make good records. The latest are records made by two-year-old sisters, Alta Goldleaf, making 23.2 pounds butter from 525 pounds milk, and Alta Mercedes, 18 pounds butter from 414 pounds milk in seven days.

Chas. L. Weaver of Tulare has purchased the dual-purpose Shorthorn bull, North Star, at a long price, to head his herd of Milking Shorthorns. This bull's sire and dam sold in England for export to the United States for $4,000 and $3,000 respectively. Mr. Weaver is expecting great results from his service.

T. J. Gist & Sons of the Holberk Stock Farm, Tulare, report the sale of young registered Holstein bulls to M. Curti, Waukena; Louis Bisch, Tulare; O. Kitley, Tulare; Harwood Williams Company, Porterville; E. F. Lathrop, Tulare; R. A. Allison, Tulare; C. N. Nun, Tulare; S. B. Anderson, Tulare; J. Borzi, Tulare, and Ed Sargent, Hanford.

J. Wm. Gemmer of Ripon is starting a pure-bred Guernsey ranch. He secured his foundation stock from the Belle Vista herd, formerly owned by Dr. Henderson. He has six mature cows, all in the Advanced Register. Mr. Gemmer's herd sire is Glen Burnie Boy, whose dam produced 684 pounds butterfat as a three-year-old. Winning herds have been established with much less promising beginners.

Fifty head of registered Holsteins have been added to the Toyon Farms herd at Los Altos. These cows were purchased in the north from Federal accredited herds and include 3 sisters of Segis Ormsby Marie, 7 daughters of Sir Korndyke Ormsby Mercedes, and 10 heifers sired by a full brother of Bonnie Ormsby Lass, grand champion at the Panama-Pacific. It is expected to bring a shipment of cows from Wisconsin to add to this herd; also a new herd sire.

Records galore are being made in the Victory Herd of Hilcrest Farms at Caruthers. H. E. Spires, the manager, reports the following: Leila Korndyke Hengerveld, 22.59 pounds butter in seven days as a junior two-year-old; Victory Josephine Segis Pontiac, a junior yearling by the herd sire, Sir Piebe De Kol Segis Pontiac, 12.36 pounds; Leda Hartog Pietertje Queen, 21.42 pounds; Pearl Pontiac Salome, 15.60 pounds as a senior two-year-old; Emerson Diamond Pell, 18.88 pounds as a four-year-old.

Beef Cattle.

Dr. H. M. Elberg of Roselawn Farm, Woodland, has sold 13 head of registered Shorthorns to Butte City Ranch, Butte City.

Ormondale Company, Redwood City, has sold to Fairoaks Ranch 3 Scotch Shorthorn cows with calves at foot; also a young son of Golden Goods Jr.

Wm. Bond of Newark finds the demand for Shorthorns greater than he can satisfy and has just sold the last lot that he could spare. This consisted of 6 cows which went to the Butte City Ranch.

M. H. Tichenor of Palo Alto Stock Farm is going into beef cattle quite extensively. He recently purchased 600 head of Shorthorns from the Vina Ranch and bought several good animals at the recent sale at Davis.

Swine and Swinemen.

A. Buckland & Son of Fresno were the successful bidders on the sow, Wonder Kings, that topped the recent Bernstein Poland-China sale at $600. This sow came direct from the Pfander herd and represents one of the best crosses, being by a son of King of Wonders and out of a daughter of Big Ben. She is a tried brood sow and has proved a great producer.

The Duroc sows sold by Geo. L. Horine of Winton certainly are prolific. He sold one sometime ago to Grant A. Mumford, Atwater, and she produced litters of 11, 11, 13 and 17—52 live pigs in four litters. The pigs have been sold, part as breeders and part as market stock, and have returned the cost price of the sow 22 times over. Do Durocs of quality pay?

An average of $21.62 was secured at the sale of Berkshire pigs at the Monroeville Orchard of the Superior

(Continued on page 746.)

LIVESTOCK DIRECTORY

Rate in this directory 3c. per word each issue.

SWINE.

Berkshire.

NICK GENTRY

Dean of the Berkshire Breeders, breeder of Baron Duke 201st, Grand National Champion, says: "I never saw a better width of loin than he has. If more breeders would produce the type of Baron Duke 201st there would be many more Berkshires raised and sold. Every animal on both sides in pedigree of Baron Duke 201st for many generations back were good ones; every one of them. His great size, good heart girth, very smooth shoulder, back and loin, legs and feet, are hard to equal in one animal. If he is not a good one and a well-bred one there is no other. I am glad to give you my opinion of Baron Duke 201st. N. H. GENTRY.

You can buy his three months old weanling pigs from 650-pound prolific sows for $35.00. They are going fast. Order now. Sandercock Land Co. In charge of Natomas Land Sales, 23 Montgomery St., San Francisco, Calif.

CASTLEVIEW

GIANT TYPE BERKSHIRES

We are booking orders for spring pigs from Grand Champion Sows and sired by Mayfield Roockwood, sire of Champion Barrow at 1919 Western Berkshire Congress.

CASTLEVIEW RANCH, SANTA ROSA.

CROLEY'S BALANCED HOG FEED—The cheapest feed to fatten hogs. Write Geo. H. Croley Co., Inc., Livestock Supplies, 8th and Townsend Sts., San Francisco, Calif.

DON'T CUT OUT A Shoe Boil, Capped Hock or Bursitis FOR ABSORBINE

TRADE MARK REG. U.S. PAT. OFF.



will reduce them and leave no blemishes. Stops lameness promptly. Does not blister or remove the hair, and horse can be worked. $2.50 a bottle delivered. Book 6 R free.

ABSORBINE, JR., for mankind, the antiseptic liniment for Boils, Bruises, Sores, Swellings, Varicose Veins, Allays Pain and Inflammation. Price $1.25 a bottle at druggists or delivered. Will tell you more if you write.

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Perfect Workmanship is as Essential to a Perfect Silo as Is the Best Material.



You Get Both in the

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REDWOOD STAVE

SILO

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A FAIR PRICE

Redwood Tank Outlasts 4 Towers

Prior to American occupation in California (1846) a ranchman near Cayucos erected a Redwood Tank on a tower of other wood. Since that time he and his son, who succeeded him, have put four towers under this same tank, replacing towers that had decayed.

Four years ago the owner built a redwood tower under this famous old veteran tank and both are now good for many years to come.

He also installed a Remco Silo.

There are hundreds and thousands of Redwood Tanks in California that are from 30 to 40 years old.

For Catalogs, Prices and Full Information in Relation to

Remco Silos, Tanks or Pipe

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Redwood Manufacturers Company

1608 HOBART BLDG., SAN FRANCISCO

GRAPEWILD FARMS BERKSHIRES
A few spring boars and fall pigs by Big eader, Grapewild Farm Leader and Majestic
A. B. Humphrey, Prop., Escalon, Calif.

ANCHORAGE FARM.

MONEY-MAKING BERKSHIRE—The pro- ic, easy-feeding kind that make the highest iced pork from the lowest priced feed. They ll increase your profits. Prices reasonable; tisfaction guaranteed. Write for free book- , describing our worlds reserve champion, AR LEADER. We are now making a ecial offering of bred sows and gilts.
Anchorage Farm, Orland, Calif.

BERKSHIRE BOAR PIGS—From large lit- rs. Order one if you want the best. Satis- ction guaranteed. R. J. Merrill, Morgan ll, California.

RIVER GARDEN FARM BERKSHIRES— eanlings and gilts. They'll surely please m. E. H. Whiting, Route 2, Box 631, iah, Cal.

BERKSHIRES IN PERRIS— They make oney for me. Write for catalogue and prices. L. Hall, Perris, California.

BERKSHIRES—Sired by Star Leader, the 500 boar. Kounais Registered Stock Farm, odesto, Calif.

BERKSHIRES by Ringleader 20th, greatest n of Grand Leader 2nd. Geo. M. York, odesto, Calif.

FOR REAL GOOD BERKSHIRES write ank B. Anderson, B. 724W., Sacramento, Cal.

CARUTHERS FARMS BERKSHIRES — olera immune. Live Oak, California.

REGISTERED BERKSHIRES—Write R. D. me, Dos Palos, California.

BERKSHIRES—Fair Oaks Ranch, Willits, lifornia.

Poland-Chinas.

EL PROFITO—Our great herd boar, will t profit-making qualities into your herd. s offspring have size, stretch, bone, good ds and feet, and easy feeding qualities. make the right start with big-type Poland nas, get one of his boar pigs. Prices ht. Correspondence cheerfully answered ols L. Renwick, Santa Barbara, California.

SOW BARGAINS—We are offering some ex- tionally nice tried sows, bred and open gilts, attractive prices. They are all sired by the defeated and world's grand champion Su- rba and out of big type sows, which cost me 00 and over. Investigate before buying else- ere. Rough's Greenfields, Arlington Station, verside, California.

POLAND-CHINAS—Am booking orders for rinb boars sired by King's Massive. Orange d from such noted sows as Rosebud Quality t, sired by President and out of King's sebud, grand champion sow of 1917 and her big sows. H. D. McCune, Lemoore, Cal.

MAKE BIG MONEY with Cloverdale Farm g-type Poland-Chinas—the prolific, fast- owing, easy-feeding, money-making kind. e purchased the famous Whitten Ranch herd luding great boar Jumbo Model. High-class ck for sale—farmers' prices. Write us. overdale Farm, R. F. D. 1, Escondido, Cal.

NOW BOOKING ORDERS for spring pigs, her sex from my prize-winning, large type land-Chinas hogs. Also will book a few ers for bred gilts, February and March rrow, and a few good serviceable, aged ars. Hale I. Marsh, Modesto, California.

ELDERSLY FARM—We are offering some cellent tops from our fall, and spring pigs attractive prices, sired by one of America's st-bred boars, Big Black Bone Wonder, with and championship breeding on both sides. is a real 1000-lb. boar. J. H. Ware, Live k, California.

THE BEST IN THE WEST—California ratdale and President's Equal are my herd es. Fall and spring boars now ready to ve—each one a corker. Dr. J. A. Craw- aw, Hanford, California.

HARTSOOK BIG TYPE POLANDS—A fine of young boars. Both bred and open gilts sale. Toggenburg goats and Holstein lls ready for service. Fred Hartsook, uker-hum, California.

BOOKING ORDERS for spring pigs sired by ob Big Bone" 281289, litter brother of the nor Champion of Sacramento, 1918, P. E. tchell Atwater, California.

OXBONE HERD offers March boars for e from King's Big Bone leader, grand mpion at State Fair, 1918. Write F. E. Tipton, California.

SPRING PIGS—Big type Polands. Best od in State. Write for particulars. White s Farm, A. F. Busch, Prop. Potter Valley, lifornia.

POLAND CHINAS—Late October boars dy for light service, sired by President out Beautiful Belle. John M. Bernstein, Han- d, Cal

CALL BOARS by a son of Caldwell Big Bob bargain prices. Also booking orders for ng pigs. Forest View Ranch, J. H. Cook, adise, Cal

WAUKEEN HERD POLAND-CHINAS—Big herd boar, the $700 Grand Champion of lifornia Lee McCracken, Prop., Ripon, Cal.

BIG TYPE POLAND-CHINAS—Stock from best herds of the Middle West. N. Hauck, on, Humboldt County, California.

50 HEAD of Big Bone Bob, Grand Model I B A., Wonder stock for sale. J. W. ofield, Acampo, California.

OAKE SIDE STOCK FARM—Large smooth big boned Poland-Chinas. Geo. V. Beck- & Sons, Lodi, California.

REGISTERED POLAND-CHINA SWINE— e winners. Finest stock in the State. M. ett, Hanford, California.

BIG-BONED POLAND-CHINAS—From East- prize-winners. D. H. Forney, Route G, no, California.

POLAND-CHINA PIGS WITH RIBBONS— ze right. Johnnie Ginsing Winter, Calif.

POLAND-CHINA PIGS—Bernstein Trew- hitt, and Ross blood. B. M. Hargis, Tulare.

POLAND-CHINAS—A few young service boars for sale. R. F. Guerin, Visalia, Calif.

REAOAKS RANCH herd of registered Poland-Chinas, W. J. Hanna, Gilroy, Calif.

BIG BONED POLAND-CHINAS—Stock for sale. E. S. Myers, Riverdale, California.

POLAND-CHINAS—Young stock for sale. Edward A. Hall, R. 1, Box 39, Watsonville, Calif.

POLAND-CHINAS—Young stock for sale. H. E. McMahan, Lemoore, California.

Chester Whites.

BILLIKEN CHESTER WHITES—Just a few left to offer. One 1917 fall boar and one 1918 fall boar; both cholera immune. Spring farrows are all sold except 10 boar pigs. Will have 10 more sows farrow during May, June and July and will book orders now from these coming litters, delivery at weaning time. C. B. Cunningham, Mills, Calif.

Duroc-Jerseys.

REGISTERED DUROC JERSEYS — Open gilts, averaging close to 175 lbs.—$50 each, crated and registered. Bred gilts about 250 lbs. at 9 months priced $100 apiece. Weaned pigs, either sex, from $25 up. Service boars and bred sows, priced to give a large return on the investment. Geo. L. Horine, Winton, Cal.

DUROC-JERSEYS AT IRELAND—Home of Cherry Volunteer II., Grand Champion Boar at Riverside. Ireland's Orion Defender and Orion's King of Ireland are excellent sires in service. Booking orders for spring delivery. Ranch at Owensmouth. City office, 1219 Brockman Bldg., Los Angeles, Calif.

THE JOHNSON HERD OF DUROCS—Two yearling service boars for sale at farmers' prices. These are well grown out, rugged animals. Weaned boar pigs, $25. Frederick M. Johnson, Napa.

SWEETWATER DUROCS—The most popular herd in the West. Our Durocs make money for us—they will do the same for you. Winsor Ranch, Bonita, San Diego Co. Address R. K. Walker.

WE WON MORE MONEY on Durocs at the State Fair than any other exhibitor. Why not buy some of this winning stock? June Acres Stock Farm, Davis, California.

REGISTERED DUROC JERSEYS — Open and bred gilts. August and November boars. Great herd headers. Weanling pigs, both sexes. Stock of the big strong type so much desired. Jack Borge, Dos Palos, Cal.

DUROC-JERSEYS—Burke's Good Enuff, Golden Model, King's Colonel and Pathfinder blood. Derryfield Farm, National Bank building, Sacramento.

REGISTERED DUROC JERSEY WEANLINGS—$15.00 each, 3 for $40. Satisfaction guaranteed. First come, first served. A few brood sows for sale. Red Rock Ranch, Glen Ellen, Cal.

DUROC WEANLINGS for the farmer. Easy feeders, 200 lb. at seven months. W. W. Everett, River Bend Farm, St. Helena, Calif.

A FEW CHOICE BRED GILTS, spring boars and gilts of the best blood lines. H. P. Slocum & Sons, Willows, California.

HEAVY-BONED DUROCS—A few service boars for sale. Ormondale Co., Route 1, Redwood City, California.

DUROC-JERSEYS—A few choice September gilts—Weanlings either sex. H. E. Boudier, Napa.

REGISTERED DUROCS—All from prize-winning stock. W. P. Harkey, Gridley, Calif.

REGISTERED DUROC-JERSEY GILTS for sale. D. Fricot, Angels Camp, California.

REGISTERED DUROCS—Stock for sale. W. J. Fulgham & Sons, Visalia, California.

Yorkshires.

LLOYTON HERD REGISTERED YORKSHIRES—Bred gilts and pigs from eight weeks up. Lloyd & Tointon, Llano Road, Santa Rosa, California.

Hampshires.

HAMPSHIRES—Fine quality. Weaned pigs, dandy young boars. Uneeda Hampshire Swine Farm, Tom M. Bodger, Prop., Gardena, Cal.

MY HAMPSHIRES are money makers. Stock for sale. Buy now. L. W. Denker, Saugus, California.

HAMPSHIRE SWINE—Young stock for sale. Ira Hart, Dos Palos, California.

MISCELLANEOUS.

LARGE YORKSHIRES—The ideal hog for the progressive farmer. Young stock for sale. A. L. Tubbs Co., Calistoga, Calif.

O. I. C. BREEDERS' NOTICE—I will sell Ohio Boy, two-year-old imported boar; none better. Also boar pigs ready for spring breeding (sire Ohio Boy, dam Toddler's Beauty, imported). Write for full information. Jas. Little, Wasco, California.

MULE-FOOT HOGS—Large type. H. T. Bailey, P. O. Box 37, Lodi, California. "The Blue Gums."

DAIRY CATTLE.

Guernseys.

GRAPEWILD FARM GUERNSEYS.
A 21-months-old bull out of dam with record of 615 pounds in A. A. class, and a few young bulls up to 1 year of age.
A. B. Humphrey, Escalon, California.

HIDDEN VALLEY FARM offers for sale young Guernsey bulls, ready for service, out of high record advanced register dams. A. J. Welch, proprietor, Redwood City, California.

EDGEMOOR FARM GUERNSEYS —First in the show ring and in official records. Few animals of either sex for sale. Edgemoor Farms, Santee, California.

PALO ALTO STOCK FARM, Palo Alto— Breeders of registered Guernseys; both sexes; prices reasonable.

Ayrshires.

ELKHORN FARM AYRSHIRES— Choice young bulls at reasonable prices. J. H. Meyer, 440 Montgomery St., San Francisco, Calif.

NORABEL FARM AYRSHIRES—Purebred young stock for sale at reasonable prices. La Farm, Estate [illegible]

AYRSHIRES—Registered; all ages. E. B. McFarland, 412 Claus Spreckles Building, San Francisco, California.

Jerseys.

THE WEST'S GREATEST JERSEY SALE

TUESDAY, MAY 27, 1919,

State Fair Grounds, SACRAMENTO, CAL.

Complete dispersal at public auction of the famous producing and show herd of registered Jerseys owned by Clifford F. Reid, Portland, Oregon, and including the highest record Jersey cow ever offered at public auction, the world's record cow,

GOLDIE'S NEHALEM BEAUTY,

together with her dam, two sisters, one daughter, two sons, fourteen granddaughters, and six grandsons, making up the most wonderful Jersey family group ever offered in a public sale.

Register of Merit cows, imported cows, grand champion show cows, and offsprings of these cows make up the balance of this splendid offering.

This herd is under Federal supervision for health, and tuberculin test certificates issued by a Federal veterinarian will accompany all animals over six months of age.

Mr. Reid is dispersing htis herd solely be- This is a five disc tractor polw and practi- ests demand his entire time, and in dispers- ing his wonderful herd at public auction, absolutely without reserve or limit, he is affording other Jersey breeders a very rare opportunity to strengthen their herds and beginners to secure foundation animals of the best quality.

For free catalog of sale address sales managers, CALIFORNIA BREEDERS' SALES AND PEDIGREE COMPANY, 211 Oehsner Bldg., Sacramento, Cal. Auctioneer, Col. Ben A. Rhoades, Los Angeles.

SUNSHINE FARM JERSEYS—Tuberculin tested. Production counts. E. E. Greenough, Merced, California.

YOUNG BULLS from Register of Merit cows. W. G. Gurnett, Orland, California.

MILKING SHORTHORNS.

BREEDERS OF REGISTERED SHORTHORNS—Milk strain; choice young stock for sale.. John Lynch Ranch, Box 321, Petaluma.

INNISFAIL DAIRY SHORTHORNS—Registered young bulls for sale. Alexander & Kellogg, Suisun, California.

Holsteins.

A PRICE ON EVERY ANIMAL.
Herd free from tuberculosis. All sales subject to sixty days' retest. Sons of **Finderne Soldene Valdesa**, whose dam is not only a world record cow in seven-day division, but has two sisters holding world's records for yearly production.
Toyon Farms Association.
679 Mills Building San Francisco.

WHEN IN THE MARKET for young bulls and females, write me. My herd sire and show bull, El Prado Wayne Colantha, is also for sale. Every animal in my herd is priced. J. W. Benoit, Route C, Modesto, California.

HIGH-CLASS HOLSTEINS—I have for sale some sons of Sir Veeman Korndyke Pontiac from A. R. O dams. Write for particulars or come see them. R. F. Guerin, Visalia, Calif.

PALO ALTO STOCK FARM, Palo Alto, breeders of registered Holsteins. Heifers and service bulls. Reasonable prices.

REGISTERED HOLSTEINS—We breed for production. Leeman and Kilgore, Ripon, Cal

REGISTERED HOLSTEIN BULLS with world's record backing. Kounias' Registered Stock Farm, Modesto, California.

CREAMCUP HERD—Registered Holsteins, Pontiac bull calves. M. Holdridge, Rt. A. Box 437, San Jose, California.

BREEDERS OF REGISTERED HOLSTEIN cattle and Berkshire pigs. Whittier State School, Whittier, California.

F. H. STENZEL, SAN LORENZO, CALIF.— Breeder of Registered Holsteins. High test producers.

THE VICTORY HERD—Registered Holstein cattle and Duroc Jersey swine. H. E. Spires, Interest Farms, Caruthers, California.

REGISTERED HOLSTEINS—A. W. Morris & Sons Corp., Importers and Breeders, Woodland, California.

REGISTERED HOLSTEINS — Best blood lines of the breed. R. L. Holmes, Modesto, Cal.

GOTSHALL & MARGRUDER—Breeders of registered Holstein Friesians, Ripon, Calif.

CHOICE HOLSTEIN bulls for sale. No females. Millbrae Dairy, Millbrae, California.

BREEDERS OF REGISTERED HOLSTEIN cattle. McAlister & Sons, Chino, California.

REGISTERED HOLSTEINS and Duroc-Jerseys. Sturgeon Stock Ranch, Tulare, Calif.

HOLSTEIN BULLS and bull calves from A. R. O. cows. C. A. Miller, Ripon, California.

BEEF CATTLE.

FARST STOCK FARM—Registered Shorthorns. Herd Sires Maxwalton Style 561148 and Maxwalton Lavender 626617. For Sale Maxwalton Style and four of his sons. L. N. Paiset, Cedarville, California.

RANCHO SAN JULIAN SHORTHORNS— Purebred range bulls unregistered, for sale. Estate Thos. B. Dibblee, Santa Barbara or Lompoc, Calif. John Tromp, Supt.

ALAMO HERD REGISTERED HEREFORDS (Founded by Governor Sparks). Herd and range bulls. Reasonable prices. W. D. Duke, Liberty Meadow county, California.

REGISTERED YEARLING SHORTHORN BULLS—Heavy boned, thick meated Scotch and Scotch topped breeding. Ormondale Co., Route 1, Redwood City, California.

REGISTERED MILK AND BEEF SHORTHORNS, bulls and heifers for sale; catalogue free. Thomas Harrison, Santa Rosa, Stock

HEREFORDS—Sierra Vista Herd, Minturn, California. Over one hundred registered animals. Fairfax and Repeater bulls head the herd. On highway.

THE NEVADA HEREFORD RANCH, Jno. H. Cazier & Son Co., Props., Wells, Nevada. Registered Hereford cattle. Breeding stock for sale.

REGISTERED SHORTHORNS—A few choice young bulls, grandsons of Fair Knight. Prices reasonable. Fair Oaks Ranch, Willits, Calif.

HOPLAND STOCK FARM—Registered Shorthorns. Prices on application. Hopland, Calif.

REGISTERED HEREFORDS—H. H. Gable. Diamond G Ranch, Esparto, California.

SIMON NEWMAN CO., breeders of Registered Hereford, Newman, California.

GEORGE CALLAHAN, breeder of registered Herefords, Milton, California.

GEORGE WATTERSON—Breeder Registere Herefords, Bishop, California.

HEREFORDS—Mission Hereford Farm, Mission San Jose, California.

SHORTHORN—Carruthers Farms. Live Oak, California.

REGISTERED HOLSTEIN CATTLE—E. E Freeman, Route B. Modesto, California.

EL DORADO HERD OF HOLSTEINS—Alex. Whaley, Tulare, California.

HORSES AND MULES.

WORK HORSES FOR SALE—10 large, sleek, fat brewery horses. Good workers, kind, gentle and true to pull. Weigh 1200 to 1700 pounds. Also one buggy horse. Prices $50 to $135. Wieland Brewery, 240 Second St., San Francisco.

SHIRES —Broodmares— Stallions. Also stallion and filly colts $100 to $700. Jack London Ranch, Glen Ellen, Cal.

FOR SALE—A-1 Breeding Jack. Bargain. Have quit raising mules. W. P. Harkey, Gridley.

SHEEP AND GOATS.

F. A. MECHAM ESTATE, Petaluma, Cal.— Breeders and importers of Shropshire, Rambouillets and American Merinos, both sexes. Also Red Polled cattle. Take electric car at Petaluma or Santa Rosa for Live Oak Ranch.

R. J. BLOOM, DIXON, CAL.—Breeder of Shropshire rams out of pure blood ewes and imported registered rams. Single and car load lots.

DORSETS AND ROMNEYS—Dorset ram lambs for sale. John E. Marble, South Pasadena, California.

ONE TWO-YEAR SHROPSHIRE BUCK for sale. C. J. L. Stonebraker, Route A, Chico, California.

BISHOP BROS., SAN RAMON CALIF.— Breeders and importers of Shropshires.

KAUPKE BROS., WOODLAND, CALIF.— Breders and importers of Hampshire sheep.

CHAS. KIMBLE—Breeder and importer of Rambouillets. Hanford, California.

CALLA GROVE FARM, MANTECA, CALIF. —Breeders and importers of Hampshire sheep.

MISCELLANEOUS.

AUCTION

250 HEAD OF DAIRY COWS AND

HEIFERS 250

WORK HORSES YOUNG MULES

On the McNeil Dairy Ranch, 4 miles west and 3 miles south of

FRESNO

On North and Cornelia Aves.

FRIDAY, MAY 16th, at 9 a. m.

Herd includes 200 choice dairy cows. Holsteins, Jerseys and Durhams, many with first and second calf, a large number fresh and some extra good springers.

50 HEAD OF CHOICE HEIFERS selected from the best cows in the herd and sired by pure bred, registered Holstein bulls. This will be an exceptional opportunity for dairymen to purchase some extra good dairy stock owing to the fact that this is a large herd, carefully culled and owner has instructed us to dispose of the entire herd.

POSITIVELY WITHOUT LIMIT OR RESERVE

TERMS: $100 and under cash, over $100 one-third cash, balance on 30, 60 and 90 days with bankable note.

A. McNeil, Owner.

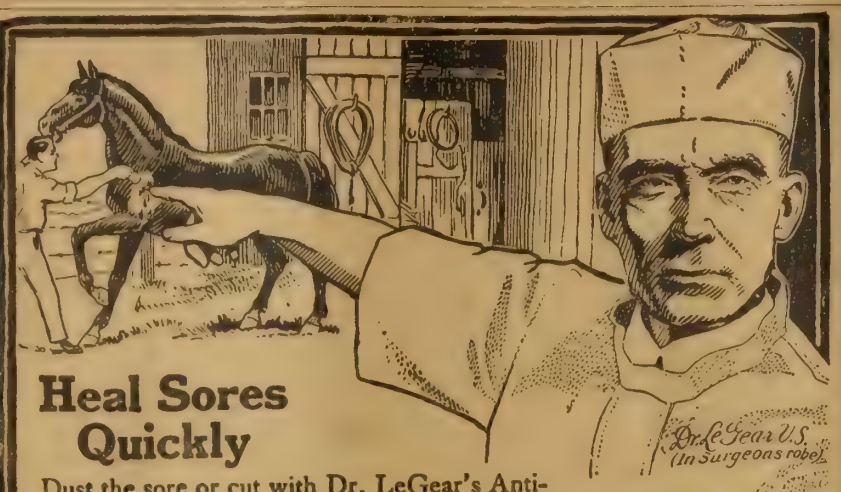
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HAROLD B. RHOADES.

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Auctioneers

BUTTE CITY RANCH—Shorthorns, Shropshires, Berkshires and Shetland ponies. Write for prices and descriptions before buying. Butte City Ranch, Box P, Butte City, Glenn county, Cal. W. P. Dwyer and W. S. Gutl- ford, owners. Special Notice: Second Farm Sale Shorthorns; Shropshires; Berkshires; Ponies. August 2, 1919.

FOR SALE—15 thoroughbred unregistered Shorthorn heifers, yearlings. Absolute bargains. Also offering one 14 months old dual purpose bull grandson of P. P. I. E. champion and out of Idlewood 12th, who weighed and out of Idlewood 12th who weighed near 1150 and has milked 3500 lbs of milk in last ninety days and is still milking 40 lbs. A real herd header. Chas. L. Weaver, Tulare, Cal.

WANTED—Thirty or more good grade Holstein cows. Must be young and sound. Send [illegible]



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Dust the sore or cut with Dr. LeGear's Antiseptic Healing Powder. In handy sifter top can, easy to use. Forms a coating that stays on—protects from insects and infection. Heals quickly.

Guaranteed to do all I claim, or dealer will refund your money. This is my personal prescription for collar and saddle sores, barb wire cuts, chafed spots, open sores, etc.

Get FREE Sample Can from your dealer.

Just ask your dealer for *free* sample can. If your dealer hasn't samples, write me, enclosing 3c postage, and I will send you sample can, with my 64-page reference book on stock and poultry.

Dr. LeGear's Lice Killer. Dr. LeGear's Poultry Prescription. Dr. LeGear's Stock Powders.

Dr. L. D. LeGEAR, Veterinary Surgeon. Graduate Ontario Veterinary College, Toronto-Can. (1892). 28 years treating stock and poultry ailments.

Dr. L. D. LeGear Medicine Co., 767 Howard St., St. Louis, Mo.

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Carruthers Farms

LIVE OAK CALIFORNIA

Second annual **SHORTHORN** sale will be held on July 10th, at San Francisco, at which time and place 60 head of bulls and females of rare breeding will be offered.



Veramont Stock Farm

TAYLORSVILLE, CAL.

HEREFORDS

The practical, beef-producing kind, raised under range conditions. See herd of young Bulls and Heifers at SANTA CLARA, CAL.

H. M. BARNGROVER, Santa Clara, California.

ORMONDALE SHORTHORNS

All are heavy boned, and of Scotch and Scotch-topped breeding. Suited for either the range grower or breeder.

EVERY ANIMAL POSITIVELY GUARANTEED.

Whether you buy or not, visit our ranch, 7 miles from Palo Alto on Woodside Road. We welcome inspection. Prices and pedigrees on application.

SHORTHORN CATTLE DUROC-JERSEY SWINE ORMONDALE CO. REDWOOD CITY, CAL. R. D. No. 1

BRIGHTON FARM SHORTHORNS

One three-year-old bull bred by H. R. Clay.
Two outstanding yearling bulls sired by Sir Type, a son of Cumberland Type.
A few yearling heifers of same breeding.
Also registered Berkshires of both sexes of best breeding.

H. L. & E. H. MURPHY, Perkins, Sacramento Co., Cal.

DIGESTER TANKAGE

Send for Sensible Folder on Feeding Hogs

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Animal Food Dept. 704 Townsend St., San Francisco

HAUSER'S DIGESTER TANKAGE

Gives Great VALUE for LEAST MONEY. IT MAKES THEM FAT.

HAUSER PACKING CO. LOS ANGELES

Meat Production and Consumption

(Written for Pacific Rural Press.)

Livestock men who are afraid that stock raising will be overdone will be interested in the report just issued by the Department of Agriculture showing the way the consumption of pork and beef is increasing. In 1918 the total dressed meat production, including lard, amounted to 20,129,800,000 pounds, which was an increase over 1917 of four billion pounds. Three-quarters of this enormous increase consisted of pork and one-quarter of beef. Gains in veal and mutton were slight.

Naturally, there was a very great increase in the over-seas shipments as compared with 1917, but also there was a heavy increase in our home consumption, being approximately 17¼ billion pounds as compared with 14½ billion pounds in 1917. After allowing for the increase in population this means an additional consumption of 23 pounds for every man, woman and child in the country.

In the aggregate, more meat per capita is eaten in the United States than in any other country. There are certain countries recorded as having a larger consumption per capita, but they are sparsely populated and raise great quantities of meat for export; consequently, it is a cheap and plentiful food. But of the older countries it will be seen from the following table that the United States leads by a wide margin:

Country	Annual Per Capita (prewar) Pounds
United States	150
Canada	137
United Kingdom	120
Germany	112
France	79
Denmark	76
Switzerland	75
Belgium	70
Holland	70
Greece	68
Austria-Hungary	64
Norway	62
Sweden	62
Spain	49
Italy	46

Of the 150 pounds per capita consumed in the United States 66.7 pounds are beef, 71.4 pounds pork, 6.9 pounds veal, 5 pounds mutton and lamb, and 14 pounds goat.

These figures show that there is room in the United States for a great expansion in the consumption of lamb and mutton and a vigorous campaign is being pushed in the expansion of sheep farming for meat, as well as wool production. Also, various organizations are starting campaigns to educate people to the food value of these meats.

Angus Cattle Good Rustlers

(Written for Pacific Rural Press.)

I have read with interest the article on Aberdeen-Angus cattle in your recent beef cattle issue, but I want to correct a wrong impression which might be formed from the reading of it. It stated that it is generally admitted that Angus are not as good rustlers as either Herefords or Shorthorns and that they are not as hardy a breed.

The Aberdeen-Angus breed originated in the rugged country of Northern Scotland; therefore, it is natural that they should be rugged animals, and I am sure that this fact is generally conceded by the majority of cattlemen. Personally I have had experience with Shorthorn, Hereford and Angus breeds in the Middle West, the South and the Northwest, and my observations have taught me that the Aberdeen-Angus are the most hardy, best doers, and earliest maturing of any of the beef breeds, and that while they do exceptionally well on small farms and enclosed pastures, they do equally as well when subjected to rough conditions and short feed.—O. V. Battles, Yakima, Wash.

More Stock Going Abroad

(Written for Pacific Rural Press.)

Shipments of livestock continue to be made across the waters. Last week Prof. Gordon H. True, of the University Farm, completed several commissions to purchase stock by shipping to the Hawaiian Islands 7 head of Aberdeen-Angus for Henry Damon; 5 head of Aberdeen-Angus for Clarence Castle; 3 Guernsey heifers and a Jersey bull for Sam Baldwin; and 3 Guernsey cows for the College of Hawaii. The latter were from the Hidden Valley Farm of A. J. Welch at Redwood City, and the Jersey bull was from the University Farm herd—a son of Mermaiden Fern 2nd, who has a record of 729 lbs. fat in one year.

On the same steamer was a Percheron stallion bought by Sam Baldwin from Woods Bros., Cambridge, Neb., and about 150 mules picked up locally. The oft-repeated prediction of Prof. True that some day the West Coast will be one of the greatest livestock centers in the world, is fast coming true.

ECZEMA OF UDDER.

To the Editor: I have a cow whose teats become slimy; in a few days the surface hardens, then turns to yellow scales, and finally peels off. Then the process repeats itself. What is the remedy?—R. B. N., Kingsburg.

[Answered by Dr. E. J. Creely, San Francisco.]

Your cow has eczema and you should apply the following ointment daily after bathing the udder and teats: Zinc ointment, 2 ounces; iodoform, 2 drams; alum, one-half ounce; Balsam Peru, 2 drams.

Grand Champion Herd of Hampshires

FOR SALE.

Brood Sows, litters at foot. Sows bred for fall litters. Young Boars and Gilts

Best families.

Finest individuality and clean-cut markings.

Call or write



Address F. V. GORDON or F. A. LANGDON, Llano Vista Ranch, Perris, Cal.

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Purebred Stock Sales a Specialty

Sales Conducted in All Parts of California.

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Calf Profits

Are you getting them? Calf profits mean more to you now than ever before.

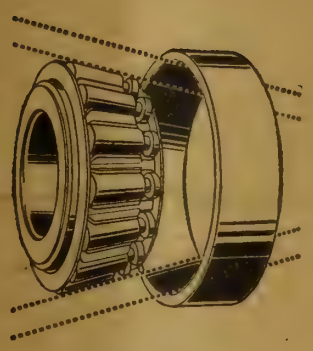
Blatchford's Calf Meal

has been known since the year 1900 as the complete milk substitute. Costs less than half as much as milk—prevents scours—promotes early maturity. Sold by dealers or direct from the makers.

Write for New Data See actual figures showing you how to increase your calf profits.

COULSON CO. - - - Petaluma, Cal.

TIMKEN TAPER



Dotted lines show how the inside of the "cup" of a Timken Bearing is *tapered* to fit over the *tapered* rollers.

Does It Really Cost More?

Does the added safety and durability that the manufacturer puts into his car when he specifies Timken Tapered Bearings actually mean a bigger outlay on his part for the item of bearings?

Does the protection that he thus secures for other important parts add to manufacturing cost?

Yes, Timken Bearings *do* cost more. For they are not the kind that are built to meet a price.

Like the best known and best built axles, springs, transmissions, electric starters and so on they add far more *value* than they do to *price*.

The foregoing is borne out by the names of the motor car, truck and tractor builders listed in "The Companies Timken Keeps." These builders would not pay more for Timken quality, if they did not know from experience that they thus add value to their product.

THE TIMKEN ROLLER BEARING COMPANY
Canton, Ohio



LIVESTOCK NOTES.

(Continued from page 742.)

California Farm Lands Company. While the prices were low the benefit of the sale to the industry will be great, as the animals went to form many good herds.

Mrs. Viola L. Renwick, of Santa Barbara, is doing a man's size business in the sale of her high-class registered Poland-Chinas. She recently sold 3 bred gilts to the B. M. Smith Ranch, Santa Margarita, and 3 corking good young boars to C. H. & O. B. Fuller of Los Angeles.

H. C. Witherow, the progressive Duroc breeder of Live Oak, reports recent sales: Boar pig to R. G. Sexton, Live Oak; sow pigs to Howard R. Gaines, Anderson; boar and sow pigs to C. E. Rische, Meridian, and boar pig to W. T. Bandy, Biggs. Also, an order has been booked from Harvey Berglund of Dixon for 4 sow pigs by the great young sire, Johnson's Defender Jr.

Donald H. Graham, of Lancaster, is selling Durocs like hotcakes. Last week he shipped six young sows and a boar pig to the Smilido Ranch, Hollister, where Smith, Lisk and Doheney are starting a large stock ranch. The boar was by Orion's King Gano and the best from a December litter of thirteen. Mr. Graham has also sold 10 bred sows and the boar, Cherry King Del Sur, to Earl McGrew, Lancaster. This boar was fifth in the under-six-months class at the Liberty Fair, showing on three legs after having been kicked by a horse. Fred Devore, the Duroc fieldman, said that this boar and his litter mate, which Mr. Graham sold to Miss Lydia Weld, Lancaster, were the best grown spring boars he had seen.

Sheep.

Sheep have decreased 50,000,000 head in the world since the war began.

Wm. Bond of Newark has purchased the flock of registered Hampshire sheep formerly owned by T. T. Miller of Hollister. It consists of 10 ewes and 9 lambs. Mr. Bond expects to send to England for a very high-class ram and perhaps a few more females.

The amount of scab existing among sheep in this state has caused an order that no herds will be allowed in the Lassen National Forest during 1919 unless accompanied by a certificate issued by Federal inspectors. Herds found infected or exposed must be properly dipped under supervision before certificates will be given .

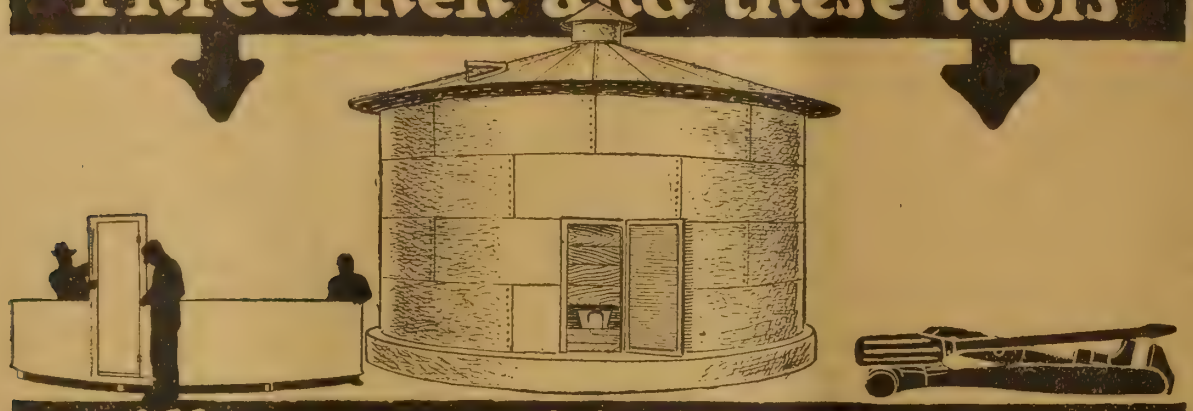
At the recent meeting of the California Wool Growers' Association it was decided to make a vigorous campaign for eradication of the scab disease and to educate people to the use contribute one-half cent per sheep, 50 per cent of this amount to be used in fighting the disease, and 50 per cent for promotion purposes.

Miscellaneous.

The county horticultural commissioner of Monterey county has notified stockmen that climatic conditions have favored the development of the blue and white flowered lupine, often called wild pea, and it is now blooming abundantly in the fields and along roadsides. He warns farmers not to cut it and stack it with hay, or some day they will wonder what killed their stock. The seeds are deadly poison and comparatively few seeds will make a fatal dose.

The annual stockholders' meeting of Moran and Company was held May 1 and re-elected the board of directors as follows: H. F. Lewis, W. T. Lynch, T. W. Dibblee, Lawrence Harris, Louis S. Haas, J. T. Blackaller, James T. Doyle. The following officers were elected for the ensuing year: H. F. Lewis, president; James T. Doyle, vice-president; D. E. Bryan, secretary; C. F. Reinlein, cashier and assistant secretary; J. T. Blackaller, treasurer; H. L. Kelley, general manager. Mr. Kelley submitted a very satisfactory report of the condition of the company and its operations from January to date.

Three men and these tools



will put up a CALCO BIN quickly

ERECTING a Calco Grain Bin is simplicity itself. A book of instruction, illustrated, accompanies each bin. Every piece of the Calco Bin fits—exactly. No skilled labor is needed, three men and three tools can do it quickly. From laying out the guide stakes to fastening on the ventilator cap—every operation follows naturally—the result is a permanent investment on your farm.

The free booklet "Calco Grain Bins" tells of many ways of saving money with the Calco. Write for it today.



Model 244

Calco Hog Trough

Popular because practical. They help raise healthy hogs; they are sanitary, strong and durable. Built of Armco Iron and Cast Iron. Lengths from 24 to 120 inches. Ask for price list of this profit increasing trough.



Model 252

Calco Automatic Hog Watering Fountain

Constant fresh water, without overflowing. Connects to water supply pipe—works automatically. Bottom and trough of cast iron, reservoir of galvanized Armco Iron. Write for circular with complete specifications and prices.



Model 250

Calco Automatic Grain Feeder

Gives plenty of feed—without waste. Feeding trough and bottom of cast iron, storage bin of galvanized Armco Iron. Capacities from 2 to 10 bushels. Write for details and price list.

California Corrugated Culvert Company

LOS ANGELES
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AMERICAN ARMCO IRON

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CALCO GRAIN BINS

PROTEIN SPELLS Poultry Profit

FOR BEST RESULTS feed high-grade Beef Scraps of Uniform Quality.

The dealer who induces poultrymen to use High Protein Beef Scraps is a benefactor to his customers. The best is always the cheapest.

GOLD BEAR BEEF SCRAPS

Backed by a guarantee which assures the poultryman, high and uniform quality.

Made in a government inspected packing house. Contains only blood and offal.

Food elements plainly marked on every sack.

Made and Guaranteed by

Western Meat Company

SAN FRANCISCO, CAL.

Write for our booklet, "PROTEIN FOR PROFIT."

Poultry and Rabbits for Profit

Conducted by R. H. Whitten.

FEEDING RABBITS FOR MARKET.

(Written by Mrs. C. A. Richey, Los Angeles.)

This subject is one of great importance, for to feed market stock successfully food must be nourishing and still not too costly.

Some people feed their rabbits entirely on green feed and they grow and thrive, but the flesh is soft and does not weigh like the grain-fed animal. Grain is therefore necessary, at least once a day, and rolled barley, oats, hay and bran, with weeds, vegetables and beet pulp mash, are the main feeds. Some feed all of the different vegetables, but potatoes are considered too starchy, unless cooked first. Rabbits love cabbage, but it makes the urine smell very strong. Lettuce contains so much water that it must be fed judiciously. Weeds and greens must never be fed wet. Lawn clippings are good if not wet or heated, and great care must be used in this respect or sick rabbits will be the result, especially with the young. Never under any circumstances feed musty grain or hay.

For the best results, feed night and morning, with fresh water in the middle of the day in hot weather. Rabbits need a lot of water in the hot season, and to be successful in the warm climates this fact must be carefully heeded. Give a handful of grain to each rabbit in the morning, and some weeds, green alfalfa or carrots in cool weather. In hot weather give greens only in the morning, and hay in the evening, with some more weeds, alfalfa or grass—what you think they will eat up clean. Never throw greens in the hutches promiscuously. It means disaster sooner or later. Remember, musty hay, wet or stale greens, and dirty water bring disease and death.

Feeding the Young.

When the young first commence to eat it is economy to start them out right, and a dish of rolled oats, bread soaked in milk, not fed sloppy, and bran will be easier for them to digest then rolled barley. This is only necessary for a few days, unless one is inclined to feed rolled oats longer. It is the finest growing feed for the young, but somewhat expensive. Some say not to feed hay to the young, but that is nonsense. If the hay is sweet and properly cured it wil not hurt them. Young rabbits are more easily affected by eating greens than the old ones, so extra care should be taken not to overfeed them. If the mother has been fed on green food it will never hurt the young.

Salt.

All animals need a per cent of salt, it is claimed, and the wild animals will go miles to get it, so we think it good for rabbits. Some keep rock salt always in the hutches. This is all right if it is clean, but the best way is to get dairy salt, which is quite cheap when sold by the pound, and sprinkle in small quantities on the grain or mash. This is a cleaner way than any other and the rabbits do not require much salt.

A handful of linseed meal once a month is a splendid conditioner. It should be given a little oftener when preparing for the showroom, but not too much, as it is loosening. Beet pulp mash, in the sugar country, is cheap and good. Pulp must be soaked for an hour or so, then mixed with bran and a little alfalfa meal into a mealy mash and fed to young and old all they will eat up clean in fifteen or twenty minutes. Formula for beet pulp mash: one part beet pulp, four parts water, one part alfalfa meal, one part bran, and a little salt, mixed into a crumbly mash. Never feed it sloppy.

Feeding the Buck.

In feeding the buck that is being used for breeding, care must be used in keeping him in first-class condition. Remember barley is heating and fattening. Oats are better, and when grain is being used to the limit, raw eggs occasionally mixed with bran and bread will keep him in good condition. He should not be mated more than twice a week.

WINTER EGGS WILL BE HIGH.

Unless the storage men have made a big mistake in their calculation, fresh eggs will sell for 80 cents next winter. These men are now putting eggs away at the highest prices on record, and their coolers are steadily filling. They are buying at a price which means that these storage eggs must sell for 71 cents in order to show even a small profit, and this price calls for about an 80-cent market for fresh eggs.

The reason prices have held up so well this season is that New York has taken a large part of our surplus and has moved it on to Europe. California white eggs have found a place in the New York market and are now quoted on that exchange. Evidently storage men think that Eastern markets will continue to absorb our surplus, for here at home consumption has not increased. At first the consumers were surprised at the high prices of eggs at this time of the year, when they are generally one of the cheapest foods. A little later they became wrathful and refused to buy such a luxury, but the price stayed high, and apparently the consumers have been broken in at last, and with everything else sky-high, they have reached the conclusion that the price of eggs is no worse than that of hundreds of other commodities.

Still they are asking when the price will come down. We might point to the fact that egg prices compare very favorably with other food prices; in fact, at present prices eggs and milk furnish our cheapest nutriment. Also we might mention that the dollar of today is worth in purchasing power only 50 cents of the dollar of a few years ago. While he war was on the Government kept prices from soaring, but now the law of supply and demand is doing the price fixing, and as long as the present demand continues prices are liable to keep up. That is, provided production does not increase. We should take into consideration that the hatcheries report the greatest business in their history. When the pullets hatched this spring begin laying next winter, perhaps the demand will not keep pace with this increased production, but the storage men must know pretty well what the future will be, and when they will put eggs in the coolers at present prices it is pretty safe to bank on 80 cent eggs next winter.

START CHICKS ROOSTING EARLY.

Early roosting is desirable, for when combined with plenty of exercise and a gradual reduction of the temperature in the brooder house, it tends to promote rapid feather growth. At first the roost should be placed not more than a foot above the floor, and it will be found that some of the chicks will start roosting even before the heat is discontinued in the hover. This early roosting helps to carry the chicks over the critical period between artificial heat and full feather, when they are most likely to crowd at night and become overheated or smothered. These conditions mean a check in growth and they should be carefully guarded against.

Avoid sloppy or wet feeds. Keep the brooder, litter and chicks always dry. Wet litter and feeds or dampness in the brooder are perhaps the worst enemies the chicks could have. Don't put chicks of different ages in the same brooder. Don't keep the chicks in the same runs as the old or mature stock. Fed regularly all the chicks will clean up but don't overfeed. Keep the brooder clean and free from mites, and the chicks free from lice.

TO INCREASE PROFITS.

Do you know that your eggs will be worth more money if you:

1. Produce infertile eggs by removing the roosters from the flock in the summer time?
2. Provide clean nests and keep eggs clean?
3. Do not wash eggs, as water opens wide the pores?
4. Gather the eggs twice daily during the summer to prevent them from being heated by the hen?
5. Keep them in a cool, dry place away from flies and preserve fresh egg flavor?
6. Market them at least twice each week, as summer heat stales eggs quickly?
7. Insist that they be bought on a quality graded basis?

Remember—every egg you ship or sell must be fit for human food.

Mites will always find their way into a brooder or brood coop sooner or later if means are not taken to keep them out. Go over the inside of your coop every week after the warm days come with crude carbolic acid and kerosene—one part acid to from five to ten of kerosene. Disinfect the brooders before each new hatch is put in and oftener if you suspect the presence of mites.

Poultry Breeders' Directory

YOU ARE NOT TOO LATE—Our early maturing, winter laying strains, May, June hatch develop quickest into profitable winter layers. "My thirty pullets laid at four, sixth month (January) cleared $31." Why? Bred 20 years to lay winters, 200-290 eggs yearly. White, Brown, Buff Leghorns; Reds; Anconas; Rocks; Minorcas; Orpingtons; clearing customers $5. Valuable circular with proof free. 70,000 egg hatcheries supplying chicks. Thousands shipped promptly, below ordinary chicks. Eggs; Half price. Hatcheries overflowing. Breeders (Pullets), Sale beginning. J. Beeson, Pasadena, Cal.

THE MISSION HATCHERY
Can now supply for May and June delivery,
WHITE, BROWN, BUFF LEGHORNS
Baby chicks of quality breeding, hatched right, and priced right, and shipped to arrive safely. Express or parcel post. Large or small lots. Also booking orders for late May and June delivery. Barred and White Rocks; Black and White Minorcas.
Circular and prices for the asking.
The Mission Hatchery, Box 27, Campbell, California.

WHITE LEGHORNS are the most profitable breed of poultry. If you are in the business for profit, you will eventually have them. Early broilers; early layers; early profits; we sell only White Leghorn Baby Chix from heavy laying Hoganized hens. Safe delivery of full count live chix guaranteed. Prices per 100: February $15; March, $14; April, $12.50. The Pioneer Hatchery, 408 Sixth street, Petaluma, California.

SINGLE COMB BROWN LEGHORNS—The large, modern, heavy-laying type that won high honors for us at the National Egg-Laying Contest. No better layers, none others so hardy. For 20 years our strain has won highest prizes at New York, Boston, Chicago, San Francisco, etc. Absolutely the finest Brown Leghorns in America. Eggs, $3 and $5 per $15; $15 per 100 Williams Bros., Fullerton, California.

BARRED PLYMOUTH HOCKS—Champion prize winners and wonderful layers. Choice cockerels, hens and pullets for sale. Hatching eggs from twelve grand matings. I have made a specialty of Barred Rocks for over twenty years. That's why I win at all leading shows. "Nothing Better In Poultry" than Vodden's Barred Rocks. Catalog free. Chas. H. Vodden Box 396, Los Gatos, California.

S. C. WHITE LEGHORN CHICKS—Any quantity from A-1 Hoganized and trapnested stock, winners of 1st, 2nd and special for pullet and 1st cockerel at Pacific Coast Land Show. Orders taken for June 7. A. O. & P. M. Forster, 2018 Otis St., Berkeley, Calif.

FINEST HATCHERY IN THE WORLD—CHICKS, White Leghorns, Rhode Island Settings—1000's—hatched right in our $60,000 brick and concrete hatchery from our Hoganized heavy layers. Stock, eggs, Pebbleside Poultry Farm. Sunnyvale, California.

RHODE ISLAND REDS—Rose and single comb Rhode Island Red hatching eggs from 220-egg record layers. Cockerels, rose and single comb. Pens. Improve your color, type, and egg capacity. Write for mating list. Wm Larm, 3915 39th Ave., Fruitvale, Calif.

BABY CHICKS—Barred Plymouth Rock, R I Reds, Buff Orpingtons, Black Minorcas, Brown, White and Buff Leghorns from Hoganized stock, bred to lay. Tobener Poultry Ranch, Washington Ave., San Jose, Cal.

BRONZE TURKEY EGGS—No more eggs till further notice. Albert M. Hart, Clemente, California.

SULLIVAN'S FAMOUS BUFF ORPINGTONS—Line bred for 20 years. Oldest flock on Pacific Coast. Hogan System for 15 years. Eggs $3.00 and $5.00 for 15, $12.00 and $15.00 per 100. Limited number of breeders for sale; write for prices. Mr. and Mrs. W. S. Sullivan, 100 Market Road, Agnew, Santa Clara Co., Cal. Telephone S. J. 5705 R 5.

PEERLESS WHITE WYANDOTTES—Our 200-egg strain, bred for years for show qualities and high egg production. 50 cockerels. 100 pullets for sale. Trios and mated yards. Eggs for hatching. Catalogue free. I. W. Atkinson, Box B, 130 Willard St., San Jose, California.

S. C. RHODE ISLAND REDS EXCLUSIVELY—"Pacific Coast Aristocrats." Hoganized flock. Booking orders for day-old chix and hatching eggs. Order early. Rosedale Poultry Farm, Motor A. Box 200A. Ceres, Calif.

BABY CHICKS—Hatching season ends June 1st., except for special orders. A few chicks still available for later part of May—leading varieties. B. M. Archibald, Soquel, Santa Cruz Co., California.

WHITE LEGHORN BABY CHICKS—Every week, good strong youngsters from fine layers. Also other varieties. Write for circular. Stubbe Poultry Ranch and Hatchery, Palo Alto.

SANTA CLARA VALLEY HATCHERY has the chicks for you from six different standard breeds, all bred for egg yielders. Can furnish references from my old customers if desired. Lincoln Ave., San Jose, California.

RHODE ISLAND REDS—Best all-purpose bird. Oakland show. First cock, second cockerel, fifth pullet on four entries. Hatching eggs. Prices for asking. John L. Reed, Route C, Box 36-B, San Jose, California.

BABY CHICKS—Hoganized White Leghorns, utility Rhode Island Reds, Barred Plymouth Rocks, Anconas, and Blue Andalusians. Free circular. McDonald Poultry Ranch, King Road, San Jose, California.

CROLEY'S RED STAR CHICK FEED—California's standard Baby Chick Feed for twenty-five years. Manufactured by Geo. H. Croley Company, Inc., 8th and Townsend Sts., San Francisco, Calif.

BABY CHIX R. I. REDS
My speciality. Bred for eggs, size, color. Hens on free range means strong chix. Price right. Denton Poultry Yards, Box 360, Campbell, California.

MODEL POULTRY FARM—White Leghorn specialists. Our fifteenth year. Baby chix and hatching eggs for sale. Our prices are right. W. C. Smith, Prop. Corning, Calif.

BARRED PLYMOUTH ROCK EGGS for sale. Good range flock headed by cockerels from 260 to 290-egg stock. $1.50 per setting. Mrs. J. A. Vassar, Laytonville, California.

FOR SALE—Bourbon Red Turkeys and eggs for hatching, $5.00 per setting of 13 eggs. Book your orders early. Albert E. Balmer, Alhambra Valley, Martinez, California.

EGG BRED—Buff Brown, White Leghorns, Golden Campines, Dark Cornish. Winners wherever shown. Send for circular. Percy Ward, 3142 Ward St., Fruitvale, California.

GOLDCROFT BUFF ORPINGTONS—Winners San Jose show. Eggs, $5.00 and $3.00 setting. Heavy laying. Choice breeders for sale. Samuel Abrams, Los Altos, Cal.

EASTMAN'S "BRED-TO-LAY" Hoganized and trapnested Barred Plymouth Rocks. Baby chicks. Eggs; cockerels. Fairmead Poultry Farm, Fairmead, California.

BABY CHICKS—Booking orders for spring deliveries. White and Brown Leghorns, Rhode Island Reds, Barred Rocks. E. W. Ohlen, Campbell, California.

BABY CHICKS—We have the large heavy-laying S. C. White Leghorns, severely culled last year. Send for prices. Tupman Poultry Farm, Ceres, California.

INCUBATOR CHICKS—White Leghorns—Bred to standard and to lay. $15 per 100. MAHAJO FARM, P. O., Box 597, Sacramento, California.

CHICKENS, DUCKS, GEESE, GUINEAS, Pea Fowl, Pigeons. Wm. A. French, 545 W. Park St., Stockton, California. Stamps.

BUFF ORPINGTONS, BUFF DUCKS, BOURBON RED TURKEYS—The Ferris Ranch, Rt. 2, Box 144D. Pomona, California.

FOR SALE—Guinea eggs $2.00 per 17 eggs. Pigeons: Extra fine birds $1.75 to $2.50 per pair. E. A. McKinley, R. F. D., Ukiah, Cal.

PIT GAME CHICKENS that are game. Also eggs for hatching. Frank McMann, 689 32nd St., Oakland, Calif.

RABBITS.

JOIN THE CALIFORNIA COMMERCIAL RABBIT Assn., and get real information on rabbit raising. We issue an educational bulletin each month, which is free to members. Membership, including 16 back bulletins $1.80. H. A. Sanderson, Secy., Eagle Rock, California.

SAN FONG RABBITS—15-16-lb. Steel and Gray Flemish Giants. Prize winners at San Jose and San Francisco. Sanborn Young, Los Gatos, Calif.

NEW ZEALAND REDS—First class utility does bred $5.00 each. Young does, $2.50 each. F. R. Caldwell, Broadmoor, San Leandro.

RAISE RABBITS FOR US—We supply the breeding stock. Send stamp for particulars. H. E. Gibson Co., Arcadia, Calif.

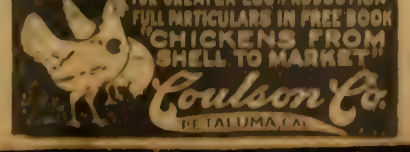
NEW ZEALAND REDS. We specialize on thoroughbred does bred to registered bucks. Baker Rabbitry, Box 371, Dixon.

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Preventative and curative of colds, roup, canker, swelled head, sore head, chicken pox, limber neck, sour crop, cholera, bowel trouble, etc. Mrs. T. A. Morley of Galien, Mich., says: "Have used Germozone 17 yrs. for chickens and could not get along without it." Geo. F. Vickerman, Rochelle, N. Y., says: "Have used Germozone 12 years, the best for bowel troubles I ever found." Frank Blake, Chenoa, Ill., writes: "I have lost but 1 pigeon and no chickens in the 7 yrs. I have been using Germozone." C. O. Petrain, Moline, Ill., "I never had a sick chick all last season." Bernard Hornting, Kirksville, Mo., says: "Cured my puniest chicks this spring." Ralph Wurst, Erie, Pa., say: "Not a case of white diarrhoea in 3 yrs. I raise over a thousand a year." Used also for rabbits, birds, pet stock.

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THE HOME CIRCLE

SUPPOSE.

Suppose no jolly chaps had known
What books the boys like best,—
No Kingsley, Scott, or Stevenson,
No Cooper and the rest;

Suppose the world had never learned
Of Crusoe and his isle;
Suppose the clever Robinsons
Had not been wrecked in style;

Suppose King Arthur and his knights,
Don Quixote and the Cid,
Had been without a chronicler
To tell what feats they did;

Suppose corsair or buccaneer
Were a forgotten word;
Suppose of Indians or scouts
No boys had ever heard;

Suppose the world was still so young
Men had not thought of books;
Suppose there were no libraries,
No cosy reading nooks;

Suppose I had not gone to school
When I was very small;
Suppose I knew no alphabet,
And could not read at all;

Suppose—it is too horrible
To think it might be true!
On rainy days and winter nights
What could a fellow do?

—Abbie Farwell Brown,
in the Churchman.

FROM THE OTHER SIDE.

He was my next-door neighbor, as farmers go; and a year ago when I shook hands and wished him good luck it is no misstatement to say that my throat was tight and my voice was not quite as steady as a man would wish. Our goings and comings are never merely casual in the country, and when the boys left for France the day was indeed marked in our books and in our hearts.

And now he was back. "Home from the wars"—that old phrase that never was meant for the new continent until this Spring. Back with the service ribbon and the French Cross on his jacket, and a golden wound chevron on a sleeve. Went away a boy, and came back a man—as they all do. Tickled to get back, full of every little detail of home affairs, and yet talking to you with a somber look in his eyes, a sort of deep, inner knowledge as of a man before whom the great book of life has been opened wide. You see that look in the eyes of these boys who went through the mill in France.

After two or three days I had the chance for a good visit with him. We sat by the fire and smoked and ate good Baldwin apples for an evening.

"Tell me, John," I said after a while, "something about the French farmers. What do you think about the country people over there? And what are the average farm conditions?"

"Well," he said, "the Frenchman makes a good farmer. That is, he is a conservative farmer; he plays the game with an eye to the future. Jacques thinks of his old age and of his children and of his grandchildren every time he fits a field for planting. He doesn't exploit the soil because he can't and get away with it. If he is a soil robber he knows that he or his family will suffer later. For with them the farm is a permanent game. Not the moving and shuffling around in and out of farming over there."

"Pretty intensive thing, as a rule?"

"Yes; what I saw; pretty intensive. Thirty to 40 acres to the farm, all under cultivation; potatoes, wheat, oats, hay, flax, milk, fruit, and so on. Whole families work in the fields—old men, women, children. We think we know what farm work means here, but we don't. Perhaps our grandfathers did, before the days of all kinds of machinery. Over there it's that same thing that our grandfathers knew; hand labor—work that depends on outlay of human muscle for results. A very hard life, on the average."

"Old, old game, isn't it?"

"Yes," answered John, gazing contemplatively at the fire.

"An old, old game. The evidences of that are on every side. You realize directly that the farmer in Western Europe is a man moving in a long-worn groove. The system is old and settled and rigid. The French farmer, as a rule, lives on land that his forefathers were farming when Columbus was trying to raise capital for a voyage west. He works the way he does, saves the way he does, fights the way he does, because an ironclad system of things for a thousand years has taught him that no other way can survive. From the days of the cradle it has been instilled into him that he will have to fight for his life straight through to the grave. Too many people; too little land; too great a concentration of industry, and so on. Makes farming and everything else a sink-or-swim proposition every minute. Fairly takes your breath to watch those people work. An average American farmer would have to go some to hold his own the way they do things in France."

"But they get results, don't they?"

"Yes, they get results. But it's at a tremendous cost of human energy. In France probably one man feeds three. Here one man feeds about four, as population runs in general. Here we do everything with the idea of conserving man labor; land we have plenty of.

"Over there they do everything with the idea of conserving land—men are a good deal more plentiful and cheaper than land. They get big yields per acre. Last October where I was billeted; in Western Finisterre, they turned out 400 bushels of potatoes to the acre. And oats went 90 bushels, wheat 60 bushels, and so on. I saw hay in midsummer that I knew would cut close to four tons to the acre. Big yields, tremendous yields in some places. But all harvested by hand—hand labor, every bit of it. I saw a few Yankee reapers, but grain all thrashed by hand. Beans same way. Potatoes dug out with old wooden hooks—and they were in level, fine soil where an American potato digger would walk through and throw them off by the bagful! Women and children in the fields from sunrise to sunset. Of course, it was war. But those people were doing work



Our store comprises five adjoining buildings,—35 floors—exclusive of warehousing and manufacturing industries,—mattress-making, upholstering, carpet, window-shade and drapery work-rooms. An entire factory is required to supply demand for our famous "Quality-Reed" furniture.

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All loans made on an amortization plan whereby the borrower repays the principal gradually with each interest payment
Over three thousand satisfied borrowers in this district.
It will pay you to investigate.
For information apply to the nearest **National Farm Loan Association,** or write direct to

Federal Land Bank of Berkeley
Berkeley, Cal.



hey were used to—same thing they'd been doing all their lives.

"The peasant homes show the same old fight for life. Everything saved, pinched, grubbed out to the last notch. Cows, pigs, chickens, all kept and coddled and watched over like the family. Kept almost in the house—stables always tacked on the rear, closer even than our New England stables. Stock tended like children; loss of a pig a historic family tragedy. And manure! Sometime we're going to understand the value of stable manure. You ought to watch those French women scrape it up in buckets and pile it out in the front yard to be composted. Every scrap saved, and the stable washed, and the wash-water saved! Great sight to walk down the street of one of those little peasant villages and see the steaming manure piles in every front yard. Great smell, too!

"Thrift, that's the word. Thrift carried to the last ultimate possibility. Why, you and I were brought up in thrifty families; but, honestly, it made me feel like a life-long prodigal to see that game in Central France. Everything intensified by the war, of course; but only intensified, not different. The evidence is everywhere that what they were doing last year they have been doing in the main for five centuries. An old, old system; a hard one; a rigid, ironclad one."

"But the French peasant as a type—isn't he a pretty upstanding sort? We've always heard that the peasant stock—the small farm owners—were the backbone of France."

John did not answer for a moment. With hands clasped behind his head he gazed upward, his eyes somber and reflective.

"Yes," he said slowly, "an upstanding, virile type. And that doesn't express it. He is really wonderful—marvelous! Literally the backbone."

Again he paused for a moment.

"Yes, my hat is off to them. They know how to fight, on the farm or in the trench. They've been trained in a long, hard, harsh school. It's a fight all the time they live—and no more chance for weaklings than there is in a thicket of young pine trees.

"It's a little pathetic to me, who never saw Europe before. I never understood anything about conditions over there; the magazines have always held up the French and German farmers to us as models—because they grew so much more food per acre. The blood and muscle that those people have to put into it never figured much in the magazine stories. But after America, to see the way they do it over there! It sort of takes your breath away to see what agriculture means in the old countries, where things have settled into grooves after centuries and centuries of increasing population and intensity of living. It's a hard, stern game, I tell you, and a case of 'devil take the hindmost.'

"The greatness of America," he said, musingly. "It's been like a gigantic sermon to me, and to a great many thousand other boys. This year in Europe has taught us a little of what it means to be an American. To belong to a country where land, and resources, and wealth, and opportunity, lie open to a man for the taking! I don't wonder any more at the tide of immigrants from the old world. All I wonder is how any 'fatherland' or 'motherland' can hope to retain any affections of men who have once settled in this country and found out what it means and is.

"The greatness of America—that's what it all sums down to, especially our fundamental greatness: land. My hat is off to those farmers over in France, but I have to pity 'em in the same breath."—A. B. Geung, in Rural New York.

FLOWER BEDS.

Children should be encouraged to have small plots of ground for flowers, the care of which they must assume themselves.

It is still not too late to plant seeds, but if there is a desire for quick results, try purchasing the rooted plants. If transplanted carefully, they hardly show the effect of the change and they may be placed where desired so that blooming effects can be secured readily.

All the old time favorites are much in vogue and in many cases they have been so improved upon that they seem only like distant relatives.

If a child has a garden all his own, he has a fine opportunity to work out color schemes and a pretty arrangement, instead of carrying out some one else's orders.

ASPARAGUS RECIPES.

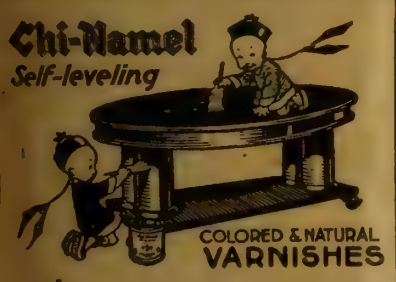
Boiled Asparagus—Wash and scrape the asparagus and cut off the tough ends. Cook both the ends and the asparagus in rapidly boiling salted water; drain, saving the water and tough ends for soup. Place the asparagus on slices of toast and serve with a drawn butter or Hollandaise sauce.

Asparagus with Eggs—Boil the asparagus in bunches to keep from breaking. When done, cut off ends and lay in a deep pie plate with butter, salt and pepper. Beat four eggs separately to a stiff froth, add two tablespoons of milk. Pour evenly over the asparagus. Bake until the eggs are set.

Father: Joe, why do you suppose that old hen persists in laying in the coal yard?

Joe: Why, father, I think she has seen the notice: "Now is the time to lay in coal."

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Self-leveling



Chi-Namel varnishes are for new and old hard or soft wood, imparting highly protective lustrous surfaces equal to "factory finishes." Being self-leveling, they can be applied by anyone without laps or brush marks. Tough, elastic, waterproof. Cost least by the square foot on account of great covering capacity.

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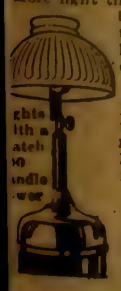
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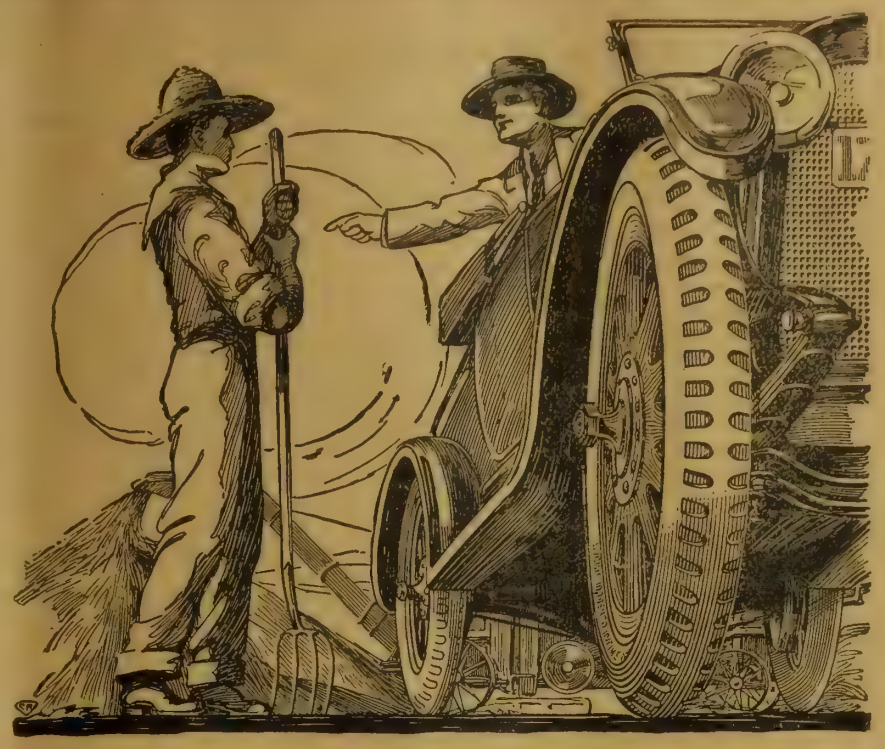
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25¢ AT ALL DRUGGISTS

Market Comment

Butter Moving Eastward.

A carload of butter has been shipped to New York by fast express from Tulare county—first this year.

Oregon Prunes 14½ Cents.

A despatch from Oregon says that 75 per cent of Oregon's prune crop has been contracted at 14½ cents a pound.

$75 a Ton for Sonoma Apples.

Healdsburg reports claim $75 a ton for apples of the 1919 crop, which promises to be a record one in quality as well.

Hog Market Goes the Limit.

Twenty-one dollars and ten cent per hundred weight for hogs was a new record established in Chicago last week. A reaction is looked for.

Apples Advance.

Prices for California Newtown Pippins have advanced from $3.50 to $3.75 a box and in some small lots and in some small lots are retailing at $4.

Fresno Cotton Brings Good Returns.

A report from Fresno County announces the sale of the entire cotton crop of the county (two carloads) at 33 cents a pound for best Durango and 25 cents a pound for short and low grades.

Independents Bid High.

It is reported that independent packers are offering 15 cents for dried peaches in the San Joaquin valley, a 12-cent base for prunes in the Santa Clara Valley. Eighteen cents are offered for apricots.

May It Stay Put!

At a meeting of the Santa Clara County Farmers' Union last week, a resolution was passed crediting the Prune and Apricot Growers' Association with putting these industries on a stable paying basis.

Strawberry Growers Have an Inning.

The strawberry season is on and steadily increasing. In San Francisco $17 to $21 a chest is being obtained—unheard of prices. The high price is said to be due in some measure to impending national prohibition. The soda fountains are figuring on these berries as a flavoring in the substitute for wines, etc.

Gratifying Expansion.

The California Associated Raisin Company serves 8,000 vineyardists, of whom 3,500 are stockholders and the tonnage handled is 85 per cent of the crop of California. Seventy-five per cent of the seeded raisins go into one-pound cartons, the balance being packed in 25-pound boxes bulk for bakery trade. And the company's finances are flourishing.

Basic Price for Wheat.

Two dollars and twenty-six cents will, it is assumed, be the basic price for No. 1 northern wheat at Chicago, according to Julius H. Barnes, National Wheat Administrator. A graduated scale of carrying charges will be put into effect. Barnes assured the trade that American consumers will not be asked to pay more for their wheat than the figure at which it is sold for export.

THE MARKET REPORTS

Figures Given Are Independent and Reliable.
Prices Quoted as Paid to Producers.

SAN FRANCISCO.

San Francisco, May 7, 1919.

WHEAT.

The following prices were announced by the Federal Grain Corporation last year and are still in effect. They are figured f. o. b. San Francisco, Los Angeles, Seattle, Tacoma and Portland and guarantee the grower a minimum of $2 f. o. b. shipping point:

Per bushel—	
No. 1 hard	$2.20
No. 2	2.17
No. 3	2.13
No. 1 soft	2.18
No. 2	2.15
No. 3	2.11
Club or Sonora, No. 1	2.16
Do, No. 2	2.13
Do, No. 3	2.09
Recleaned, per ctl.—	
California	$4.30@4.40
Early Baart	None

BARLEY.

Barley continues strong at last week's quotations. No purchases of large quantities are reported this week, but shipments of lots already contracted for are going forward regularly.

Feed	$2.50@2.60
Shipping	2.60@2.75

OATS.

Oats continued steady. They depend entirely upon the barley market and the slightest weakness in the former would be immediately reflected in the price of oats.

Red feed, per ctl.	$2.30@2.40
Red for seed	Nominal
Black for seed	Nominal
Recleaned Red or Black for seed	Nominal

CORN.

Corn remains unchanged. There is some Egyptian and Milo on the market, but absolutely none of the choice grade. What there is here is more or less rain damaged, and prices for it are subject to its condition on arrival in this market. Its prices range from $2.60 to $3.00.

California	$3.25
Egyptian, choice	Nominal
Milo	Nominal

HAY.

Receipts of hay for the past week were 2,288 tons compared to 2,464 the previous week. Receipts for the past two weeks have been much heavier than for some time past and probably will continue that way for a week or two more, as much of this hay is being brought in specially to fill large Government purchases recently made. New Volunteer hay is being harvested in many sections and can soon be looked for on this market. Weather conditions about the Bay sections have been most favorable for crops.

No. 1 wheat, per ton	$17.00@19.00
No. 2 wheat, per ton	13.00@16.00
Choice tame oat, per ton	17.00@19.00
Wild oat, per ton	12.00@15.00
Barley hay, per ton	12.00@15.00
Alfalfa, per ton	16.00@20.00
Stock hay, per ton	12.00@14.00
Barley straw, per bale	.50@ .80

FEEDSTUFFS.

The market is strong and advances were made on all three of the principal products—cracked corn, rolled barley and rolled oats. Alfalfa meal remains unchanged.

Cracked corn	$66.00@68.00
Rolled barley	52.00@53.00
Rolled oats	51.00@52.00
Alfalfa meal	34.00@35.00

POTATOES, ONIONS, ETC.

The market for old potatoes is dead. Stocks, however, have been fairly well cleaned up. Quotations are nominally unchanged. The market for new potatoes is constantly broadening under a good demand. Onions are heavy on lack of shipping demand. Last year's garlic has been cleaned up and the new crop is just appearing on the market. So little has yet come on the market that no prices have been established for it. Tomatoes were not plentiful this week and sold at higher prices. Beans and peas and other green vegetables are now arriving in constantly increasing quantities and are meeting a good demand.

String beans	10@20c
Peas	4@7½c
Lima beans	None
Carrots, per sack	$2.00@2.75
Asparagus	4@7c
Rhubarb, Strawberry, box	$1.00@1.50
Cucumbers, hothouse, box of 30	3.00@3.50
English, per dozen	$2.50
Eggplant, per lb	None
Lettuce, per crate	75c@$1.25
Celery, crate	Nominal
Spinach, crate	50c@$1.00
Tomatoes, Southern, per crate	None
do, Mexican	$3.00@4.00
Sprouts	Nominal
Summer squash	$1.00@1.25
Potatoes—	
Rivers	$2.00@2.40
Oregon	2.00@2.40
Washington	1.95@2.25
Idaho	2.00@2.40
Garnets, new on street	4½@5¼c
Other new on street	3½@4½c
Sweets, per sack	None
Onions, Warehouse Stock—	
Yellows	None
Australian Browns	$3.75@4.00
Green River	75c@1.00
Green Alameda	2.00@2.25
Garlic	Nominal

BEANS.

The market for beans was much better. A good demand is developing and prices readily responded to the demand. While the demand this week was principally for whites, Cranberries and Carbanzos scored the best advances.

Bayos, per ctl.	$6.25@6.40
Blackeyes	$3.40@3.60
Cranberry beans	$5.50@5.75
Limas (south, recleaned)	7.50
Pinks	5.80@6.10
Mexican Reds	4.75@5.25
Tepary beans	2.50@2.75
Garbanzos	11.75@12.00
Large whites	6.00@6.25
Small whites	6.75@6.90

POULTRY.

While there were few changes in the poultry market this week, the tendency is downward. Shipments are keeping up well, with the demand only fair. These conditions predicate lower prices. Small broilers have about reached the bottom, though they may recede a cent or two. At 35 cents or less this description can be put into storage. Medium and large broilers may be lower during the coming week. Fryers, however, are expected to maintain about their present level.

Turkeys, live, young spring, lb	30@38c
do, old	34@36c
do, dressed	42@44c
Broilers, 1½ to 2 lbs.	40@45c
do, 1¼ lbs.	38@40c
do, ¾ to 1¼ lbs	35@36c
Fryers	52@55c
Hens, extra, per lb. colored	36@38c
do, Leghorn	36@38c
Smooth young roosters, per lb. (3 lbs. and over	48@50c
Old roosters, colored, per lb.	22c
Geese, young, per lb	38c
do, old, per lb	38c
Squabs, per lb.	55c
Ducks, young	38c
do, old	36c
Belgian hares	15@16c
Jack rabbits	$3.00@3.50

BUTTER.

Butter market continues strong, although the high of the week and the close is only a half cent above last week's close. The New York market has been variable during the week, although today it advanced 2 cents over yesterday's quotation. It is known that some shipments of butter are being made to the Eastern market. An interesting comparison of receipts in this market for the month of April just closed and April of last year show one reason for the continued high price of butter. The receipts in San Francisco for April, 1919, were 2,661,900 lbs. and for April a year ago the receipts were 3,128,600 lbs. As last year was a dry year when production was not up to normal, a falling off of about a half-million pounds this year is explained only by the supposition that shipments are being made East direct from points of production. The formation of Milk Producers' Associations and the centralization of these under one control facilities such shipments.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extra	53½	53½	52	52	53	53½
Prime firsts				Nominal		
Firsts				Nominal		

EGGS.

Eggs continued to advance this week, although there was a drop in prices at the close. Shipments are still going out of this market, especially to the north and south. Those going to the south are mostly for storage purposes, but those going north go into immediate consumption.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	45½	46	47½	47½	46½	46
Extra first	..	..	..	..	..	..
Firsts	43½	43½	43½	45½	45½	45
Ex. pullets	43½	44	44½	45	43½	43

CHEESE.

Cheese is quiet. Receipts of Oregon are light and those of the California varieties are just about enough to hold the market steady.

Fancy California flats, per lb.	28c
First	26½c
California Y. A. fancy	30c
Oregon Y. A.	34c
Oregon Triplets	34½c
Monterey cheese	22½@24c

FRESH FRUITS.

The apple market is becoming less active as the stocks in storage are becoming lower. Many of the apples now being put on the market are not in the best condition. Strawberries are now coming in exclusively in chests and it is believed that the price is about as low as it will go this season, although some dealers say that they expect $10 to be reached. Cherries began to come into market this week, the first variety being the purple Guigne. The fresh fruit market should now show more variety of offerings as the season advances.

California apples	$3.50@4.00
Northwest apples	3.50@4.00
Winter pears	3.00@4.00
Persimmons	None
Loquats, per lb.	8@10c
Strawberries, chest	$11.00@12.00
do, crate	None
Cherries, purple Guigne	$2.50@2.75

CITRUS FRUITS.

Navel oranges are rapidly going off the market and Valencias are taking their place. Mandarins and tangerines will not last much longer. The market is steady.

Oranges, navels	$3.50@5.75
Valencia	4.75@5.00
Mandarins	3.50@4.00
Tangerines	3.50@4.00
Lemons, fancy	4.00@4.50
do, choice	3.50@4.00
do, standard	3.00@3.50
Lemonettes	2.00@3.00
Grapefruit	2.50@3.50

DRIED FRUITS.

The trade is still waiting for the association to name prices for dried prunes. In the meantime the buyers are bidding against each other and some sales have been made at 12½ cents. In some cases green prunes are being contracted for and a price of $100 a ton has been offered for this description in Sonoma county. Peaches are unchanged at 13½ to 14 cents. Prices have not yet been named on the other dried fruits.

RICE.

There is possibly still some rice in the State which will be sold as choice, but real fancy has all been disposed of. Damaged rice is moving slowly. The reported Government order for 10,000 tons of damaged rice has not yet materialized. The new crop is on the way, much of it already sprouting in many districts. The water is being turned on with the confidence that there will be no water shortage this year.

HONEY.

The honey market developed no new features this week. Local dealers say that they are making no offers for the rest of the crop still in the hands of bee men.

HIDES.

The market for country hides is fairly strong. For light hides there is a steady demand.

Wet Salted—Native steers and cows, 50 lbs. up, 16@18c; 30 to 50 lbs. up, 16@18c; kips, 15 to 30 lbs. 21@22c; calf and veal, under 15 lbs. 31 @32c; bulls and stags, 13@14c.

Horse Hides—Wet salted, large prime, each, $5@$5.50; medium prime, $4@4.50; small, $2.50@$3.50; dry, large, prime, $2.50@3; dry, medium, $1.50@2.50; colts and ponies, 50c@$1.

LOS ANGELES.

Los Angeles, May 6th, 1919.

BUTTER.

Butter shipments for the week ending show a slight decline, since reported last week. It will be noted that prices remain stationary. There is a good demand for all offerings. Receipts for week, 342,200 lbs.

We quote:

California extra creamery	54c
do, prime first	52c
do, first	51c

EGGS.

This market is steady with prices showing an advance since last week. The demand is very good and consumption holding up well. Receipts for week, 2,446 cases.

We quote:

Fresh ranch, extras	48c
do, case count	47c
do, pullets	46c

POULTRY.

Prices in this market remain firm. Hens, Broilers and Friers are in good demand. The consumption is mostly local. Receipts only fair.

Broilers, 1 to 1¼ lbs.	30c
Broilers, 1½ to 1¾ lbs	32c
Fryers, 2 to 3 lbs.	40c
Roosters (soft bone), 3 lbs. and up	35c
Stags and olds roosters, per lb.	14c
Turkey	35@40c
Hens	33@34c
Ducks	34@35c
Geese	28c

VEGETABLES.

Potato prices firm. Kentucky Wonders now on the market and selling at 16c and 17c. Peas steady. Cauliflower now off the market. Receipts continue fairly heavy and a good demand is reported for all staples, especially string beans. Summer squash show slight decline in price, also rhubarb.

We quote from growers:

Peas, per lb.	8@12c
Potatoes—	
Oregon Burbank, per cwt	$2.25@2.40
Idaho Russets, per cwt	1.80@2.00
Sweet potatoes, per cwt	$3.75@4.00
Garlic, per lb.	40@15c
Onions—	
Australian Brown, per cwt	$4.00@4.50
White Globe, per cwt.	8.00
Imperial Valley white silver wax, crate	$3.75@4.00
Imperial Valley Wax—yellow	$3.75
Cabbage, per 100 lbs.	$2.00@2.25
Celery, local, per crate	4.00@7.00
Celery, northern, per crate	8.00@9.00
Rhubarb, per 30-lb. box	$1.25
Summer squash—	
Imperial Valley, 4 basket crates	$1.00@1.10
Asparagus, per lb.	6@8c

STRING BEANS

Kentucky Wonders	16@17c
String Wax	11@12c
do, Green	14@15c

FRUIT.

Deciduous fruits in good demand with prices firm. Strawberries declining in price, but selling well. The only change in prices in this market to report since last week is on strawberries.

We quote from growers:

Apples—	
Black Twigs, Northwest pack	$3.50@3.75
Baldwins, Northwest pack	3.25
White Pearmains, 4-tier	3.50@3.75
Yellow Newtown Pippins,	

CALIFORNIA STEERS ON EASTERN MARKET.

Encouraging news for California cattlemen is contained in the report from Kansas City that Clay, Robinson & Company sold a shipment of steers for Roland Hill of Bakersfield, at the following prices:

Av. Wt.	No. Animals	Per cwt.
1010 lbs.	235	$15.50
860 lbs.	228	15.30
850 lbs.	170	14.75
838 lbs.	133	14.40

Had these animals been heavier it is believed that from 50 cents to $1 more per cwt. would have been realized. The entire lot averaged but 26 months in age. The California Cattlemen's Association is preparing to send a trainload of steers to Kansas City, the latter part of this month. It will be the initial step toward stabilizing the glutted market which usually prevails in California in early summer when the bulk of the grass cattle are marketed. The animals picked for this shipment will be heavier than those shipped by Mr. Hill, weighing 1,020 pounds or more on shipment. Anyone desiring to include cattle in this shipment should correspond with the Association. Its office is at 320 Sharon Building, San Francisco.

4-tier	3.25@3.75
Winesap, loose, per lb	7½@8½c
Roman Beauties, Northwestern, per peck	3.50@3.75
Loquats, per lb	7@15c
Strawberries—	
30 basket crates, fancy	$3.50@4.00
Poor to choice	$2.75@3.25

ALFALFA MARKET.

The Alfalfa Growers of California, Inc., 525 Central Building, Los Angeles, furnish the following quotations. Has sold

No. 1 Dairy Alfalfa	$26.00
Standard Dairy	24.00
Standard Alfalfa	22.00

F. O. B. cars, Los Angeles. The above is for new hay, and represents actual sales. The market is firm and satisfactory.

HAY.

This market is still reported to be very dull. All prices remain the same as quoted a week ago. There is a fair demand for choice alfalfa. We quote f. o. b. Los Angeles.

Barley hay, per ton	$21.00@24.00
Oat hay, per ton	23.00@25.00
Alfalfa, northern, per ton	21.00@23.00
Alfalfa, local, per ton	22.00@24.00
Straw, per ton	9.00@10.00

BEANS.

There is very little moving. The market quotations remain firm and steady. All prices the same as last week.

Limas, per cwt.	$7.00
Large white, per cwt.	5.50
Pinks, per cwt.	6.50
Small white	6.00
Blackeyes, per cwt.	3.00
Tepary, per cwt.	3.00

COTTON MARKET.

..NEW YORK, April 29.—Cotton closed very steady, net 20 points higher to 8 lower. Spot cotton, quiet; middling, 29.65c.

Prices on options ranged as follows:

Option	Open.	High.	Low.	Close.
January	24.35	24.30	23.90	23.95
May	28.90	28.90	28.40	28.65
July	27.16	27.29	26.66	26.98
October	25.40	25.55	24.79	25.06
December	24.75	24.99	24.82	24.60

Special Livestock Market Report.

SPECIAL LIVESTOCK REPORT.

San Francisco, May 7, 1919.

CATTLE—The large movement of coast cattle eastward tends to stiffen the price market, notwithstanding a local demand of moderate dimensions only. Receipts are adequate. In the East cattle are lower.

Steers—	
No. 1 weighing 1000@1200 lbs.	11½@12c
do, weighing 1200@1400 lbs.	11½@12c
do, thin	8@10½c
Cows and heifers—	
No. 1	9½@10c
do, second quality	8½@9c
do, common to thin	4@7c
Bulls and stags—	
Good	6@7c
Fair	5@6c
Thin	4@5c
Calves—	
Lightweight	12½c@13c
Medium	11@12c
Heavy	8½@11c

SHEEP—The supply and demand equation continues to be pretty well maintained. There is a prospect that larger supplies will ease the price situation. Eastern markets slow.

Milk lambs	13@14c
Yearlings	11½@12c
Sheep, wethers	10½@11c
do, ewes	9@10½c

HOGS—There is a moderate run of hogs only, including a larger proportion of soft stuff than is desirable. The market is well maintained and prices are unchanged. Today hogs opened 20@25c higher in Chicago, and higher in other Eastern markets, but are showing signs of weakening.

Hogs—	
Hard, grain fed, 100 to 150	18½c
do, 150 to 250	19 c
do, 250 to 300	18½c
do, 300 to 400	18c

Los Angeles, April 29, 1919.

LIVESTOCK.

CATTLE—Prices in this market are unchanged. The general tone of the market is dull. Only fair receipts.

Per cwt., f. o. b. Los Angeles:

Beef steers, 1000@1100 lbs.	$11.00@13.00
Prime cows and heifers	9.50@10.50
Good cows and heifers	8.00@9.00
Canners	$6.00

HOGS—No change in prices to report. There is a fair demand and offerings are of good quality. Receipts about up to normal.

Per cwt. f. o. b. Los Angeles:

Heavy, av'ging 275@350 lbs.	$16.00@17.00
Mixed, av'ging 225@275 lbs.	17.00@18.00
Light	18.00@18.50

Rough docked 20 lbs., piggy sows 40 per cent

ANNUAL ANT NUISANCE.

Annually after the heavy rains are over and the warm weather has set in, the most aggravating of pests, the ant, comes ready to torment and even overrun the household, if proper precaution is not immediately taken. There was a time when it was impossible to rid the house or store of the ant nuisance. Now, however, its extermination is an easy matter. The remedy lies in the use of Kellogg's Ant Paste, which was discovered by a chemist nearly seventeen years ago. This paste seems to have a supernatural effect over the ant. It not only drives them out of the house or store at once, but seems to keep them out indefinitely during the season. Thousands of testimonials bearing evidence of the great efficiency of this preparation have been received by the manufacturers since its introduction. The remedy is put up for general use under the name of Kellogg's Ant Paste, and can be only obtained at druggists. You will always know the genuine by the patent tittle-cap on the bottle, which should be always looked for, owing to the many imitations now on the market. It can easily be applied by using a little on the end of a match stick and spread in cracks or openings, at windows and doors.

SHEEP—This market continues dull. Prices unchanged. A slow sale is reported.

HOGS—Prices unchanged. A slow sale is reported. Per cwt. f. o. b. Los Angeles.

Prime wethers	$ 9.50@10.50
Prime ewes	8.50@ 9.50
Yearlings	10.00@11.00
Lambs	14.00@15.00

Portland, (Ore), May 7.

CATTLE—	
Steers, best	$13.00@13.50
Good to choice	$11.00@11.50
Medium to good	$10.00@11.00
Fair to good	$ 9.00@10.00
Common to fair	$ 8.00@ 9.00
Good to choice cows and heifers	$10.00@11.00
Medium to good	$ 6.50@ 7.50
Fair to medium	$ 4.50@ 5.50
Canners	$ 3.00@ 5.00
Bulls	$ 6.00@ 8.00
Calves	$ 9.00@12.50
Stockers and feeders	$ 7.00@10.00
HOGS—	
Prime mixed	$20.00@20.50
Medium mixed	$19.75@20.00
Rough heavies	$18.00@18.75
Pigs	$17.75@18.25
SHEEP—	
Prime lambs	$14.00@15.00
Fair to medium	$12.50@13.25
Yearlings	$11.00@12.00
Wethers	$ 9.00@10.00
Ewes	$ 7.00@11.00

HIDES.

The market for country hides is good, with a partiality for light stock.

Wet Salted—Native steers and cows, 50 lbs. up, 16@18c; 30 to 50 lbs. up, 16@18c; kips, 15 to 30 lbs. 21; calf and veal, under 15 lbs., 31@32c; bulls and stags, 13@14c.

Horse Hides—Wet salted, large prime, each, $5@6.50; medium prime, $3.50@4.50; small, $1.00@2.50.

One means of increasing our supply of food is to prevent loss from hog cholera. Keep the hog house and lot clean. This is important in preventing outbreaks. If any of the hogs show signs of sickness notify the State live-stock sanitary authorities, the county agent, or local veterinarian. Steps taken in the early stages of the disease can probably prevent loss, but if delayed many hogs may die.

Classified Advertisements

Rate in this directory 3c. per word each issue.

MISCELLANEOUS.

REMANUFACTURED PIPE.

All sizes standard pipe and wrought iron screw casing. All kinds of fittings. Guaranteed good as new. Write for prices. **Weissbaum Pipe Works,** 160 Eleventh street, San Francisco.

YUBA ALL-AROUND PLOW FOR SALE—cause his large and varied financial intercally new. Has only been used one season to plow sixty acres and cost $525.00 a year ago. Box 1510, Pacific Rural Press.

FOR SALE—SANDUSKY TRACTOR—10-20—Plowed only 110 acres; in best condition. Sell on account of sickness. Apply Box 221, Riverbank, California.

PATENT ATTORNEYS.

WEBSTER, WEBSTER & BLEWETT, Savings and Loan Bldg., Stockton, California. Established 50 years. Send for free book on patents.

ALL SIZES OF PIPE and screw casing, both new and second-hand, dipped and undipped. Guaranteed. Prices right. Shecter Pipe Works, 304 Howard St., San Francisco.

MADE OF REDWOOD, Hawley's Perforated wooden well casing, the best and cheapest well screen made. Send for descriptive circular. G. M. Hawley, La Mesa, California.

FULLY EQUIPPED CHEESE FACTORY at Woodbridge, Calif. Located in center of dairying district. For sale or rent. Inquire, Ralph C. Clark, Lodi, Calif.

CO-OPERATION (not operated for profit) reduces living expenses. Particulars and catalogue from Co-operative League, Commercial street, San Francisco.

FOR SALE—Three 2-unit Empire Milking machines, nearly new. M. S. Garcia, Route 1, Box 56, Marysville, California.

SCALES WANTED—Want scales that will weigh five to ten tons. Address C. F. Waters, Paicines, Cal.

A BARGAIN—For sale, eight-inch centrifugal pump with pipe and fittings; also 50 h. p. electric motor, 1200 revolutions, 220 volts, with starter complete. All in good condition, little used. Must be sold. Apply to Geo. F. Roberts, Electrical Supplies, Marysville, Cal

TRACTORS FOR SALE—Holt Caterpillar, 30 H. P. Samson Seive-Grip 10-25. Good condition. Call and see them. Prices very reasonable. E. A Dunipace, Paicines, near Hollister, Cal

BEES FOR SALE—Golden Italians in patent hives. John G. Mee, St. Helena, Cal.

FOR SALE—32 H. P. FairbanksMorse Gas Engine. Guaranteed perfect. $600. J. J. Pottinger, 115 Main St., San Francisco.

COUNTRY LANDS.

FOR SALE—$4,500. Clear 104 acres—50 bottom, 8 bearing orchard. New 6-room bungalow and 6 other buildings. Spring water under pressure. Auto mail route and Mattole river cross place. Fish and deer. Million feet saw timber. Plenty rain here. Ideal home. **E. T. Gray (owner), Petrolia, Cal.**

FOR SALE—15 acres with good improvements, $4,000. Deep soil, cheap irrigation, ¼ mile from good town in Stanislaus County. High school ½ mile. Will sell 20 acres more with it at $250 per acre. Owner, W. L. Bone, Escalon, California.

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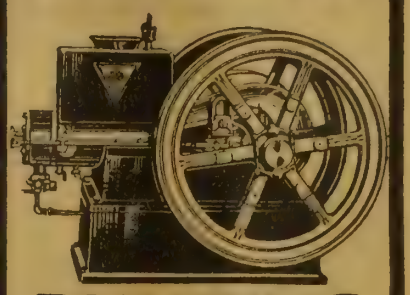
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1 cup Boiling Water
1 tablespoonful Melted Shortening
1 tablespoonful Sugar
½ yeast cake dissolved in ¼ cup of lukewarm water
1 Teaspoonful Salt
Between 3 and 3½ cups Sperry Flour

All measurements should be level. Flour should be sifted before measuring.

METHOD OF PREPARATION

Put shortening, sugar and salt in boiling water; let stand until luke warm. Add dissolved yeast and Sperry Flour gradually, beating well until too stiff to stir. Then turn on moulding board and knead in remaining flour until mixture is smooth and elastic to touch, and bubbles may be seen under the surface. Return to well greased bowl, brush dough over with melted shortening, cover and allow to rise in a warm place to twice its original bulk, then cut down. This is accomplished by cutting through and turning over several times with a case knife. Let rise again, when the dough will be ready to shape into loaves or rolls. Place in well greased pans, having them about half full. Brush over loaves or rolls with melted shortening or milk, let rise again to double its bulk and bake in a hot oven about forty-five minutes for a medium sized loaf; twenty minutes for rolls.

This quantity is for one loaf of bread and with the amount of yeast given, to each cup of liquid, bread can be made and completed in about five hours. If a longer period be given to the rising process less yeast will be required. One-fourth cake to a cup of liquid may be used if bread is set over night. In either case the same method is used. Also the liquid can be half milk and half water or all milk if desired.



Tractor Demonstration Reports in this Issue

Vol. XCVII—No. 20 Forty-ninth Year

THE PACIFIC RURAL PRESS

SAN FRANCISCO MAY 17, 1919 LOS ANGELES

A Chance to Investigate Power Farming

Written for Pacific Rural Press by R. E. Hodges.

OVER AN ACRE per minute began to turn over at the shot which started 1,520 tractor motor-horsepower pulling 2,740 inches of plow width in the "general demonstration" of the California Tractor and Implement Association May 7, 1919, near Sacramento. Surely that subsoil which had not been tortured with man-made implements since the time of Noah at least, must have been startled from its long sleep by the compact giants sputtering, coughing, humming, and growling through the volunteer grain that was soon to lay its heads where its roots had been.

Few Tractors Overloaded.

It is interesting to note that the tractor operators, learning from previous demonstrations, did not attempt too big a load for their tractors in most cases, only four or five of the 23 different models and 33 different makes being noticed with undue loads. These tractors were rated at 852 drawbar horsepower, the tendency in recent ratings being to consider a trifle over half of the motor horsepower as delivered to the implements being pulled. An increase in this proportion is justified in view of the increased number of machines using Timken or Hyatt roller bearings or ball bearings to reduce internal friction, and also to the increased simplicity of transmissions.

Average Inches per Horsepower.

It will be seen that the average inches of plow width pulled per rated drawbar horsepower is a trifle over 3.2. This figure would have been considerably bigger if the soil had not been bone dry and if the six-inch depth which all machines were required to plow had not included a clay plowpan, which was real vicious hardpan in places. Then again, in the effort to make a good job of turning under the volunteer grain, a number of tractors put on fewer inches of plows in order to plow deeper than was required by the rules. There was no relation between the size of tractor and the inches plowed per horsepower. The mid-western tractor buyer would expect to see double this number of inches pulled per horsepower, but some California soil is naturally tougher even if it had not been dried out. This fact emphasizes the need of Californians to buy tractors of greater horsepower than seems necessary. Such a conclusion would be reached anyway by one familiar with the "spottedness' of our soils. In this field of a little more than a section of land, there were various spots of different soils, some of which pulled harder than the average and thus required laboring of the engines to get through them, or adjustment of plows to a lesser depth, or some damaging jerking when the machines got stuck, which was seldom in this demonstration. A notable difference in the quality of plowing by various machines was evident to the discriminating eyes of even the casual visitors. This will be discussed more fully elsewhere.

"General Demonstrations."

In the discussion above we have spoken only of the "general demonstration," which occupied the morning from ten o'clock until noon. Such a demonstration was held each day from Wednesday until the close of the event, May 11. It consisted of the lining up of all tractors engaged in this part of the program each on its designated plot of 500 feet depth and of six feet width for each rated drawbar horsepower. Half of the machines were on each side of a turning space not to be plowed at this time. At the explosion of a bomb both lines charged to the task with a mighty upheaval of dust and noise, each one staying on the job until it was done, and giving an incomparable comparison of the way these machines all did the same kind of work.



Prof. J. B. Davidson, Chief of the University Farm Agricultural Engineering Division. He is the man responsible for organization of the California Tractor and Implement Association, which held the Demonstration at Sacramento May 6 to 11, 1919. Prof. Davidson will have greater opportunity for development of Agricultural Engineering at the Iowa Agricultural College, where he was in charge of that Division for ten years and to which he will return July 1. California is the loser.

Individual Demonstrations.

But the general demonstrations were only one magnificent part of the great tractor and implement event. Individual demonstrations were held all afternoon of each day doing whatever the exhibitors had conceived would attract most attention to the useful qualities of tractors and implements. Details of many of these stunts will be found in our other columns. They were performed on ample space assigned to each exhibitor for the purpose. A headquarters tent, including water and resting accommodations for visitors and various implements and machinery, was established on each plot.

Individual demonstration plots were occupied by several makes of tractors not represented in the general demonstrations and by several models of other makes, which models were not used in the general demonstrations. Then there were numerous extra tractors of most models so that many activities were on at once around each individual headquarters. Tractor-driven machines were in operation in various tents as mentioned in detail elsewhere. Tractors were also shown in various stages of disarray, so that visitors might look at the insides of those steel draft animals the better to know how to keep their digestive apparatus in order and their joints free from rheumatism and strains.

Tillage and Harvesting Machinery.

Many separate tents were occupied by exhibits of tillage implements with attendants explaining unexpected features and advantages of the various makes. Harvesting machinery was especially noticeable because it was being run by tractor belt power, chopping alfalfa in one case, mowing hay in another, unloading bulk grain and loading it up again in another, and threshing pine planks in another with a grain thresher, while combined harvesters were operated empty and deep subsoilers were operated out of sight.

Trucks, Trailers, and Accessories.

A main source of attraction was the biggest tent on the grounds, filled with motor trucks, trailers, motor and tractor accessories of many kinds, oil displays in which visitors were shown unsupposed properties of lubricating oils and came away knowing better why their gas motors work or don't, and some other surprises, by which visitors were well paid for their time, in addition to the observations of tractors and implements and the lectures given free in a special auditorium tent. We congratulate Californians on the opportunities thus made so conveniently available by the California Tractor and Implement Association!

IRON CANYON IRRIGATION PROJECT.

One of the biggest irrigation projects in California, and one which has been talked about for years, is that which would result from the damming of the Iron Canyon four miles above Red Bluff. About a dozen systems have been proposed varying from the irrigation of 100,000 acres to about 800,000. The latter project would involve the diversion of the entire steam and cannot be done because of the needs of navigation. The most feasible proposal and one which seems likely to be put through in the near future will irrigate 225,000 acres, supply enough water for navigation, produce about 700,000 electric horse power, will store 603,000 acre-feet of water and hold the maximum flow to 100,000 second feet, with a 20 per cent greater flow than normal during periods of low water. Government engineers estimate the cost at 18 million dollars. There is an objection that this project would inundate Cottonwood Valley in Shasta county, which, if well founded, would seriously militate against the utility of the project.

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EDITORIAL.

MAKING AMERICANS.

WE SURELY NEED a lot more Americans. Nearly all our American-born boys and girls are now going over the top toward objectives in the captaincy of industry and in the mistress-ship of organized commercialism and sociability. We used to be peeved at the over-supply of lawyers, doctors, preachers and professors, but that complaint has disappeared because the human organism has been demonstrated to have so many more physical and moral defects which have disclosed consequent ability to quarrel in so many new ways and to know so little why it is suffering and quarreling that our old army of doctors, lawyers and preachers has relatively declined to the insignificance of a corporal's guard. As for professors, like the other poor, it is not certain that we shall always have them with us: it is doubtful if the present supply will keep pace with the current demand for statesmen and technical advisers to the league of nations. Broadly speaking, it is beginning to quite clearly appear that our American population, professional, industrial and social, is fast becoming an army of commissioned officers with no privates to command—a great concourse of people qualified to say what shall be done and nobody to do it. The foundation principle of our citizenship, that every high place in our country shall be open to every American, seems to have over-reached itself, not as a principle but in the current application of it, which seems to be that because the going toward boss-ship is good, therefore everybody must be taught to boss and none to obey.

IS OBEDIENCE KEY TO RULING?

Darius and Parysatis got a job of ruling in Persia twenty-three hundred years ago. They were no great shakes morally or monarchically, but they did claim to have one great idea, or else Xenophon put it into them to make the first paragraph of his history look well. It does not matter now which it was, for the idea got ahead just the same. It was that a kinglet, if he is to know how to rule, must first learn how to obey. To Darius and Parysatis there were born two sons, Artaxerxes and Cyrus, and the way the parents lammed those kids around was a caution in Babylon. When the neighbors protested that the yells from the palace kept them awake nights Darius told them it was none of their unmentionable business, he was fixing up a couple of pawns for the king-row. And so Darius worked at it until neuritis got him in the right arm and then Parysatis took a turn and kept at it until she found she got so het up trouncing the kids that she always caught cold when she went out to the movies. And so the royal parents, strong in mistaken purpose but infirm in method, called in the neighbors and bound out the princes to them to work for board and clothes on the condition that they would make them obedient so that they would know how to command! History does not tell exactly what the neighbors did to the kids, but it does show that they grew up to be mighty poor kings in after years and busted up the kingdom in great shape. It may be claimed that they never had been successfully taught to obey because they surely did not know how to rule either themselves or others, and so Cyrus was killed in a war with his brother who was himself beaten to a treaty of peace with the Greeks. But we doubt the validity of such a claim. Darius was a chump because he let Parysatis rule him without first teaching her to obey and Parysatis was no lady—for reasons unfit for publication—and Xenophon's epigram does not make them either moral or educational philosophers.

LEARN TO RULE BY RULING.

It is a current indulgence of the modern cynics to claim that little in the line of country-building can be expected from the rising generation of American-born persons because they are not being taught to work as their grandparents were taught and, not having learned to work for others, they cannot work for themselves. It is not a new claim, for we heard it in our childhood, the third generation back, and still Americans have been going ahead ever since. This causes us to doubt the truth of the cynical philosophers of today, but it seems axiomatic enough that if Americans are to keep going ahead they must have something to go ahead with. It seems to have been a fact as far far back as we can remember that the effort to make American-born youth do common work when they could rig up some sort of a purchase by which they could get others to do common work for them, has not been a crowning success—though there have been plenty of industrial crowns for Americans who made others do their common work. This may be actually one of the reasons why American development has been so rapid and remarkable. There is a venturesomeness, an initiative, a genius for organization and projection of industry, and withal an ability in the use of hired labor in creative enterprise, which have constituted American youth not only creative in design but in achievement also. Agriculture has not figured in the popular mind as much of a field for such creative ability and yet it has always existed in this country. Of course there have been plenty of farms on which the boys stuck around the old man, plodding beside him, designing nothing and finally dividing his substance when he was called across—which is the usual European peasant way of getting ahead backwards. But only a small fraction of American progress was attained in that way. In most cases the young American farmer has married into some of the land that joined him and earned money enough to buy the rest, or else he has saved money enough to marry the girl of his choice and take her to new land farther west where there were no neighbors and created there an estate from which most of his children could make a new start for the farther west. In fact, most Americans have learned to work while working for themselves; and really an enterprise of one's own, either small or great, is the best agency or course of instruction in the world to teach a young man how to work to win a sweetheart and a fortune for himself. If Darius had not tried to subjugate his kids but had started them out to whale the Parthians or the Egyptians, they might have captured thrones of their own and he would not have had them hanging around his throne until they began to fight each other for possesssion of it!

AMERICANS NEED MORE HELP.

But someone may say: If it is true that Americans have always had this powerful impulsion toward boss-ship, which is now recognized as their ruling passion and purpose, how did they get their work done in the past: if they were always proprietors or foremen, who worked for them? That is easily answered: the newer Americans have always done the work. There has never been any demonstration of the length of time required to make an American. It used to be said in New York that it took just long enough to get a policeman's uniform on—but that was probably exceptional in speed and not an element in serious computation. There have been, however, times and places where five years of Americanization constituted a new-comer an old-settler, hiring newer comers like a lord, while those of two years have put a squad of yearlings to work for them, and yearlings have picked their help off the gang-plank! One of the remarkable things about Americanization is the speed with which it takes possession of a new-comer of proper parts and purposes: how soon he feels the patriotic thrill and gets the point of view of the grand old thing which blossomed in 1776 and has been ripening new fruits ever since. But to get the shock of Americanism one must be in contact with the live wires of it.

Speaking broadly, it may probably be truly said that the advancement of American industries has always been the product of the attractiveness of the American idea of equality of opportunity and of the American possession of natural resources which gave concrete value to opportunity. It is true that these forces have not always actuated immigration, for we have some millions who came rather to escape from something than to gain anything but respite. Such immigration has brought great burdens and dangers and problems to reduce them, but they have been in the past chiefly urban menaces. Until recently it has been claimed that country, air and open life have the power to immunize the body politic against the approach of pestilential un-Americanism, but there is surely a menace in it now in rural communities which must be guarded against in all possible ways.

It seems, however, just as true now as it has been in the past that the development of our resources and the pursuit of our producing industries of all kinds, which means the general prosperity of our people, depend upon an adequate supply of laborers and we see no provision for such supply except the continuance of the policy of the older Americans building their industries, large and small, upon the labor which newer Americans desire to provide for good wages which will enable them to live as Americans and finally to enter upon the possession of opportunities for themselves and their children in the old American way. With the strong bent of all Americans, both old and rather new, toward their own proprietary enterprises, it will not be possible in many years to grow enough men and women in this country who will be actuated only by a desire to work for others, to supply the help which all these growing proprietary enterprises require for their operation. Therefore it seems unavoidable that we must continue to secure such help by immigration of those who are of physical, mental and moral quality fit for Americanization. If we can supply American employers with laborers from abroad who are fit to follow their employers into the loyal citizenship of this country, development can continue in the future as it has in the past, but evidently immigration must be guarded by more stringent laws and exacting requirements than it has been heretofore.

A CONDITION AND A THEORY.

We are led to these reflections by an announcement and argument telegraphed from New York to the effect that as so many unattached foreigners are returning to Europe and taking much money from our savings banks to re-establish themselves in their old homes, we should do something to keep them in this country for their labor's sake and fasten them down upon American soil in some way. The following is a condensation of the proclamation:

"It is shown by recent statistics announced by customs house officials to the effect that the United States has so far lost more than 100,000 foreign-born citizens. One of the officials of the War Trade Board quotes assertions to the effect that about 5,000,000 foreign-born residents are making arrangements to leave for Europe this year or as soon as it is possible to obtain passage.

"Some students of the present movement believe that the drift toward Europe will not be checked unless an organized effort is made to settle more of our foreign-born population on farms. Some excellent suggestions have been made in this respect, one of them advocating the establishment by public or private endowment, of farming communities where expensive equipment could be owned in common and the use enjoyed by all.

"We take the stand that this country can well afford to lose those who prefer their native land to the United States, and who are more in accord with old world institutions than with our own. This, however, does not relieve us from the responsibility of attempting to impress upon our foreign-born population the merits of our political principles, and the desirability of American citizenship. At present we are in need of all our resources, both in the form of labor and accumu

lated savings, and any steps tending to promote legitimate sympathy on the part of our foreign-born residents with our national ideals will be well worth the effort."

EXACTLY THE WAY NOT TO DO IT.

We are surprised that any American should conceive of a scheme so undesirable as creating communities into which foreigners are to be herded for Americanization! Immigrants are already too much disposed to do that for themselves, by the aid of land-sellers and steamboat solicitors. What needs to be done is to break up that method of settlement. We already have in some parts of the country mass-settlements of foreigners, conducting business and education in their native languages, establishing soviet governments, propagating Bolshevism, hatching out broods of hyphenates and multiplying menaces to the existence of the very principles which have made America great! And yet the New York authority quoted above declares:

"It is a rather sad commentary on the resourcefulness of our philanthropists, with all the millions left to institutions of learning, research bureaus, hospitals, etc., that no one should have thought of establishing such a farming community."

Why should American philanthropists endow institutions for the maintenance and propagation of dangerous Europeanism? Co-operation among rural neighbors in old settlements and in development—settlements in the American style—is a grand thing both to secure supplies and to market products; but to promote "communities" or "communism," in the European sense of the words, is a menace to all our time-honored conceptions of American citizenship. Our newer Americans must be taught to rule as Americans by association of independent individuals for specific purposes, not taught to obey, along lines of European peasant-obedience—in the old time, obedience to landlords; in the present time, obedience to ruling demagogues.

CALIFORNIA NOT INVOLVED.

Fortunately, so far as we know, California will be free from the menace of promoted and established Europeanism. The land is too high-priced to meet the requirements of profits in low-grade colonization which immigration-promoters desire. The California spirit of enlightenment is too high, resolute and permeating to allow the isolation of European darkness. We have had groups and colonies of Europeans, but their personnel has been so conscientious and capable and too appreciative of the Americanization which they seek for their capital and their earnings, and for life-ideals for themselves and their children, to allow them to be led or driven into reproduction here of the conditions which they left their old homes to escape from. They earnestly desire something very different and they are developing it most rapidly and remarkably. The foreign group-settlements are among our most progressive, prosperous and desirable factors in the upbuilding of California, not only because they are industrious and accumulative of their savings for the improvement of their individual enterprises, but because they learn to speak our language as rapidly as possible, they build American schools, they organize co-operative establishments of self-determining individuals and not personally-conducted communes. They learn to rule by ruling—first, their own spirits upon the principle of fair play for all, and afterwards by participation in town, state and national ruling, as our laws provide. They add to the breadth and depth of our cosmopolitan Americanism, as the founders of the republic planned for all light-seeking Europeans to do. It is up to our national government to see to it that they and we are protected from certain lewd fellows of the baser sort who are gathering companies and setting all the country in an uproar—to put the case somewhat unscripturally in form, but preserving the spirit of the utterance. It is no wonder to us that our philanthropists do not see in isolated communities of Europeans anything which can tend to build up this country. They are not blind on that side. They see too much to think of doing it.

California Weather Record.

The following rainfall and temperature record is furnished the Pacific Rural Press by the United States Department of Agriculture Weather Bureau at San Francisco for the week ending May 13, 1919.

Stations—	Rainfall: Past Week	Rainfall: Seasonal To Date	Rainfall: Normal To Date	Temperature: Highest	Temperature: Lowest
Arcata	.07	38.25	13.66	58	42
Red Bluff	0	26.16	24.00	88	50
Sacramento	0	17.19	19.58	86	48
San Francisco	0	25.64	21.73	70	49
San Jose	0	18.86	16.34	82	47
Stockton	0	6.80	9.33	90	48
San Luis Obispo	0	17.90	19.96	82	42
Los Angeles	0	8.40	15.39	74	50
San Diego	.04	8.23	9.78	66	54
Independence	0	6.30	7.19	78	34
Fresno	0	8.46	9.88	80	42
Yuma	0	4.84	9.03	76	40

QUERIES AND REPLIES

By the Editor.

Inquirer Must Give Full Name and Address.

Tear-Stains on Orange Leaves.

To the Editor: A friend of mine owning a small orchard is concerned over the appearance of some badly blighted leaves on about half a dozen trees in one corner of his orchard. I enclose a few leaves for your inspection. Will you kindly diagnose the case and suggest a remedy.—S. G. L., Orland.

The leaves show what is sometimes called "tear stain"—not that anybody has been weeping over the foliage, but a stain or discoloration affecting the tissue next to a tear or some other mechanical injury to the leaf. The fungus destroying this tissue takes the advantage of such a wound to get its work in and is able to invade surrounding normal tissue to some extent—usually not large—withering and discoloring the parts which it invades. It is thought to follow frost injury or wind-whipping of the leaves or the laceration caused by a biting animal or insect. The organism is related to those causing the disease known as anthracnose but is not of aggressive force or disposition and so far has not been thought worth fighting or worrying about, though it has been suspected of connection with spotting of citrus fruits in storage. If the leaves get on your friend's nerves tell him to pull them off and forget about it.

Curl Leaf Occurrence.

To the Editor: Have you any remedy or preventive for curly leaf on peach, apricot and pear trees?—F. R. K., Martinez.

The fungus which causes the disease of the peach called "curl leaf" does not attack the apricot or the pear. If you have leaves curling on those trees it is due to some other cause and that cause must be ascertained before treatment can be intelligently prescribed. The most orderly accepted treatment for curl leaf of the peach is preventive by killing the germs on the bark, before the leaves appear, with a spray of lime-sulphur applied when the buds are swelling but not yet opened. At that time a winter strength of 1 to 10 can be safely used. Treatment after the leaves are curled is not undertaken. If the leaves are only partly curled the injury will be slight and the fruit may not be lost. If the leaves are largely curled the fruit may be lost but the trees will save themselves with new leaves. It is seldom that the trees are killed or permanently injured. The disease will disappear later in the season and not reappear until next spring. It is this reappearance which you must spray to prevent.

Peach Moth on Almond.

To the Editor: Our two-year-old almond orchard suffered a bad attack of the twig borers this spring. The new foliage is out again and the borer has about ceased to work. However, as protection against further attack this summer, we are prompted to spray with lime-sulphur if you would give the information as to the strength and time to be applied this summer. We neglected to spray when the buds were just opening and so the borer got in its work in good shape and to our sorrow, needless to say.—E. L. M., Chico.

Lime-sulphur can be safely used 1 to 50 on foliage, but we do not know of spraying for peach moth after the hibernating worms have dug themselves into the new growth. They have been known to come out again as early as the last week in May and to continue emerging through June and into July. Just when to hit them is therefore doubtful, after you have lost the chance to get them at their first rush just before and during blooming time. If spraying is done then and lime-sulphur 1 to 10 is thrown with force in the forkings and other rough bark shelters, whence they are emerging, it is usually so effective that later treatments are not thought of. Probably you will have to take whatever is coming to you this year.

Just the Job for You

Satisfied with your present work? Feel capable of earning more? Like to travel and be in the great out-of-doors? Enjoy interviewing people and putting things across?

If so, we have a good position to offer you in our circulation department, attending to renewals and getting new subscribers. No investment necessary except that you must have an automobile.

Permanent work; straight salary, with advancement. Write us a little about yourself and we'll tell you about this opportunity that you can't afford to overlook.

The Baffling Bird Business.

To the Editor: When my Imperial prune trees were blooming the linnets and sparrows picked the bloom and did much damage. They came in large flocks from a nearby madrone grove where they roost and nest. What can I do to destroy them? Can I poison them?—F. J. K., Healdsburg.

We have said many times that we know no easy and satisfactory answer to this question. Many things have been recommended by a few people and abandoned as useless by many. Drinking water poisoned with strychnine, corn meal poisoned in the same way, grain poisoned as if for squirrels have all been commended when placed in receptacles on top of high posts, out of reach of fowls, etc. Cut apples with strychnine pricked into their pulp and placed on twig ends in the trees have also been praised and condemned. After trying out such poisons growers generally get boys, guns and cartridges of bird shot and turn them all loose on the birds, but they do not long continue the treatment. Most growers have concluded that the only attitude toward the bird injury is to grin and bear it—but even this is not perfectly satisfactory.

Suckering Almond Trees.

To the Editor: Is it a good plan to sucker almond trees, or is it better to save the sap that the young shoots have and cut off at the time of pruning in the winter? Should suckering be done above the crotch. The first limbs above the crotch, inside and outside, will produce nuts in the earlier years of the tree, but is it better on the whole to allow no shoots to continue at the crotch or a short distance above?—R. D., Stockton.

It is desirable to check the growth of shoots which break out strongly and promise to make branches where they are not wanted and by their wild growth to depress growth where it is desired for the proper shaping of the frame work of the tree. There is nothing saved by allowing a tree to have its own wrong way for the sake of cutting it off later. However leaf growth is desirable along branches which you wish to make strong—therefore it is desirable to pinch the tips of shoots to take the headstrong conceit of them and force them to make small laterals and bear early. It is not better to clean off the growth either above the crotch, or below it, but you should see to it that it does not have its own way but yours.

Only Winter Pasturage.

To the Editor: On forty acres of rolling land on the east side of the bay north of Berkeley, mostly adobe but about fifteen acres of heavy loam, what could best be produced to make it pay most revenue—aside from field crops? If cows and hogs are maintained what number of each could be most economically fed under average conditions?—Subscriber, El Cerrito.

Without growing field crops suitable for feeding when the pasturage fails in the dry season, such dry upland will give you nothing but winter pasturage which might keep half a dozen cows busy for three or four months, if the rainfall is good. If other feeds are supplied it would serve as a recreation ground for quite a lot of hogs all the year—the number depending upon how much feed you hauled to them. To get anything more than winter pasturage the land would have to be farmed or used simply as a feed lot.

San Jose Scale on Almond.

To the Editor: I send an infested branch of almond, that I found in a neighboring orchard. The entire body of the tree was heavily coated with it.—L. H. E., Oakley.

It is a bad case of San Jose scale.

A Rural Vision of Soil Science

Written for Pacific Rural Press by Albert F. Etter, of Ettersburg, Humboldt County.

A SCHOOLBOY defining the difference between a farmer and an agriculturist, said: "A farmer is a man who plows, sows and reaps, while an agriculturist is one who knows and does everything necessary to his land and seed to get big crops." The aptness of this definition in differentiating farming from agriculture is that too many farmers go no deeper than the boy's definition indicates: the "a b c" of farming. To this class of farmers, the field is but a place to toil, the crop, something to cash in to buy necessaries of life and to buy a little fun. Nature spread out before him is as little understood as is fine music by a savage. He cannot say, like the immortal Shakespeare: "In Nature's infinite book of secrecy, a few things I can read," because his mind is somewhere else. His life's labor is a long-drawn-out span of drudgery, and the fascination of Nature's ways is a sealed book to him.

An Early Lesson.

Turning from philosophy to facts, one of the early lessons I had hammered into my head was administered by a son of Scotland, and with that strength characteristic of the Scotch, I was hoeing corn with him, or rather he was hoeing corn in his row and I was killing weeds in my row. That is, I was skimming the surface, cutting the weeds close on the surface so they would wither and die, while he was hoeing about four inches deep and apparently paying no attention whatever as to the fate of the weeds. He rebuked me by saying: "Burn the weeds, hoe the corn, and keep the ground alive, and the corn will soon grow up and smother the weeds." That proved right, for that corn did grow up. It grew 12 to 14 feet high and smothered everything.

This was my first introduction to bacterial life in the soil, the foundation of agriculture. Before that I thought that a wagonload of manure added to the soil was intended to increase its fertility only as $10.50 added to one's bank account increased it that much in dollars and cents.

Turning a Page in the Book of Nature.

Now the secret was unfolded to me that the principal business of a farmer was to grow bacteria in his soil, and his crops would take care of themselves, as it were. I realized what bacteria were, and how they were increased in the soil, in a vague sort of a way. I saw why some farmers produced good crops and why some "ne'er-do-wells." But when I undertook to farm the characteristic tan-oak sour soil here at Ettersburg, I found some mighty perplexing problems on my hands. Nature seemingly had tied the resources of the country into several hard knots that I was able to loosen slightly but could not untie.

As I look backward, I am struck by how little we really are able to read in Nature's wonderful Book of Secrecy, even when the book is wide open before us. It also strikes me that books and professors know only what is printed in them, or what has been worked out, and that it is not above some men who are not in the teaching class to solve obscure problems for themselves.

The Professor Says Lime. Then What?

I asked Dr. Hilgard what would make this type of land produce. He said: "Lime and plenty of it." But it was wrong, and lime would not cut the knot. Looking forward, how perplexing; looking backward, how easy. The key to it found, and the seemingly knotty snarls are the fascinating tracings in a page of Nature's book as easily read as is hieroglyphics chiseled on the face of a stone when one has the key to it.

Long before the white men came, the Indians called the river which drains this region "Mattole," or translated into plain English, "Crystal Water," a name well bestowed because the Mattole is noted for its clear water. But why? Bacteria are like jelly fish, only smaller, and they retard settling of foreign materials in the water when they are numerous in it. But how came it to pass that this whole region should have been, or became, deficient in bacterial life in the soil?

Like Plant, Like Farmer.

Any man can grow good crops on land abundantly supplied with bacteria, but the longer some farmers farm a piece of land, the less bacteria they have in the soil. On the other hand, the longer some plants grow on a soil the poorer it gets. Or, in plainer language, the less bacteria the soil contains. Getting up closer to the subject, some families of plants are splendid farmers to promote bacterial life in the soil, and some other families are poverty breeders.

The characteristic sour tan-oak soils in this region have been "farmed" for generations almost entirely by four families of plants, viz.: the Ericaceae, including madrone, manzanita, salal, and huckleberry, the tan-oak and mountain live-oak of the oak family, the Douglas fir and the caeanothus family.

The ericas and oaks mentioned above are notoriously poor bacteria farmers, the Douglas fir is tolerant or neutral, and the caeanothus family are good soil builders and enrich the land where they grow.

Vision Cleared by Vinegar.

In making vinegar, I unfortunately got the acetic bacteria working too soon in a 1000-gallon tank of apple cider and the result was that the fermentation was headed off and the alcohol already formed converted into vinegar. Since the fermentative bacteria could not work in the presence of the acid, and the acetic bacteria could only consume the alcohol, I had 1000 gallons of pickled apple juice of no particular value.

This illumination gives a flood of light on the methods of the four ericas mentioned, and the tan-oak and mountain live-oak have in depleting the bacterial life in the soil where they grow.

As the matured leaves filled with tannic acid are cast, the rains leach the acid into the soil. Gradually, slowly but surely, fermentation ceases, and a mould permeates a stratum of soil between the surface and the subsoil, forming an effectual barrier to intruders of other families. Thus is brought about the aspect of the flora in this region in the oak forests—the only undergrowth being huckleberry and salal, if any at all be present. Noteworthy, too, is the fact that all seedlings first of all root straight down through this mouldy stratum.

I would point out first: that a soil overcharged with acid is not necessarily deficient in lime; and secondly: that lime applied is exceedingly slow if at all able to develop the necessary bacterial life in the soil; and thirdly: that this soil, when bacterialized, is able to become very productive without any dressing of lime at all. While I still admit that lime is helpful with plentiful bacteria introduced, yet it is impotent of itself.

Another aspect of the situation is this: Soils having a superabundance of bacteria, are mellow and finely divided. Soils depleted in bacteria are, in the lapse of time, slowly granulated, even though once having been finely divided alluvial soil. Upon the introduction of plentiful bacteria, those granules are broken down and the soil again becomes finely divided loam.

Again we will notice in the most typical class of these sour and mouldy soils of the oak forest that there is no darker and bacterialized surface layer of soil a few inches in depth, but to all appearance, the subsoil comes quite to the surface. Then there are other favored spots far from the influence of ericas or oaks that are as a healthy normal soil should be, having a dark surface soil and a rich covering of grass.

Then we take another view at an angle too little appreciated—that of earthworms. In the type of good soil just mentioned, angleworms are numerous. Through their work the soil is brought to the surface and cast. In the lapse of many years a distinct layer of surface soil is created quite free of coarse particles. As we follow this line of investigation from the best soil to poor and the worst, we find the worms fewer and fewer in the soil and evidence of his work less and less, the comparison really running hand-in-glove fashion all the way through. This is not an accident but a true line. The earthworm does not find acid soil congenial, yet Darwin tells us that when an earthworm eats acid soil he casts it as neutral. But it is likely that the earthworm does not find congenial food in harsh half-decayed erica, oak and fir leaves, soft, easily rotted leaves and entirely wanting in these soils.

Reversing Gears on Nature.

Here are all the "Lines of Nature" laid bare so that he who reads may run. Here is a case where the "poor farmers of Nature" have made a bad mess of it and changed the whole aspect of the region. Though we have summed up the causes and effects, is it possible to lay out a a method of proceeding to reverse gears on Nature's way and get the soil back to fertility and richness?

This is one of the problems we have been working on at Ettersburg for many years, and now are able to report as well on the road to complete success. You can't feed an angleworm with a spoon, neither is that the logical point to begin at. Bacteria to plant in the soil and therein to increase them by millions until the whole soil is a living mass of soil bacteria, is what we want. The baker puts a small quantity of yeast in a batch of dough, and at a proper temperature in a few hours it becomes all a living mass of bacteria. We follow the same lines, and by putting only a moderate dressing of goat manure on the land and properly cultivating it, in a month one can see the soil turning darker every week, and a year or two later one would scarcely recognize it as the same soil. The angleworm now finds everything to his liking and goes about increasing and multiplying and doing his beneficial and neutralizing work. Winter weeds grow in a heavy mat on the ground to furnish food for both bacteria and worm. Land once as poor as a pile of sand is now rich as a garden.

The first thing is to get the manure. This we find possible to get from a flock of Angora and Toggenberg goats and sheep. These are shedded every night, winter and summer. During the summer this manure becomes quite dry, but in the winter it all becomes moist and when hauled on the land in the Spring it is like yeast filled with bacteria. It is not spread on the land and plowed under, but plowed first, and then spread on the plowed ground, harrowed in and floated down. In a week or so it is again harrowed and floated down. The soil is nice and warm and the whole process works out similar to yeast in a baker's sponge.

The feed of the goats and sheep is from range grasses and browse—tan-oak sprouts, madrone, etc., the very plants that made the land poor. In the winter this is supplemented with lentil hay, a highly nitrogeneous food, which, of course, is very desirable to make a rich bacterial manure.

I am certain we will prove the locust tree a wonderful agent in the work. It goes so deep in the soil and, like the lentil, is one of the few legumes that will take hold of the type of soil. It will furnish abundant forage in summer if fed to the stock or, even if left to cast its leaves, they in themselves enrich the soil like a crop of clover decaying on the ground.

The mould permeating the soil overcome by the bacterial life added to the soil; decaying, it gives back to the soil the substance it has been hoarding in its own body.

The moral to this story is: Learn to read Nature—not a few lines, but a whole page.

British trade restrictions have been removed from dried fruit.

Dr. Lipman's Kindly Criticism.

To the Editor: At your request I have read Mr. Etter's manuscript with the deep interest I always feel in his writings. His argument for a more intelligent agriculture and his claims that the farmer will get more joy as well as more profit from the fuller intellectualization of his pursuit is sound and particularly valuable as it is approached from the practical rather than from the academic point of view, and it should stimulate all whose lives are cast on the practical side to fuller determination to observe carefully and think deeply upon the natural prenomena with which they are in daily contact. I presume, however, you desire me to speak of his statements concerning the relations of natural agencies to soil fertility.

That a vigorous bacterial flora is in some way connected with fertility in soils is, of course, assumed at the present time by most soil scientists; that animal manures help to build up such a vigorous flora is also admitted by them; that certain plants only thrive on what are considered good crop soils and others only on poor crop soils, forms the basis of much of the work of the modern plant ecologist;—but none of these subjects has been studied more than superficially to date and we are far from being able to correlate the various factors belonging with each one of them to a point whereby we can make the broad generalizations which Etter makes. On the other hand, I believe that Etter is entirely correct in stating that the liming of his soil, which has always been recommended by this experiment station, may only in part, or not all, overcome the poor crop producing power of that soil when first cleared of forest trees. My own opinion, which is based on many studies, but is merely offered as an opinion and not as a fact, is that in such cases we are dealing with toxic organic substances produced from the decay of peculiar organic compounds contained in the leaves and twigs of the natural plant associations which occur on the lands in question. If this should be so, it is, of course, plain that liming could not cure the difficulty. Only insofar as the acidity of that soil interferes with normal growth in one way or another, would the liming affect it. The other factor which I have mentioned would still limit, if it was found in sufficient quantity, the normal growth of crops.

I take it that you do not wish me to discuss in detail the broad questions raised by Etter, but if you do, I shall be glad to go into the matter more fully for you. In general, I may say, with all due respect, that Mr. Etter's statements must be regarded at the moment, at least, as mostly fanciful, inasmuch as they constitute opinions that are not supported by facts drawn from systematic research and careful experiment.

CHAS. B. LIPMAN.

[We shall await with keen interest the fuller discussion of fertilizer propositions which Dr. Lipman will undertake. The way the subject rises to the attention of our readers through Mr. Etter's initiative will increase popular interest in the latest and most dramatic phases of modern soil science.—Editor.]

Notes on the Big Tractor Demonstration.

(Written for Pacific Rural Press by R. E. Hodges.)

More Kerosene Burning Tractors.

Since the recent advances in distillate prices the kerosene-burning tractors built for middle western conditions where distillate is unknown, are reaping an advantage in being ready for the present lower price of kerosene. However, it was notable that most of the tractors burned distillate at the Demonstration.

New Tractors of Wheel Type.

All of the new tractors on the Demonstration grounds were of the wheel type, as might be expected, because they are mostly of Eastern makes.

Magneto Ignition Popular.

It is getting to be not a question whether a tractor should be equipped with magneto or battery ignition, but which magneto is most desirable.

Lauson Tractor Self-Starter.

Just touch a button and the Lauson tractor whirrs softly into action. No more problem of cranking your head off! The De Laval people are just in receipt of the Christensen self-starters, which are installed when ordered on their Lauson tractors. The engine, while running, may be connected to an air compressor, which pumps the air tank to about 200 pounds pressure for normal work or 250 pounds when the tractor is new and stiff or the weather is cold. This forces a gas mixture into the cylinders under compression and a touch of the button ignites it.

Sixteen Valve Twin City Tractor.

Plenty of deliveries are now assured for the Twin City 16-valve four cylinder 12-20 tractors being handled in the West by the Frank O. Renstrom Company of San Francisco. This model was used with satisfaction and pride, pulling three fourteen-inch moldboards in the general demonstrations. Wm. Swedberg was out from the factory at Minneapolis. The Belt Rail tractor, handled by the same firm fell while being unloaded from a truck at the demonstration field, so the Twin City did the work of both.

New Oliver Plows.

Howard Seely, manager of the tractor plow department of the Oliver Chilled Plow Works at South Bend, Indiana, was a Sacramento demonstration visitor. Mr. Seely mentions several new types of Oliver plows, built especially for California conditions, and soon to be on the market here. One is an orchard plow and another is built for specially hard soil.

One-Man Tractor-Mower.

More responsive and more easily handled than a pair of horses was the Moline tractor with which O. B. Thomas mowed the volunteer grain around his tent at the Demonstration field. An eight-foot sickle handled as easily as that on any common mower, and ten-foot sickles are provided for those who want them. The tractor has nine horsepower at the drawbar, so there is an excess for any such work. Mr. Thomas rode on the mower, picked up the sickle and backed up and cut around posts with admirable certainty. Apparently it would work as well as any team on a hillside.

Dustless Hub Caps for Sanduskies.

"You wouldn't guess the worst trouble we have found on Sandusky tractors," said A. E. Vandercook of Vandercook & Meng, who handle this machine from Sacramento northward. "Dirt used to fall from the wheel rims and work under the hub caps. There it would grind the axles. We just recently found a man who said his Sandusky was powerful hard to turn. With the axles worn, the front wheels wobbled, and threw a strain into the driver. New hub caps are now being provided free of charge to all Sandusky users. These are so designed that no dirt can get to the bronze bearings of the wheels."

Huber Tractors Established in Cal.

Fred A. Bennett and E. F. Peer form the newly installed Huber Tractor Sales Co. of Los Angeles and Oakland. Huber Company's steam tractors were first built over 40 years ago. Their gas tractors, first shown in California at the Sacramento demonstration, are the result of intervening years of farm experience and gas engineering. J. M. Newby of the Huber factory at Marion, Ohio, came to Sacramento to see that the tractor was properly handled at the demonstration.

Farm Elevator for Bulk Grain.

The first exhibit seen by visitors at the Sacramento Demonstration was a working illustration of how much easier it is to let machinery handle grain in bulk. The California Corrugated Culvert Co. had erected a 1200 bushel metal grain bin. The John Deere Plow Company had supplied two grain wagons, one of 150 bushels capacity and one of 100 bushels capacity, loaded with grain. The front end of this was hoisted into the air by ropes over the hubs and through pulleys in a light derrick set for the purpose. The ropes were wound on a hand windlass to lift the wagon to a 45-degree angle; but an attachment is available so it could be worked by the engine. The rear end of the wagon opened by a slide door and the grain ran a steady stream into a hopper trough containing a screw conveyor along its bottom. This dumped grain into a "Pony tubular elevator," supplied by the Deere Company. The elevator rested on a wheeled truck along with an engine which operated the chain-and-disk conveyor whose capacity was 15 bushels per minute, dumping into the grain bin. Two and a half horsepower were more than enough for this job. The elevator, which was built for farm work, hinged at its lower end on the truck and was raised or lowered by pulling an arm under it more or less vertical. A rolling spool on the upper end of the arm supported the elevator. Normally in unloading the bin into wagons, the same hopper would be set beside the bin and the same elevator would empty into wagons. At the Demonstration two elevators were used so a stream of grain ran constantly from wagon into bin and back again.

Woman Moves Over Twelve Tons at Once.

A slight frail woman moved a few levers which set in motion a 23,500-pound Caterpillar, and with the force of 40 horsepower pulled a giant five-standard Killefer subsoiler eighteen inches deep through hitherto undisturbed dry hardpan. It took a husky man to lower and raise the subsoil standards by means of a big hand wheel and screw.

Threshes Grain Out of Pine Plank.

A noisy "Yellow Kid" Avery thresher periodically undertook to thresh the grain out of a 2x12-inch pine plank shoved under its cylinder by two men. It chawed the ends off the plank ferociously and we were told it was just as hungry for three-inch oak plank. There was a standing offer of $1 each for any broken teeth which spectators might find from the cylinder or concaves. They are of steel with hard faces.

Tractors Run Alfalfa Cutters.

A 26-inch Smalley alfalfa cutter attracted attention to the Pacific Implement Company's tent at intervals by chopping weedy alfalfa into fine feed and blowing it to an overhead hopper, whence it was sacked by two men. The cutter was run by a Rumely 16-30 tractor burning "stove tops," which cost 6½ cents per gallon. The tractor was pretty sleepy on the job for it was using only a third of its power. An eight-inch Smalley cutter was run by a 5-10 Avery tractor using less than half its power; and a Samson tractor with the new G. M. C. equipment operated another larger alfalfa machine.

I. H. C. Buys P. & O. Plow Works.

The well and favorably known Parlin & Orendorf line of plows, manufactured at Canton, Ill, and heretofore distributed in California by the Baker, Hamilton & Pacific Co., has been purchased by the International Harvester Co., according to Manager W. G. Criswell of the Harvester Company's San Francisco branch. Messrs. Parlin and Orendorf, who had retained active management of this great business, have progressed far enough in life so that they are entitled to less strenuous days ahead. Their establishment was the outgrowth of a blacksmith shop started in 1842 by Wm. Parlin. As President Harold F. McCormick of the I. H. C. said, the purchase of the manufacturing plant and business of the P. & O. plow works, adds to the I. H. C. the one important farm implement not heretofore handled by that company, and enables farmers now to buy their entire equipment of tillage, planting, and harvesting implements from one house. The company has 88 branch houses, while the P. & O. had only

(Continued on page 766.)

TRACTOR DEMONSTRATIONS IN U. S.

The National Tractor Demonstration and smaller ones are held under the auspices of the Tractor and Thresher Section of the National Implement and Vehicle Association. This Association covers the U. S. very thoroughly as a manufacturers' and dealers' organization in the lines named. It is composed of separate sections, including wagons, silage machinery, plows, etc., etc. The Tractor and Thresher Section has appointed a Demonstration Committee, which has supervising control of the big demonstrations. Vice-president E. J. Gittins of the J. I. Case Threshing Machine Co. was chairman of this committee last year and was reappointed for the present season. He was an enthusiastic visitor at the California Tractor and Implement Demonstration near Sacramento, May 6 to 11.

Only one National demonstration will be held in 1919 according to Mr. Gittins. That will occur at Wichita, Kansas, during the week of July 21. Various tests are made of tractors and implements at this demonstration which are not attempted at the "regional" demonstrations, of which ours at Sacramento is one.

Already three regional demonstrations have been held this season: one at Macon, Georgia, in March, one in Walla Walla, Washington, in April, and the one at Sacramento. There will be one at Denver in June, one in Aberdeen, S. D., late in August, one in Southern California about that time, and probably one in the East at a place not yet designated.

Each of these demonstrations is "sanctioned" by the National Association's Demonstration Committee. The "sanction" is simply permission for members to take part. There is no penalty of a material nature if members take part in unsanctioned demonstrations, but they seldom do this. They ask the Demonstration Committee if a proposed demonstration is sanctioned, and if not, they seldom care to undertake the expense and time. If it is sanctioned, they know that practically all the others will be there and of course each one wants to be represented. Such being the case, the public understands it will be a representative exhibition and crowds attend.

The aim of the National Implement and Vehicle Association and its Sections, as stated by Mr. Gittins, is not to have anything to do with prices or the financing of buyers or dealers, but is to eliminate the evils of old-time cut-throat competition, which resulted in all sorts of tricks and inferior service as well as hardship on those least able financially to fight. Its get-together meetings in conventions and demonstrations promote the welfare of all, including farmers who need the best implements and the best service.



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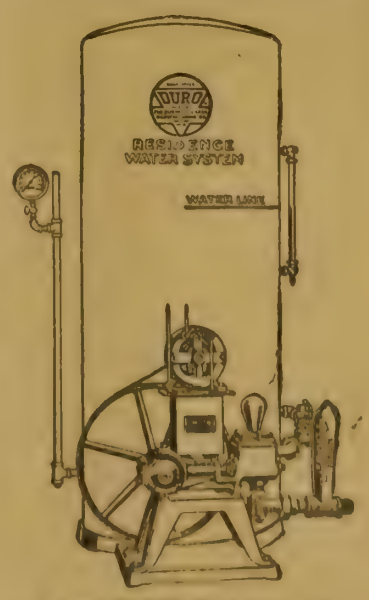
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The Hollister Area as a Fruit Center

(Written for Pacific Rural Press by Jno. J. Fox.)

Twelve or fifteen years ago when Hollister was mentioned we immediately thought of hay, grain, alfalfa, dairying, hogs and stock. The area devoted to fruit was of minor importance. Hollister furnished such quantities of meat, fodder and garden seeds and much of the land was in such large holdings that the fruit idea took some time to mature.

Moreover everybody knows how difficult it is to change a stockman, a dairyman or a grain farmer who has been accustomed to working on a large acreage scale. The raising of fruit looks like a rather puttering sort of a game to him. There is no room to swing a big team on the end of a jerk-line without hitting a tree. And besides, he knows nothing about it. His hogs, sheep, cattle, alfalfa and dairy produce is driven or hauled to a shipping point, put on the scale and he knows just about what he is going to get for them, whether the market be high or low. But the spraying, pruning, orchard care; this picking, curing, packing, and harvesting of unknown fruits daunts him until he sees what other men are making from their fruit acreage and then he begins to look into things.

He finds that the interest on high priced land under average conditions is not to be made by raising hay and grain. He must either sell his best land to those men who are willing to pay the price or go into the business himself. And sooner or later he takes the plunge.

Several of the best and most successful orchardists known to the writer are ex-livestock men. They have started by getting the best advice obtainable, planting tree varieties that have been proven in their locality and studying their new craft through every channel provided by science, experience and successful practice. They were already adept in handling the soil and well posted on the value of manure and other fertilizers and their accumulated knowledge is easily adapted and applied. They figure out that if a good tilth and painstaking cultivation increases the volume and value of their crops of corn, beans, beets, etc., it will affect the vigor of the trees in like manner. They study the best information obtainable that has a daily bearing on their new profession and take pains to verify new ideas but let the other fellow experiment.

Large Holdings on New Ground.

New orchards of generous acreage are being planted out or coming into bearing north and east of Hollister in the Fairview and Ausaymas districts and towards Pacheco Pass. In this fruitful valley leading to the Pass there are some very substantial holdings, owned by men who have realized values and who are conducting the business of building up these new orchards under the best conditions. The soil is there and the climate. The owners supply the best help and management they can obtain. The Bisceglia Bros. of San Jose have 60 acres in pears we were told and 200 acres in fruit. Adjacent, the D. Pyle Company of San Jose have 100 acres in pears, prunes and peaches. We drove down between several of these young orchards—more to take tent of their pruning, growth and general management than anything else. We found most of the big men following the latest lines in pruning their young trees and some interesting experiments are being carried out here on newly bearing trees by Leonard H. Day, the Horticultural Commissioner, amongst new growers—some of whom are men from Missouri. Mr. Day has practiced the system of pruning himself for four years or more and has good results to show on his own trees.

Pruning Young Pears.

One large orchard we entered belongs to the Lester Bros. of Gilroy, who have 300 acres here set to prunes, apricots and pears. Our attention was particularly directed to some three and four year old pear trees which had been built without the severe cutting back, and were not pruned at all this year with the exception of some very conservative thinning. Lateral growth had developed to make very uniform and symmetrical heads. Plenty of spurs were formed on the main stems and some bunches of bloom showed.

Eliminating Centers.

On all trees one or two or more central stems were running away and will be left probably till next year and then, the chances are they will be taken out to the strongest or best placed lateral. In this way the trees will be left in fine open shape and the elimination of the two-year-old wood will not be harmful. The laterals will be forming fruit spurs and the trees ready to bear a commercial crop in their sixth year if the gods will it. The trees are low-headed and are branched in a way impossible to obtain easily by severe cutting for four years. For we all know how straight up the Bartletts persist in growing under the old system. How we have tried to keep them spread with corn cobs and little wooden struts and by wedging. Obtaining a bearing tree on the system we saw being practiced here means getting a larger and more symmetrical tree in a shorter time and earlier fruiting.

Cross Pollination of Pears.

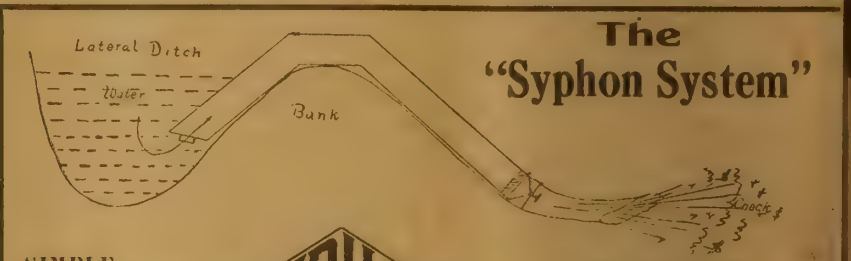
In the Fairview section among the "coming" orchards are those belonging to Martin Luther—a name that history connects with a personality that was masterful, thoughtful and persistent. These orchards comprise some 200 acres of bottom land and all the trees are young. The 60 acres of pears are set for the best advantage of cross pollination—all commercial varieties. The Bartlett is the leading variety, Mr. Day told us, and the others are Glout Morceau, Buerre Hardy (said to be one of the strongest pollinators), Winter Nelis, and Buerre d'Anjou. The trees—of all varieties—here are being given careful attention in the pruning and management. The soil is strong enough to intercrop for several years if needed. There are also 40 acres of walnuts three years old, and 20 acres of prunes trained on the newest scientific system, 30 acres of cling peaches have been set out. Adjacent to Mr. Luther on the west and north are some of the

Morse Seed Company's Farms.

This company, whose seeds are distributed all over the world, has some 3,000 acres in the Hollister and San Juan districts—all devoted to the raising of seeds. The main ranch is 2¼ miles long in one strip of 900 acres. This place has nothing to do with our heading of "Hollister as a Fruit Center," but it gives an idea of the quality of the soil used for fruit in this section. For high-class seeds demand a soil of good bottom and this is all alluvial and deep. Anyway we could not pass by a place of such importance to Hollister and to agriculture without mentioning it. We asked if their plantings in any one thing had been increased or reduced by conditions in Europe and were told, "No. We have about the same acreage of everything as usual—making a specialty of radish in the San Juan and lettuce at Hollister and San Felipe. Otherwise our carrots, turnips, parsnips, onions and all other seeds are about normal. There is one notable exception. Our foreign orders include those of beet seed for Europe to whom we have been accustomed to look for seed on this side. Of course, we don't expect it to last, but the fact remains that California is growing beet seed for Europe."

The soil here is all alluvial and rarely needs irrigation. But in case of need the company has wells and a pumping plant on the estate at Hollister that will raise 1500 gallons a minute. The water is piped and gates are stationed so that it can be applied anywhere if needed.







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The Palomino Grape--Best of 7,000

(Written for Pacific Rural Press by Prof. Frederic T. Bioletti.)

RECORD OF CROPS OF THE PALOMINO.

		Tons Per Acre	Sugar Per cent.
Kearney, ungrafted	1915	9.919	25
" "	1916	14.524	26
" "	1917	10.325	24
Davis, ungrafted	1915	11.075	26
" "	1916	14.181	25
" "	1917	7.175	
" "	1918	8.556	
" grafted on 420-A	1915-1917	16.551	24.1
" " " 3309	1915-1917	10.257	26.0
" " " 3306	1915-1917	8.781	25.6
" " " St. George	1915-1917	3.171	26.5

In the last four entries the figures are averages for the three years ...icated.

If the prohibitionists with the gen...osity of victors will allow us to re...in one wine grape, my choice is the ...alomino. It combines more points of excellence than perhaps any other of the seven thousand named and listed varieties of grapes.

While perhaps not the best grape for any single purpose it is an excellent grape for nearly every purpose. As a table grape for home use, its delicate flavor, crisp texture, large, well-filled bunches, and beautiful golden color make it difficult to excel. Its firmness and freedom from decay make it suitable for packing and shipment. As a market grape it is unexcelled in keeping qualities by any variety of equal eating quality.

As a wine grape it is the best variety, grown largely in California for sweet sherry and angelica. It makes a very good wine of Sauterne type, and while not of the highest quality for this purpose, it blends excellently with the Semillon and the other fine Sauterne varieties.

For drying it is perhaps the best variety we have outside of the standard raisin grapes; a little smaller than the Feher Szagos and Malaga but of better quality. Its sugar contents have averaged 25 degrees Balling at Kearney and 24 degrees Balling at Davis.

The quality of its fruit is excelled by its quantity. Its crops are heavy and regular. At the Kearney Experiment Vineyard, its crops have averaged 11.59 tons per acre. At Davis, the average crop of ungrafted vines for four years has been 10:25 tons per acre; and its average on seven resistant stocks, 7.78 tons per acre. Its average yield of dried grapes has been 3.59 tons at Kearney.

It is not at all difficult to suit in the matters of soil or climate. It does well in any soil, sandy or heavy, that will give good results with any grape. It bears well and ripens its crop in the coolest vineyard districts of the coast and the hottest parts of the interior.

It is so amenable to the purposes and whims of the vineyardist that it is a pleasure to grow it.

It is a strong, clean grower, easily trained to any desired form. For this reason, it makes an excellent arbor vine. It bears full crops with the simplest form of short pruning. It produces few suckers, water sprouts, or laterals, and is pruned easily, rapidly, and cheaply. It is very free from diseases of all kinds and matures its crop and wood well.

The original home of the Palomino is in the Xeres district of southern Spain, where it is the principal ingredient in the bulk of the sherries produced there. It is one of the principal white grapes of South Africa, where it is known as the "White French." In France it is called the "Listan." It is grown in considerable quantities in Napa, Sonoma, and in the interior valleys, usually under the misleading and incorrect name of "Napa Golden Chasselas." The "Golden Chasselas" or "Sweetwater" is a totally different grape.

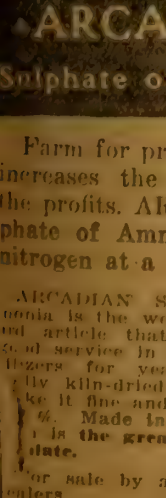
Another good quality of this variety is the ease with which it is propagated. The wood is nearly always good and roots readily. It also makes excellent unions with resistant stocks and bears well grafted.

It is also a good stock to graft on if it becomes necessary to change the variety. Its clean, straight, vigorous underground stem is ideal for grafting. Of eleven varieties of wine grapes grafted with Muscat at the Kearney Experiment Vineyard, it gave the best results in number of successful unions, the development of the grafts, and the size of the first crop.

Its only fault is that it is irritating to see so many perfections in a single individual.

In 1917 the total sales of prunes in Canada by the affiliated packers totalled 800,000 pounds. On May 1, 1919, two young salesmen of the California Prune and Apricot Growers' Association had already booked 12,000,000 pounds of prunes in the Dominion, with more to follow. And the organization is extending its world markets in like proportion. Join

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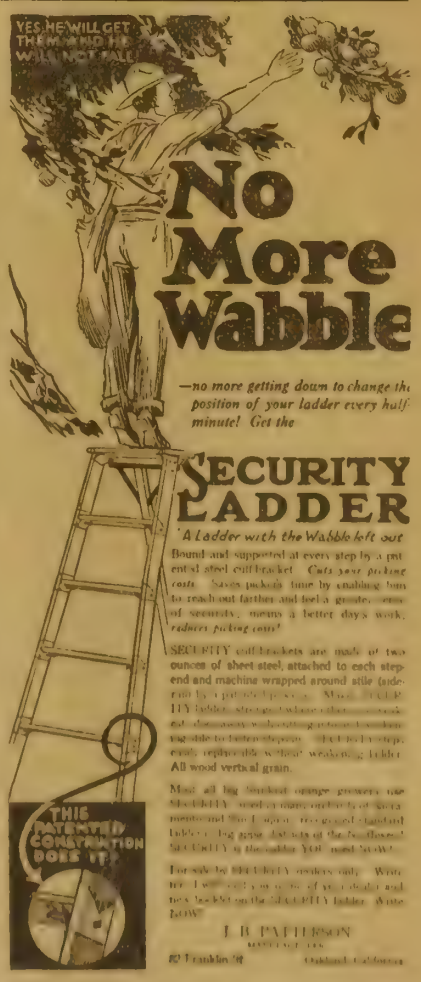
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Tractor Troubles Told to Fruit Man

(Written for Pacific Rural Press.)

"The worst trouble with the majority of our new tractor owners is that they over rate their tractors, and so most of them overload the capacity of the machine," said Chas. Ferguson (Napa County agent for the Fordson), in reply to our question in regard to this matter. Continuing he said:

(2) "Then they will use a poor grade of oil because it is 'cheap'—cheap to buy but dear to use. Now most tractor dealers recommend an oil that is best suited to their engine, and if the owner will use the oil that is recommended it saves him heaps of trouble. Because the tractor manufacturers try out their oils in a scientific way, keep track of results and only recommend the oil that proves most satisfactory under stress of work."

(3) "The oil should be drained out and replaced with new oil at least once a week when the machine is doing steady work. For the old stuff loses virtue as a lubricant, gets dirty and carbonizes quickly no matter what tractor you use. So this is a very important matter. Throw that old used-up oil out. It seems a waste but is, as a matter of fact an economy."

(4) "The new tractor owner begins by thinking his machine is like an auto and that all you have to do is to fill it up with oil and gas, crank up and keep going indefinitely. This is the greatest mistake out. A tractor requires as much care as a team, perhaps more time than a team each day it is worked. The grease cups must have constant and regular attention. The radiator must be cleaned out once a week and the reservoir kept full at all times—at all times. The air washer should be cleaned and washed out three or four times a day—especially when harrowing or when it is very dusty."

(5) "If the owner doesn't understand his tractor and anything goes wrong he should let it alone and get a service man to correct it and show him how or he may monkey along till he upsets an adjustment and have serious trouble. When he is driving his tractor and hears something wrong he should stop right there. He may think, 'Well, I guess I may as well finish the round, she'll pull me that far.' That is wrong. He must stop and investigate right there—directly. It might be a very small thing that he could locate and put right at once."

"I have been giving service to my clients really at a loss for I want to get them started right and I either go or send a man, dropping shop work, if necessary, to keep the tractors going. Sometimes it is a very small thing that the owner might easily have located himself, but I get him going in short order. For I know that the service system I am building up now is bound to result in the good will of my clients and an extension of my business. Once I was called out ten miles—and we were very busy—and found a broken porcelain in a spark plug only. But no matter. Service is what counts and people are going to buy tractors that give it."

"Sum it all up and we find that overloading and overdriving lead to more troubles than anything else. It is a matter of education in tractor work and generally the farmer catches on right away. But many have to suffer some annoyance first that could easily have been avoided. You know A. Rosel of Coombsville? Well, I sold him a Fordson December 1, and he has already plowed 350 acres with it and harrowed 800 acres. Most of the ground was adobe and 100 acres of it had never been plowed. How deep did he plow? About five inches, and the best he could do was drawing two twelve-inch bottoms at that depth in low gear." (April 24.)

COTTON PEST TURNS TO CITRUS.

The "cotton stainer" (Dysdercus suturellus) is now causing loss to citrus and avocado growers in Florida by puncturing the rind of these fruits, causing them to drop from the tree and decay. The punctures are invisible to the naked eye. "Truly Florida, thou art (in) a parlous state!"

The apple crop of Australia is reported to be considerably below a normal yield and indications are that later in the year the market will be bare of supplies.

GRAPE VINES FOR THE HOUSE.

"How many grapes can I get from a small arbor, what are the best varieties, and what is the best fertilizer for grapes? we were recently asked. We enumerated some of the best varieties in our issue of April 19. As many grapes can be taken from a good-sized arbor as any family will need. One man at Dinuba told us he took nearly 250 pounds of grapes from one large Thompson Seedless that spanned an area between two of his buildings. And that is nothing compared with some old patriarchal Mission vines that have run up to half a ton and more. The chief fertilizer used in Europe for intensive cultivation is fresh or dried blood. Sometimes it is procured fresh from the abattoirs and trenched in. In ground around the house there is generally plenty of chicken manure, wood-ashes or compost, that answers the purpose for a few house vines.

Ten wooden vessels are said to be allotted by the shipping board to be used as flour carriers from Washington and Oregon ports. Wooden vessels have been sailing from San Francisco with perishable cargoes which have arrived in excellent condition at their destinations.

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IN hauling grain to market, the Nash Quad, which drives and brakes on all four wheels, excels. Under normally good road conditions it will handle economically a three-ton trailer besides its own load of two tons, and under extremely favorable conditions has handled a five-ton trailer.

Thus five or possibly seven tons of grain may be transported at one trip. The Quad saves the farmer time at the season when it is most valuable. The automatic locking differentials prevent spinning of the driving wheels, thus practically assuring traction as long as any one wheel can take hold.

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Here and There in the Fruit Business

[Written for Pacific Rural Press.]

Plenty of Cantaloupes.

The increase in cantaloupe acreage this year is about 42 per cent over that of last year.

State Citrus Institute.

Permanent organization of the California Citrus Institute has been completed at a meeting in San Bernardino and Dr. H. J. Webber, Director of the State Citrus Experiment Station, has been elected President. Bylaws have been adopted tentatively until the next institute (in February, 1920).

Poison Gas and Caterpillars.

The poison gas that wrought such havoc during the war may be used for beneficent purposes in horticulture, it is said. Gabriel Bertrand of the Pasteur Institute informed the Academy of Sciences that he had discovered a method by which such gas might be supplied for the destruction of caterpillars and injurious larvae on trees and other vegetation.

Co-operation Co-opts Profit.

In 1912, according to W. G. Alexander of the Prune and Apricot Growers' Association, a 200,000,000 pound prune crop (of which 117,000,000 pounds were exported) sold at three cents. In 1917, under the Association influence, a crop of equal size was cleaned up at six cents. Last year, in spite of the embargo, growers received more than a quarter of a cent above the government price.

"It's a Poor Heart That Never Rejoices."

It is estimated that a 400,000 ton crop of wine grapes will be hanging on the vines next September—enough to make 60,000,000 gallons of unfermented grape juice. The suggestion by an interested party that a law be now enacted to compel every man, woman and child in the United States to consume a half-gallon apiece per annum is not to be taken seriously.

Oldest Winery Closes Its Doors.

El Pinal (West's) Winery at Stockton has been permanently closed after continuous operation since 1854 (65 years). It may be converted into a dairy or a grape dryer. In one year as high as 28,000 tons of grapes were crushed here—the largest winery in the State. It cost the winery $5 a ton to operate. By July 1 the entire stock of wine will be cleared out and the cooperage empty.

Heavy Crop of Robes.

In one of the Buck-Corey orchards at Lodi we saw one of the heaviest crops of Robe-de-Sargent prunes we have seen for a long time. Apparently there are enough French mixed in them or adjacent to cross pollinate.

On May 1 the ground, which was in fine condition, was being laid off prepartory to the first irrigation. All prunes and peaches in this section were exceptionally promising.

Apricots and Almonds in San Joaquin.

At Lodi and Acampo some of the almond orchards showed fine crops; others were light and some very light. We noticed some red spiders beginning to show up (May 1). Harry H. Ladd, the Horticultural Commissioner, estimates a crop of 60 per cent for the county. Apricots, however, show a large crop—100 per cent, in fact, probably the largest crop they ever had.

Injunction Asked on Prohibition.

Permanent injunction to restrain the U. S. Attorney from enforcing provisions of the war-time prohibition acts was brought in the United States District Court in San Francisco on May 2. The petition was filed in the name of two Napa vineyardists and recites that unless restrained by injunction, action under these laws will wipe out the product of 177,000 acres in California, valued at $75,000,000, etc. The action is based upon an agreement by R. J. Williams, to furnish wine grapes to Ephraim Light, who intends to make wine from them.

Wooden Ships and Nitrate.

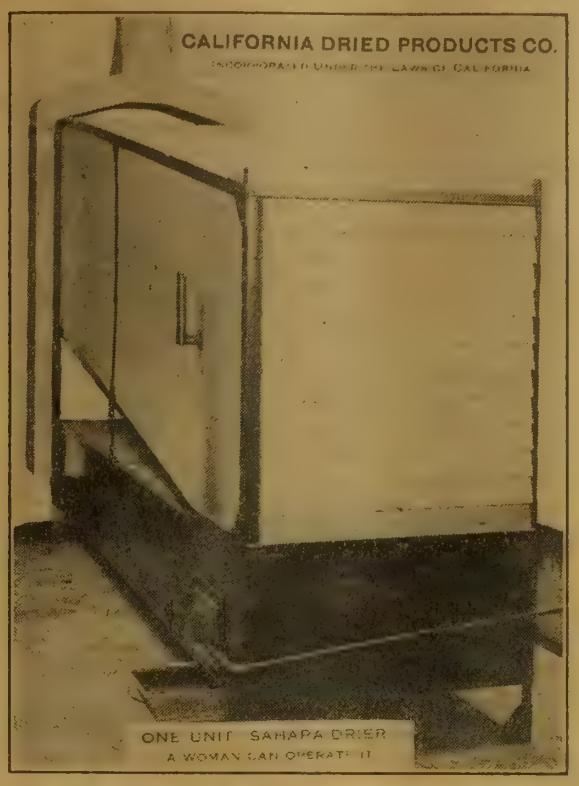
Now that so many wooden ships are being sold by the government, farmers are beginning to hope that it will afford them relief in cost of transportation. No doubt many of these ships will be fitted with sails to reduce cost of running, and the hope is expressed that these may carry nonperishable freight at a reduced cost. Nitrate of Soda from Chile is one commodity that we think of first—three men recently have "wondered when the price would come down again." We can ship plenty of canned stuff back in the place of it, and a great deal more nitrate would be used if the price dropped.

Viticulture Board and Wine Men.

The State Board of Viticultural Commissioners, which has been making a direct effort to accomplish the sale of wine grapes and culls of table grapes in view of the impending Prohibition measures, is meeting with ready response from the growers, it is stated. Three hundred dealers in grapes in this country will have the offers submitted to them and any contracts consummated are purely between grower and dealer, the Commission only bringing the parties together. The coming crop at present gives promise of being a very large one and the Commission is making every effort to salvage the crop for growers.

Zante Currants on Zinfandel.

W. B. Nichols, the head of the Great Western Vineyard Company of Fresno, has had 80 acres of 15-year-old Zinfandel grapes grafted over to Black Zante currants. The Great Western has over 2,500 acres in vineyard—half of which are wine-grapes of different varieties. Apparently the demand for the black Zantes exceeds that for the white. The currant is being watched with interest in all grape sections because it matures and ripens early and dries well in the stack in the interior valleys. When the fruit is setting, the spurs or the stump have to be "ringed," which checks growth and sets fruit. The rings of bark taken off are from one-eighth to one-quarter of an inch wide and these cuts should heal over the same year.



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Easy starting

Force feed oiler to cylinder

Ring Oiling Bearings on main shaft provide positive lubrication

Acme Pump Co.

HIGH DUTY MARINE TURBINE PUMPS
52ND AND SANTA FE AVE.
LOS ANGELES

Fairbanks, Morse & Co., Feb. 26th. 1919.
Los Angeles, Cal.

Gentlemen;

The record of the 25 horse-power, "Y" Engine, you installed at the Price Ranch, over two years ago, speaks for itself:-

When not irrigating our 65 acres of Valencias, we mill water and the plant runs almost constantly, our longest run being 40 days without a stop.

Fuel- 48 Gal. per. 24 hours- @3½- $2.40
Lub. Oil- 1½ " " " " @36¢ .54
Man's time figured liberally- .56
$3.50

Making the cost of pumping 70 inches of water, from 60 feet- 5¢ per. inch, per twenty four hours.

The man fills the 8 gal. lubricating oil tank (when necessary) the first time it runs, and inspects the bearings, puts oil in wells, turns and tests cylinder lubricator, (possibly) ½ hour per. day. We have not spent one cent for repairs on either engine or pump since you installed them.

Yours truly,

Manufactured and Sold by

Fairbanks, Morse & Co.

Los Angeles San Francisco Portland Seattle Spokane

Facts About the Bee Moth

(Written for Pacific Rural Press.)

To the Editor: I lost several colonies of bees last year from moths. What is the best way to get them out? Is there any way of keeping them out? Do they travel from one hive to the other? How far apart should the hives be?—F. J. M., Escalon.

The wax worm, which is sometimes found in beehives in the comb, is the larvae of the bee moth, and it is in the larval stage that it does the damage to the combs by eating the wax and making considerable muss with the cocoons, often eating into the wood of the frames when it is ready to pupate. The eggs are laid by the female moth in an empty cell in the comb and when the larvae hatch they bore or tunnel their way through the combs, even through the brood nest, destroying the wax as they go.

The female moth cannot gain entrance to a good strong colony of bees, especially if they are Italians.

When, however, the colony becomes weakened down to such an extent that there are several empty combs in the brood chamber which the bees do not cover, and especially with a large entrance or cracks under the cover or in the hive, the female moth can easily slip in and deposit her eggs. The remedy, then, is: first, keep all colonies supplied with good young Italian queens. Second, have good hives and plenty of room for a good strong colony of bees. Third, contract the entrance during the late fall and winter when the colony is the smallest.

If your colony is already infested with the wax worms they may be removed or destroyed by the use of a wire, or, if there are no bees in the hive, close it tight and pour an ounce of carbon bisulphide in a shallow tin on top of the frames and leave it for twenty-four hours.

The best place to keep empty combs is over a good strong colony of Italian bees, but if you have to store them, put them in a moth-proof room and give them a good strong dose of carbon bisulphide about twice during the winter. If you have plenty of space, it is a good plan to place in racks spaced about two inches apart as the moths are less liable to deposit their eggs in the combs which are thus separated.

The French Minister of Agriculture has fixed the minimum price of sugar beets at $14.57 a ton basis of 7.5 degrees. The Minister requested the manufacturers not to charge more than $0.339 per pound for beet sugar.

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32x3½	13.90	17.20	3.00
31x4	18.25	22.45	3.65
32x4	18.55	22.95	3.75
33x4	19.35	23.95	3.85
34x4	19.80	24.45	3.95
36x4	.....	29.50	.....
34x4½	26.20	31.40	4.80
35x4½	27.00	32.75	4.95
36x4½	27.50	33.30	5.10
37x4½	.....	39.00	5.20
35x5	29.90	37.40	6.00
37x5	32.25	39.60	6.20

All other sizes in stock.
Write for them or call and see them.

Prices subject to change without notice. Goods Shipped C. O. D., Express or Parcel Post. Money Refunded on Goods Returned to Us intact within Ten Days.

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CHEMICAL TREATMENTS FOR ALKALI.

To the Editor: I have a piece of land rather low, which grows heavy crop of alkali and fox-tail grass. It was formerly used as a dry yard for peaches. Last year I planted it to Thompson seedless rootings and they all died except in the place where the sulphur house was. On that one place every vine lived and grew nicely, yet no weeds or grasses have grown on that spot. I desire to plant Thompson's there again. Please advise me of chemical treatment if there be any. I have thought of putting gypsum on it.—C. E. O., Fresno.

(Answered by Dr. C. B. Lipman, Univ. of California.)

It is difficult to make recommendations for the treatment of your alkali land without knowing something about the amounts of alkali which are present in the land in question. To ascertain this, we should have a number of samples of soil taken from different spots in the field, in accordance with the directions given in a circular which we send to those who apply for it. When these samples have been received and examined, I may be able to give you some information of value in connection with the treatment of that soil for improving it. Insofar as your inquiry about the sulphur is concerned, the good effects which you have noted from the sulphur which was used on one place in your fruit-drying ground were probably due to the neutralization of some black alkali contained in that soil. Nothing more definite, however can be said with regard to that matter until we have had an opportunity to examine samples of the soil in question.

ANNUAL PICNIC FARM OWNERS AND OPERATORS NATIONAL ASSOCIATION.

The annual picnic at Locke's Grove will be held May 23rd, which is Friday of next week. The program will be one of the most extensive and interesting ever given at the famous Oak Grove. Last year 12,000 people were in attendance, and it is expected that the number will be even greater this year. A program of sports, including races, will be given. There will be all kinds of entertainment, fine music, a barbeque, and every convenience for the thousands. The speaking program will be under the auspices of the Farm Owners' and Operators' Association, which will provide a battery of eloquent farmers from different parts of the state to address the people.

"I am 72 years old and have taken the Rural Press since 1872. I still am glad to get it, and thank you for all the help you have given me."—A. H. Foster, Raymond.

GOOD ROADS FOR PROSPERITY.

(Written for Pacific Rural Press.)

DO you know that in counties where the most money has been spent for good roads the acreage returns are the highest?

ON the money spent on good roads does the progress of the community depend.

LAND situated on good highways is not only more valuable to sell. It is more valuable to live on.

LET us remove that feeling of oppressive isolation from our wives and children by providing means of rapid and easy transit to town and the benefits an American progressive community has to offer. This is only possible with good roads.

ARE you raising anything for the market? Are you married? Have you any regard for the self-respect and happiness of your family? Boost for good roads.

REMEMBER that money invested in permanent highways and bridges releases the amount annually spent in patching makeshift "trails."

SINCE our system of highways was established our land values in California have nearly trebled. Money is only invested where there is progress and possibilities. A mudhole approach does not appeal to the investor or to the investor's wife. Neither does a road with that washboard effect. And every investor who brings money for improvements, contributes toward the welfare of the whole community. Jot up these suggestions and see what they mean to you.

Flies, Moths, all Flying Insect Pests, Caught by the Quart and Gallon



Fly-Moth Bait

One Gallon Can Non-Poisonous Fluid. Price ..... $2.00 per can

Properly Used Will Last One Trap Four Months.

FLY-MOTH OAKLAND CALIFORNIA

Fly-Moth Trap



19 in. high, 10½ in. square.

Galvanized Iron, substantial and sanitary. It is collapsible and is shipped in knock-down form, making it easy to handle in quantity. There are no screws or bolts, and a child can put it together.

Price ..... $2.00 each

(Each Trap includes Bait Cup and Bran Bait Cup.

Bait and Trap (knocked down) shipped in one flat package (weight 17 lbs.)

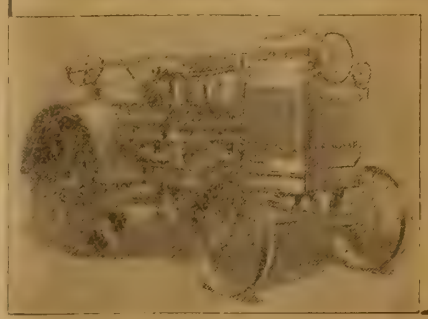
AN ANALYSIS

of a catch in a FLY-MOTH trap, half-filled, showed flies of 15 varieties and moths of 10 varieties, and also a large number of mosquitoes, gnats and wasps. The BAIT does not lure the honey-bee.

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FLY-MOTH BAIT & TRAP CO.
221 Broadway, Oakland, Cal.

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Light and Powerful Strong and Durable

Five Years' Successful Service for Satisfied Owners

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GIANT WINTER Rhubarb

APRIL-MAY decidedly best months to plant for coming winter crops. If interested in Rhubard or Berries, write for special prices. J. B. WAGNER, Rhubarb and Berry Specialist, Pasadena, California.

HORTICULTURAL JOTTINGS.

Early cherries are light and shipments are bringing around $2.50 a box on the local market (May 10).

A new Directory of California Nurseries is in course of publication by the State Commissioner of Horticulture.

A Lake county man is reputed to have sold his entire crop of prunes and pears at $70 a ton green for both fruits.

The coming season's crop of apples is in strong demand and many "orchard run" sales have been consummated.

The Almond Growers have organized at Chico and the new board of Directors have held their first meeting (May 7).

A pool of Gridley peach growers is reported to have sold or contracted 1200 tons to the C. F. C. A. at $61 a ton for "clings" and $41 for "frees."

W. M. Dickerson, an agent of the Apple Growers' Association, says that the entire Pacific Coast bids fair to produce a phenomenal deciduous fruit crop this year.

The Wisconsin Assembly killed the prohibition enforcement bill (May 8) by a vote of 83 to 6, former supporters of the measure joining in voting it down.

The sales of 10,000 acres of San Joaquin valley vineyards, at prices ranging from $500 to $1000 an acre is of recent report. The totals aggregate some $6,000,000.

Everybody is busy thinning stone fruits; some men are even working on their plums. We have seen large crops of Jeffersons, Sugars and Gages, that will need relief.

This year's raisin crop will reach 200,000 tons, it is estimated. It has already been practically all sold. It pays to advertise and this can only be compassed by organization.

The large number of young almond orchards now coming into productivity will have a distinct bearing on this year's crop, which may total a record in spite of light crops in some sections.

A heavy prune crop is estimated on report from Tulare county, probably the largest crop they have had there. A few contracts have been made by men not yet association members on a basis of 11 cents.

A New York Company has erected three large kilns for burning charcoal, a mile north of Marysville on the Yuba river. Cottonwood trees, which fringe the Yuba and Feather rivers will be used for burning.

Sutter and Yuba counties fruit crop promises to be a whopper. The writer never has seen the trees and vines look so thrifty. Considerable curl leaf on the Philip cling in spite of two sprays in many places.

The members of the Mount Vernon Farm Bureau (Placer County) have completed arrangements for a central fruit-packing house at Auburn. They intend to rent a building and fit it up for packing the fruit of members.

Many ranchers in the central valleys took advantage of the season and irrigated early. A lot of water was used last month on peaches and vines. In some regions where water is obtained by pumping a lowering of the water table is reported.

Independent buyers in the Oakdale section (Stanislaus county) have been paying as high as 22 cents for the best grades of almonds, it is reported. With a full crop now in prospect Oakdale almond growers have a place in the sun this year.

Independent packers have sprung ¾ of a cent on Muscats to 7¼ cents on seedless. Twenty cents is the average price on dried apricots, with few sales, and 15 cents for dried peaches, which would be about $55 a ton green for Muirs (allowing for curing).

Thirteen prominent growers of Douglas County, Oregon, have closed a deal, it is said, whereby they contract the entire product of their orchards (for 1919) at 15 cents for Italians (30-35s—the largest sizes) and 14 cents for French. The pool is estimated at 750 tons.

At a recent large meeting in Cape Town, South Africa, it was voted to form a Western Province Fruit Growers' Association. All important producing sections the world over are now following California's wonderful lead in organization.

J. H. Wheeler of St. Helena, Napa county, one of our well known viticulturists and an authority on walnuts is the first man in his county to try out Zante currants on a commercial scale. He finished grafting over 8 acres of wine grapes to currants on May 1.

A "long pruning" demonstration, under the auspices of the Farm Bureau, has been given to the growers of the Livermore valley by Dr. J. C. Whitten, Professor of Pomology in the University of California. All varieties of trees were included.

Thirteen thousand, eight hundred and twenty acres are reported under contract by canteloupe growers of the Imperial valley, according to the U. S. Bureau of Crop Statistics. Fields now under cultivation are developing a crop for May, June and July shipments which will break all former shipping records from this area. In 1900 the first crate was shipped; in 1901 eleven cars (the first commercial shipment); the next year 577 cars, till in 1917, 5,041 cars of canteloupes went out of this valley.

The cherry crop throughout the State is light. Royal Anns generally are a good crop, while Blacks are mostly running fair to light. With a crop as spotted as this one, it is hard to estimate except to say in general that it is light. The first cherries of the seaments from Santa Clara points will be about June 1.

Settle the Tire Question Right NOW!

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BULL DOG GRIP NON-SKID

TIRES

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"The Tyre to Tie To"



See Those Teeth? They Bite The Road

Satisfactory in Service and Sold Right. Honest Construction.

Material and workmanship found in Braender Tires produce a tire that gives absolutely the better service demanded by you.

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have unusually strong side walls and a tough wear-resisting tread.

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Either with an electric motor, gas engine, tractor or water motor. All PELTON Type B pumps have this interchangeability feature.

The same pump may be driven one season with a tractor or gasoline engine and later connected direct to an electric motor. No expensive alteration or dismantling is necessary. PELTON pumps will give guaranteed efficiency with either type of drive. Irrigate now when you need it, without waiting for electric power.

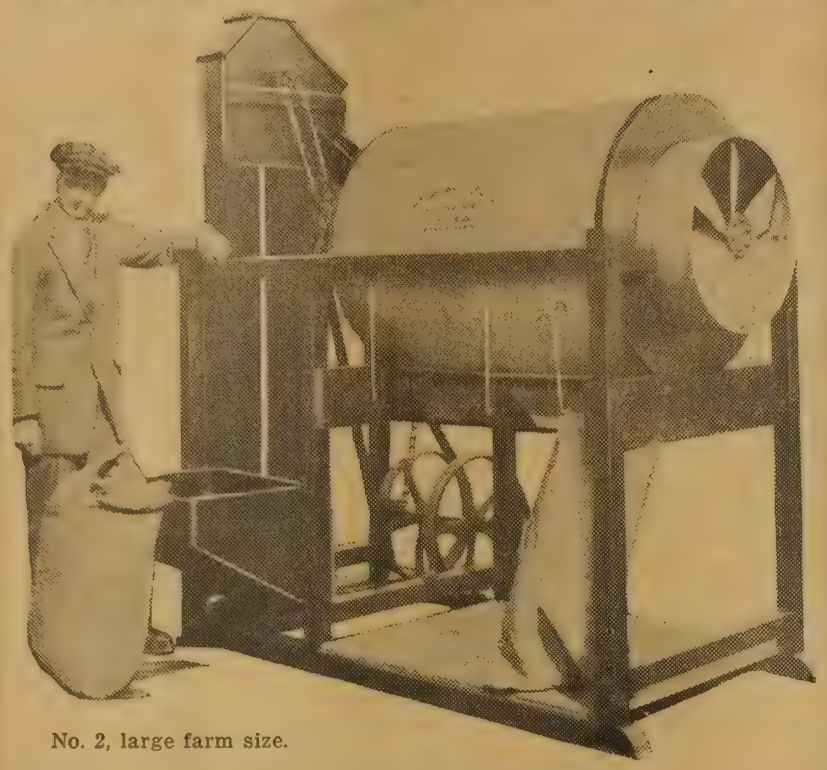
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THE PELTON WATER WHEEL COMPANY,

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ROTARY GRAIN CLEANER



No. 2, large farm size.

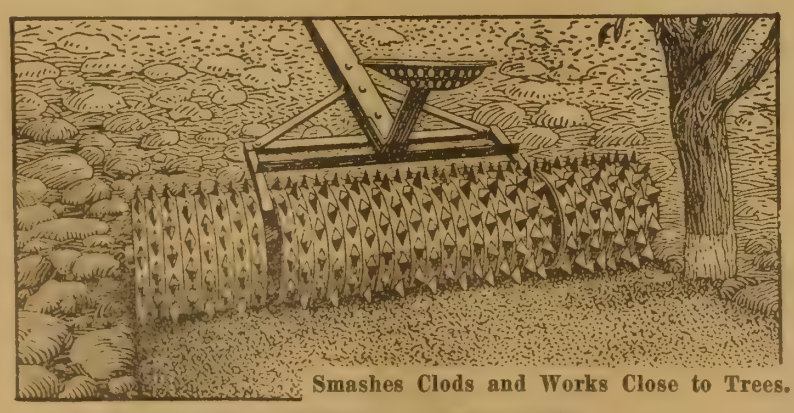
Capacity from one to one and one-half tons per hour.
Latest improvement in grain cleaner line.
It has a principle all its own.
A new invention that has no equal for selecting the best seed for planting.
Cleans Wheat, Barley, Oats, Rice and Kaffir Corn.
Cleans thoroughly and quickly; is simple in principle and durable in construction.
A 1 H. P. gasoline engine is all the power necessary to run it under full load.

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328 NORTH EAST STREET, STOCKTON, CALIFORNIA

CUNNINGAM PULVERIZER AND PARALIZER



Smashes Clods and Works Close to Trees.

ONE OWNER, AN ORCHARDIST
in Santa Clara Valley has this to say: "By using this **PULVERIZER** right now the increased production from 5 acres alone will pay for it."

GET YOUR ORDER IN QUICK

MADE IN ALL SIZES—Write for Circular

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625 Market Street, SAN FRANCISCO

Federal Farm Loans

LONG TERM LOW RATE

All loans made on an amortization plan whereby the borrower repays the principal gradually with each interest payment
Over three thousand satisfied borrowers in this district.
It will pay you to investigate.
For information apply to the nearest **National Farm Loan Association**, or write direct to

Federal Land Bank of Berkeley

Berkeley, Cal.

Root-Knot in Old Vineyard

(Written for Pacific Rural Press.)

Last week we were shown an almond tree one year old whose roots were one large jumbled mass of root knot. They made good growth the one year and now 50 per cent of the trees are gone from root knot like the one we saw. The following citation of vineyard experience will be of interest:

George F. Schuler of Stockton has 175 acres of vineyard. To prepare for squalls he has been interplanting the vines with peaches and almonds by taking out every third vine and putting in a tree, till he now has some 2,000 trees set. The almonds were set in a Mission vineyard (22 years old) and Mr. Schuler says they will all have to come out because of this root knot as half are gone already. He has some Tuscan Cling Peaches planted in holes where Zinfandel, Mattaro and Alicante grapes had been and they are all good, while those planted where Missions had been are gone.

About 100 acres of his vineyard are in wine grapes and the rest table grapes and the soil is a strong loam, but black knot is apparent throughout the vineyard.

We have occasionally come across similar conditions in interplanting, particularly on low lying land and in cold situations where black knot has been rife for years, yet there are plenty of old vineyards where the trees are now in bearing and all the vines taken out to give them the ground.

Where trees are to be set in such a vineyard and the grower wants them in the line of the vines it is safer to dig the holes deep and leave them open for a year before planting and then—when planting, to fill the hole with surface soil and give them every chance to start right. At any rate the wounds on roots will get a better chance to callus in clean ground.

Black Measles and Grape Shrivel.

Commenting on his treatment of "Black Measles" and its mysterious kindred disease, "grape shrivel," Mr. Schuler says that if the diseased portion is not cut off in the growing season, the whole vine may become infected and dead in two years. He not only cuts off the diseased cane but the whole spur to which it is attached, as soon as the disease is apparent through the yellowing and dying of the leaves. He later takes a sucker or perhaps a shoot from an adjacent spur to balance up the vine. In his vineyard, those vines cut two years ago for these diseases look as good as ever, while many of those left uncut are gone. Where he makes the cuts during the summer, he dresses the wounds and all exposed parts of the vine with a strong whitewash with plenty of salt in it to protect the bark and prevent infection. We would like to know if similar results have been obtained in the raisin districts of the San Joaquin Valley or whether it has been tried.

Irrigation and Drainage Hand in Hand

(Written for Pacific Rural Press.)

In view of the interest shown in so many sections of California and the desire in so many districts of farmers to own and control their own irrigation and drainage systems, it is enlightening to see how the banks regard these matters. Are your land values good security? Are those values increasing or diminishing?

The proof of the pudding is in the eating. If you want to negotiate a loan, what is the accepted value of your land—what you paid for it, or what you can borrow on it? Read what the Federal Land Bank of Berkeley has to say to its National Farm Loan Associations. It is sound and clear:

"It is the consensus of opinion among engineers who have studied the subject, that upon nearly all lands where irrigation is constantly practiced the necessity for drainage will sooner or later become apparent. In a new or comparatively new country this necessity may not appear for a long period of years, and for this reason little regard has been paid to it until the danger becomes very real and imminent.

At first, water only is needed in order to make the soil productive, and in many cases the effect of constantly putting this water on the land is even not considered and many times not understood. Not only must land be reclaimed by the use of water, but its value and future usefulness must be zealously guarded. After a considerable period of irrigation, it is just as necessary to begin to think about drainage facilities, and to install them where needed, as it is to have the assurance of a permanent and adequate water supply.

In some regions of the 11th District the need for speedy, intelligent and definite action in the matter of drainage stares us in the face. This Bank, unlike old-time institutions doing a similar business, is making loans for long periods of years, and unless we can be satisfied that lands are not menaces by rising water table, or unless such menace is recognized and solved by the installation of effective drainage, we cannot make loans upon them. Therefore, we must be assured not only of a good and permanent water supply, but also that the land is capable of being drained, and if the necessity arises, that it will be drained. This is a matter to which I think the members of every Farm Loan Association in an Irrigated area should give their very earnest and prompt consideration."

Orchard and Vineyard in May and June

(Written for Pacific Rural Press.)

The Grape Leaf Hopper.

This little pest hatches out about the middle of May and must be sprayed about the end of the month and the first week in June while in the wingless stage and save your foliage and vine vigor. The less plant food there is stored in the wood the less weight there is in the grapes and vitality of the vine is impaired.

Suckering Vines.

Sucker the vines, old or young, and keep the suckers rubbed off so as to concentrate the vigor of the vine on the shoots that are to be kept. In wine grapes keep all shoots rubbed off that appear below the crown. On all vines, any sucker or water sprout not needed for renewals should be rubbed off before it has made much growth. A sucker is an unproductive robber of nutriment.

Irrigation of Vines.

From the Upper Sacramento to Kern County vineyardists are busy irrigating their vines while the canes are getting ready to make their most strenuous growth. There is plenty of water now and it is being used to advantage. "While you're gettin' get a-plenty," and then cultivate as soon as ever the ground turns up nice and mellow—each strip as soon as ever it is dry enough.

Professor E. J. Kraus of the Oregon Agricultural College, who recently visited the Santa Clara Valley with Professor J. C. Whitten of the University of California, expressed his wonder at the extent of the fruit culture here which, according to his belief, is not equalled anywhere in the world.

Start a grain saving account - *this year*

HARVEST is here. Again you are confronted with the problems of marketing your grain. How much of it are you going to sacrifice to rats and careless sacking this year?

There is yet time, if you will act at once, to erect a Calco Grain Bin on your farm. The Calco Bin is so designed that it can be erected by unskilled labor, with ordinary tools, very quickly.

By getting in your order NOW—by wire or telephone preferably—you can have your Calco Bin up and ready for use in three weeks. You can save enough on this year's crop of grain by using the Calco Bin to pay you for the change from jute sacks.

Calco Bins are made in twelve sizes: 600 bushel, 900 bushel, 1200, 1400, 1850, 2300, 2700, 3350, 3650, 4000, 4550 and 5450 bushel capacities.

Phone or wire for your Bin. Or wire for the Calco Grain Bin price list, so that your order may be sent back in time for your bin to be shipped immediately. Start a grain saving account with a Calco Bin—this year.

California Corrugated Culvert Co.

LOS ANGELES
417 Leroy Street

BERKELEY
406 Parker Street





AMERICAN ARMCO

CALCO GRAIN BINS

Notes on the Big Tractor Demonstration

(Continued from page 757.)

ten. The International Harvester Co. was established in 1902, combining several lines of harvesting implements.

Bulk Grain Motor Truck Sold Quick.

A two-ton motor truck exhibited by the Pacific Nash Motors Co. at the Demonstration has a bed designed for bulk grain hauling. The bed is in the shape of a square hopper unloading by a slide at the center, and is made of ⅛-inch iron plate. The truck will carry its load at the rate of 14 miles per hour, making five trips, while a team would make one. This truck was sold during the Demonstration to Andrew Kaiser of Glenn county. Our readers will remember Mr. Kaiser as the man who raised several thousand acres of wheat in 1918 and handled it by bulk methods in his big new elevators near Hamilton City. He used horses and wagons with just one truck in harvesting the 1918 crop, but the truck method looks best to him.

Bosch Magnetos on Ford Cars.

A Ford magneto is notoriously unable to handle its job of supplying good ignition for the engine and electricity for headlights at slow speed; and many a Ford owner would welcome better lights without the added equipment and expense of storage batteries or other lighting devices. It is proposed by the American Bosch Magneto Corporation that the Ford magneto be given the exclusive job of furnishing headlights. Ignition, timing, etc., would all be entrusted to a specially designed Bosch magneto built to fit on the front of the engine. Distributor-timer and coils would be stowed away to be replaced when the car is sold in order to retain the magneto afterward if desired. The magneto is geared to the engine so that it must spark at exactly the right time. Its spark is made by breaking contact and is thus always certain. The Ford equipment times the spark by making contact of roller and metal surface. If dirt or oil get between, a weak spark or none at all results. It is practically impossible to keep the coil points adjusted to give sparks of equal intensity and at the same relative position of their various pistons. This causes damaging vibration. Also, where one spark comes a little too early or too late, it makes the next piston do its work and power is lost, though the same amount of gas is used. The late spark burns slower and the heat of combustion is not turned into useful work, but overheats the engine. This causes boiling radiator and other troubles. With the magneto, the spark comes just at the proper instant of compression, so it gives greatest force to the piston, turns most of the heat into work, and no piston loafs on its job. Coming at the opportune time, all of the fuel is burned and the total fuel consumption per mile is reduced by ten per cent or more. This fuel being burned, does not remain to carbonize the combustion chamber or to run past pistons and dilute lubricating oil in the crank case. Lubricating oil thus gives longer service and its cost is decreased. Using the magneto there are no coil points to keep filed, no distributor to keep clean, no fear of rain short-circuiting the coils. The sparks are hotter, better timed, and far more efficient.

Wizard Four-Pull Factory Soon to Be Built.

Plans are ready for the big factory at Stockton which is to manufacture Wizard Four-Pull tractors; and ground will be broken early in June, according to the inventor and chief of the $5,000,000 Kroyer Manufacturing Co., J. M. Kroyer. The machines to be built will be along the same lines as those already tested thoroughly during many months, and Mr. Kroyer expects to make deliveries in October. These original tested machines will be ready to show interested people late next month. As announced in our March 8 issue, there is to be a complete line of sizes: 6-10, 12-20, 20-35, 30-50, and 45-75 horsepower. This new tractor pulls with all four wheels and has its weight distributed equally on all. It turns as short as any other tractor and probably shorter. The four-pull feature gives it double the traction of one with two wheels of the same size, and prevents it from "digging in."

Scientific Fruit-Vegetable Drier.

One of the most scientifically arranged artificial driers for fruit and vegetables that we have seen is the Sahara, shown at the Tractor Demonstration. It is somewhat similar to the "New-Way" Drier described in the Pacific Rural Press about a year ago, but is considerably improved. Fruit or vegetables are prepared for drying and placed on coarse-mesh trays of a size convenient for one person to handle. These are pushed into the drying chamber through openings just big enough to admit a tray. The openings are covered by slats which swing inward to let the tray in, thus wasting no heat. The trays rest on cleats along the sides of the chamber; and pushing one tray in pushes another half way out at the other end, which is considerably lower. A horizontal compartment under the drying chamber and running its full length, admits fresh air to the fruit. This compartment is partitioned to make room for an oil burner, the best selection of some 20 burners tested for the purpose. The fresh air is heated by contact with the partition over the burner and rises into the front or lower end of the drying chamber, being distributed evenly by division plates. As it passes upward through this sloping chamber, it gathers moisture from the fruit or vegetables and passes off through side flues and thence to the main chimney, which helps with the draft. The chimney is partitioned to carry the burnt gas from the burner separate from the moisture-laden air of the fruit chamber. The particular feature of this construction is that fresh fruit or vegetables are put into the end where temperature is lowest and air is not so dry that it would seal the fruit with an outer layer while it would cook the insides. The Sahara drier acts gradually and dries the fruit uniformly through before it has progressed down to the hottest, driest end, where it is finished off with sealed surfaces. Over 450 contracts are claimed to have been taken for these driers within two months.

Rotary Grain Cleaners.

Half a dozen Rotary Grain Cleaners were at work separating grain and seeds of various kinds at the Demonstration, and running them back into bins to be separated repeatedly. The principle is to have cylindrical sieves with proper openings and with a fan blowing strong lenthwise through the sieves. Rotation and wind proved highly successful with the seeds used.

Biggest Engines Pulled Biggest Plow.

The biggest crowd seen at one place on the Demonstration field was around a Killefer four-gang moldboard plow, the biggest of its kind. The strongest tractors on the grounds took turns pulling it, and not all of them pulled it at its greatest depth. This came near being one of the tabooed contests, for one tractor pulled the plow out after another of greater rated drawbar horsepower had gotten stuck with it.

Aviator Does Some Thrills.

Some excitement was caused by R. W. Mess on Friday at the Demonstration field. Mr. Mess has been in the U. S. Aviation Service. He flew over the grounds and lit near the E. B. tractor. A crowd gathered and Mr. Mess shot up into the air, dropping a red-and-white snowstorm of bits of paper labeled on one side in big letters, "Buy Victory Bonds," and on the other side, "See the E-B. tractor work."

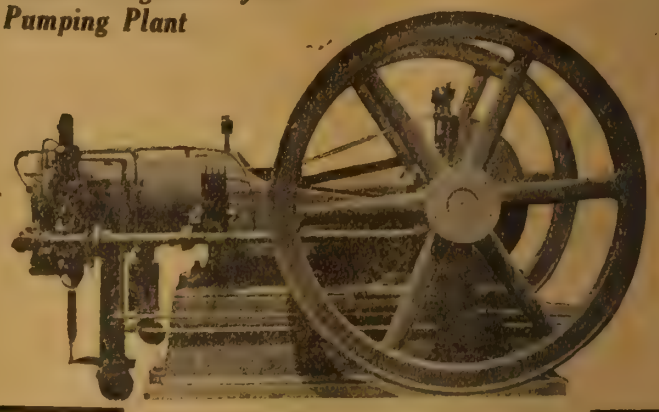
Trundaar Agency Changed.

The agency for Trundaar tractors in northern California, heretofore held by Hamilton & Nickell, is now in

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San Francisco California

charge of Frank Dimond, garage and automobile man of Vacaville. Headquarters for Trundaar tractors will continue in Sacramento under the name of Mr. Dimond, who is organizing his forces to give good field service. He had been a local dealer under Hamilton Nickell.

Russell Tractors and Threshers.

Three sizes of Russell tractors were on the Demonstration fields along with two Russell Threshers, one for beans, the other for grain. A 15-30 tractor was running a 33x60 grain thresher by a belt about 45 feet center to center of belt pulleys. A platform was built beside the thresher, whose top was taken off so visitors could see the special arrangements for separating and recovering a maximum percentage of grain. As bearings in a tractor and its motor are most likely to give trouble, emphasis is placed on those in the Russell. In the 20-40 size the five bearings for the crankshaft have a total length over 36 inches; and all other moving parts in the tractor rest on Timken rollers. Other sizes of Russell tractors, all of which are in stock at San Jose, available for delivery; are the 10-20, 20-40, and 40-80.

Yubas Driven by Fair Maidens.

Three fair and brown young ladies operated Yuba tractors in the Demonstrations in order to show how easily they are controlled. A feature for part of the time at the Yuba headquarters tent was the arrangement of some Stockton inventors, by which a long mower-sickle-bar was run beside a 12-20 tractor, power being taken directly from a pulley on its crankshaft. It was remarked that with a ten-foot sickle, it would pay to use the tractor for this purpose.

Association Banquet Biggest Ever.

The California Tractor and Implement Association banquet on the evening and night of May 6 was the biggest event of its kind ever pulled off. W. H. Gardner of the Yuba Manufacturing Co. was presented by members of the Association with a handsome silver set as a token of appreciation for his past work as President of the Association. A speechless presentation was made by flashing the words on a screen. Mr. Gardner was compelled by surprise, emotion, rules of the banquet and applause to accept without a speech. Even the incoming President, F. H. Poss of the Avery Company of the Pacific Coast, was allowed no opportunity to address the crowd. But while it was a "speechless" banquet, it was surely a noisy one.

Giant Leveler, Checker, and Tractor.

The smoothest, softest field at the Demonstration on its last day was the one on which C. L. Best Tracklayer had been working a twelve-foot Schmeiser Giant Land Leveler raised and lowered by compressed air from the tractor. But leveling is not all of the preparation for irrigated crops. Checks were made with a steel checker manufactured by the Schmeiser Mfg. Co. This machine was made of ⅜ inch steel runners set on edge, 18 feet apart at their front ends and two to three feet apart behind. They were about 20 feet long and were held in place by several I beams across the top, heavy angles being used to stiffen the upper edges. The runners were 30 inches wide (high) behind and about 18 inches wide in front with a curve toward their lower edges so they sharpen themselves by a little use. The weight of the checker rested on two caster wheels in front and two bigger wheels behind. Depth of cut was regulated by an eccentric shaft and levers. Six of the Schmeiser levelers of all sizes were scattered all over the grounds according to D. R. Throop of that Company. The tractor bore a sign reading, "I bought this Best tractor in October, 1914. It has run over 1,500 shifts (10 or 11 hours per shift). Lincoln White, Natomas District, Owner." It is still in good shape.

Big New Sieve-Grip Plant.

Contrary to a general impression, Samson Sieve Grip tractors are soon to be put on the market in far greater numbers than ever before. The old



Harvest and Thresh at One Operation

MANY Western farmers are now using **Deering** or **McCormick Harvester-Threshers,** and many more will buy these machines for the coming grain crop.

Modern grain handling means harvesting and threshing in one operation wherever weather conditions permit, turning the threshing expense into clear profit, doing away with the big threshing bill and burden, saving time and long-drawn-out labor.

Deering and **McCormick Harvester-Threshers** are Western necessities. They cut a 9-foot swath, harvest 15 to 18 acres per day, and thresh as clean as any thresher. Require 8, 10, or 12 horses, and one or two men, depending on attachment used. In most cases, an International kerosene tractor can be used to best advantage.

The harvester-thresher has proved that it is designed and built right in every particular—strong and lasting, simple, of light draft. It can be used as a stationary thresher, too, by adding cylinder and beater pulleys, which are supplied at extra cost. A 10-h. p. engine does the work. Capacity 30 to 50 bushels of wheat per hour. Write us for interesting folders on **Deering** or **McCormick Harvester-Threshers** and on any other machines in the list below.

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ORIGIN OF TRACTOR ASSOCIATION.

Interesting note is taken regarding the origin of the California Tractor and Implement Association in view of the fact that Prof. J. B. Davidson will soon be taking a new position in Iowa. In 1916 or 1917 Prof. Davidson sent out a call for an organization meeting. It was a fizzle and the Professor heard about it several times afterward. He determined that it should not remain a fizzle, so he personally asked each of the dealers and manufacturers to attend such a meeting. All but two of them met at the Palace Hotel in San Francisco in the fall of 1917 and formed the organization, which has just held its third great demonstration, the first having been at the State Fair and the second at Davis.

factory site is too small for even the assembling plant which the General Motors Corporation plan to put up in Stockton. This will be the biggest tractor assembly plant on the Pacific Coast, according to H. L. Marsh of the Samson Sieve Grip Sales Co. of Los Angeles. Plans have seemed to lag, owing to the difficulty of getting the necessary real estate, but all is ready now and the grounds will be cleared for construction by September 1, The new Model 30X Samson Sieve Grip tractor, never shown in public until the Sacramento Tractor and Implement Demonstration, May 6 to 11, has much the same general appearance as the old S25. But the new motor has greater piston displacement, being rated as a 15-30 h.p. machine. Its crankshaft is 3/8 inch greater diameter and is geared lower so it delivers proportionally more power to the drawbar at the same working speed. It has force feed oiling of the same type as the Cadillac automobile; and a Remy Electric governor is being used instead of the double-saucer Model 30X pulled 3500 to 4000 pounds on a Killefer subsoiler. Harrison P. Smith of Stockton is the Pacific Coast distributor.

Smallest Tractors Finished First.

The little Fageol 8-12 "Walking Tractor" plowed its strip of ground allotted as with other tractors in proportion to its rated horsepower, finishing first of all. the tractors on the first and last general demonstrations and probably on the other two also. It simply kept going steadily and rapidly with its three ten-inch bottoms and then jubilantly marched off the field first. It was driven by Rush Hamilton, who invented the original machine for his Sonoma county vineyards. The straight furrows turned by Mr. Hamilton brought forth considerable comment.

Bean Track-pull Turned Short Enuf.

Beans were scattered all around if you got onto the Bean Spray Pump reservation at the Tractor Demonstration, for they had a big bunch of their Track-pull tractors there, driving them over all sorts of inclines to show how they would pull as well on a turn as anywhere and that they do not tip over as some people have said about older models. A farmer almost became alarmed lest the Bean track, in making its short turns, should step on its own (w)heels. No changes have been made in this tractor since those noted at the last State Fair.

Combined Harvesters Working.

Two of California's characteristic big Caterpillar combined harvesters operated by their own gas engines and intended to be pulled by Caterpillar tractors, were seen in full operation though not cutting grain. The "Giant Gas Harvester" has not been sold to any extent until this season, according to G. M. Walker of the Holt Mfg. Co. A considerable number of them are now being delivered for the coming harvest. Each is operated by a 55 h.p. motor, has a 24-foot header, a 50-inch separator, 40-inch cylinder, and carries most of its weight on Caterpillar tracks. A combine of the kind commonly used in California was also running. It had a 45 h.p. motor, 44 inch separator, 30 inch cylinder, and 16, 18, or 20 foot header. Its weight is carried on big wheels. Both machines had platforms so visitors could look into them.

Tractor Ascension with Passengers.

For a tractor to lift itself bodily straight up into the air and hang there ad libitum is sensational to the passengers it carries. This is what the Hart-Parr 15-30 did repeatedly during the Sacramento Tractor and Implement Demonstration May 6 to 11.

Tractor Climbs Vertical Poles.

When a Ford climbs a tree, it is supposed to be a joke, but when a tractor climbs vertical posts with its front wheels, there's a method in its madness. The Fitch Four-Drive tractor at the Demonstration did just this thing to show how all of its four wheels pull together. Heavy posts were set up and braced. The tractor was run up against them and its front wheels simply climbed straight up until they had to be stopped to avoid tipping the tractor over backward. The Four-Drive is not up to such tricks without something like a post to set its front claws into.

Avery Shows Flexibility.

A standing shock to Demonstration visitors was what appeared to be an Avery 25-50, after a collision with an irresistible force. It was not demolished, but it appeared to be standing on one forward corner. Closer inspection showed that one of its rear wheels had been driven onto a block of wood over two feet high, and a straight wrench had been stuck into one of the lug holes so that this rear wheel was standing on the wrench which stood vertical on the block. All other wheels rested on the ground and the frame of the tractor seemed to be in no strain at all, because of its single-point suspension on the front axle.

Cheap Fuel—Big Work.

Most of the tractors in the general demonstrations pulled less than two inches of plow width per rated motor horespower, but the Rumely 20-40, burning stovetops which cost 6½ cents per gallon, pulled a dozen disk plows presumably turning 120 inches of plow width at once or six inches per drawbar horsepower. It pulled six fourteen-inch moldboards in the last general demonstration, May 10; and in the private demonstrations pulled Saunders disks, cutting 100 inches wide.

Whitney Has More Power Than Rated.

The Whitney 9-18, weighing 3,000 pounds, submitted to ydnamometer tests made by the Engineering Department of the Hyatt Roller Bearing Co. at Upper Sandusky, Ohio. Photographs of the engineers' reports show that in one test it pulled 1763 pounds on two fourteen inch Oliver plows on second speed, 2.36 miles per hour, thus developing 10.97 horsepower on the drawbar. In another test it pulled 1994 pounds at 1.6 miles per hour, giving 8.5 drawbar horsepower.

Distinctive Kerosene Burner.

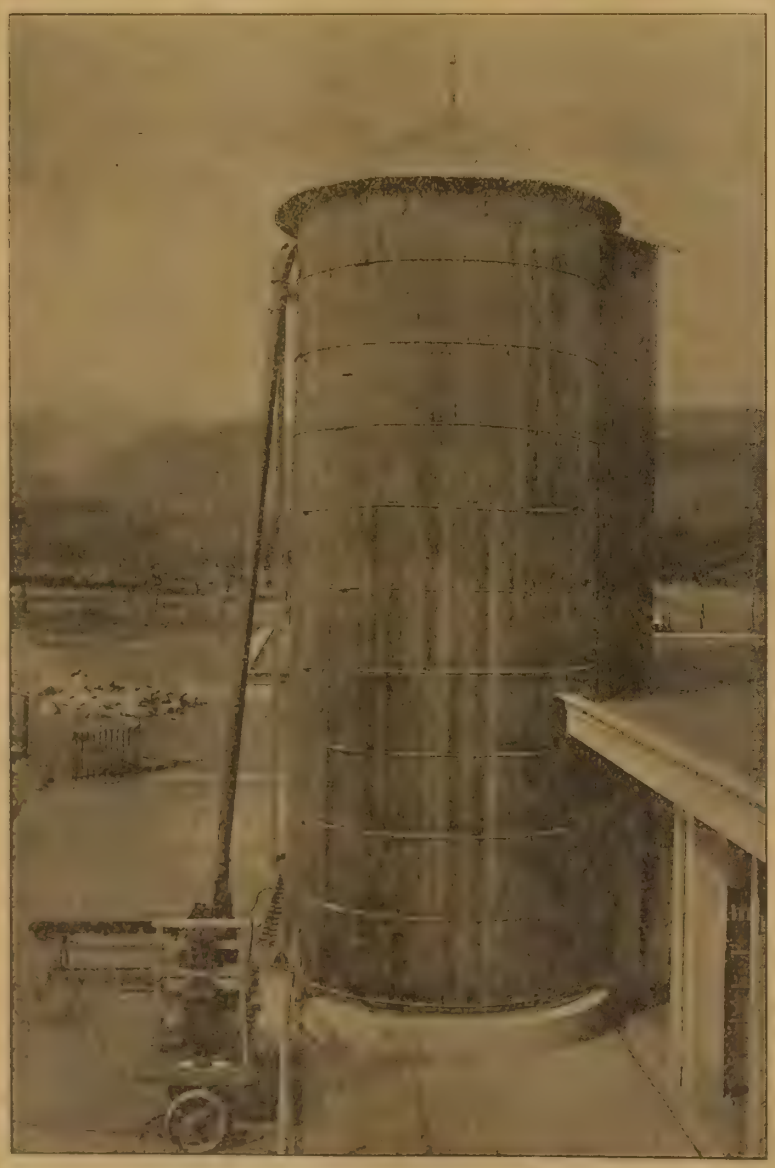
The Velie 12-24 tractor has its own distinctive way of carbureting kerosene for its motor. It is so effective that practically no kerosene escapes ignition. The Government had one of the Velie kerosene carbureting devices put on a motor truck, which was then run 995 miles from Moline to Washington without changing the crank case oil. On arrival it was found that the crankcase oil contained only four per cent of kerosene, this small amount being all that had escaped serving its explosive purpose. The kerosene is run through a carbureter, reducing it to a spray and mixing it with the proper amount of air.

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What the Legislature Did to the Farmers.

Written for Pacific Rural Press by R. E. Hodges.

In summarizing action on the Legislative bills up to May 9, we are compelled to omit many details which can be supplied on request of our readers. Many bills of general interest cannot be mentioned in our space which is crowded with bills of agricultural significance. We can give the action on any bill requested if postage stamp is enclosed. The initials SB and AB refer to Senate and Assembly bills respectively, and the names following the numbers indicate their authors in the Legislature. All bills now before Governor Stephens and not yet signed are still subject to favorable or unfavorable action, according to whatever will of the people is most forcibly and reasonably expressed to the Governor. Write him in favor of the bills you want him to sign and against the others, giving your reasons. Do it at once, for all bills not approved by May 27 will automatically be "pocket vetoed." The Governor on May 9 had signed only four of the agricultural bills passed by the Legislature.

Poisonous Spray Bill.

SB 372, McDonald, prohibiting the use of poisonous sprays never got out of the first committee to which it was referred.

King Estray Bill.

SB 34 was passed by both houses and awaits the Governor's approval. It was amended four times in the Senate and once in the Assembly. As finally passed, it provides that it shall not become effective in any supervisorial district until a majority of voters in such district shall have voted for it at a general election or at a special election called for that purpose by the supervisors. The people will not have even this privilege in Del Norte, Lassen, Modoc, Shasta, Siskiyou, or Trinity counties. Where voters do not choose to come under the act, present estray laws will remain in effect. Where they choose to accept this act, any person finding stray stock on his place may take up such stock and hold for expenses, as provided in the present estray law, provided his place is entirely surrounded by a fence of three tightly stretched barbed wires, the top one of which must be at least four feet above the surface and securely fastened to posts firmly set in the ground not over a rod apart. Any other fence of height, strength, and capacity equal to or greater than the one described shall be considered sufficient. By implication at least, no stock may be held as estray unless the land is so enclosed, in districts which accept the act. We will be glad to hear from our readers when any district takes such action.

Roadside Weeds Reprieved.

SB 35, King, providing for destruction of weeds along roadside at the expense of land owners along such roads was passed by the Senate and refused passage by the Assembly.

Seed Labeling Bill before Governor.

SB 70, Rigdon, as finally passed by the Senate and Assembly and sent to the Governor, is sketched below. Seeds affected: "grains, grasses, clovers, vetches, beans, forage crops, and other field seeds, not including flower seeds or garden vegetable seeds." Penalties for violation: $10 and costs for first offense and not less than $100 and costs for subsequent offense. The Assembly struck out the provision that offenders should be liable in civil suits for damages suffered by anyone on account of violation. Seeds of the kinds named when exposed for sale or sold in lots of ten pounds or more within the State for seeding purposes within the State must be labeled to show (a) commonly accepted name of the kind and variety; (b) name and address of seedsman, importer, agent, or dealer; (c) approximate percentage of germination with the month and year when the test was made; (d) approximate percentage of purity computed by weight showing freedom from foreign matter and other seeds distinguishable by their appearance; (e) locality where cereal grain, corn, and alfalfa seeds were grown, if known; (f) the names of certain specified noxious weed seeds in excess of certain quantities. Mixtures of certain hay crop seed in lots of ten pounds or more must be labeled, showing name and approximate percentage of each kind of seed comprising over 5 per cent of the total, the percentage of purity as defined above, the germination percentage of each kind of seed in the mixture, the name and address of the vendor. Other seed mixtures have somewhat similar provisions. Seeds are **exempt** from this act when sold for food purposes, when sold to be recleaned, and **when sold by original grower direct to planter,** provided they are labeled "not cleaned or not tested seed." State and county horticultural commissioners are to enforce the act. A division of seed inspection in charge of a trained botanist shall maintain a laboratory for conducting tests. Samples of seeds may be taken anywhere and divided so half may be left with the seedsman and the other half sent in for test. Any citizen may send samples for test subject to rules adopted by the State Horticultural Commissioner. Four thousand dollars are appropriated for establishment of a laboratory and ten thousand dollars for enforcement during the next two years. Readers who want to know whether the seed they are buying is pure and will grow may help now by writing to the Governor. The companion bill, AB 482, Cummings, was amended three times in the Assembly and then did not pass. It would have eliminated the ten-pound minimum package among other changes.

Mealy Bug Insects.

SB 75, King, appropriating $6,000 to send an entomologist abroad to seek beneficial insects for control of mealy bugs now awaits the Governor's approval.

Feed Control Bill before Governor.

SB 93, Rigdon, feed control bill, awaits the Governor's signature. It was amended three times in the Senate and once in the Assembly. It now provides as follows: Includes all feeds used for livestock and poultry except whole seeds or grains, unmixed meals consisting of entire grains, unmixed roughage, and materials consisting of 60 per cent or more of water (milk, etc.). Every lot of feeds subject to the bill must be labeled to show net weight of contents, brand, name and address of person responsible for putting it on the market, minimum percent of crude protein and crude fat, maximum per cent of crude fiber and ash, specific name of each ingredient, percentage of corn cobs, rice hulls, ground alfalfa and certain other materials, the percent of grit or mineral matter in poultry feeds. The State Board of Health may take samples anywhere for analysis. Violation or misbranding is punishable by a fine not more than $100 for the first offense and not less than $100 for subsequent offenses. Half of all the fines go to support the laboratory making tests. Dealers may be protected from prosecution by having a guaranty signed by the people from whom they bought the feeds. Mixing feed stuffs with substances injurious to the health of livestock or poultry is also deemed a violation. Readers may well promptly urge the Governor to sign this bill and Senate bill 652, which will provide $5,000 for enforcement of this act if approved by the Governor.

Deciduous Fruit Investigations.

SB 319, Benson and Jones, appropriating $100,000 for investigations of deciduous fruits, nuts, olives and figs by the University is waiting for the Governor's approval.

County Horticultural Bill Killed.

SB 361, Jones, passed the Senate and was twice refused passage in the Assembly. This bill would have strengthened the county horticultural law.





Standardization Inspectors Slighted.

SB 362, Jones, passed the Senate and was refused passage by the Assembly. It would have given county horticultural inspectors $4 per day and traveling expenses; and would have given the county horticultural commissioners not less than $1,800 per year, or $6 per day. We have voted fruit and vegetable standardization, but have proved unwilling to vote as much as a day laborer's wages for the men who are to enforce this extremely important law. Inspectors are practically impossible to get at present salaries.

Emergency Fund for Plant Pests.

SB 363, Jones, would have appropriated $50,000 as an emergency fund to be used in fighting new dangerous plant diseases, insects, weeds, or animal pests. It died in the Finance Committee.

Apple Standardization Approved by Governor.

SB 364, Jones, amending the apple standardization law, to make its objects more enforcible, has been signed by the Governor. It establishes a standard box 10½ inches deep, 11½ inches wide, and 18 inches long, inside measurements. After July 1, 1920, all apples sold or shipped must be in standard boxes, but other boxes may be used if marked "irregular container." Apple sizes are expressed in "tier" terms, are defined in terms of inches diameter, and defects are closely circumscribed.

Flood Storage and Conservation.

SB 427, Dennett, is before the Governor. It would create a Bureau of Water Storage in the State Engineering Department to construct storage reservoirs, prevent floods, and sell water wholesale for power, irrigation and other purposes. The cost of any such construction is to be returned to the State with interest within 50 years. Right of eminent domain is given to the State for these purposes.

Detailed Drainage District Bill.

SB 428, Dennett, is before the Governor. This provides for the organization and government of drainage districts. It covers 22 printed pages. Fifty or a majority of the holders of title, who hold a majority in acreage, or two-thirds of the holders of title who hold one-third of the acreage in any body of wet lands needing drainage, may proceed under provision of the act, petitioning the board of supervisors for a hearing, at which the petition for organization may be amended and granted or refused.

No Appropriation for Crop Statistics.

SB 430, Harris, would have appropriated $10,000 per year for collection of good agricultural statistics, but it died in the Finance Committee.

No Nursery Fumigation Experiments.

SB 490, Jones, would have appropriated $15,000 for the State Horticultural Commission, to use in experiments on disinfection of nursery stock with special reference to vacuum fumigation. It passed the Senate but died in the Assembly Ways and Means Committee.

Fruit and Vegetable Standardization.

SB 513, Inman, the improved fruit and vegetable standardization act, is before the Governor. It establishes standards and standard packages for apricots, almonds, walnuts, berries, canteloupes, cherries, grapes, oranges, peaches, pears, plums, prunes, quinces, tomatoes, onions, sweet potatoes, and potatoes. Standard dimensions of boxes, crates, lugs, drums, and kegs are specified, and after January 1, 1920, only such containers may be used for the products mentioned above, unless those of other sizes are marked "irregular container." Standards of maturity and perfection are made definite, and arrangements are made for establishment of official grades. Table grapes must show 17 per cent sugar by the Balling test, except Emperors, Gros Colemans, and Cornichons, which may go to 16 per cent. Oranges must be either 6 to 1 (sugar to acid) and 25 per cent colored, or 70 per cent colored at time of picking regardless of sugar-acid ratio. Frosted oranges that would endanger the reputation of the citrus industry may not be shipped. Every county is to have an "inspector of fresh fruit and vegetables." Horticultural commissioners and their deputies are to be ex-officio inspectors. Other such inspectors will receive $6 per day and traveling expenses while on duty.

Let's Eat Dog Awhile.

SB 641, Rush, would have curbed the vagrant dogs which worry and kill sheep and other livestock. It passed the Senate but was turned down in the Assembly. Did your Assemblyman vote against it? If he did, can him next time. But don't forget that it was your fault that the bill failed. If you had written your As-





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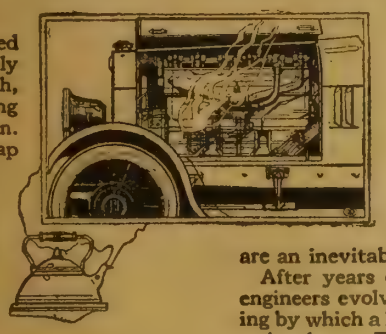
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semblyman as Pacific Rural Press repeatedly urged, we would have more sheep in California next year on small farms.

Couldn't Behead Market Director.

SB 639, Brown, which would have repealed the present State Market Commission law and would have established State commission markets, was refused passage in the Senate. AB 46, Baker, designed solely to repeal the present State Market law, died in the Assembly.

More Land for State Fair.

SB 642, Rush, re-appropriating $1,300.49 for purchase of additional land for the State Fair, is in the Governor's hands. This amount is the unexpended balance from $10,160 appropriated in 1917 for purchase of land. The original bill of 1919 proposed to appropriate $10,160 for this purpose. The State Budget Board had approved $30,000 appropriation in 1919 to buy additional land.

Water Companies Not Public Utilities.

SB 649, Duncan, would have declared all water companies, mutual or otherwise, public utilities, subject to jurisdiction of the State Railroad Commission, but it died in the Committee on Irrigation.

High School Tractor Courses.

SB 702, King, appropriating money for tractor courses in High Schools, under auspices of the State Board of Education, died in the Assembly Ways and Means Committee.

Purebred Bulls on Ranges.

SB 653, Rigdon, making it unlawful for anyone to permit a bull over eight months old to run on any open range unless he is a "purebred," as defined in the bill, passed both Houses and awaits the Governor's signature.

Egg Bill Spoiled.

SB 704, Anderson,. to define fresh eggs and regulate sale of eggs, passed away in the Committee on Public Health and Quarantine.

Potato Bill Still in Jeopardy.

SB 709, Slater, the bill introduced late after a special meeting of potato growers, to encourage better seed potato production, is in the hands of the Governor. Our readers should promptly urge him to sign this important bill. Senator Slater has received no encouragement from him.

Oleo Bill Innocuous.

AB 14, Prendergast, modifying oleo laws with prejudice to the dairy industry, died in the Assembly without action.

Kasch Estray Bill Not Pushed.

AB 22, Kasch, would have raised the permissible charges for taking up estray livestock, but it was never brought to vote in the Assembly.

Riverside University Farm.

AB 38, Kline, appropriating $150,000 for a University farm in Riverside county, is before the Governor.

Weedy Railroads.

AB 51, Rose, requiring railroad rights of way to be kept free from weeds and grass never came to vote in the Assembly.

No Wine Loss Investigation.

AB 130, Bruck, would have secured investigation of losses to vineyardists and winemakers, and would have pledged the State to a policy of compensation, but it was refused passage in the Assembly after Mr. Bruck had refused to eliminate the implied pledge mentioned.

Irrigation District Electricity.

AB 168, Broughton, providing that irrigation districts may use their water for generation of electric power, is ready for the Governor's signature. Write to him that you want this to became a law.

Raised-bottom Berry Baskets Permitted.

There was a long drawn-out oft-repeated scrap between State Superintendent of Weights and Measures Chas. G. Johnson and the berry growers of Central California and especially of Sonoma county, regarding a little amendment at the end of Assembly Bill 172, Collins. This amendment was put onto the bill March 5, prohibiting the use of containers, boxes, or baskets having **false or raised bottoms.** The Senate struck out this amendment April 9. On April 19, the Senate adopted a similar amendment prohibiting use of **false** bottoms. The bill was adopted in this shape April 22, a letter from Mr. Johnson having been read into the Senate Journal in which he stated his opinion that "a raised-bottom container is not a false-bottom container and that no restraint will be placed upon the employment of a raised-bottom container where such construction is necessary and beneficial to the transportation of food products." After another scrap, the Assembly agreed to the amendment and the Governor has signed this bill making it a law.

Rose Dairy Bill Signed.

AB 212, Rose, defining oleomargarine and prescribing rules for sampling and testing of milk passed both houses and went to the Governor April 12. It has already been signed.

Liberty Fair Deficit.

AB 215, Fleming, appropriating $75,000 to liquidate the deficit encountered by the Los Angeles Liberty Fair due to influenza and other causes, was approved by the Legislature in its last hours and is up to the Governor.

No More Land for Citrus Station.

AB 285, Kline, to purchase 300 acres for the Riverside Experiment Station, never came to a vote.

Squirrel Extermination Districts.

AB 409, Greene, providing for squirrel extermination districts passed the Legislature and awaits the Governor's pleasure.

Los Angeles Exposition.

$53,000 for maintenace and support of the Los Angeles Exposition, passed both houses and is before the Governor.

No State Farm Agent.

AB 596, Polsley, creating the office of State Farm Agent and providing



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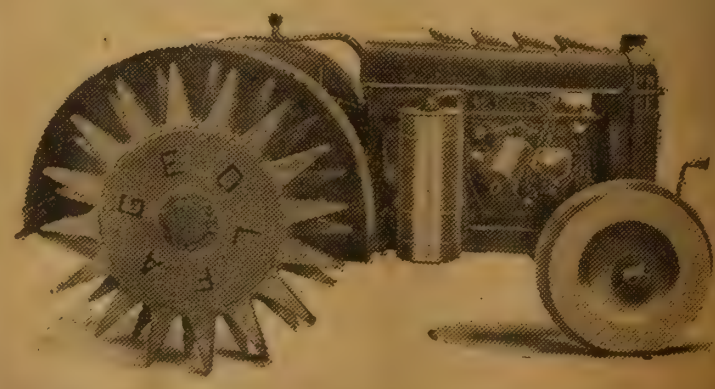
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local boards for farm investigations with a view to assisting people to purchase farm homes more intelligently, was refused passage, though it was made a case of urgency, and Article IV, Section 15, of the Constitution, was suspended in order to get it to third reading and passage on the last official day of the session.

Walnut Codling Moth.

AB 645, Miller, providing $10,000 per year for two years to determine and apply control measures for the walnut codling moth and to prevent its spread, is waiting for the Governor's signature.

Plant Disease Survey.

AB 646, Miller, appropriating $10,000 for a survey of the State by the Horticultural Commissioner to determine the distribution of dangerous plant diseases and to find and apply control measures, is in the Governor's hands.

Agricultural Engineering Bill.

AB 722 would have provided a pitiful $25,000 for use of the University Farm Agricultural Engineering Division in solving the problems of tractor and farm implement users, but for all the fight that was made in behalf of the bill, it died in the Assembly because you, our readers, who would have benefited greatly, would not take the trouble to write to the committee and your legislators telling them to push it through. We had probably the best man in America at the head of this Division, and he was satisfied with his salary, but he wanted greater opportunity. You would not give him that opportunity and he has just made arrangements to go to Iowa.

Market Commission Bill.

AB 917, Eksward, counterpart of Senator Brown's bill, repealing the State Market Commission law and establishing State commission markets, was twice refused passage in the Assembly.

Coast Experiment Stations.

AB 924, Green, appropriating $25,000 for establishment and maintenance of agricultural experiment stations between San Ardo, Monterey county, and Santa Margarita in San Luis Obispo county, passed the Legislature and was sent to the Governor.

Tomato Inspection at Canneries.

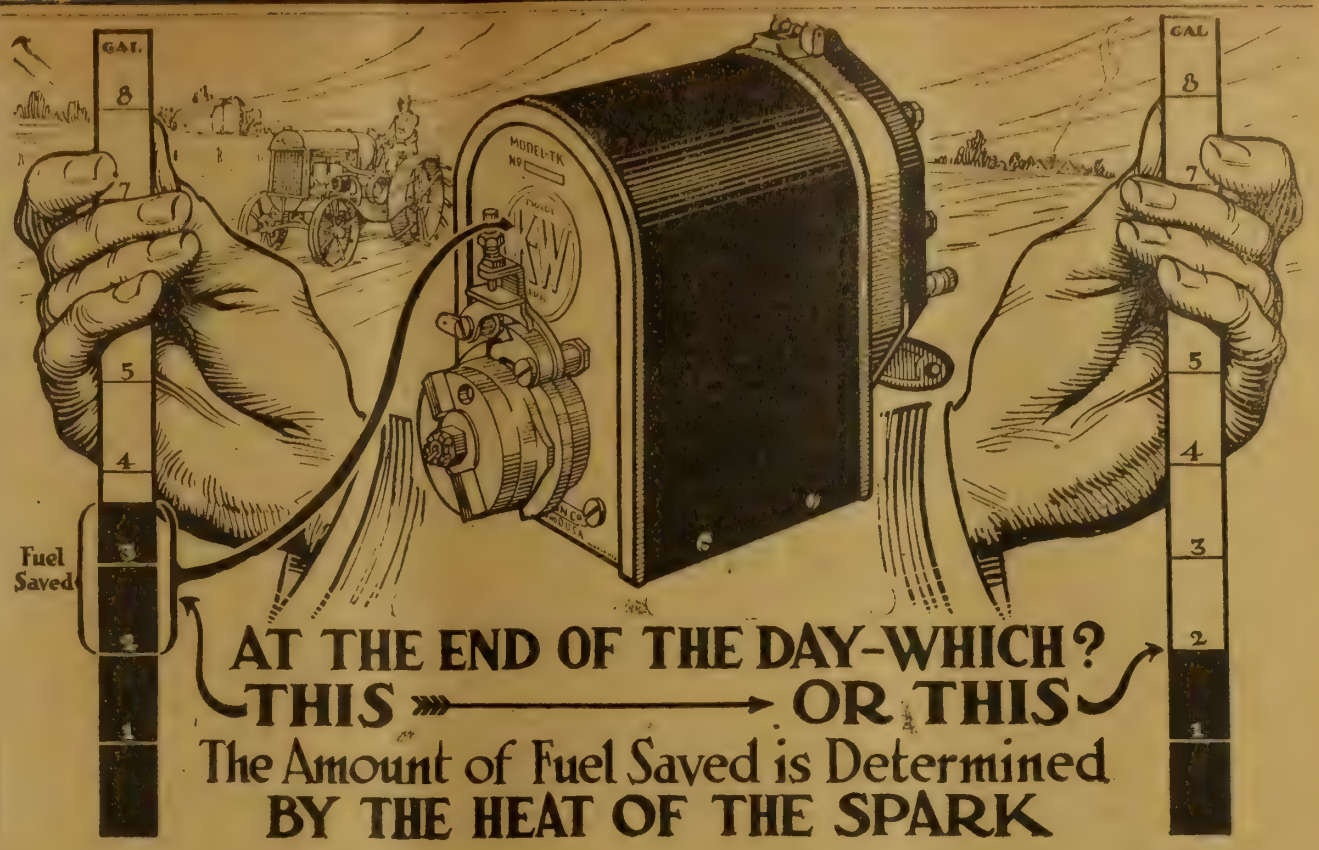
AB 949, Morris, regulating quality of tomatoes delivered to canneries, died in the Assembly in its final days.

Hay Bill Passed to Governor.

AB 1505, Eden, regulating the baling and weighing of hay, passed both houses and may need your letters to convince the Governor that he should sign it. The bill provides for baling and sale of hay by its true net weight as determined by tested scales, and prohibits putting anything into baled hay with intent to defraud. Urge the Governor to sign this. It will cost the State nothing, but will do farmers and hay users much good.

Ream Estray Bill to Governor.

AB 914, Ream, amends the present estray law by defining fences in Trinity, Shasta, Del Norte, Siskiyou, Lassen and Modoc counties, in which no one is to be permitted to take up estrays unless they are found on property entirely enclosed by such fences. Stone fences to be deemed "substantial" under the bill, must be 4½ feet high; rail fences, 5½ feet high; woven wire, 5 feet; wire or boards, not less than 50 inches high attached firmly to posts big enough to square 3½ inches, or other equally good stays set close enough to turn the



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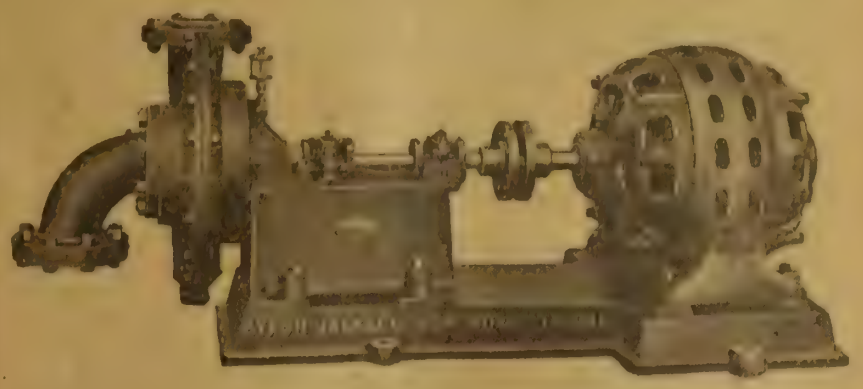
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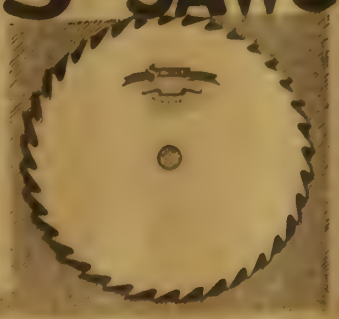
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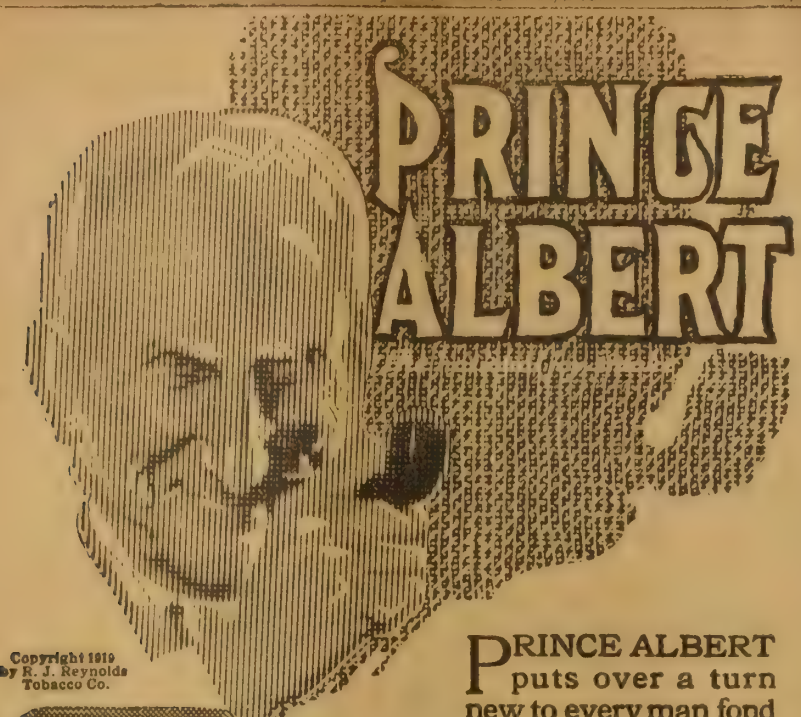
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animals that may have come onto the property. For horses and cattle, four barbed wires or four boards will be deemed "substantial" if the bottom wire or board is 18 inches from the ground and the spaces between the upper ones be ten, ten, and twelve inches respectively.

Rose Range Bill.

If AB 1088, Rose, shall be signed by the Governor, all persons or corporations from outside of California must obtain a State license to graze their stock on unenclosed land within the State, provided that such license will not be required for the grazing of five sheep per acre or three head of cattle per acre on land owned or leased by such outsiders. To obtain a license, payment of 50 cents a head will be required for sheep and $2 a haad for cattle in excess of the five sheep or three cattle per acre exempted. Grazing of more animals than are licensed and exempted subjects the offender to fine and withdrawal of his permit to graze stock in the State until the fine is paid.

State Department of Agriculture.

AB 1112, Prendergast, creating a State Department of Agriculture, passed the Legislature, but is not yet signed by the Governor. It proposes that a "Director of Agriculture" shall be appointed by the Governor. The work of the Department shall be divided into at least two divisions, one of plant industry, and one of animal industry. The new Director would succeed the present State Horticultural Commissioner, State Board of Horticultural Examiners, State Dairy Bureau, Stallion Registration Board, State Board of Viticultural Commissioners, Board of Citrus Fruit Shipments, and Cattle Protection Board. This does not include the State Agricultural Society. Several laws are specifically put under his control. Appropriations already made for specific purposes would have to be expended for those purposes by the Director of Agriculture.

Alfalfa Grows in Orchards.

(Written for Pacific Rural Press.)

The writer has never looked with favor on alfalfa grown in orchards for various reasons, the chief one being that generally they are alternately flooded and dried out for haying. From time to time we have seen exceptions to the rule and Grover C. Hamilton's place near Lockeford is one. He has 13 acres bordering the Mokelumne River, 12 acres of which are in fruit: 6 acres of almonds—Texas Prolific and Drake's Seedlings, planted in alternate double rows—and 6 acres of peaches—half Elbertas and half Muirs. All the almonds and some of the peaches, and sub-planted with alfalfa, which is hogged or hayed and both trees and alfalfa are certainly well cared for and thrifty.

When there was no alfalfa the orchard was plowed and will be irrigated about the middle of May, and then again, after the crop is off. But where the trees stand in alfalfa Mr. Hamilton irrigates five times to each two cuttings—two and three waterings to a cutting alternately. He cuts five crops a year. In this way he keeps the moisture supply to the roots pretty even—never waterlogged, and never over dry. The trees are well supplied with water especially during the length growth—during May and June. Both almonds and peaches are carrying a good crop and the owner says he will be gratified to have arrived at a stage where he will be qualified to pay income tax. The hogs he keeps are pure bred Duroc-Jersey and nothing goes off this ranch but fruit. Ground squirrels used to be the bane of his life, but he has now succeeded in eradicating them entirely and his fruit and nuts are safe. He will turn under a crop of barley on the plowed section next season as a cover crop.

Where there is unlimited water: where it is judiciously applied and the drainage is good and where the owner is a fruit man and the trees are the first consideration, alfalfa seems to answer. But this combination is not common and after all it depends so largely on the man. Also, as the trees get older and make larger demands on the ground, conditions alter and management is adjusted to meet them.

Small White Beans Are Moving

(Written for Pacific Rural Press.)

Beans are beginning to move out of Salinas Valley according to R. W. Anderson of the Southern Pacific Milling Co. and Donald Lazier, who worked 20 years with the same company, but is now in the private partnership of C. N. Thorup & Co. The latter has recently shipped a dozen carloads to Michigan hand-picking establishments and had just taken an order for another 1,000 bags when the writer called April 30. Michigan and New York so generally have rain damage that they have big establishments for hand picking. Michigan beans were not damaged last season; hence the opening into which Mr. Lazier is pushing California beans. Very few of the Salinas Valley beans were used in the recent shipment of 150 carloads sent east from California. Forty carloads of the latter were of small whites, mostly from Santa Barbara county, where there still remained on April 1 760,000 bags not appreciably rain damaged.

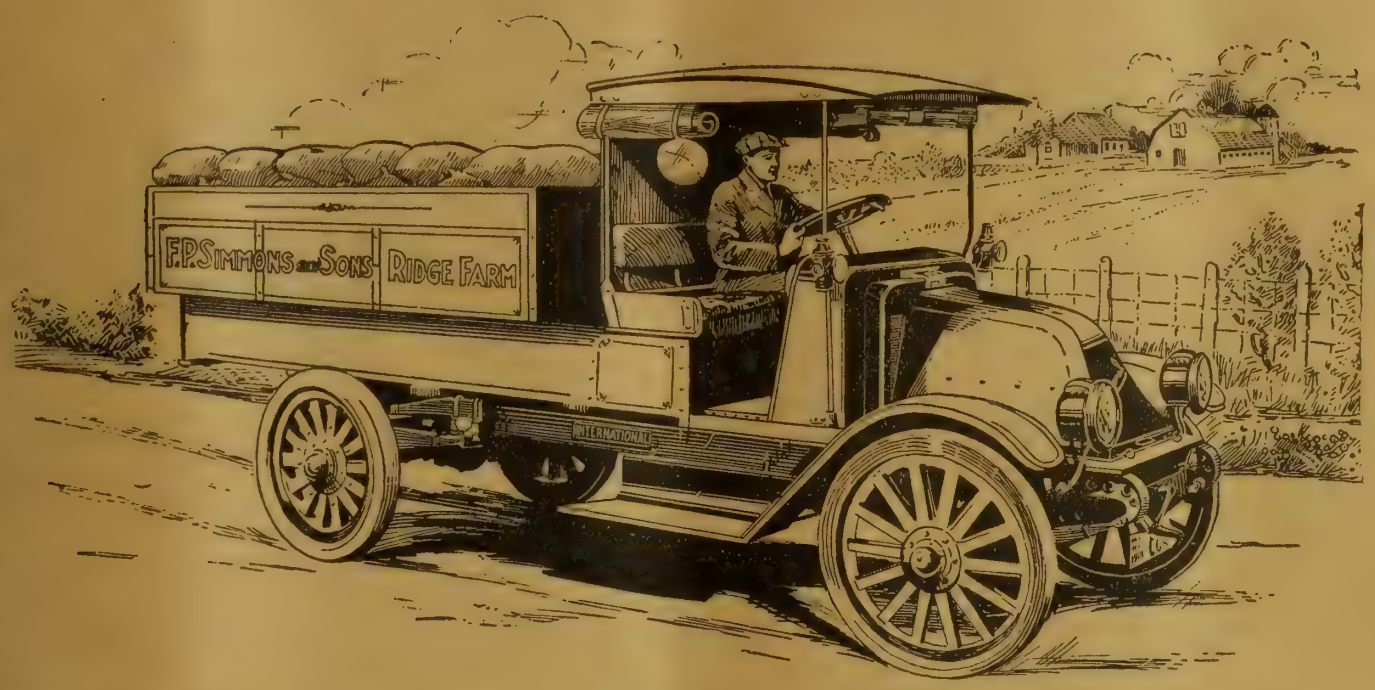
Mr. Anderson estimates that there were about 160,000 sacks of 1918 beans in territory tributary to Salinas City, a few thousand sacks being pinks. A great many of these are still held by the growers at home. Some have been shipped to the East at a price of four cents to the growers after picking out the worst at a cost of $2.20 per ton. Mr. Anderson showed us several lots in which there are still many discolored beans. One lot of 3,615 pounds lost 315 pounds in the cleaning. Another of 5,300 pounds lost 500. Another of 5,760 ponds lost 400. Selling at four cents after such losses and costs means that the growers are in the hole. Still the Salinas Valley farmers seem optimistic about their planting, which is just now under way. Mr. Anderson estimates that the acreage will be 65 per cent of last year, while Mr. Lazier esimates the planting about equal to that of 1916 but only half of last season. He notes that seed-bed preparation is better than for many years. The proportion of pinks is decreasing.

Baart Wheat Endures Drouth.

(Written for Pacific Rural Press.)

A field of 200 acres of Early Baart wheat planted in January by James Slaven in the Tres Pinos Valley of San Benito County showed considerably better resistance to the April drouth than other varieties, such as bluestem and white Australian sown under conditions equally as favorable. While a poor job of broad-casting made the stand rather spotted, the field in general almost reaches a tall man's arm pits, thick, heavy, and green, with heads averaging nearly 4 inches long. Mr. Slaven planted this Early Baart because he handled some last year when he expected to find the grain pinched and light, but this Baart weighed 143 pounds per sack. He had also noticed a field in San Joaquin County last year partly planted to Early Baart wheat and partly to barley; the barley was not worth harvesting, but the wheat yielded between 4 and 5 sacks per acre.

does it pay?



A NEBRASKA rancher located 45 miles from the railroad used to spend four days on the road with a team going and returning from his shipping point. With his International Motor Truck, he makes the trip in a day and saves three days for productive work.

An Iowa farmer living ten miles from town required the greater part of a day to make a round trip haul with horses. With his

International Motor Truck

he makes the trip in about three hours. The rest of the day he has for productive work. To the farmer living closer to market, the saving accomplished with an International Motor Truck is relatively as great.

This truck is built by a Company that knows farm and country road conditions. The engine is a simple, heavy duty type, transmitting ample power to the famous International internal gear rear axle, that converts it into mileage at lowest cost.

When need arises for repairs, or an adjustment, an International owner has always at ready command a service organization that is thorough and complete. This is an important consideration to the farmer, whose hauling must so often be done at just a certain time.

Figure up the time you and your help spend on the road in the course of a year. Two-thirds of that time is the approximate number of days an International Motor Truck will save you for productive work. There is a style of body and size of truck to meet practically every hauling requirement. Write for full information.

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International Harvester Company of America
(INCORPORATED)

Chicago -:- **U S A**

Branch Houses, Distributors and Dealers Everywhere

Helping Neighbors Helps Self.

(Written for Pacific Rural Press by R. H. Whitten.)

You have been publishing many good articles lately, and no matter what branch of farming a man may be engaged in, he can find plenty of food for thought. However, the one who is most in need of help does not take the Rural Press or any other farm paper, and the great question is—how to get at such men. There are many cases where progressive dairymen, for instance, who have been improving their herds for years, are surrounded by men who have the scrubbiest of stock, and the progressive and the unprogressive are at loggerheads.

I recently read of a farmer who had succeeded in everything undertaken, but was not appreciated by his neighbors. Among other things he raised pedigreed corn; his neighbors did not. On inspecting a field in the fall he found that the pollen from his neighbor's field had destroyed his own corn for seed purposes. At first he became sour on his unprogressive neighbor, but after thinking the matter over he went to him with an offering of pedigreed corn, so that he, the neighbor, could also raise the best. And, consequently, both were benefited. I believe that is the spirit which will convert the great mass of farmers to better farming. Returning to livestock raising, I don't mean that a breeder who perhaps has borrowed money to improve his stock should make a present of it to his unprogressive neighbors, but if he cannot sell his stock for what he thinks it worth, he ought to be willing to sell it to his neighbors for less, rather than sell to the butcher, as is customary.—Subscriber, Santa Rosa.



The progressive farmer should give his first attention to bettering his own community by giving his unprogressive neighbors the benefit of his knowledge and experience. He can hardly sow seed in more productive soil. Every dollar expended in this way will be returned to him increased many fold.

Right you are, friend, and we are glad to tell you that there are some breeders in our state who have enough foresight to do the very thing you suggest—yes, one of the most conspicuous examples is right in your own town. Mr. J. Francis O'Connor, owner of the Castleview Ranch near you, a few months ago bought a herd of Berkshires that had achieved national prominence in the show ring, but the former owner had made practically a failure so far as sales were concerned. We believe that it was because he kept his prices too high, and did not offer any inducements to farmers in that section to adopt his breed and strain of hogs. That we are right seems proved by the fact that after Mr. O'Connor bought the herd he reduced the prices, advertised the stock among farmers, and presto—the hogs sold like hot cakes.

Mr. O'Connor did not make a very big profit on any one sale, but he did a big business and his aggregate profit was most satisfactory. Furthermore, he put out stock which he felt sure would make good, and he expects to reap returns from this promotion plan for years to come.

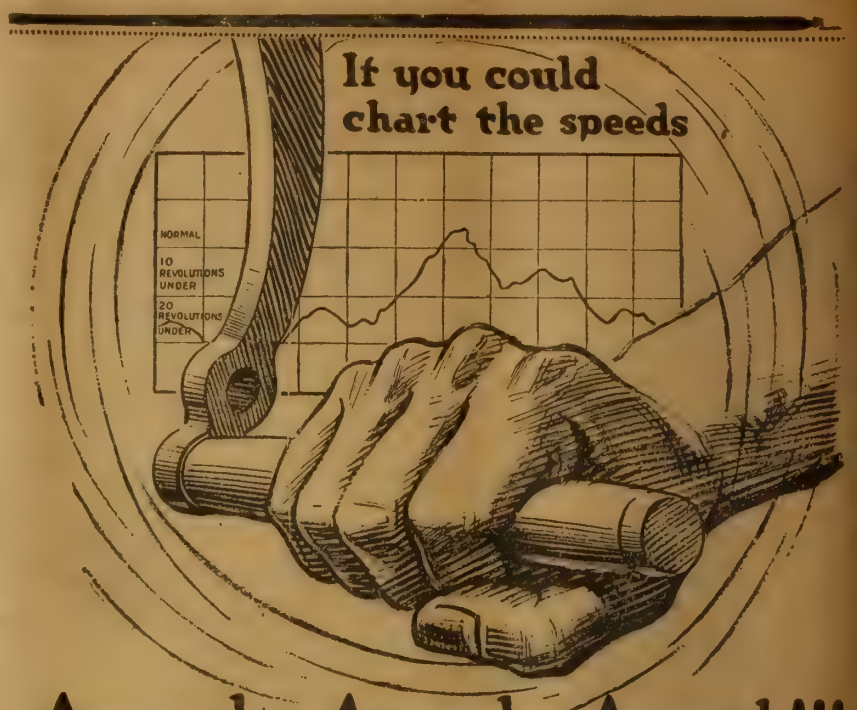
Our state needs more men like Mr. O'Connor. There are many plans which can be worked out to good advantage in encouraging the breeding up of herds and flocks. For instance, back in the Middle West breeders are offering to exchange young registered sires for scrub sires when they find farmers who really want to get ahead but are handicapped by lack of means. It requires lots of courage and foresight to make such a deal, which in reality means the selling of a registered male at meat prices, but we believe that it will pay in some cases. The experience of a farmer with registered stock is about like that of a tiger in tasting blood—an insatiable desire for more is created. And it is pretty certain that the farmer will go back to the breeder who got him started, and will become a good customer.

Now, regarding those who do not read, we know of a case where a cow-tester had 28 members in his association, 14 of whom read farm papers. The net profit per cow in the herds of the latter was $33.40. In the herds whose owners did not read farm papers it was only $21.46—a difference of $11.94. Figuring on an average herd of 30 cows, this would make a difference of $358.20 per year. Pretty good returns on an investment of $1 per year and just a few minutes' time each day, don't you think?

It works out the same along all lines of farming, and it may safely be said that the man who won't read is too shortsighted to succeed. No man should be too busy to study the methods by which others have made progress; in fact, the most successful men are the ones who are doing this very thing.

So, just as the man about whom you wrote introduced his neighbor to better seed corn; just as Mr. O'Connor introduced his neighbors to better hogs, how would it be for you and others who read this article to introduce your neighbors to better farming in general by acquainting them with the Rural Press? The benefits will be mutual. They will be helped, and you in turn will be surrounded by better neighbors, who will be able to help you in many ways. All together, now, let's work for the good of the cause.

It is a good plan to have under dry cover a box or barrel of air slaked lime for use as needed. When protected it will hold its full strength and freshness. Lime is both a germ killer and a health stimulant. It is recommended to be given in hogs feed in small quantities as a bone builder and a preventative of disease in which the bone is affected. It is a wise precaution to occasionally take a little water off lime and add it to the drinking water of hogs, as it is beneficial especially where there are weak bones. Some authorities claim that when a sow has access to lime water while carrying her pigs it will produce heavy, strong-boned youngsters.



Around and Around and Around !!!

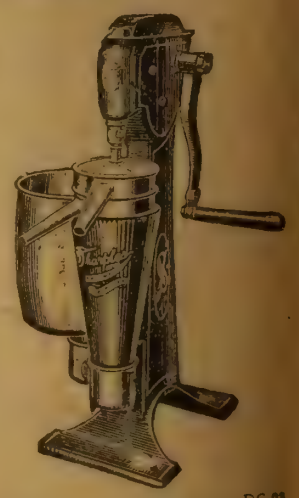
No human hand can keep up a fixed normal speed

If every owner of a fixed feed separator—especially those who *think* they are skimming clean,—could see a chart of the great *variation* in speed during one week's separation, they would be amazed. The chart would show that practically all the time the separator was being turned *below* speed and wasting butterfat. Actual tests prove that 95% of all separators are turned below speed most of the time and all separators are turned below speed some of the time. No matter how careful you are, it is humanly *impossible* to turn at a fixed speed, day in and day out. Speedometers, bells and other contraptions only show the wastefulness of fixed feed separators.

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CREAM SEPARATOR

SKIMS CLEAN AT ANY SPEED

Before you buy a separator, ask if it will *skim clean at any speed*—as otherwise you are going to lose money. Ask if it is American invented, American perfected, American owned. Meanwhile write for Sharples catalog and Sharples Book of Old Songs to nearest office, addressing Dept. 31



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Creamcup Herd offers service bulls and bull calves of 34-lb. breeding. Females offered for foundation stock. Tuberculin tested.
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R. D. "A," Box 437.
Two miles out North First Street.

Livestock Queries

HORSE HAS BOTS.

To the Editor: I have a horse that seems to have bots of the stomach. What is the remedy?—F. C. S., Meridian.

(Answered by the Live Stock Editor.)

Bots are caused from the bot fly which deposits eggs on the horse during warm weather. An egg hatches in from 2 to 4 weeks and the larva reaches the mouth through the animal licking the part to which the egg is attached. From the mouth it passes to the stomach where it attaches itself to the mucous membrane. Here it remains until fully developed when it becomes detached and passes out. Then on the ground it develops into a fly and the process is repeated over and over again. In the passage of the bot through the bowels it attaches itself to the membrane of the rectum and causes a great deal of pain and irritation. The presence of bots in large numbers causes dyspepsia, loss of condition, emaciation, and a hidebound appearance, and no relief appears to be possible until their discharge has taken place. Many attempts have been made to dislodge bots from their dwelling place inside the horse, but it has been found that any medicine strong enough to prove effective is so injurious to the horse that it is better to let the bots remain than to use any medicine. About the only way to overcome the trouble is to do as much as possible to destroy the eggs. Sometimes the hair is clipped, other times the eggs are scraped off with a sharp knife, and sometimes they are destroyed with a 2 or 3 per cent solution of carbolic acid. This should be practiced every 2 weeks during the period when the fly deposits the eggs.

ANOTHER CASE OF GARGET.

To the Editor: My Jersey cow was suddenly taken sick, would not eat, and one-quarter of her udder was badly swollen. I gave her Epsom salts and ginger, milked the udder clean and rubbed in turpentine and lard. She eats well now, but her hind feet are swollen and the udder does not become normal. She steps from one hind foot to the other and sometimes kicks her feet.—J. B., McKinleyville.

(Answered by Dr. E. J. Creely, San Francisco.)

Your cow has garget, which is an infection of the udder due probably to an injury. The swelling of the feet was due to a secondary or sympathetic inflammation of the adjoining lymphatic glands. Give a physic of Glauber's salts; restrict food and water and alternately put on the affected parts hot cloths and an ice bag. Irrigate the udder with a 3 per cent solution of boric acid, hold the solution in the udder and massage it gently for 15 minutes, then draw off with a milk tube and apply the following ointment: Lanoline wool fat, 4 ounces; boric acid, 2 drams; balsam Peru, 2 drams; oil Fennell seed, ½ dram. Do this twice a day.

SKIMMILK VS. WHEY FOR HOGS.

To the Editor: What is the relative value of whey and skimmilk for hogs? Some of my neighbors claim that whey is almost equal to skimmilk. I know that it is a very poor feed for calves.—W. N. B., San Gregorio.

(Answered by the Live Stock Editor.)

Your neighbor is wrong, as whey contains only 0.8 per cent protein, while skimmilk contains 3.8 per cent protein. Prof. Henry, the leading authority in the United States on feeds, says that whey is worth just about half as much as skimmilk for hogs. As whey is deficient in protein it should be be fed with foods that are high in protein, while skimmilk being comparatively high in protein should be fed with foods that are high in carbohydrates, such as barley and other grains. Consequently, your decision as to which of the two should be used would depend largely upon the feeds you have to use with them.

Cows know when they are well treated and are quick to reciprocate.

Milkers on Strike

MR. DAIRYMAN:

Does this threat affect you?

You insure against fire. Why not insure against being left without help? A good piece of machinery never strikes. Install a milking machine—we can have one operating for you within a week.

BUY NOW AND BE INDEPENDENT.



A Dozen Hands Are Better Than Two

One person, with the Universal Natural Milker, can milk three cows in less time than it requires to milk one by hand.

Today farm labor is scarce. The Universal will do your milking better and quicker than hired help—and a boy or girl of twelve can operate it.

It is easily attached, and milks in nature's way, with a gentle suction and massage similar in action to the calf's tongue.

It alternates, milking two teats at a stroke, allowing the other two to rest and refill.

It is sanitary and easily cleaned.

Once you use the Universal you would not do without one. The rubber lined Universal teat cup fits any cow.

Buy a Universal and save money. "It Pays Its Way Every Day."

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Some good territory open for live dealers.

Rubbing Elbows with Other Breeders

(Written for Pacific Rural Press by Thos. F. McConnell.)

Ayrshires Active at Elkhorn.

Activity is one of the chief characteristics of this greatest of all Scotch breeds of dairy cattle. Combined with sturdiness, elegant dairy conformation and wonderful constitutions, it makes them particularly valuable where the pasturage is not of the richest, or being rich is made somewhat difficult by mountainous or hilly country. These valuable qualifications, however, do not prevent Ayrshires from responding to more intensive conditions found in abundance in California. Therefore no matter whether a ranch is located in the hilly regions or the rich fertile valleys of the Pacific Coast, the choice of the Ayrshire for dairy purposes will be justified.

Some may ask where can such dairy cattle be found? One answer to the questions is—at Elkhorn Farm, owned by J. Henry Meyer of San Francisco, and located some 7 or 8 miles south of Watsonville on the old Toll Road to Salinas and on the main coast line of the Southern Pacific railroad. Here on the hills and in the dales of this beautiful region with some of the rugged characteristics of their native heath, but with a climate softened by the breezes of the Pacific, and in a more southerly latitude, is found the home of Holehouse Secretary Imp. No. 21989, a recent addition to this already super-excellent



Holehouse Secretary, the $5,000 Ayrshire sire at Elkhorn Farm, Watsonville.

herd of Ayrshires. This magnificent 2-year-old is probably the finest Ayrshire bull ever brought from Scotland to this country. With typical Ayrshire dairy conformation he combines the finest handling quality, masculinity, great constitution, excellent disposition, and almost an excess of vitality and vigor. His breeding? Well, his six nearest dams averaged over 10,000 pounds of milk each in 365 days, milking only twice a day and freshening once within that period. His dam produced 11,030 pounds of milk, 3.87% fat, in 40 weeks of continuous milking and produced a calf within a year.

Another bull at the farm is Penshurst Statesman, a 3-year-old, grandson of the world's champion Ayrshire cow, Garclaugh May Mischief, 25,329 pounds milk and 1,053 pounds butter in one year.

A matron that may be said to be just in her prime is Rena Ross 3rd, 9 years old, winner of the French cup two years in succession by the production of 13,710 pounds milk and 649 pounds butter as a 3-year-old and 16,114 pounds milk and 804 pounds butter as a 4-year-old. She produced 2,030 pounds of milk during last February. Many other cows might be mentioned, such as Thistledown Hobland 3rd, with a great back and udder; Polly Puss 3rd; Willowmoor Fairy,, a Peter Pan Junior 2-year-old that produced 11,065 pounds milk with an average test of 3.93 per cent fat.

At present there are 23 breeding cows, with the two bulls mentioned, and a bunch of as nice young calves, both bulls and heifers, as one could hope to see anywhere.

R. L. Hendric is a native Scottish herdsman, whose good work is evident in the fine condition of the stock and barns. A visit to the place is well repaid by the sight of such fine stock and equipment.

More About Riverina.

In a recent issue we attempted to say a few good things about the excellent Poland Chinas found in the Riverina herd at Modesto, owned by McCarty and Starkweather, but in some way a part of the article was left out. We cannot consider the write-up complete without referring to the new herd sire.

This great yearling, King Jones Over, is a son of the noted Siever's boar King Jones, and was bred by Fred Sievers, Audubon, Iowa. True to his name, he is King Jones over again, or even an improvement on his daddy, if such a thing is possible. For a yearling he shows wonderful size, with plenty of bone, stretch and spring of ribs. He has a strong back, good feet, and the masculinity so necessary in a prepotent boar. We hope he will be shown next fall, for he promises well as an individual as well as a sire.

Another great animal in both individuality and breeding is a gilt recently imported from Illinois. She is by Fashion Masterpiece and out of a Big Bob sow. Bred to Expansion King, she ought to produce a prize-winning futurity litter.

The location of Rivernia Farms, the foundation stock and everything else points to one of the great herds of Poland Chinas in California. Anything and everything necessary to grow great Polands can be done right here at home, and Mr. Starkweather, the active manager, seems to be working along exactly the right lines.

Venadera Jerseys Show Great Class.

The Venadera herd of registered Jerseys, owned by Guy H. Miller of Modesto, is typical of the best of the breed in every way. Performance, appearance, temperament—everything impressed the writer immediately, and closer inspection only verified first impressions. From such aged cows as Goldie of Venadera, 598 lbs. fat; Pearl of Venadera, 702 lbs. fat; Wanda of Venadera, 531 lbs. fat as a 10-year-old, to Angela of Venadera, with 380 lbs. fat as a junior two-year-old—all look alike, and prove by their records that they are, economical butter fat machines.

This last heifer is from the senior herd sire, Altama Interest, four times grand champion of the breed at the State Fair, who shows great prepotency in producing stock of supreme quality and constitution. This animal is well worth studying as he has that sturdiness and masculinity, and withal quality, that is so eagerly looked for by all first rank breeders, no matter what particular breed they may fancy.

The cows in this herd are all horn-less and Mr. Miller practices dehorning with caustic when they are calves. It certainly is both humane and profitable, as the animals cannot injure one another and there is practically no suffering when caustic is used.

Cornwell Prefers Pop Corn.

H. E. Cornwell of Modesto is a great advocate of pearl pop corn for silage or soiling. Last year Mr. Cornwell grew 100 tons of silage pop corn on 5 acres, which is a good yield for any kind of corn. The proportion of grain may not be quite so large, but the stalks are so fine that there is absolutely no waste in feeding. The corn also packs more closely, and excludes more air; consequently, it is preserved in a condition more closely approximating the natural green plant.

Mr. Cornwell has raised this pop corn for soiling for the past 20 years, and by planting at intervals has been able to extend the soiling of this crop over a period of from 4 to 5 months each year. By growing this crop, raising some lima beans, the straw of which is fed, and having alfalfa make up the rest of the area of this 60-acre intensive ranch, Mr. Cornwell is able to keep 60 head of registered Holsteins, besides the necessary horses to do the work.

Speaking of Holsteins brings to



Sir Johanna De Kol Rag Apple No. 188642. Senior Herd Sire in herd of H. E. Cornwell. This bull is out of the Lindstead Co.'s cow Advanced Wintske Derry Maid No. 204052 with highest 7 day and 60 day combined records ever known in the U. S.

Young bulls from dams of Prince Hiske Walker ... for sale.

H. E. CORNWELL.
R. R. B., Box 180, Modesto, Calif.
Ranch 3 miles N. W. on Prescott Road.

FALSE RUMORS!

have been circulating concerning the

McAlister & Sons' Dispersion Sale

200—REGISTERED HOLSTEINS—200

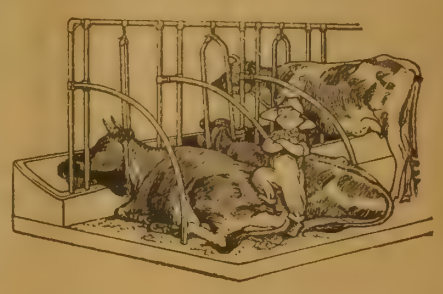
May 21-22, Chino, Cal.

It has been rumored that this is not a complete closing-out sale. Just to prove that it is a genuine closing-out sale, the

McALISTER & SONS' RANCH

is for lease for a period of 10 years.
The dairy utensils, equipment, farm implements, horses and furniture are for sale. Your great opportunity to buy stock from California's premier herd at your own price.

DON'T FORGET THE DAYS—MAY 21-22



The Louden line includes everything needed about the dairy ranch—from Stall Fittings to Gutter Drains and Feed Carriers. We are distributors for the entire line. We are also

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Do your cows enjoy the comfort and freedom of flexibly hung swinging steel stanchions, or are they cramped and miserable in rigid, insanitary wood "stocks"?

LOUDEN STEEL STALLS AND STANCHIONS

not only keep your cows clean and healthy, but help you get maximum milk production. Cows respond to good treatment—Contented cows give the most milk.

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N. H. LOCKE CO.
LOCKEFORD, CAL.
Choice young bulls of King's Valet Blood, backed by Records.
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VENADERA HERD REG. JERSEYS
Herd headed by Altama Interest, Grand Champion 1918 State Fair. Awarded two other championships and 10 firsts, including Aged Herd Breeders' Young Herd, and get of sire. Young bulls for sale from dams and granddams in Register of Merit.
GUY H. MILLER, Modesto, Cal.

LEONARD FARM JERSEYS
Bulls for sale from Register of Merit Cows. Write for information.
W. J. HACKETT,
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Breeders of
Registered JERSEYS
Young bull calves for sale. Fine individuals with Register of Merit backing.

RANCHO SANTA MARGUERITA, D. F. Conant, Prop., Modesto, Cal.
Register of MERIT JERSEYS A limited number of bulls for sale

FOR LARGE AND ECONOMICAL PRODUCTION
Get one of my young Jersey bulls from a high producing dam. They are rich in the blood of Gertie of Glynllyn and Lady Letty Lambert. Occasionally one old enough for service.
A. A. JENKINS, TULARE, CAL.

Edgemoor Farm Guernseys



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PRETTY PRODUCTIVE PROFITABLE

Noted for the highest natural colored dairy products, the best flavored milk, the most economical production of cream and butter.

A Few Animals of Either Sex For Sale

SANTEE, CALIF.

W. H. DUPEE
Pres.

mind the magnificent senior herd sire, Sir Johanna De Kol Rag Apple, whose dam Adirondac Wietske Dairymaid, holds the combined milk and butter record of the United States for 7, 30 and 60 days. When we say magnificent we do not draw the long bow in the least. This bull is an animal of outstanding quality and vigor, with supreme dairy conformation and temperment, and will be in the money wherever shown.

HEIFER STOPS MILK FLOW.

To the Editor: I have a heifer fresh three months. She was recently bred and two days later she let up on her milk, giving only a cupful of rich, thick milk daily. She was in a corral at night with other cows and horses. What can I do to bring back her flow of milk?—M. P., Orland.

(Answered by Dr. E. J. Creely, San Francisco.)

A diminished flow of milk is one of the first symptoms of disease in a cow and may be due to one of many causes, such as stomach or bowel complaint, bad feed, prolonged hunger, disease of the udder, pining for the young, and fear caused by being milked by a stranger. Without knowing the cause it is difficult to prescribe a "sure cure," but the following will generally prove effective: Black sulphide antimony, 3 ounces; sulphur, 1½ ounces, pulverized fennel seed, 5 ounces; pulverized caraway seed, 5 ounces; pulverized juniper berries, 5 ounces; chloride sodium, 1 pound. Mix and give 1 tablespoon at each feeding.

SHEEP HAS DIGESTIVE TROUBLES

To the Editor: Our Shropshire ram died after being sick about four days. He laid down most of the time and when he got up his legs seemed stiff. He kept getting worse until he could not get up at all and would neither eat nor drink. After he died we cut him open and found the small intestines red and the bladder full of water. What was the matter?—S. C. H., Turlock.

(Ansered by Dr. E. J. Creely, San Francisco.)

Your ram had inflammation of the bowels with a secondary inflammation of the bladder. Generally it is caused by something introduced into the bowels in the way of food or something picked up. Occasionally it is caused by an impaction of the bowels. A good dose of a mixture of castor oil and ether will generaly stop an attack if taken in time.

MONEY-MAKER, START TO FINISH.

A registered Hereford cow that had outlived her usefulness recently sold on the Kansas City market for $274.35. She weighed 1,170 pounds and brought $15.50 per hundred. The sale illustrates very strikingly the sound foundation underlying the structure of the whole purebred industry. The cow devotes all of her producing life to bringing profits to her owner on offspring, and then when she has done all she can in that way, she turns over her flesh and hide. And in this supreme sacrifice she returns to her owner all that he ever paid out in her feed and care. What more could be asked of her?



The Simplicity of Empire Milking

makes it easy for anyone to operate the Empire Milking Machine. There is nothing intricate about it. You start the engine, attach the milker to the pipe line, apply the teat cups and the machine does the work. It is so simple that boys and girls are successfully doing this work on many farms.

Empire Milking Machines have taken all the wearisome labor out of milking. They not only make this job easier but they do it better and with more uniformity. The operation of the Empire is the same at all times—gentle and soothing to the cows. You save help, for one person can do the work that it formerly took three to do, thus giving you more time and more help for field work.

Put Empire Milking Machines to work in your dairy. They will not only increase the production of your hard milkers and nervous cows but they'll cut dairy costs and make you independent of hired help.

Don't delay learning more about the Empire. Write at once for catalog No. 45 and get complete information. Let us have our local dealer give you a demonstration.

EMPIRE CREAM SEPARATOR COMPANY, Bloomfield, N. J.

Also Manufacturers of Empire Cream Separators and Gasoline Engines

Chicago, Ill.; Denver, Col.; Atlanta, Ga. Montreal and Toronto, Canada

EMPIRE MILKING MACHINES

Large Production and Fine Type



are combined in the get of PRINCE RIVERSIDE WALKER

Aaggie Acme of Riverside 2nd and Miss Valley Mead De Kol Walker, his two daughters, made the highest official yearly butter record and the highest butter record for three-year-olds, respectively, for 1917-18. His get won first prize at Sacramento last year. We are breeding his daughters to King Korndyke Pontiac 30th, our young $6,500 sire, whose great individuality, fine type, and backing of an unbroken line of great producing dams are hard to beat. Come and see the result of this breeding or write us for further particulars.

Our Entire Herd is Tuberculin Tested.

TULARE HOLSTEIN FARM

W. J. HIGDON, Owner TULARE, CAL. H. L. REDD, Herdsman

California Hog Book

By W. S. GUILFORD

Illustrated — 250 pages.

Price $2.00 postpaid. PACIFIC RURAL PRESS, SAN FRANCISCO

THE VICTORY HERD

REGISTERED HOLSTEIN FRIESIANS.



HERD SIRE, SIR PIEBE DE KOL SEGIS PONTIAC, No. 135795.

A 30-pound son of King Segis Pontiac Count, whose daughters in both short and long time work have broken more than one hundred world's records and now hold more records than the daughters of any other sire.

More About This Herd and Its Head Will Appear Later.

Watch For It.

HILCREST FARMS

H. E. SPIRES, Caruthers, California.

Novel Sales Methods Bring Results

(Written for Pacific Rural Press.)

Artistic design used on all Renwick Ranch stationery—generally in two colors.



Some class! That's what you say when you open the attractive letter you receive from the Renwick Ranch, answering your inquiry for a toppy young Poland China boar fit to head a prize-winning herd. The design used for the letterhead and envelope is artistic; the paper has a feel to it that makes you think of quality; the letter itself is neatly typewritten, answers all your questions, and creates such a favorable impression that you decide you simply must have that pig, and you hot-foot it to the telegraph office to place your order before someone else gets him.

Such is the subtle, persuasive power of classy stationery and properly worded letters, and here in California it has been left for a woman to make this important discovery. For the owner of the Renwick Ranch at Santa Barbara is a woman—Mrs. Viola L. Renwick. A nervous breakdown brought a recommendation from the doctor that some outdoor work be taken up, and being of a very practical turn of mind, Mrs. Renwick naturally decided upon porkers to produce pleasure and profit.

She started with the best stock to be had, but she did not stop there. She knew that to sell good stock at good prices she must do clever advertising and follow this up with skilful business-getting letters; she knew that every bit of literature going out should suggest quality, and thus cause a prospect to unconsciously form a good impression of her stock.

So she had an artist prepare a design which could be used for letterheads, envelopes, post cards, bill heads and pedigree blanks, and all of these different forms were printed. The latter is a great help in selling by mail as it has spaces for giving a pedigree for three generations back, and one is sent along for each animal described and quoted.

But the Big Winner is the pocket herd record—a little pocket size book containing blank spaces for keeping pedigrees and records of 24 animals. When a buyer makes his first purchase from Mrs. Renwick she enters the animal in a record book and mails it to him with the certificate of registration. And would you believe it—buyers have come back for more hogs, so that they could make more entries in their nifty little books. The average breeder would consider such a stunt a "crazy idea" and a useless expense, yet it is just such out-of-the-ordinary things as this that make a breeder stand out from the multitude and that cause orders to be given to him instead of to the one who sticks to the beaten path and does things in the old-fashioned way.

It requires skill to raise good hogs, but even good hogs will not sell themselves in this age of stiff competition. In the sensational boar El Profito, and the several excellent foundation sows in her herd, Mrs. Renwick has some of the finest stock on the Coast, but she knows that she must develop a market for her stock, so she spends quite as much time in studying her selling problems as in studying her breeding and feeding problems. And she makes it pay, for nearly all of her stock is booked before it is ready to leave the ranch, and nowadays to get a pig from the Renwick Ranch it is necessary to place an order well in advance.

That woman can profitably play the livestock game is proved by the number of women who are successfully engaged in it here in California. And that one woman is leading about nine-tenths of our swine breeders in original, progressive, business-bringing methods will be proof to anyone who writes to a number of breeders for quotations on stock and includes a letter to Mrs. Renwick.

Give the Runt Pig a Chance

(Written for Pacific Rural Press.)

In almost every litter there is a runt pig. He is undersized, and if left with the others and given the same feed and care he proves a slow grower; in fact, the longer he remains the more of a runt he seems. He is the star boarder of the hog herd.

The ordinary advice is to get rid of star boarders, but instead of killing the runt pig give him a chance to make a record for himself. Perhaps he will prove to you that he can put away feed to profitable advantage.

To prove the truth or fallacy of the saying "Once a runt always a runt," the Oregon Agricultural College took nine runts from the 1918 spring farrow and raised them separately. They were not pigs that had been stunted by poor feeding, but were the smallest pigs at farrowing, several weighing only one pound and none exceeding 1.5 pounds; at weaning time their average weight was 17.5 pounds, while the average of their litter mates was 38 pounds.

At first these runts were fed on shorts and garbage; later barley was substituted for shorts. The pigs were fed until nine months old, when they were marketed at an average weight of 238 pounds, making an average daily gain of 1.58 pounds while on barley and garbage. How many farmers are able to put gains of 1.58 pounds per day on their best grade stock, or to market the hogs at 9 months weighing 238 pounds?

We know of another case where the best 40 pigs of a season's farrowing were put in one lot, and 13 tailenders in another. The former averaged 46 pounds; the latter 35 pounds. All were fed the same, and after 147 days the better pigs were found to have averaged 1.17 pounds gain per day; the runts only 1.03 pounds. But the former consumed 454.10 pounds grain for 100 pounds gain, and the latter 454.39 pounds, so according to gains made it cost no more to raise the runts than it did the better pigs.

The results of these and other tests indicate that by proper segregation according to size, the so-called runts will make almost equal returns per pound of feed with the rest of the litter, although they will require more time to reach the same size.

Consequently, as the man who makes the most money in the hog business is the one who gets the highest average profit for his pigs, each pig should be made to pay a good profit on his keep, and the way to bring this about is to segregate the pigs so that the runts will have a fair chance.

Whenever possible, have about three sows farrow at the same time; then take the smallest pigs from all three litters and give to one sow—a good suckler. As soon as the pigs are old enough to eat, make a creep for them and give them all they will eat. Make them take plenty of exercise, keep them free from worms and lice, and like as not at weaning time you won't be able to tell which were the runts. Anyway, they will make about twice as good growth as they would if left with their larger litter mates, and you will be handsomely repaid for your efforts.

The healthy pig can defend himself against almost any attack of disease.

BOYS SWAT DOGS, BUY SHEEP.

For every dog kept, a loss of $36.50 must be pocketed every year. For every sheep kept, a profit of $27.60 may be pocketed every year.

At least, that is the way the proposition was itemized on the blackboard of a school house by a farm advisor. And the figures were convincing. There was not a sheep in the district at the time the figures were placed on the blackboard. Somebody said there used to be one sheep, but the dogs killed it.

A few weeks from the time the advisor placed the figures on the board 15 boys had contrived to buy one sheep each. Eleven dogs had been killed. Several other families, pestered by their small sons, but still unwilling to kill their dogs, were trying to give the brutes away.

Similar movements were started at other schools. Now, in that district, back in Kentucky, there are 622 boys who are members of sheep clubs. Among them they own nearly 2,665 sheep. By the tax returns the dog population appears to have increased also, but the farm advisor says this is not true. Formerly there was no

MONTELENA HERD
OF LARGE
YORKSHIRES



LAKE PARK KING 25211
Grand Champion Boar—California State Fair, 1917.

Due to the ever increasing popularity of the breed, Yorkshire breeders are almost entirely sold out, and it would behoove the prospective purchaser to place his order soon.
We are only able to offer at the present time a very exceptional lot of fall pigs, some sired by "Lake Park King," others by "Montelena Prince 2d." They are out of such sows as "Deer Creek Nena 8th," present Grand Champion sow of the State, who has averaged a fraction over 17 pigs per litter for nine consecutive litters; "Riverina Nena 9th," one of her best daughters, and "Lake Park Lady Frost 291st," the top sow at the Thomas H. Canfield sale last year.

We solicit your correspondence.

A. L. TUBBS CO.
CALISTOGA . CALIFORNIA

Lendorris Ranch Poland-Chinas



PUT PROFIT IN FARMING
Our herd is the result of careful selecting and constructive breeding, and combines size, bone, easy-feeding qualities, prolificacy—everything you want for a profit-making hog.
GREAT BATTERY OF BOARS
YOUNG JUMBO (see picture), the great son of Jumbo Bob, who is all that his name and breeding imply; also the sensational young boar, LENDORRIS LIBERTY BOND, a son of Liberty Bond, for whom $10,000 was refused. He promises to become one of the Coast's greatest sires. This is the blood you need to insure your success.
W. L. HAAG & SON
Hanford, Calif.



ORION'S KING GANO,
Junior and Reserve Grand Champion, Liberty Fair, Los Angeles.
The sensational boar for whom I refused $2500.

Big Type Durocs

Fred DeVore, of the Duroc Bulletin, approves of my herd boars—California Orion Cherry King and Orion's King Gano, both splendid grandsons of Orion Cherry King. They are BIG TYPE—the kind the East demands. DeVore says, "Orion's King Gano is the best boar I have seen on the coast."
A few choice spring pigs offered now. A little later I will have some fall gilts bred to the above boars for September litters.
DONALD H. GRAHAM,
P. O. BOX 177,
LANCASTER, CAL.
Ranch near Del Sur.

BIG TYPE POLAND-CHINAS



PRESIDENT JR., No. 320937
This great young boar (see picture) by President, out of Fruitful Maid, heads our herd.
YOUNG STOCK FOR SALE
Classy youngsters of the popular big-bone type. Sure to please and make money for you.
E. S. MYERS
Riverdale, Cal.
Ranch ¼ mile east and 1 mile south.

THE OTIS HERD

Milking Shorthorns

WILLOUGHBY, OHIO.

BEEF MILK



LADY OF THE GLEN.

Bred by us and acknowledged the best and most valuable individual of the breed.

Largest herd in America with the best connection. Many cows weighing 1,700 lbs. and above with records of over 10,000 lbs. of milk. Winners at the recent Congress sale owned by us or of our breeding. Sale cattle in carload lots or single. Calf clubs a specialty.

Write T. H. Harrison,
Santa Rosa Stock Farm, Santa Rosa, Cal.
California Representative.

Galls Cured While Horse Works

Don't lay your horse up in curing him of galls and sores! Don't delay and let the trouble get so bad you have to call in a veterinary. Bickmore's Gall Cure is GUARANTEED to *cure your horse while he works.* If you are not perfectly satisfied your money will be returned. Bickmore's is wonderful for collar and saddle galls, broken skin, rope burns, sore shoulder, mange and other skin diseases, bruises, cuts, chafes, mud scalds, grease heel, chapped teats on cows and other wounds on horses, cattle, pigs, and poultry. W. R. Pearson, Oakville, Kentucky, says: "I had a mare with an awfully bad shoulder but have worked her every day since I received your remedy and it has healed up nicely. I will never be without it as long as I have stock." Get Bickmore's from your druggist, harness dealer, hardware or general store. Accept no substitute; watch for the famous "Old Gray Horse" trademark—known for 34 years all over the world. Or send 10c for liberal trial sample and helpful Farm Account Book, giving valuable pointers to farmers and showing how to keep track of all expenses and receipts. Bickmore's is now being refined and put out for human use. It is called "Bickmore's XYZ Skin Ointment," and will soon win as big a reputation as Bickmore's Gall Cure. At your dealer's—or direct from us. The Bickmore Company, Dept. 365 Old Town, Maine.

BIG BONED POLAND-CHINAS

The fashionable, prolific kind that everyone wants.

Service boars, gilts and weanling pigs sired by the 1,000 pound boar

Big Bone Bob

Don't send East when you can get better at home. Come and see them and be convinced. Stock for foundation herds or exhibition.

N. K. HORAN

Lockeford, Cal.

Ranch 2 miles east of highway.

ROC STEIN RANCH DUROCS

Crimson Monarch, Gold Model and Orion Cherry King breeding. Weaned pigs and bred gilts and one service boar for sale. Write and get our prices before you buy.

W. M. Way & Son

Rt. 1, Box 320, MODESTO, CAL.

TAMWORTHS

(The Bacon Hog)

Largest Herd in the State

DURCO-JERSEYS

Mature Stock and Weanlings of both sexes. Sure to please.

SWINELAND FARM

W. O. Pearson, Prop. Woodland, Cal.

DUROCS OF THE

Best Blood Lines

Bred sows, gilts bred and open. Have one very nice O. C. K. boar 9 months old. Dam sold for $1,100 and sire for $1,000 in last month's sale.

Jersey Queen Farm, San Jose, Cal.

RHOADES & RHOADES

EXPERT LIVESTOCK AUCTIONEERS

Purebred Stock Sales a Specialty

Sales Conducted in All Parts of California.

BEN A. RHOADES, Auctioneer

501-3-5 So. Main St., Los Angeles, Cal.

Roselawn Stock Farm, Woodland, has sold a fine lot of Shorthorns to Butte City Ranch, Butte City.

sentiment for the enforcement of the dog law, but now there is a very strong sentiment that way, and, while there has been a considerable decrease in the number of dogs, there is an apparent increase, because people who formerly evaded the dog tax now have to pay it. No reason why the plan wouldn't work out the same in California.

PRAISE FOR PIE MELONS.

In a recent issue, under the heading, "Pie Melons for Hogs," you stated that the experience of Mr. Bernstein was that pie melons fed to pregnant sows would cause abortion and dead pigs. It may interest your readers to learn of my successful experience in feeding citrons to brood sows.

Two years ago while with the Delta Farm and Livestock Company, I fed 100 brood sows the following ration: Two pounds of concentrates, including 8 per cent tankage, alfalfa hay, and about all the citrons the sows would eat, which was considerable. This ration was fed for four months. At farrowing time the sows were in good condition, farrowed big, strong pigs, and raised from six to eight pigs to the litter. From the time the sows were bred until 14 days before farrowing time they were running in a big lot, had plenty of shade, water, exercise and access to a mineral mixture.

Citrons make a cheap feed when the cost is from $1.80 to $2 per ton, the price for which we bought them, but the sows must have a high protein feed and minerals in connection with the feeding of citrons.—W. C. von Rosen, Whittier State School.

ADVERTISERS—THIS WON'T DO.

We continue to receive complaints from our readers that advertisers do not answer their letters. What's the reason? Don't you realize the high market value of courtesy? Think back to the time when you were starting in and wrote to different breeders. What sort of an impression did you form of those who did not answer you?

Even if you are sold out when an inquiry is received, you can well afford to take the time to write a prompt and courteous reply to this effect. Later on, perhaps you will be glad of the patronage of these same persons. If you handle their inquiries properly now you will have their good will, but if you remain silent a feeling will be developed against you which will preclude any future business dealings.

If you are in business for keeps, cut out the receptions a la iceberg that you are giving those who favor you with inquiries. Look upon each letter as an opportunity for business sometime, and make the most of that opportunity. Answer at once, and in terms that will cause the recipient to consider you about the best breeder on the map to do business with.

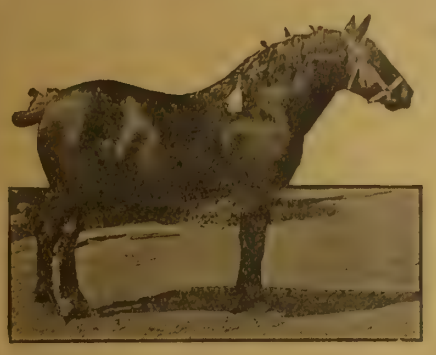
USE OF SERUM INCREASES.

One of the signs of the times and of improved methods in animal husbandry is the increasing use of vaccines and serums for the prevention of communicable animal diseases, such as cholera in swine, blackleg in cattle, etc. Evidence of this increased use is seen in the establishment of a central California office by the Purity Serum Co. (successors to Thatcher Serum Co.) at Sacramento. Mr. J. L. Thatcher, Pacific Coast manager for this widely known laboratory, found this step necessary, owing to a large increase of business in this section, and the convenience of having an office of easy access to stockmen of northern California, southern Oregon and Nevada.

Bridgford Company, Knightsen, report that Nattaline Walker, a junior three-year-old, gives promise of making a world's 30-day milk record in her class. She has already made 31.50 pounds butter from 789.8 pounds milk in 7 days and is now milking 115 pounds per day.

Imported and American Bred

PERCHERONS - BELGIANS - SHIRES



Stallions

A Large Collection of Stallions ready for service this season.

Heavy boned, ton types, with plenty of style and action. Prize-winners and descendants of prize-winners. No better in America. State certificate of soundness and life insurance furnished with every horse. If your community is in need of a high-class stallion, come to Patterson, California, and see the largest and best collection in the West.

SPECIAL PRICES AND LIBERAL TERMS FOR THE NEXT SIXTY DAYS

Visitors Welcome. Correspondence Invited.

N. W. THOMPSON, Patterson, California

THE YANKEE, JR.

ANOTHER YANKEE TO CALIFORNIA

The Yankees have been coming to California since the days of '49. However, last but not least is this new arrival, the four-legged kind.

THE YANKEE JR. a new herd sire for the POLAND CHINA HERD of John M. Bernstein, sired by THE YANKEE, probably the most famous sire of the breed for his age. **THE YANKEE JR.** comes from the herd of Williams Bros., Villisca, Ia., and was the final result of searching the seven states of Ohio, Indiana, Illinois, Missouri, Kansas, Nebraska and Iowa for a herd header. After inspecting boars young and old of various degrees of merit, with long backs, strong backs, long legs and short legs, the goal was reached when this great young boar was found, whose real merit cannot be told on paper, but must be seen to be appreciated. Come and see him and others of great merit.

JOHN M. BERNSTEIN, Hanford, California.



UNEEDA QUEEN MODEL,
Grand Champion State Fair, 1918.

UNEEDA GLENN COUNTY HERD OF

Duroc-Jersey Hogs

KEY HERD OF PACIFIC COAST

Won at Sacramento:

Grand Champion Sow, Senior Champion Sow, Junior Champion Boar, seven Firsts, 23 other prizes.

PIGS BY NOTED SIRES

High Orion, the world's record-breaking sire, Great Wonder, Grand Champion Iowa; King Orion Cherry, First Prize Indiana and Ohio, and other best boars of the breed. Get some of their pigs. Few bred sows and gilts left.

H. P. SLOCUM & SON

WILLOWS, CAL.

DUROC JERSEYS

GREENWOOD HERD OF LARGE TYPE DUROCS

The kind that have the bone, constitution and size combined with supreme quality. Our breeding stock comprises animals with blood lines that are noted for certain reproduction of the above characteristics. Ranch on state highway, 8 miles north of Marysville and 3 miles south of Live Oak.

H. C. WITHEROW, Mgr. LIVE OAK, Sutter Co., Cal.

OAK KNOLL FARM

LAKEPORT CALIFORNIA

We have sold all our young boars and are now booking orders for toppy weanlings. Highlander, the $1,000 Grand Champion Boar, heads our herd of

CHESTER WHITES

SAN FRANCISCO OFFICE, 601 BALBOA BLDG.



REGISTERED DUROC-JERSEYS

We have for sale right now, big, heavy-boned, high-up, four-months-old boars. Also some A-1 weanling pigs, either sex. Also some young gilts. Our herd boar has the best blood of the breed and was a prize-winner at the State Fair last year.

Write for prices.

ROUTE 4, BOX 735 THE GARDINER RANCH, SACRAMENTO, CAL.

FOR SALE

100 FINE YOUNG

Registered Duroc Jersey Sows

Ready for June breeding to get Fall pigs. Extra fine stock and in good condition

G. D. WILLOUGHBY & SONS

Box 506 Calexico, Cal.

HAUSER'S DIGESTER TANKAGE

Gives Great VALUE for LEAST MONEY. IT MAKES THEM FAT.

HAUSER PACKING CO. LOS ANGELES

DIGESTER TANKAGE

Send for Sensible Folder on Feeding Hogs

WESTERN MEAT COMPANY

Animal Food Dept. 704 Townsend St., San Francisco

Livestock and Dairy Notes

Livestock breeders all over the state are invited to send on postal cards, notes regarding their sales, State and County Fair intentions, new stock, etc.

LIVESTOCK SALES DATES.

May 21-22—McAlister & Sons, Chino, Registered Holsteins.

July 10—Carruthers Farm, Live Oak, Registered Shorthorn sale at San Francisco.

The Dairy.

It is reported that the Carnation Condensed Milk Company will establish a factory at Newman to cost $250,000. This is understood to be the first of several plants that will be built in this state.

C. A. Miller, of Ripon claims that a mixture of green alfalfa with Indian corn in the proportion of 25 per cent alfalfa makes a superior quality of silage that cows relish even better than the best silage from corn alone.

Betsy Lamb Prilly, a six-year-old Holstein, owned by H. E. Vogel, Fresno, was sent to the Tulare Holstein Farm to be put on test by H. L. Redd, the expert herdsman, and has just made 35.03 pounds butter from 743.3 pounds milk. She is being continued on 30-day test.

At the Napa State Hospital sale of grade Holsteins, 95 females averaged $125.50, which is excellent considering that only 12 of these females were cows. Most of them were open and bred heifers. Bred twin heifers brought $300 and $295, establishing a world's record price of $595 for twin daughters of a grade cow.

Boskadel Pietertje Hengerveld, owned by Mrs. Catherine Mays of Newman, has made a record of 25.24 pounds butter in 7 days. Mrs. Mays purchased the cow from M. M. Holdridge of San Jose, and also has a junior two-year-old daughter of the same cow due to freshen next month, who promises to make a very creditable record.

R. L. Holmes, the well-known Holstein breeder of Modesto, has recently sold a bull calf to John B. Magginni, Stockton, a heifer to Mr. Shirley, stockton; a bull to Oliver A. King, Winton, and a bull calf to C. G. Lane, Chowchilla. The last two sales were directly traceable to Mr. Holmes' advertisement in the Rural Press, from which he says he is getting great results.

Wm. A. Sayers of Bolinas, purchased four promising young Jersey heifers at the Bomberger sale, all descendants of Petralida, who produced over 500 pounds of fat per year for seven years. Mr. Sayers' herd sire is Valet's Emperor of L., who traces to Financial King on his sire's side, and to Gertie's Lad on his dam's side; both his sire and dam being grand champions.

H. E. Cornwell, Modesto, is a firm believer in the Ignaro strain of Holsteins. His first herd bull was sired by Ignaro and he has always continued this line of breeding. Mr. Cornwell has his own electric plant for lighting and running washing and ironing machines. The expense for gasoline and oil averages only about 1 cent per day and he has practically no trouble with the machinery.

King Segis Alcartra Abberkerk, senior sire in the Bridgford Company herd at Knightsen. has had his first two daughters freshen recently. Sarah Segis Alcartra Abbekerk, at 2 years and 1 month, made a record of 24.87 pounds butter from 483.3 pounds milk in 7 days, and Luzetta Segis Alcartra made 21 pounds butter from 437.6 pounds milk. Both heifers tested over 4 per cent—in both cases higher than their dams.

Robert Scoville of New York, president of the American Guernsey Cattle Club, proprietor of the famous Grassland Farms, and breeder of Masher's Sequel, one of the leading sires of the Guernsey breed, is making a tour of the coast and has visited several of the Guernsey breeders in California. He says that Humboldt county, California, and Waukesha county, Wisconsin, are the two ideal spots in America for dairy development. Mr. Scoville reports conditions in the east very encouraging.

T. J. Gist & Sons of the Holberk Stock Farm, Tulare, have recently added some fine stock to their herd of registered Holsteins. At the Guaranty sale they purchased a heifer bred to the $106,000 Carnation King Silvia, and at the Mitchell sale they purchased 5 head, including the 31.70 pound cow, Fidessa Helena, and 4 others with good records. All will be bred to King Sadie Vale Rose, a fine son of King Korndyke Sadie Vale, the only bull in the world to have a 40-pound dam, a 40-pound daughter and a 40-pound sister.

Coloma Beauty Butter Maid, the Holstein cow in the Tulare Holstein herd of W. J. Higdon, who made such an excellent record last year, recently dropped a fine heifer calf by King Korndyke Pontiac 20th, and has just finished a 7-day test at 4 years and 2 months, making 34.77 pounds butter from 576.3 pounds milk, which is believed to be a state record for a junior four-year-old. Lady Pontiac Holingen Jewel, a junior two-year-old, has made 21.90 pounds butter from 493.8 pounds milk. She is a senior two-year-old daughter of King of the Pontiacs 14th.

Clothilde Beauty Pontiac Veeman, owned by R. C. Sturgeon, Tulare, has completed a record of 20.83 pounds butter from 492.7 pounds milk in 7 days and 83.33 pounds butter from 2,-215.9 pounds milk in 30 days as a junior three-year-old. Princess Hengerveld Arizaba made 23.66 pounds butter from 605.3 pounds milk when in very poor flesh. Lady Legathend made 18.78 pounds butter from 513.6 pounds milk as a three-year-old. The best record of all was made by the Sturgeon cow, Buena Alta Aaggie Ormsby, at the Tulare Holstein Farm. She made 19.33 pounds butter from 411.03 pounds milk at 2 years and 6 days without being fitted for test.

Beef Cattle.

M. H. Tichenor, Palo Alto, has made two purchases of Shorthorn cows and calves from Vina Ranch, aggregating about 650 head. The stock has been moved to the Palo Alto Stock Farm.

All beef cattle sales records were smashed to smithereens May 6 and 7, when 180 head of Herefords averaged over $4,000 per head at the sale of Harris & Sons, at the Model Farm, Harris, Mo.

Polled Durham cattle probably will be known as Polled Shorthorns after the annual meeting of the association in June. The members claim that Polled Durhams are typical Shorthorns in every respect except that they have no horns, and they say that the present name is not satisfactory because the animals are often confused with Red Polled cattle.

While at Davis conducting beef cattle sales, Col. Fred Reppert stated that California is not only a good place for a rich man to come and enjoy life, but also the best place on earth for a poor man to become rich through the raising of livestock. He paid a glowing tribute to California stock which has been sent to Chicago and Portland and has won championships in the hottest competition.

(Continued on page 784.)

CATTLE RANGES

ARE YOU INTERESTED?



in knowing facts about Central British Columbia Cattle Ranges and mixed farming, improved and non-improved, large and small? Write your requirements, resources.

J. H. BROWNLEE, Canadian Land Surveyor, Peoples Savings Bank Bldg. Phone Main 2355. Sacramento.



Calf Profits

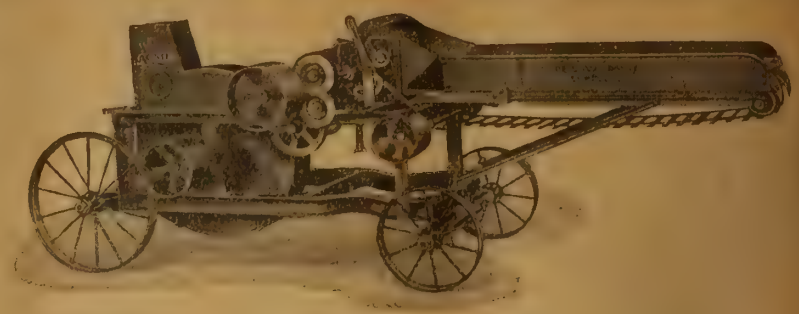
Are you getting them? Calf profits mean more to you now than ever before.

Blatchford's Calf Meal

has been known since the year 1890 as the complete milk substitute. Costs less than half as much as milk — prevents scouring — promotes early maturity. Sold by dealers or direct from the makers.

Write for New Data See actual figures showing you how to increase your calf profits

COULSON CO. - - - Petaluma, Cal.



The ACME Cutter

The Acme is equipped with spiral cutting knives. It is a CYLINDER TYPE cutter—superior to any other type from the standpoint of usefulness and efficiency because:

1. The spiral knives produce a clean evenly cut silage of highest quality. They do not bruise or tear it.
2. The correct design of the Acme gives it the largest capacity as a Hay Chopper and Alfalfa Meal Machine, a USE AVAILABLE WITH NO OTHER TYPE.

As your investigation will prove the superiority of the cylinder type your own good judgment will convince you of the superiority of ACME ALL STEEL FRAME CONSTRUCTION.

The Acme is the only steel frame cylinder cutter on the market. This frame gives The Acme the greatest durability. It can't warp or sag. Bearing and shafts always run true, requiring less power to operate. Vibration and wear common to the old style wood frame cutters are eliminated in the Steel Frame Acme.

COMPLETE CATALOG AND SAMPLE OF MEAL UPON REQUEST.

DE LAVAL DAIRY SUPPLY CO.

61 Beale St., San Francisco.



Imported stock from the best blood lines in America.

RAMBOUILLETS

will make money on any farm. Pure bred, large and smooth, with heavy fleece of fine, long staple white wool. Yearling and older rams. Breeding ewes. Any quantity. Prices attractive.

Chas. A. Kimble, Hanford, Cal., Breeder and Importer.



Champion Ram, P. P. I. E.

SAN RAMON SHROPSHIRES

WINNINGS P. P. I. E., 1915

Aged Ram, First and Second. Yearling Ram, First. Ram Lamb, First, Second and Third. Champion Ram. Yearling Ewe, Second. Ewe Lamb, Second and Third. Get of sire, First. Pen of three Lambs, bred by Exhibitor, First and Fourth. Pen of Four Rams, bred by Exhibitor, First and Fourth. Flock, any age, Second. Flock, any age, bred by Exhibitor, Second. Flock, one year old, First. Flock one year old bred by Exhibitor, First. Flock under one year, First. Produce of Ewe, First, Second and Third. Premier Champion-hip for Breeder. Premier Championship for Exhibitor. A total, including American Shropshire Specials, of 15 Firsts, 9 Seconds, and 6 Championships.

Purebred Registered Rams and Ewes. Individuals or Carload Lots.

BISHOP BROS., Agents, SAN RAMON Contra Costa County, California.

RAMBOUILLET RANGE RAMS

One hundred purebred yearlings. Big, smooth and heavy-wooled sheep.

Big money in using this kind.

Write or call for further particulars and prices.

MERRITT RANCH,

G. N. & J. B. MERRITT. WOODLAND, CAL.

LIVESTOCK DIRECTORY

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Berkshire.

NICK GENTRY

Dean of the Berkshire Breeders, breeder of Baron Duke 201st, Grand National Champion, says: "I never saw a better width of loin than he has. If more breeders would produce the type of Baron Duke 201st there would be many more Berkshires raised and sold. Every animal on both sides in pedigree of Baron Duke 201st for many generations back were good ones; every one of them. His great size, good heart girth, very smooth shoulder, back and loin, legs and feet, are hard to equal in one animal. If he is not a good one and a well-bred one there is no other. I am glad to give you my opinion of Baron Duke 201st.
N. H. GENTRY.
You can buy his three months old weaning pigs from 650-pound prolific sows for $35.00. They are going fast. Order now. Undercock Land Co. In charge of Natomas Land Sales, 23 Montgomery St., San Francisco, Calif.

CASTLEVIEW

GIANT TYPE BERKSHIRES

We are booking orders for spring pigs from Grand Champion Sows and sired by Mayfield Lockwood, sire of Champion Barrow at 1919 Western Berkshire Congress.

CASTLEVIEW RANCH, SANTA ROSA.

CROLEY'S BALANCED HOG FEED—The cheapest feed to fatten hogs. Write Geo. H. Croley Co., Inc., Livestock Supplies, 8th and Townsend Sts., San Francisco, Calif.

GRAPEWILD FARMS BERKSHIRES
A few spring boars and fall pigs by Big Leader, Grapewild Farm Leader and Majestic King.
A. B. Humphrey, Prop., Escalon, Calif.

ANCHORAGE FARM.

MONEY-MAKING BERKSHIRE—The profitable, easy-feeding kind that make the highest priced pork from the lowest priced feed. They will increase your profits. Prices reasonable; satisfaction guaranteed. Write for free booklet, describing our worlds reserve champion, STAR LEADER. We are now making a special offering of bred sows and gilts.
Anchorage Farm, Orland, Calif.

BERKSHIRE BOAR PIGS—From large litters. Order one if you want the best. Satisfaction guaranteed. R. J. Merrill, Morgan Hill, California.

RIVER GARDEN FARM BERKSHIRES—Yearlings and gilts. They'll surely please you. E. H. Whiting, Route 2, Box 631, Chiah, Cal.

BERKSHIRES IN PERRIS— They make money for me. Write for catalogue and prices. L. Hall, Perris, California.

BERKSHIRES—Sired by Star Leader, the $500 boar. Kounais Registered Stock Farm, Modesto, Calif.

FOR REAL GOOD BERKSHIRES write Frank B. Anderson, B. 724W., Sacramento, Cal.

CARUTHERS FARMS BERKSHIRES — Cholera immune. Live Oak, California.

REGISTERED BERKSHIRES—Write R. D. Lume, Dos Palos, California.

BERKSHIRES—Fair Oaks Ranch, Willits, California.

Poland-Chinas.

POLAND CHINAS—A few fine Fall gilts sired by Big Bone Bob; also some top Spring boar pigs sired by Long Big Bone Jr.; junior champion, and Golden State King, out of Smooth Beauty. Black Beauty 5th, grand champion and champion, Black Beauty C. Mrs. Price, the dam of champions and others of high-backed, good-footed, the kind that make good. Sold worth the money. W. A. Young, Lodi Cal

EL PROFITO—Our great herd boar, will add profit-making qualities into your herd. His offspring have size, stretch, bone, good necks and feet, and easy feeding qualities. To make the right start with big-type Polands, get one of his boar pigs. Prices right. Correspondence cheerfully answered. Linda L. Renwick, Santa Barbara, California.

SOW BARGAINS—We are offering some exceptionally nice tried sows, bred and open gilts, at attractive prices. They are all sired by the undefeated and world's grand champion Sunrise and out of big type sows, which cost me $200 and over. Investigate before buying elsewhere. Rough's Greenfields, Arlington Station, Riverside, California.

WEANLINGS sired by Trailblazer, son of Pathfinder, Derryfield Col and Derryfield Wonder Boy, King's Col boars, ex Burke Good Enuff, Golden Model, and Model Col sows. Bred Gilts, Service Boars. Derryfield Farm, Capital National Bank Building, Sacramento

POLAND-CHINAS—Am booking orders for spring boars sired by King's Massive. Orange Jr. and from such noted sows as Rosebud Quality Jr., sired by President and out of King's Rosebud, grand champion sow of 1917 and 1918 and her big sows. H. D. McCune, Lemoore, Cal.

NOW BOOKING ORDERS for spring pigs, either sex from my prize-winning, large type Poland-Chinas hogs. Also will book a few orders for bred gilts, February and March farrow, and a few good serviceable, aged sows. Hale I. Marsh, Modesto, California

ELDERSLY FARM—We are offering some excellent tops from our fall, and spring pigs at attractive prices, sired by one of America's best-bred boars, Big Black Bone Wonder, with size and championship breeding on both sides. He is a real 1000-lb. boar. J. H. Ware, Live Oak, California.

MARCH BOAR PIGS—Out of sows selected from the best herds of the corn belt. One line-bred Big Bob pig sired by Bridge's Bob Wonder Missouri, grand champion, and out of my great sow, Bridge's Bobby. Two sired by the noted Boulder Buster and out of the splendid sow Bob's Giantess. These are real tops and guaranteed to please. H. C. Shinn, R. F. D. 1, Tulare.

THE BEST IN THE WEST—California Gerstdale and President's Equal are my herd sires. Fall and spring boars now ready to move—each one a corker. Dr. J. A. Crawshaw, Hanford, California.

BRED AND OPEN JULY GILTS by King Big Bone Leader for sale. Also September gilts by California Jumbo Buster and a few toppy young boars. A. Buckland & Son, Route E, Box 126, Fresno.

BOOKING ORDERS for spring pigs sired by "Bob Big Bone" 281289, litter brother of the Junior Champion of Sacramento, 1918, P. E. Mitchell, Atwater, California.

OXBONE HERD offers March boars for sale from King's Big Bone leader, grand champion at State Fair, 1918. Write F. E. Fay, Tipton, California.

SPRING PIGS—Big type Polands. Best blood in State. Write for particulars. White Oak Farm, A. F. Busch, Prop. Potter Valley, California.

BIG-BONED POLAND-CHINAS—From Eastern prize-winners. Sold out of boars; a few choice October gilts for sale. D. H. Forney, Route G, Fresno, California.

FALL BOARS by a son of Caldwell Big Bob at bargain prices. Also booking orders for spring pigs. Forest View Ranch, J. H. Cook, Paradise, Cal.

WAUKEEN HERD POLAND-CHINAS—Big type herd boar, the $700 Grand Champion of California. Les McCracken, Prop., Ripon, Cal.

BIG TYPE POLAND-CHINAS—Stock from the best herds of the Middle West. N. Hauck, Alton, Humboldt County, California.

LAKE SIDE STOCK FARM—Large smooth and big boned Poland-Chinas. Geo. V. Beckman & Sons, Lodi, California.

REGISTERED POLAND-CHINA SWINE—Prize winners. Finest stock in the State. M. Bassett, Hanford, California.

POLAND-CHINA PIGS WITH RIBBONS—Prices right. Johnnie Glusing, Winton, Calif.

POLAND-CHINA PIGS—Bernstein Trewhitt, and Ross blood. B. M. Hargis, Tulare.

POLAND-CHINAS—A few young service boars for sale. R. F. Guerin, Visalia, Calif.

REAOAKS RANCH herd of registered Poland-Chinas, W. J. Hanna, Gilroy, Calif.

BIG BONED POLAND-CHINAS—Stock for sale. E. S. Myers, Riverdale, California.

POLAND-CHINAS—Young stock for sale. Edward A. Hall, R. 1, Box 39, Watsonville, Calif

POLAND-CHINAS—Young stock for sale. H. E. McMahan, Lemoore, California.

POLAND CHINAS—Strictly large type. J. F. Lehman, Lodi, Cal.

Chester Whites.

BILLIKEN CHESTER WHITES—Just a few left to offer. One 1917 fall boar and one 1918 fall boar; both cholera immune. Spring farrows are all sold except 10 boar pigs Will have 10 more sows farrow during May, June and July and will book orders now from these coming litters, delivery at weaning time. C. B. Cunningham, Mills, Calif.

Duroc-Jerseys.

REGISTERED DUROC JERSEYS — Open gilts, averaging close to 175 lbs.—$50 each, crated and registered. Bred gilts about 250 lbs. at 9 months priced $100 apiece. Weaned pigs, either sex, from $25 up. Service boars and bred sows, priced to give a large return on the investment. Geo. L. Horine, Winton, Cal.

DUROC-JERSEYS AT IRELAND—Home of Cherry Volunteer II., Grand Champion Boar at Riverside. Ireland's Orion Defender and Orion's King of Ireland are excellent sires in service. Booking orders for spring delivery. Ranch at Owensmouth. City office, 1219 Brockman Bldg., Los Angeles, Calif.

THE JOHNSON HERD OF DUROCS—Two yearling service boars for sale at farmers' prices. These are well grown out, rugged animals. Weaned boar pigs, $25. Frederick M. Johnson, Napa.

SWEETWATER DUROCS—The most popular herd in the West. Our Durocs make money for us—they will do the same for you. Wilsor Ranch, Bonita, San Diego Co. Address R. K. Walker.

REGISTERED DUROC JERSEY WEANLINGS—$15.00 each 3 for $40 Satisfaction guaranteed. First come, first served. A few brood sows for sale. Red Rock Ranch, Glen Ellen, Cal

WE WON MORE MONEY on Durocs at the State Fair than any other exhibitor. Why not buy some of this winning stock? June Acres Stock Farm, Davis, California.

REGISTERED DUROC JERSEYS — Open and bred gilts. August and November boars. Great herd headers Weanling pigs, both sexes. Stock of the big strong type so much desired. Jack Borge, Dos Palos, Cal.

DUROC WEANLINGS for the farmer Easy feeders 200 lb at seven months W W Everett, River Bend Farm St Helena, Calif

A FEW CHOICE BRED GILTS, spring boars and gilts of the best blood lines. H. P. Slocum & Sons, Willows, California.

HEAVY-BONED DUROCS—A few service boars for sale. Ormondale Co., Route 1, Redwood City, California

DUROC-JERSEYS—A few choice September gilts Weanlings either sex H E Endicott Napa

REGISTERED DUROCS—All from prize winning stock W F Hackey Gridley Calif

REGISTERED DUROCS Stock for sale W J Fulgham & Sons, Visalia, California

Yorkshires.

LLOYTON HERD REGISTERED YORKSHIRES—Bred gilts and pigs from eight weeks up Lloyd & Tomton, Llano Road, Santa Rosa California.

Hampshires.

HAMPSHIRES—Fine quality. Weaned pigs, dandy young boars. Uneeda Hampshire Swine Farm, Tom M. Bodger, Prop., Gardena, Cal.

MY HAMPSHIRES are money makers Stock for sale. Buy now. L. W. Denker, Saugus, California.

HAMPSHIRE SWINE—Young stock for sale. Ira Hart, Dos Palos, California.

MISCELLANEOUS.

LARGE YORKSHIRES—The ideal hog for the progressive farmer. Young stock for sale. A. L. Tubbs Co., Calistoga, Calif.

MULE-FOOT HOGS—Large type. H. T. Bailey, P. O. Box 37, Lodi, California. "The Blue Gums."

DAIRY CATTLE.

Guernseys.

GRAPEWILD FARM GUERNSEYS.
A 21-months-old bull out of dam with record of 615 pounds in A. A. class, and a few young bulls up to 1 year of age.
A. B. Humphrey, Escalon, California.

HIDDEN VALLEY FARM offers for sale 2 young Guernsey bulls, ready for service, out of high record advanced register dams. A. J. Welch, proprietor, Redwood City, California.

EDGEMOOR FARM GUERNSEYS —First in the show ring and in official records. Few animals of either sex for sale. Edgemoor Farms, Santee, California.

PALO ALTO STOCK FARM, Palo Alto—Breeders of registered Guernseys; both sexes; prices reasonable.

Ayrshires.

ELKHORN FARM AYRSHIRES— Choice young bulls at reasonable prices J. H. Meyer, 440 Montgomery St., San Francisco, Calif.

NORABEL FARM AYRSHIRES—Purebred young stock for sale at reasonable prices Le Baron Estate Company, Valley Ford, Calif

AYRSHIRES—Registered; all ages. E. B McFarland, 412 Claus Spreckles Building, San Francisco, California.

Jerseys.

THE WEST'S GREATEST JERSEY SALE

TUESDAY, MAY 27, 1919,

State Fair Grounds, SACRAMENTO, CAL.

Complete dispersal at public auction of the famous producing and show herd of registered Jerseys owned by Clifford F. Reid, Portland, Oregon, and including the highest record Jersey cow ever offered at public auction, the world's record cow.

GOLDIE'S NEHALEM BEAUTY,

together with her dam, two sisters, one daughter, two sons, fourteen granddaughters, and six grandsons, making up the most wonderful Jersey family group ever offered in a public sale.

Register of Merit cows, imported cows, grand champion show cows, and offsprings of these cows make up the balance of this splendid offering.

This herd is under Federal supervision for health, and tuberculin test certificates issued by a Federal veterinarian will accompany all animals over six months of age.

Mr. Reid is dispersing this herd solely because his large and varied interests demand his entire time, and in dispersing his wonderful herd at public auction, absolutely without reserve or limit, he is affording other Jersey breeders a very rare opportunity to strengthen their herds and beginners to secure foundation animals of the best quality.

For free catalog of sale address sales managers, CALIFORNIA BREEDERS' SALES AND PEDIGREE COMPANY, 211 Ochsner Bldg., Sacramento, Cal. Auctioneer, Col. Ben A. Rhoades, Los Angeles.

SUNSHINE FARM JERSEYS—Tuberculin tested. Production counts. E. E. Greenough, Merced, California.

MILKING SHORTHORNS.

BREEDERS OF REGISTERED SHORTHORNS—Milk strain; choice young stock for sale.. John Lynch Ranch, Box 321, Petaluma.

INNISFAIL DAIRY SHORTHORNS—Registered young bulls for sale. Alexander & Kellogg, Suisun, California

Holsteins.

A PRICE ON EVERY ANIMAL.
Herd free from tuberculosis. All sales subject to sixty days' retest. Sons of **Finderne Soldene Valdean,** whose dam is not only a world record cow in seven-day division, but has two sisters holding world's records for yearly production.
Toyon Farms Association.
679 Mills Building San Francisco

WHEN IN THE MARKET for young bulls and females write me My herd sire and show bull, El Prado Wayne Colantha 2d is also for sale. Every animal in my herd is priced. J. W. Benoit, Route C, Modesto, California

HIGH-CLASS HOLSTEINS—I have for sale some sons of Sir Veeman Korndyke Pontiac from A. R. O dams. Write for particulars or come see them R F Guerin Visalia Calif

PALO ALTO STOCK FARM, Palo Alto, breeders of registered Holsteins Heifers and service bulls Reasonable prices

REGISTERED HOLSTEINS—We breed for production Leonard and Kilburn Ripon Cal

REGISTERED HOLSTEIN BULLS with world's record backing Kounais' Registered Stock Farm Modesto California

CREAMCUP HERD—Registered Holsteins, Pontiac bull calves M Holdridge, Rt. A, Box 187 San Jose California

BREEDERS OF REGISTERED HOLSTEIN cattle and Berkshire pigs Whittier State School Whittier California

F. H. STENZEL, SAN LORENZO, CALIF.—Breeder of Registered Holsteins High test producers

THE VICTORY HERD—Registered Holstein cattle and Duroc Jersey swine. H. E. Spires, Hillcrest Farms, Caruthers, California.

REGISTERED HOLSTEINS—Young stock for sale from A. R. O. dams. La Driver Stock Farm, Nicolaus, Cal.

REGISTERED HOLSTEINS—A. W. Morris & Sons Corp., Importers and Breeders, Woodland, California.

REGISTERED HOLSTEINS — Best blood lines of the breed. R. L. Holmes, Modesto, Cal.

GOTSHALL & MARGRUDER—Breeders of registered Holstein-Friesians Ripon, Calif.

CHOICE HOLSTEIN bulls for sale. No females. Millbrae Dairy, Millbrae, California.

BREEDERS OF REGISTERED HOLSTEIN cattle. McAlister & Sons, Chino, California

REGISTERED HOLSTEINS and Duroc-Jerseys Sturgeon Stock Ranch, Tulare, Calif.

HOLSTEIN BULLS and bull calves from A. R. O. cows. C. A. Miller, Ripon, California.

BEEF CATTLE.

PABST STOCK FARM—Registered Shorthorns. Herd Sires, Maxwalton Style 564168 and Maxwalton Lavender 626612. For Sale Maxwalton Style and four of his sons. L. N. Pabst, Cedarville, California.

RANCHO SAN JULIAN SHORTHORNS—Purebred range bulls, unregistered, for sale Estate Thos. B. Dibblee, Santa Barbara or Lompoc, Calif. John Troup, Supt.

ALAMO HERD REGISTERED HEREFORDS (founded by Governor Sparks). Herd and range bulls. Reasonable prices. W. D. Duke, Likely, Modoc county, California.

REGISTERED YEARLING SHORTHORN BULLS—Heavy-boned, thick-meated. Scotch and Scotch-topped breeding. Ormondale Co., Route 1, Redwood City, California.

REGISTERED MILK AND BEEF SHORTHORNS, bulls and heifers for sale; catalogue free. Thomas Harrison, Santa Rosa Stock Farm, Santa Rosa, California.

HEREFORDS—One hundred head of fine Hereford heifers two and three years old. Have been bred up for eighteen years. Box 428, Bishop, Cal.

HEREFORDS—Sierra Vista Herd, Minturn, California. Over one hundred registered animals. Fairfax and Repeater bulls head the herd. On highway.

THE NEVADA HEREFORD RANCH, Jno. H. Cazier & Son Co., Props., Wells, Nevada Registered Hereford cattle. Breeding stock for sale.

REGISTERED SHORTHORNS—A few choice young bulls, grandsons of Fair Knight. Prices reasonable. Fair Oaks Ranch, Willits, Calif.

HOPLAND STOCK FARM—Registered Shorthorns. Prices on application. Hopland, Calif.

REGISTERED HEREFORDS—H. H. Gable. Diamond G Ranch, Esparto, California.

SIMON NEWMAN CO., breeders of Registered Hereford, Newman, California.

GEORGE CALLAHAN, breeder of registered Herefords, Milton, California.

GEORGE WATTERSON—Breeder Registere Herefords, Bishop, California.

HEREFORDS—Mission Hereford Farm, Mission San Jose, California.

SHORTHORN—Carruthers Farms, Live Oak, California.

REGISTERED HOLSTEIN CATTLE—E. B Freeman, Route B, Modesto, California.

EL DORADO HERD OF HOLSTEINS—Alex. Whaley, Tulare, California.

HORSES AND MULES.

WORK HORSES FOR SALE—10 large, sleek, fat brewery horses. Good workers, kind, gentle and true to pull. Weigh 1200 to 1700 pounds. Also one buggy horse. Prices $50 to $135. Wieland Brewery, 240 Second St., San Francisco.

SHIRES —Broodmares— Stallions. Also stallion and filly colts $100 to $700. Jack London Ranch, Glen Ellen, Cal.

FOR SALE—A-1 Breeding Jack. Bargain. Have quit raising mules. W. P. Harkey, Gridley.

SHEEP AND GOATS.

F. A. MECHAM ESTATE, Petaluma, Cal.—Breeders and importers of Shropshire, Rambouillets and American Merinos, both sexes. Also Red Polled cattle. Take electric car at Petaluma or Santa Rosa for Live Oak Ranch

R. J. BLOOM, DIXON, CAL.—Breeder of Shropshire rams out of pure blood ewes and imported registered rams. Single and car load lots.

10 HEAD OF ANGORA GOATS for sale or will trade for beef cattle. K. J. Easby Jr., Merced Cal

DORSETS AND ROMNEYS—Dorset ram lambs for sale. John E. Marble, South Pasadena, California.

ONE TWO-YEAR SHROPSHIRE BUCK for sale. C. J. L. Stonebraker, Route A, Chico, California

BISHOP BROS., SAN RAMON CALIF.—Breeders and importers of Shropshires

KAUPKE BROS., WOODLAND, CALIF.—Breeders and importers of Hampshire sheep

CHAS. KIMBLE Breeder and importer of Rambouillets Hanford California

CALLA GROVE FARM, MANTECA, CALIF. Breeders and importers of Hampshire sheep

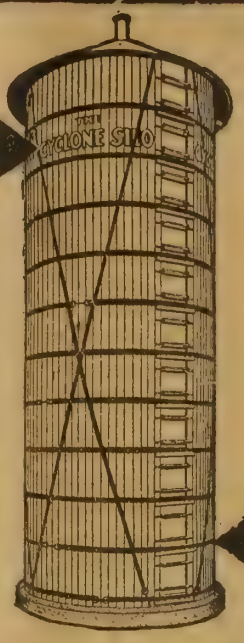
MISCELLANEOUS.

BUTTE CITY RANCH—Shorthorns Shropshires Berkshires and Shetland ponies Write for prices and descriptions before buying Butte City Ranch, Box P, Butte City, Glenn county, Cal. W. P. Dozier and W. S. Gulnac owners. **Special Notice:** Second Farm Sale Shorthorns; Shropshires; Berkshires; Percies August 2, 1919

FOR SALE—15 thoroughbred unregistered Shorthorn heifers yearlings. Absolute bargains. Also offering one 14 months old dual purpose bull, grandson of P. P. I. E. champion and out of Idlewood 12th, who weighs now and out of Idlewood 12th, who weighs near 1450 and has milked 3,700 lbs. of milk in last ninety days and is still milking 40 lbs. A real herd header. Chas. L. Weaver, Tulare, Cal

No other Silo has 'em!

Famous Trussed Steel Bracing



The Cyclone Silo is unequalled for strength and durability. Can't twist, lean or blow down. The strongest silo made. Wind proof, storm proof, twist proof.

The Cyclone Silo Trussed Steel Bracing is fastened to the top of the silo and firmly anchored in the concrete foundation. Each stave is not only stapled to each hoop but also to the bracing. Every staple fits into notches pressed in each edge of the steel, so there can be no slipping, no twisting or sagging. Every stave must stand upright regardless of shrinkage or expansion. This is the silo for you. Write for details of our Free Book on Silos and Feeding. A postal will do.

Cyclone Hoops Need no Tightening

National Tank & Pipe Co.

275 D OAK ST., PORTLAND, OREGON.

"Cyclone" Silo

Herefords

LEADING HERD OF THE STATE.

My stock is the result of nearly 40 years of careful breeding and selection. Have for sale a carload of registered bulls and a carload of heifers —1917 calves, grandsons and granddaughters of Beau Donald 31 No. 109885 and Mr. Perfection No. 215575.

They will go quickly. Write or call at once.

Wm. Bemmerly, - - Woodland, Cal.

INNISFAIL DAIRY SHORTHORNS



Won at Sacramento:

ALL Championships. Grand Championships, Reserve Championships.

22 OTHER PRIZES, INCLUDING 15 FIRSTS.

We offer for sale a few choice young bulls sired by Glenside Royal and out of large cows of good milk production.

Entire Herd Tuberculin Tested.

ALEXANDER & KELLOGG, Suisun, Cal.

GLENSIDE ROYAL 408155,
Grand Champion, Sacramento, 1916-1918, and at P. P. I. E. Farm on Grisly Island.

Carruthers Farms

LIVE OAK CALIFORNIA

Second annual **SHORTHORN** sale will be held on July 10th, at San Francisco, at which time and place 60 head of bulls and females of rare breeding will be offered.

BRIGHTON FARM SHORTHORNS

One three-year-old bull bred by H. E. Clay.
Two outstanding yearling bulls sired by Sir Type, a son of Cumberland Type.
A few yearling heifers of same breeding.
Also registered Berkshires of both sexes of best breeding.

H. L. & E. H. MURPHY, Perkins, Sacramento Co., Cal.

LIVESTOCK AND DAIRY NOTES.

(Continued from page 782.)

Swine and Swinemen.

Homer Hewins, Jr., has purchased a ranch near Salida and expects to locate on it soon. For some time he has been manager of the Maplewoode Ranch at Calistoga.

George L. Horine, Winton, recently sold a barrow at 7 months and 6 days that weighed 255 pounds. He was one of a bunch raised on alfalfa pasturage, milo and salt, and was not penned up for fattening. Some weight.

C. E. Barrows, the well-known breeder and exhibitor of Berkshires, is going to launch into business for himself and has taken a place at Orland where he will raise Berkshires and Jerseys.

H. C. Shinn, Tulare, has at the head of his herd a splendid 12-months-old boar by Mc's Big Orange and out of Smooth Wonder. This boar is closely related to the famous boars, The Yankee and The Pilot. He has been named, The Californian, and surely will do credit to this good name. Mr. Shinn is building up a mighty fine herd of big-type Polands.

When Fred Devore, the Duroc field man, was on his way south through the state he told Donald Graham of Lancaster that his herd was the only one seen up to that time that did not need any boars. He thought so well of Orion's King Gano that he told Mr. Graham he stole the boar from the East, and offered him $2,500 cash for him to ship him back to Iowa.

Fred Gatewood, Poland - China breeder of Fresno and member of committee on a big Swine Promotion Show at the Fresno District Fair next fall, says that the Duroc and Poland-China breeders both are going to have futurity classes at this fair. The Duroc breeders already have seventeen entries and the Poland-China breeders about as many.

W. D. Trewhitt, the Poland-China breeder of Hanford, has been doing a rushing business lately, selling. 4 bred sows to C. A. Vaughan, Hanford; 4 bred sows to D. L. Hensley, Lemoore; 3 boars to Kern County Land Co., Bakersfield; boar and sow to A. F. Nunes, Hanford; bred sow to Lewis Hudson, Laton. Mr. Trewhitt is pretty well cleaned out, but will have 50 sows for fall sale.

Winsor Ranch, Bonita, have recently sold Durocs as follows: A yearling son of Great Model and 4 bred gilts to R. N. Miller, Brawley; a Great Model gilt to D. F. Lane, Julian; 2 boar pigs by Great Model to San Pasqual Ranch, Escondido, and Ralph Mitchell, National City, at what is reported to be the highest prices ever paid for animals of their age.

The pig club of the Lemoore High School, Mr. Ashford in charge, expects to hold a public auction sale on the 31st of this month or the 7th of June at which hogs grown by the club members will be sold. About 31 head will be offered, mostly registered Poland-China females—some with litters of pigs. There are several Durocs and a very few Hampshires. Before the sale the animals will be judged and awards made, probably by a competent judge from the University Farm. Another feature will be the exhibition of sheep by the sheep club students. It will consist of Rambouillet ewes with lambs at side, procured from the flock of Chas. Kimble, Hanford.

Sheep.

Sheepmen in different parts of the state are clubbing together and selling their wool collectively. Prices of from 40 cents to 50 cents are reported.

W. S. Guilford, of Butte City Ranch, has been up in Oregon on a buying trip and will bring back a big shipment of Shropshires from the Clifford Reid flock near Portland. These sheep are from imported stock and have been prominent prize-winners at northern shows.

O. B. Fuller of Los Angeles stated at the Cattlemen's Convention that 60 carloads of lambs had been shipped from Imperial Valley to eastern points. Only 16 cents could be secured from local packers, but the lambs brought 19 cents f. o. b. Imperial Valley on the eastern markets.

Livestock Miscellaneous.

Prof. Gordon H. True of the University Farm has accepted an invitation to judge at the territorial fair to be held in Honolulu, June 9-14. Prof. True judged at the same fair last year and his excellent work gave great satisfaction.

Secretary Charles W. Paine announces that John C. Burns of College Station, Texas, will judge beef cattle and draft horses at this year's state fair; Prof. E. A. Trowbridge, Missouri College of Agriculture, light horses; Hugh G. Van Pelt, Waterloo, Ia., dairy cattle; Guy Putnam, Tecumseh, Neb., Duroc-Jersey hogs; R. N. Miller, Texas Agricultural College, sheep. Prof. J. I. Thompson, University Farm, will assist in the judging of hogs, and other judges will be announced later.

The California Shorthorn Situation

(Written for Pacific Rural Press.)

"Few breeders realize the tremendous production of cattle west of the Rocky Mountains," says W. A. Cochel in "The Shorthorn in America. "Here is a vast area of land adaptable only to grazing which is now producing a surplus of meat and will increase this surplus very materially in the near future. In California alone there are twenty-five herds of purebred Shorthorns, but these are insufficient to supply the demand for purebred bulls in the state. For the most part these herds have been established for the purpose of providing bulls for their owners to use in improving their grade herds.

"It is a surprise to one who is used to conditions in the Mississippi valley to see two and three-year-old steers of dairy breeding utilizing the grass and roughage on the coast. A few of the pure-bred herds would measure up in type and condition with what are usually termed the best herds of the East. There is, however, almost an entire absence of small breeders owning from one to twenty pure-bred females, who are the backbone of the pure-bred industry and furnish the best market we have for the class of bulls which are usually considered too valuable for use in grade herds and not quite up to the standards required of herd bulls in the large and well-known herds of the breed.

"Unfortunately, many of the bulls purchased in the East are handled through speculators or through breeders whose chief interest is not in maintaining the popularity of the Shorthorn in this territory. At least 50 per cent of the Shorthorn bulls in use in grade herds in that section would have made much more creditable steers than bulls. In order that the Shorthorn may maintain its present popularity it will be necessary for our breeders to see that nothing but bulls of size, quality and most desirable type find a market in this comparatively new territory. The type of cattle now being produced in California has set a high standard by which the Eastern imported cattle are measured. There is a very active demand for grade females and bulls of all classes which will improve present stocks throughout California, but each individual must be of modern type and presented in most desirable condition to be fully appreciated."

ORMONDALE SHORTHORNS

All are heavy boned, and of Scotch and Scotch-topped breeding.
Suited for either the range grower or breeder.
EVERY ANIMAL POSITIVELY GUARANTEED.
Whether you buy or not, visit our ranch, 7 miles from Palo Alto on Woodside Road.
We welcome inspection. Prices and pedigrees on application.

SHORTHORN CATTLE
DUROC-JERSEY SWINE
ORMONDALE CO.
REDWOOD CITY, CAL.
R. D. No. 1

Increase Production —Reduce Costs With Silage

"It is safe to say that with silage, the cost of butter fat can be reduced six to twelve cents per pound and the cost of producing a hundred pounds of milk thirty to fifty cents, a hundred pounds of beef, a dollar to two dollars."—A. L. Haecker, formerly head of Dairy Dept., University of Nebraska.

Prof. Haecker further states:

"The silo should be considered a part of the necessary equipment of a dairy or stock farm, for it has to do with the success of the business.

"The largest item of expense in keeping a herd is the feed bill. Labor comes next but the feed bill is generally twice that of labor and the silo strikes directly at the overhead, making a big saving in the cost of feeding.

"It also produces better young stock and increases production.



Record Yield Due to Silage

"Practically all of the great milk and butter records of the country are held by cows that have been fed silage.

"Large, growthy, vigorous young stock are easily and cheaply obtained by the liberal use of silage.

"It is surprising to find on our best stock farms not one but five or six silos.

"It is difficult to determine accurately the saving made by the silo, when cost of ration is considered, for so many conditions enter in which make a variation in the result, but it is safe to assume that from ten to twenty-five dollars can be saved in the cost of feeding a cow one year by the use of silage.

One Man Feeds 40 Cows in 30 Minutes

"By properly arranging the silo and barn, it is possible for one man to feed forty cows in thirty minutes. The work can be done with ease and without the use of horse or wagon.

"The silo is the most economical equipment for storing forage. Eight times more feed can be kept in a silo than a haymow.

"There is less deterioration in holding over silage than in holding dry fodder.

"I have seen excellent silage that was six years old and this same silage was fed successfully to cattle, who seemed to relish it more than new silage.

Silo Insures Your Feed Crop

"The silo stands ever as insurance against forage failures, especially damage by frost or drought.

"Any kind of feed that can be grown can be saved in the silo though it might not mature a grain crop.

"It makes farming more secure and warrants a cheap and excellent forage for all kinds of stock in both winter and summer.

"Six times more feed can be furnished on pasture ground, if it is put in the form of corn and siloed.

"It is not uncommon to see corn fodder produce as many as twenty tons of silage per acre.

"The pasturage of land worth a hundred dollars and up per acre is questionable, especially in sections where summer droughts are frequent.

"The summer silo in many sections is needed more than the winter silo.

"The silo will lower the cost of digestible carbohydrates, it will make your acres earn more, your work easier, your storage greater, the production of your cows higher, your farm richer."

THE SIMPLEX SILO
(One piece, unspliced staves)

THE PAPEC CUTTER
are indispensable adjuncts
to the successful dairy and stock raiser.

Santa Fe Lumber Company

16 California St., San Francisco, Cal.

MAIL THIS COUPON TODAY.

SANTA FE LUMBER COMPANY,
16 California St., San Francisco, Cal.
Please send me folder describing Simplex Silos, also information about Papec Ensilage Cutters.

Name .....

Address .....

Changing Calves to Skimmilk

(Written for Pacific Rural Press.)

Not many years ago there was a prejudice against skim milk for calves, as it was believed that undersized, unthrifty calves resulted. These results, however, were not due to the removal of the fat from the milk on which the calves were fed, but to wrong methods of feeding. Because the fat was removed, it was thought more milk should be fed, and consequently digestive disorders resulted from overfeeding.

This mistaken idea that only by feeding a great bulk of skim milk can a calf be profitably grown needs to be corrected. As a matter of fact, the removal of the butterfat renders the milk richer in bone and flesh forming materials, and it is very easy to throw the skim milk calf out of condition by overfeeding.

Casein and albumen are most necessary in growing a calf, as these are the elements that make bone, muscles, hair and hoofs. They are found in the skim milk, while in the butterfat are the elements that go more toward making heat and fat in the body than toward growth. And the fat removed from the milk can be supplied much more cheaply in the form of grain, so that the butterfat can be sold.

Barley is the best grain to use when mill feeds are high in price or not available. It does not contain much fat, but the carbonaceous matter takes the place of it. A little oil meal helps digestion, but this too is very high in price, and cocoanut meal will answer the purpose, using one part of it to two of ground barley. Add a teaspoonful of blood meal and you will have an excellent, economical grain ration. Corn meal, oats, or any of the sorghums, ground, may be added, and when wheat middlings are plentiful again they should be included.

Last Call for the McAlister Sale

(Written for Pacific Rural Press.)

Some people think that it is not good policy to buy dairy cattle at public sales. They carry the idea that these cows have been fitted to the limit and that they will go backward later on. But if they would take the trouble to investigate they would find that such cows bought without records have made good records, and those with good records have increased them. Every week we receive many reports of this kind. Coloma Beauty Butter Maid, purchased in the 1917 Guaranty Sale by W. J. Higdon of Tulare, has just made 34.77 pounds butter in 7 days as a junior 4-year-old; Abby DeKol of Eastbank 2nd, purchased at H. E. Cornwell's sale by A. M. Bibens, Modesto, recently made a record of 30.64 pounds butter—and so it goes.

The real truth of the matter is that in high-class herds dairy cattle are developed to the point where they can go out and give good accounts of themselves, and this is the kind of stock that will be offered at the McAlister & Sons' sale at Chino, May 21 and 22, when the entire herd of 200 head will be dispersed. The famous herd bull "It," and all of the foundation cows will be offered, as well as youngsters of great promise—sure to make good records. It will be a great sale; let's go.

CO-OPERATION IN DAIRYING

Everyone should eat more milk and butter, ice cream and cheese—city people especially, but they don't know it.

The dairyman should advertise his product same as other producers advertise theirs.

He will sell more and at better prices, and will then have more money with which he will get better cows that will give more milk per cow that will supply the increased demand caused by his advertising, that will give him more money to get more cows and so on.

For every advertisement for butter substitutes there ought to be one for milk or butter or ice cream or cheese.

Not an advertisement for some one's Brand but a truth telling advertisement about the product itself.

You say you are too busy to attend to it yourself; then combine with others in the same line and who are also too busy.

Subscribe a small sum of money; have someone on the job for you ALL THE TIME, telling the truth to the public, contradicting erroneous and false statements, putting up YOUR side of the case, and all under your own control.

The National Dairy Council and several State Dairy Councils are doing this.

California Dairy Council will be ready to do it too as soon as its membership and income are large enough.

Write NOW. Say you want to join and ask what YOU are expected to pay.

CALIFORNIA DAIRY COUNCIL

268 Market Street (Room 242), San Francisco

2311 Fairfield Avenue, Hollywood

Poultry and Rabbits for Profit

Conducted by R. H. Whitten.

PESTS THAT TAKE THE PROFIT.

Old Lady Hen doesn't object to scratching for a living, but she balks on scratching for worms all day and then having to scratch all night at vermin which delight in strolling over her. And she has a right to balk, for lice and mites hinder growth, reduce the egg production and lower the quality of the flesh.

Vermin receive less attention in the average farm flock than on large specialty poultry farms—either because farmers are not posted on the best methods of killing the cooties, or because they are too busy with other affairs. Practically all birds have a few lice, even if preventive means are practiced; in fact, investigations of the Department of Agriculture show that over 99 per cent of the flocks of this country are lousy. But this is no reason for allowing the flocks and houses to be come so overrun that the hens are carried at a loss.

Tons of valuable poultry feed given to fowls is wasted. Although it is eaten by the birds it does not go to produce eggs or meat. It really supports millions of lice and mites. Feed is too high and eggs and meat too scarce to permit this waste to go on, and to utilize all avilable food to the fullest extent we should keep up an incessant warfare against mites and lice, the two principal pests of poultrydom.

Smite the Mite.

With the advent of warm weather comes the scrap with mites—dangerous enemies of both young and old chickens. The hens become irritable, and decline in egg production and



Kill the cooties of the chicken yard if you want Biddy to do her best. In this illustration the hen is being dusted by the "pinch" method.

healthy condition as a result of losing blood to the mites. In heavily infested coops it is not unusual for the chickens to become droopy and weak, with pale combs and wattles. Setting hens desert their nests and thus ruin the eggs, while in extreme cases they are found dead on the nests, being killed outright by the attack of thousands of mites. The mites feed almost entirely at night, except that they attack hens on the nest in the daytime. They secrete themselves in cracks and crevices around the chicken house during the day, and hence their presence often is overlooked until a heavy infestation has developed. They lay their eggs in cracks around the roosts and nests, and multiply so rapidly that a fresh swarm comes forth every few days.

Since it is known that darkness, dampness, and filth are favorable for the development of the pests, it is clear that sunshine, dryness, and cleanliness are the best means of preventing the mites from getting a start. The hen house, brooding coops, nests and perches cannot be kept too clean, and they should be sprayed often during the warm season. They should be so constructed that they can be easily cleaned and sprayed. Provide good ventilation and allow a maximum amount of sunshine within the houses and coops.

When a house is infested, the first step necessary to destroy the mites is to get rid of the hiding places, as far as possible. Take down the roosts; remove all unnecessary boards and boxes; clean out all nesting material and litter, and burn it. Then spray, spray, spray. Use a teacup of crude carbolic acid or crude crosol to a quart of kerosene, or one part kerosene to four parts of crude petroleum, and spray every part of the building, for if it is heavily infested mites will even be found in the roof. Use a coarse spray and get a liberal amount of the solution into all cracks, especially in the nests and on the dropping boards, if you have them. Let it soak well into the roosts, and spray the floor also, as many mites fall to the floor when the roosts are being removed. For small coops a hand atomizer will answer, but for larger houses a bracket pump, knapsack sprayer, or barrel pump is desirable.

Spraying should be repeated in a week or ten days to kill the young which may have developed from the eggs which were not destroyed by the first application. After that sprays should be applied as often as necessary to keep the building, nests and perches free from the rapidly multiplying pests. It is well to do all spraying in the morning and keep the birds out of the building until the liquid has dried well into the wood.

Lose the Lice.

If poultry escape infestation of mites they are still exposed to visitations from lice which, unlike the mites, remain constantly with the fowl. More than 40 different kinds of lice attack domestic fowls and feed on portions of the feathers or on scales from the skin, their presence in any considerable number resulting in serious injury.

Sodium fluoride means sure and instantaneous death to poultry lice, and in either the dust or dip form it is the practical control. This material in the dust form is applied by the "pinch" method, which consists in holding the fowl by the legs or wings in one hand, while with the other hand a small pinch of the chemical is placed on the head, one on the neck, two on the back, one on the breast, one on the tail, one near the vent, one on each thigh, and one on the underside of each wing when spread. This material may also be applied in a shaker consisting of a tin can with nail holes punched in the top, the chemical being mixed with road dust or flour. When applied in this way more or less dust floats into the air, while it requires two persons to dust the fowl, one holding the feathers open while the other shakes the powder.

This method is satisfactory for treating small flocks, but when there are 25 or more birds the dipping method is advised — provided the weather is warm and sunny to insure quick drying. From three-quarters to one ounce of commercial sodium fluoride, or two-thirds ounce of chemically pure sodium fluoride, should be added to each gallon of tepid water in a tub. In dipping the fowl, it is best to hold the wings back with the left hand and quickly submerge the bird in the solution, leaving the head out while the feathers are thoroughly ruffled with the other hand so as to allow the solution to penetrate to the skin on different parts of the bird. The head is then ducked once or twice, the bird is lifted out of the bath and allowed to drain a few seconds, and then is released. Only 30 to 45 seconds are required to dip a fowl, while the expense for material is less than one-half cent a bird. The compound is very destructive to lice.

There is absolutely no injury to fowls by treatment with sodium fluoride, when dipping, the feathers are not wet very much and the birds dry quickly. This is very different from the case in dipping fowls in creosote compounds and other dips which have commonly been used.

Sodium fluoride is now carried by most wholesale druggists, and mail-order houses quote it in their catalogs. The price ranges from 25 cents to 40 cents a pound, according to locality. One pound will treat one hundred hens by the "pinch" method, and the amount of material used in dipping is considerably less. With a convenient method of catching the birds, 100 can be dipped in 25 minutes with 4 men working. The dusting method is

PROTEIN SPELLS Poultry Profit

FOR BEST RESULTS feed high-grade Beef Scraps of Uniform Quality.

The dealer who induces poultrymen to use High Protein Beef Scraps is a benefactor to his customers. The best is always the cheapest.

GOLD BEAR BEEF SCRAPS

Backed by a guarantee which assures the poultryman, high and uniform quality.

Made in a government inspected packing house. Contains only blood and offal.

Food elements plainly marked on every sack.

Made and Guaranteed by

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SAN FRANCISCO, CAL.

Write for our booklet, "PROTEIN FOR PROFIT."

somewhat slower, and there is a slight danger of missing certain portions of a bird through carelessness, thus allowing a few lice to escape destruction.

If you cannot procure sodium fluoride, use mercurial ointment, which can be purchased from any druggist ready for use. It must be well rubbed in, as it will not answer its purpose if it is merely daubed on the bird. A piece the size of a small pea should be rubbed about the vent, and if there are a great many lice a piece the same size should be rubbed under each wing.

It is well to provide dust baths for fowls, but this method cannot be depended upon for complete louse control. Some birds seldom dust themselves, and others which dust do not entirely free themselves. The dust bath should be under cover, if possible, and may consist of fine road dust with air-slacked lime or sulphur added. More hens will be induced to wallow if it is kept slightly moist.

Success in poultry raising comes only to the person who is willing to lend his time and energies to the business, and a most important part of that business is the exterminating of lice and mites. Smite the mite; lose the louse, and keep everlastingly at it.

USE THE TABLE SCRAPS.

Don't forget that you can convert the waste of the kitchen into considerable hen fruit and meat. The main thing is to handle the leavings so that they will reach the birds in a wholesome condition. A mess of scraps from the table and crusts of bread, mixed with vegetable parings, is neither as palatable nor as nourishing as when separated. It is well to have a flour sack hanging in a warm, dry place, in which to put all pieces of bread or biscuit. When enough have accumulated, run these through the meat grinder, or toast in the oven until crisp and crush with the rolling pin. These make good feed for the baby chicks.

The shells of boiled eggs dried and crushed are also good feed for chicks. Vegetable parings are relished more if run through the grinder or chopped. A green bone cutter puts small potatoes in fine shape for the chicks. Orange and lemon skins and other wastes of no food value should be burned. Chicken runs are sometimes made foul with the rinds which chickens cannot and will not eat, and which only make breeding places for flies and filth. Large pieces of fat or other meat should be cut up, and bones either run through a bone cutter or burned and broken with a hammer. Soft scraps add relish to the mash. Table scraps are sometimes too rich for little chicks, but make the best of tidbits for the breeding stock and the laying hens.

DON'TS FOR RABBIT BREEDERS.

Don't attempt to raise more than one variety—at least, not until after you have made a complete success of one.

Don't feed green food when it is stale, or alfalfa or clover when musty.

Don't be too eager to see what is in the litter. Wait two or three days; then satisfy your curiosity as quickly as possible.

Don't allow the doe to nurse more than eight youngsters; she cannot do it successfully.

Don't open the hutch door too quickly when feeding or the youngsters may become frightened, jump out and get lost.

Don't take all the youngsters from the doe at once, or you may cause her to have milk fever.

Don't mate the doe too soon after she has been separated from her litter. Wean the young at six weeks and let her rest for two weeks.

Don't make mashes with water that is not boiling. A mash to be properly made should be scalded.

OUTSIDE WHITEWASH.

Please give me a formula for painting the outside of poultry houses.—Mrs. S. G. H., Live Oak.

Probably what you want is a whitewash that will stand outside exposure. If so, you will find nothing better than the Government whitewash used on lighthouses, the formula for which is: Slake one-half bushel of unslaked lime with boiling water, keeping it covered during the process. Strain it and add a peck of salt, dissolved in warm water; three pounds of ground rice put in boiling water and boiled to a thin paste; one-half pound of powdered Spanish whiting and one pound of clear glue, dissolved in warm water; mix these well together and let the mixture stand for several days. Keep the wash thus prepared in a kettle or portable furnace, and when used, put it on as hot as possible with painters' or whitewash brush.

HE NEEDED THE "RURAL PRESS."

I started out to raise some hens;
I first bought wire to make the pens.
You need nice pens to make hens
thrive;
Mine cost me $40.25.

I bought eleven kinds of feed,
For fowls a large assortment need.
I bought cut bone and grains galore;
The bill was $19.84.

Of course hens need a chicken shed,
A place to sleep and to be fed.
Mine was a good one through and
through,
And cost me $60.42.

I wonder if hen farming pays.
I've had twelve eggs in sixty days.
The bills, of course, have been immense;
The twelve eggs brought me 30 cents.

All vegetables sold to canneries or in carload lots for shipment will be handled by the newly organized Vegetable Growers of California, the new co-operative association that supplants the California Tomato Growers' Association.

"The Rural Press is a great paper, and a welcome visitor to our home." —Chas. T. Langenour, Woodland.

Poultry Breeders' Directory

YOU ARE NOT TOO LATE—Our early maturing, winter laying strains. May, June hatch develop quickest into profitable winter layers. "My thirty pullets laid at four, sixth month (January) cleared $31." Why? Bred 20 years to lay winters. 200-290 eggs yearly. White, Brown, Buff Leghorns; Reds; Anconas; Rocks; Minorcas; clearing customers $5. Many repeat orders, monthly, yearly. Valuable circular with proof free. 70,000 egg hatcheries supplying chicks. Thousands shipped promptly, below ordinary chicks. Breeders (Pullets). Sale beginning. J. Beeson, Pasadena, Cal.

THE MISSION HATCHERY
Can now supply for May and June delivery,
WHITE, BROWN, BUFF LEGHORNS
Baby chicks of quality breeding, hatched right, and priced right, and shipped to arrive safely. Express or parcel post. Large or small lots. Also booking orders for late May and June delivery. Barred and White Rocks; Black and White Minorcas.
Circular and prices for the asking.
The Mission Hatchery, Box 27, Campbell, California.

WHITE LEGHORNS are the most profitable breed of poultry. If you are in the business for profit, you will eventually have them. Early broilers; early layers; early profits; we sell only **White Leghorn Baby Chix from** heavy laying **Hoganized** hens. Safe delivery of full count live chix guaranteed. Prices per 100: February $15; March, $14; April, $12.50. The Pioneer Hatchery, 408 Sixth street, Petaluma, California.

SINGLE COMB BROWN LEGHORNS—The large, modern, heavy-laying type that won high honors for us at the National Egg-Laying Contest. No better layers, none others so hardy. For 20 years our strain has won highest prizes at New York, Boston, Chicago, San Francisco, etc. Absolutely the finest Brown Leghorns in America. Eggs, $3 and $5 per $15; $15 per 100. Williams Bros., Fullerton, California.

LARM'S RHODE ISLAND REDS were never better. Rose and single comb hatching eggs from winners of the leading shows. Bred to lay. Eggs, now half price, from the best breeding lines in existence. Remember a few June and July chicks round into winners for the December and January shows. Send for circular. 3 Rose-comb cockerels. Wm. Larm, 3014 49th Ave., Fruitvale, Cal.

BARRED PLYMOUTH ROCKS—Champion prize winners and wonderful layers. Choice cockerels, hens and pullets for sale. Hatching eggs from twelve grand matings. I have made a specialty of Barred Rocks for over twenty years. That's why I win at all leading shows. "Nothing Better In Poultry" than Vodden's Barred Rocks. Catalog free. Chas. H. Vodden, Box 396, Los Gatos, California.

S. C. WHITE LEGHORN CHICKS—Any quantity from A-1 Hoganized and trapnested stock, winners of 1st, 2nd and special for pullet and 1st cockerel at Pacific Coast Land Show. Orders taken for June 7. A. O. & P. M. Forster, 2918 Otis St., Berkeley, Calif.

SULLIVAN'S FAMOUS BUFF ORPINGTONS—Line bred for 20 years. Oldest flock on Pacific Coast. Hogan System for 15 years. Eggs $3.00 and $5.00 for 15, $12.00 and $15.00 per 100. Limited number of breeders for sale; write for prices. Mr. and Mrs. W. S. Sullivan, 100 Market Road, Agnew, Santa Clara Co., Cal. Telephone S. J. 5205 R 5.

BABY CHICKS—Barred Plymouth Rock, R. I. Reds, Buff Orpingtons, Black Minorcas, Brown, White and Buff Leghorns from Hoganized stock, bred to lay. Tobener Poultry Ranch, Washington Ave., San Jose, Cal.

ATKINSON'S PEERLESS ANCONAS lay more and eat less than other breeds. 50 big husky cockerels $5 and up. 200 pullets, trios and pens for sale. Hatching eggs. Catalogue free. J. W. Atkinson, Box B, 130 Willard Street, San Jose, Cal.

S. C. RHODE ISLAND REDS EXCLUSIVELY—"Pacific Coast Aristocrats." Hoganized flock. Booking orders for day-old chix and hatching eggs. Order early. Rosedale Poultry Farm, Motor A, Box 200A, Ceres, Calif.

BABY CHICKS—Hatching season ends June 1st., except for special orders. A few chicks still available for later part of May—leading varieties. B. M. Archibald, Soquel, Santa Cruz Co., California.

WHITE LEGHORN BABY CHICKS—Every week, good strong youngsters from fine layers. Also other varieties. Write for circular. Stubbe Poultry Ranch and Hatchery, Palo Alto.

SANTA CLARA VALLEY HATCHERY has the chicks for you from six different standard breeds, all bred for egg yielders. Can furnish references from my old customers if desired. Lincoln Ave., San Jose, California.

RHODE ISLAND REDS—Best all-purpose bird. Oakland show. First cock, second cockerel, fifth pullet on four entries. Hatching eggs. Prices for asking. John L. Reed, Route C, Box 36-B, San Jose, California.

CROLEY'S RED STAR CHICK FEED—California's standard Baby Chick Feed for twenty-five years. Manufactured by Geo. H. Croley Company, Inc., 8th and Townsend Sts., San Francisco, Calif.

MODEL POULTRY FARM—White Leghorn specialists. Our fifteenth year. Baby chix and hatching eggs for sale. Our prices are right. W. C. Smith, Prop. Corning, Calif.

BARRED PLYMOUTH ROCK EGGS for sale. Good range flock headed by cockerels from 260 to 290-egg stock. $1.50 per setting. Mrs. J. A. Vassar, Laytonville, California.

EGG BRED—Buff Brown, White Leghorns, Golden Campines, Dark Cornish. Winners wherever shown. Send for circular. Percy Ward, 3142 Ward St., Fruitvale, California.

GOLDCROFT BUFF ORPINGTONS—Winners San Jose show. Eggs, $5.00 and $3.00 setting. Heavy laying. Choice breeders for sale. Samuel Abrams, Los Altos, Cal.

EASTMAN'S "BRED-TO-LAY" Hoganized and trapnested Barred Plymouth Rocks. Baby chicks. Eggs; cockerels. Fairmead Poultry Farm, Fairmead, California.

BABY CHICKS—Booking orders for spring deliveries. White and Brown Leghorns, Rhode Island Reds, Barred Rocks. E. W. Ohlen, Campbell, California.

BABY CHICKS—We have the large heavy-laying S. C. White Leghorns, severely culled last year. Send for prices. Tupman Poultry Farm, Ceres, California.

CHICKENS, DUCKS, GEESE, GUINEAS, Pea Fowl, Pigeons. Wm. A. French, 545 W. Park St., Stockton, California. Stamps.

BUFF ORPINGTONS, BUFF DUCKS, BOURBON RED TURKEYS—The Ferris Ranch, Rt. 2, Box 144D, Pomona, California.

FOR SALE—Guinea eggs $2.00 per 17 eggs. Pigeons: Extra fine birds $1.75 to $2.50 per pair. E. A. McKinley, R. F. D., Ukiah, Cal.

PEKIN DUCK EGGS—Settings $1.50; 100, $8.00. Mrs. W. E. Court, Route 1, Lathrop, Cal.

BRONZE TURKEY EGGS—No more eggs till further notice. Albert M. Hart, Clements, California.

RABBITS.

JOIN THE CALIFORNIA COMMERCIAL RABBIT Assn., and get real information on rabbit-raising. We issue an educational bulletin each month, which is free to members. Membership, including 16 back bulletins, $1.80. H. A. Sanderson, Secy., Eagle Rock, California.

NEW ZEALAND REDS—Pedigreed registered from prize-winning stock. Pedigreed does bred to registered buck, $5.00. Does 4 months eligible to registration, $4.00; 5 months, $5.00. Satisfaction guaranteed. E. Peppin, 86 Cambridge, San Leandro, Cal.

FLEMISH GIANTS—3 young bucks, 2 does 4 months old. Fine stock, sure to please. Only $3 each. Edw. Marston, Route 9, Box 521, Los Angeles.

SAN FONG RABBITS—15-16-lb. Steel and Gray Flemish Giants. Prize winners at San Jose and San Francisco. Sanborn Young, Los Gatos, Calif.

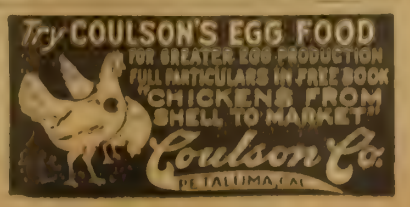
NEW ZEALAND REDS—First class utility does bred $5.00 each. Young does, $3.50 each. F. R. Caldwell, Broadmoor, San Leandro.

RAISE RABBITS FOR US—We supply the breeding stock. Send stamp for particulars. H. E. Gibson Co., Arcadia, Calif.

NEW ZEALAND REDS—We specialize on thoroughbred does bred to registered bucks. Baker Rabbitry, Box 321, Dixon.


America's Pioneer Dog Medicines

BOOK ON
DOG DISEASES
And How to Feed
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THE HOME CIRCLE

A Prayer.

By Maj. Guy M. Kindersley, O. B. E.

Nameless the things we have suffered, and shameless the things we have wrought,
We have borrowed the devil's weapons, we have used the guile that he taught,
For the things that our souls have hated, and for lies that our lips abhorred,
For the blood, the lust, and the passion, grant Thy forgiveness, Lord.

Yea, not by the things which we loathed, but by the cause which we loved,
Not by our doubts of Thy Mercy, but by our faith which we proved,
Judge us, O Lord, in Thy pity, remembering we are but dust,
And that though our ways be crooked, we have not broken our trust.

For it seemed that Thy cause was challenged, and we saw no better way
Than the way of the brute to serve it—to raven, to hate, and to slay;
So when Thou sittest in Judgment on the things that our souls abhorred,
By Thy prayer for those that knew not, remember Thy children, Lord.

The Prize That No One Expected.

"There," said Dora, the tears gathering in her eyes, while the brave smile on her lips strove to discount them, "there goes my last chance of any prize at all."

"It's too bad." The words came from a group of girls who all spoke the same well-worn phrase with varying accents of sympathy. "I don't see how you can keep on with school at all!"

"I can't be regular, that's certain," admitted the object of their compassion, a slim pretty girl of fifteen; but I'll do my best—and Miss Mason understands—which is a comfort."

"Yes, I know." The rest of the group fell back as Clare Willett, Dora Carter's especial friend, put her arms about the slender shoulders. "But you only graduate once in your life—and to be the single girl who desn't have a prize at all! Why must Dicky choose now to break his arm?" she added so fiercely that Dora smiled. When you are down-hearted, however, there are more endearing traits than reasonableness, and Clare's strong feeling comforted her.

"He couldn't help it," she said more cheerfully than she had yet spoken. He told me he had 'yumped the one step, and yumped the two step, and he fought he could yump the three step' —bless him!"

Dora Carter, Clare Willett, and a few other girls of the town attended a private school, chiefly because their mothers had attended it also when there was no high school; and Miss Mason, proving herself quite up-to-date and in keeping with modern requirements, had endeared herself to pupils of both generations to such a degree that no one criticised the parents of the second. Her diploma, moreover, admitted to more than one college, and was highly valued. Her prizes stood for many things. No scholarship could win you one if your moral standard and social deportment wasn't all it should be.

This year the class which called itself "Seniors"—strange word to apply to those active young forms and fresh young faces—numbered five; and there were five prizes, always. From the beginning of the year the girls had been sure of their destination. Margaret Brown would have the "Math." No one had had her reasoning power! Lucy Dean's specialty was knowledge of foreign tongues — she headed the Latin, French, and German classes. The English, the Science, and the General Knowledge all seemed to belong to Dora. At Christmas neither Clare nor Isabel hoped for any.

Then a series of misfortunes came which put Dora out of the running for the Science. Her mother's serious illness kept her at home during the most important experiments; but Clare's unlooked-for proficiency rejoiced Dora more than her loss troubled her.

At Easter a married sister brought two babies to be cared for, while she herself went with her husband down to Mexico, to try if living there would be possible for their precious little ones. Dora did not often miss her classes, but her preparation time seemed nil. She fell so behind in her theme work!—themes take thought, time, and a concentration to which babies are strongly opposed!—and it was soon evident that Isabel seemed in line for that prize But the General Knowledge still lured Dora on to early rising study, to odd-moment study, and to the seizing of every opportunity to add to her score of "Madam How and Lady Why." The sister came back and claimed her babies. Peace and plenty (of time) seemed well within view, when five-year-old Dicky broke his arm. Her mother was not yet strong enough to do much nursing, the family purse was sadly depleted, and Dora gave up all hope of the General Knowledge prize, for which Margaret seemed now the probable contestant.

Dora was a bright, unselfish girl, but she could not always keep back the tears that would come as day after day went by and she had to go unprepared to what classes she was able to attend, nor could she always conquer a certain impatience with Dicky,—not impatience of manner or action, but of feeling. He really was spoiled, she told herself. Then the big blue eyes would grow wistful as the sensitive little fellow felt a change in his nurse, and Dora, full of remorse, would double her attentions.

At last, just two weeks before Commencement, she had a talk with Miss Mason.

"You had better stay at home altogether, my dear," said that lady. How Dora loved the lined face, so strong and sweet under its silver hair! "I am sorry—very—for your disappointment But you are learning other lessons, of equal value with English and Science—perhaps of greater value. Come here on Tuesday, the day before Commencement."

Dora wondered at this request. On the day before Commencement, Miss Mason usually requested her pupils to rest.

It was with a feeling of relief that the girl abandoned all her beloved lessons and gave herself up to the household duties she always found tedious, though she did them pretty faithfully. She swept and dusted; she washed and ironed the lighter things; she sewed at her white Commencement gown, though it hardly interested her.

"I hope you will have another kind of prize, some day, dear,—you deserve it," said her pale, fragile mother, as she watched her.

Dora, smiling, said,—

"You're a nice enough prize, Mother, and Dicky's another!"

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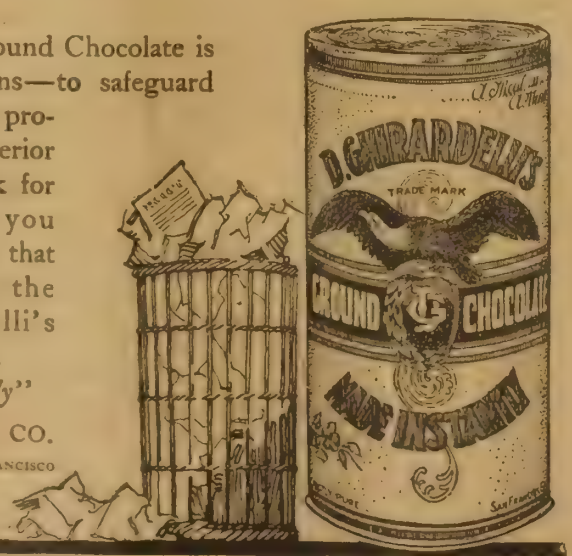
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But on Monday night—after a hard day she was extra tired—it suddenly seemed to Dora that, as she said to herself, "the bottom fell out of everything!" She pictured the often-rehearsed graduation day,—the music, the addresses, the giving of the diplomas and prizes; and it seemed very unjust that she, who had worked whenever she could, must sit among the undistinguished many, and not among the distinguished few.

"The others who get no prizes have had a good time going along," she said to herself. "I've had neither."

Then a thought came to her. She need not go to Commencement at all. She did not view this in the light of a temptation. It seemed merely an escape from a disagreeable position. She went to sleep rather relieved.

But when she told her mother the next day of her determination, she saw the sweet face sadden.

"Oh, my dear," said Mrs. Carter, "I am so sorry. I did not know it meant as much to you as that."

"I've no prize—not even a diploma," urged Dora, passionately. "I should feel so disgraced, Mother. I want to keep out of it all."

"I won't ask you to do a thing you don't wish to—when my illness and Lucy's babies and Dicky's arm have kept you from your just reward," replied her mother; "but I am sorry—not only for your loss, but that it seems so hard to you."

Then Dora understood that her way of escape was a temptation—a temptation to indulge in bitterness, to give way to repining. She was not able to speak for a few minutes, but she put away the breakfast things and made Dicky clean and tidy for the day. Then she heard the clock strike nine, with a start. If she made herself go to the Commencement festivities, she must also go to Miss Mason this morning, and not telephone her wish to stay at home. So she hurriedly slipped on her coat and hat and ran to her mother, compelling herself to speak brightly:

"I'm going, Mother, dear. It would be a shame to miss Clare's Commencement, and the other girls', just because mine isn't all I want it."

She was rewarded by the smile in her mother's eyes.

"Why, what is all this?"

The words burst from her astonished lips. She was shown into a large room, sometimes used for extra classes, but now newly furnished with six gas stoves, six tables with cupboards, and six sets of pots and pans.

"It means," explained Miss Mason, "that I am installing a Domestic Science department. It will be a senior and postgraduate course. Today, under my instruction, you will contend for a scholarship."

Such a merry hour and a half they had! But to Dora it was at once play and work-play (because of the ease with which her practised fingers worked) and work (because she wanted that scholarship). For, if she won it, she could with a clear conscience stay at home next year, instead of finding employment—employment that might, perhaps, perforce take her away from her loved ones.

"A committee of my friends will pronounce judgment," declared Miss Mason.

The next day dawned so cloudless, so blue, so beautiful, that Dora felt her heart lighter than she had thought possible. Her mother and Dicky were debating as to the advisability of attending the exercises, when the matter was settled by the arrival of Miss Mason's little electric—to take them.

The large hall was packed with people; the graduates and younger scholars filled the platform.

As the exercises went on, Dora schooled herself to rejoice for her friends—especially for Clare, whose look at her made her feel how true and loyal a heart was loving her—as they took their prizes.

Of course, you know what is coming? No, not quite!

"A friend to domesticity," announced Miss Mason, "has promised a sixth prize from now on—for Domestic Science! She wishes, however, to give one this year to the winner of the D. S. scholarship—Dora Carter, whose cake yesterday was pronounced to distance all competitors."

So Dora, quite unexpectedly, left her seat and went forward to receive a large and handsome book. She was not the "only graduate without a prize" after all.

For that is another surprise I have kept for you. She did graduate. When Miss Mason advised her staying at home for the last two weeks, she had discovered that passmarks were sure.

"Oh," said Dora, as, with Dicky on her lap, she whirled home by her mother's side in the little electric, suppose I had sulked—as I wanted to—and not gone yesterday!"

"Any one whose efforts are, in the main, to do right is often kept from falling," said her mother, gently. "And I am so glad that your home duties, so well done, have received a reward and that the reward was public, and an honor, too!"—Frances Harmer.

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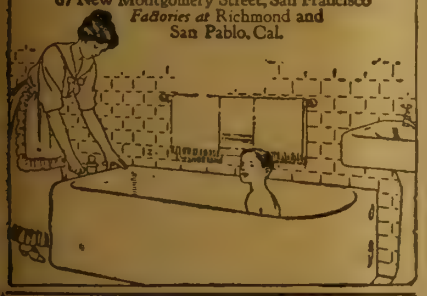
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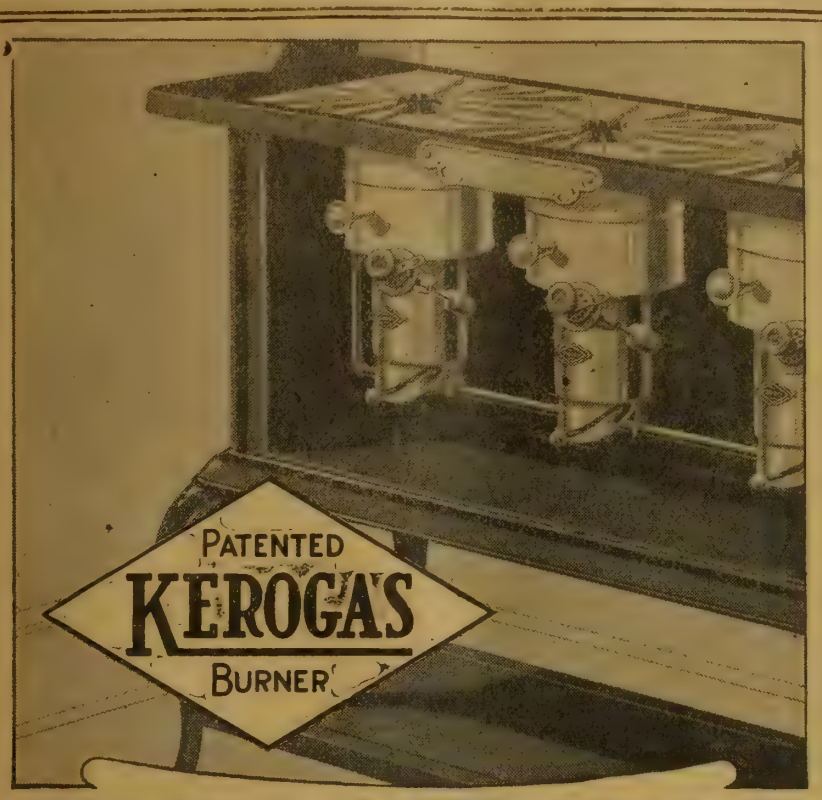
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Market Comment

"Cheer Up, Cherries Are Ripe."

Fifty dollars was the price paid in Chicago for the first box of cherries of the 1919 crop, grown in the Placer district.

Record Hog Prices.

Hog prices recently established two new records at Chicago, when top hogs sold for $21.55, and when $21.21 was the average price paid for hogs in one day.

Shasta Wool at 45 Cents.

A number of sheepmen in Shasta county clubbed together and sold their wool at 45 cents a pound. At the close of the week the same grade sold for fifty cents.

Average Dried Fruit Prices.

Average prices for the 1919 crop of dried fruits are being paid as follows: Peaches (per lb.), to growers, 14@15c; pears, 18@20c; prunes, 11½@12c; apples, 14½@15c.

California Cotton Crop Valuable.

California's cotton crop has grown out of its swaddling clothes and is recognized as a valuable asset to the state. Growers will receive approximately $20,000,000 for this season's crop.

Bean Growers Cut a Watermelon.

Members of the Lima Bean Selling Agency will receive about a half million dollars as a result of declaring another payment of a cent and a half on regular limas, and one cent on baby limas, according to a report from Oxnard.

22 Cents for Almonds.

For the best grade of almonds 22 cents is being offered around Oakdale, where it is anticipated a heavy crop will be harvested. This is five cents higher than the opening price of last year, which price was then considered the limit.

Beans Are Firm.

Values throughout the country were fully maintained the past week with some advances. Southern California sacked small whites strengthened to a range of $6.00—$6.75 to growers. California limas were strong, ruling $7.50 to growers and narrowing to a general range of $8.50—$8.75 in leading terminal markets.

Independents Find Grass Short.

The tieing up of the larger part of the acreage of the State by the California Prune and Apricot Growers has limited the supplies available to independent packers, and they have been forced to bid high for what they got. It is reported that 12 cents is offered for the cheaper grades, 20 cents for Imperials, and 24 cents for dried apricots.

World's Greatest Wheat Crop.

The U. S. Department of Agriculture estimates the 1919 wheat crop to be almost nine hundred million bushels, which at the guaranteed price of $2.26 a bushel, brings the crop up to a total valuation of over two billion dollars. California conditions are not up to the prophecy of the Washington department. There is much land in doubt and some is decidedly unpromising.

Price on "Practically Peeled Peaches."

Opening prices on "Practically Peeled Peaches" have been announced by the California Peach Growers, Inc., as follows: Peaches per case of 48 packages of 11 ounces each, $6.25; $8.50 per case of 24 two-pound packages, and $10.25 per case of 12 five-pound packages. These prices are f. o. b. sellers' plants, and obtain only for "peeled peaches," and do not apply to bulk stock, but the average advance indicates what may be looked for in bulk stock. The prices quoted are for September, October and November shipment, and are guaranteed against a decline until next January. It is now estimated by Federal agents that the 1919 California peach crop will amount to 15,676,000 bushels. This is an increase of 4,013,000 bushels over last year's crop. It is also estimated that about 88 per cent of the state's peaches are either dried or canned.

THE MARKET REPORTS

Figures Given Are Independent and Reliable. Prices Quoted as Paid to Producers.

SAN FRANCISCO.

San Francisco, May 14, 1919.

WHEAT.

The following prices were announced by the Federal Grain Corporation last year and are still in effect. They are figured f. o. b. San Francisco, Los Angeles, Seattle, Tacoma and Portland and guarantee the grower a minimum of $2 f. o. b. shipping point:

Per bushel—	
No. 1 hard	$2.20
No. 2	2.17
No. 3	2.13
No. 1 soft	2.18
No. 2	2.15
No. 3	2.11
Club or Sonora, No. 1	2.16
Do, No. 2	2.13
Do, No. 3	2.09
Recleaned, per ctl.—	
California	$4.30@4.40
Early Baart	None

BARLEY.

Barley continues to show strength with higher quotations on the shipping grade. Two steamers are now loading in this port with barley for the European market. One of these is under charter to G. W. McNear, Inc., and the other to Strauss & Co. The local demand for barley shows no increase.

Feed	$2.55@2.60
Shipping	2.75@2.80

OATS.

With little more than a nominal demand for oats in this market the grain is steady on the continued shipments of barley to foreign ports. No changes in prices are noted.

Red feed, per ctl.	$2.30@2.40
Red for seed	Nominal
Black for seed	Nominal
Recleaned Red or Black for seed	Nominal

CORN.

Corn showed more strength for first grade yellow this week and higher prices were demanded. It is stated that a cargo of corn from Argentine is on its way to this port in a vessel belonging to Balfour, Guthrie & Co.

California	$3.30@3.35
Egyptian, choice	Nominal
Milo	Nominal

HAY.

Receipts of hay for the past week were 1,846 tons compared with 2,288 the previous week. Most of this hay was of medium grades of old hay which has brought in to finish up shipments ordered by the Government several weeks ago. Several cars of first cutting alfalfa have arrived, some in good order and some in bad condition. Although most of this first cutting has been heavily charged with foxtail, some has been clean and carried very few wild oats. The latter was sold to good advantage, but the other was more or less a drug and price concessions had to be made. The market as a whole is easy with a downward tendency. Farmers are being advised to be sure their hay is well cured before baling to avoid heating when placed in cars as heated hay must be sold for what it will bring.

No. 1 wheat, per ton	$16.00@18.00
No. 2 Wheat, per ton	12.00@15.00
Choice Tame Oat, per ton	17.00@19.00
Wild Oat, per ton	11.00@14.00
Barley Hay, per ton	11.00@14.00
Alfalfa, per ton	15.00@19.00
Stock Hay, per ton	11.00@13.00
Barley Straw, per bale	.50@ .80

FEEDSTUFFS.

The market continues strong and shows further advances except in the case of alfalfa meal, which is slightly weaker and lower. Cracked corn was especially strong this week.

Cracked corn	$68.00@70.00
Rolled barley	53.00@54.00
Rolled oats	52.00@53.00
Alfalfa meal	33.00@34.00

POTATOES, ONIONS, ETC.

Bermudas, both white and yellow, are now arriving in good quantity. These new onions have taken the life out of the market for the old stock, but prices were maintained nominally at the same figure as last week. The increased arrivals of new potatoes have had the same effect on old potatoes, but it is said that the carry-over of old potatoes is not excessive and prices are fairly well maintained. New garlic is now coming in in sufficent quantity to make quotations possible. Most of it sold from 25 to 30 on the street this week. Beans are slowly getting cheaper. The stock of carrots is getting low and the price was materially advanced this week.

String beans	10@17½c
Peas	5@7c
Lima beans	None
Carrots, per sack	$3.00@4.00
Asparagus	6@8c
Lima beans	None
Rhubarb, Strawberry, box	$1.00@1.50
Cucumbers, hothouse, box of 30	3.00@3.50
English, per dozen	$2.50
Eggplant, per lb	None
Lettuce, per crate	75c@$1.25
Celery, crate	Nominal
Spinach, crate	50c@$1.00
Tomatoes, Southern, per crate	None
do, Mexican	$3.00@4.00
Sprouts	Nominal
Summer squash	$1.00@1.25
Potatoes—	
Rivers	$2.00@2.40
Oregon	2.00@2.40
Washington	1.95@2.25
Idaho	2.00@2.40
Garnets, new on street	5@5½c
Other new on street	3½@4½c
Sweets, per sack	None
Onions, Warehouse Stock—	
Yellows	None
Australian Browns	$3.75@4.00
Bermudas—white	3.00@3.25
do, yellow	$3.00
Green Alameda	2.00@2.25
Garlic	25@30c

BEANS.

Beans were in greater demand this week than for some time past and the market here is stronger. The only changes in quotations were for cranberries.

Bayos, per ctl.	$6.25@6.40
Blackeyes	$3.40@3.60
Cranberry beans	5.75@6.00
Limas (south, recleaned)	7.50
Pinks	5.80@6.10
Mexican Reds	4.75@5.25
Tepary beans	2.50@2.75
Garbanzos	11.75@12.00
Large whites	6.00@6.25
Small whites	6.90@7.00

POULTRY.

The poultry market was strong this week, with the receipts being just about enough to take care of the demands. Medium-sized broilers and squabs were weaker; otherwise there were no changes in quotations. At present prices broilers are rapidly going into storage and it is not expected that they will go below 35 cents so long as this movement continues.

Turkeys, live, young spring, lb.	30@38c
do, old	34@36c
do, dressed	42@44c
Broilers, 1½ to 2 lbs.	40@45c
do, 1¼ lbs.	38c
do, ¾ to 1¼ lbs	35@36c
Fryers	52@55c
Hens, extra, per lb. colored	36@38c
do, Leghorn	36@38c
Smooth young roosters, per lb. (3 lbs. and over	48@50c
Old roosters, colored, per lb.	22c
Geese, young, per lb	38c
do, old, per lb	38c
Squabs, per lb.	45@50c
Ducks, young	38c
do, old	36c
Belgian hares	15@16c
Jack rabbits	$3.00@3.50

BUTTER.

Butter continued to show strength throughout the week, and on active bidding an advance of three cents was made for extras over the high last week. Butter has recently been going into storage in greater quantities in this market and close to a half-million pounds is now reported in local storage. Shipments out of this State, both from San Francisco and from points of production, continue to be made. While some of the Eastern dealers are said to be inclined to feel bearish, very little shading of Eastern prices is noted.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extra	54	54½	55	55	56	56½
Prime firsts	....			Nominal		
Firsts	....	..	53½	53½	53½	54½

EGGS.

Eggs also were strong throughout the week, extras closing 2½ cents above the close of last week. The dealers admit that the present market is a difficult one to make predictions about, but one evidence that the exchange members look for egg prices above 60 cents within the course of a month or two at any rate is the action taken by the Board of Directors on May 12 when paragraph 3 of Rule 38 was amended to read, "All sales of eggs on the exchange shall carry a trade discount of 8 per cent." This rule previously made the discount 8 per cent on eggs selling up to 60 cents and 6 per cent above that amount. The new rule becomes effective May 17 and certainly indicates that the 60-cent price is looked for in the not distant future. Reports of storage in this market indicate over 70,000 cases on hand at the present time.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	46	47½	48½	48½	48½	48½
Extra first	..	..	..	..	..	..
Firsts	45	45	45	45½	45½	45½
Ex. pullets	43½	45	45½	46	46	46

CHEESE.

The cheese market is very firm, but trading is almost at a standstill. Nearly 400,000 pounds of cheese are in storage in this market.

Fancy California flats, per lb.	29c
First	27c
California Y. A., fancy	30½c
Oregon Y. A.	34c
Oregon Triplets	34c
Monterey cheese	22½@24c

FRESH FRUITS.

Strawberries and cherries were the leaders in the local fresh fruit market this wek. The former sold as low as $10 per chest and were in good demand. Free receipts of cherries lowered their price by about 75 cents for 10-pound boxes, but the prices are still too high for general consumption. Some apricots came in from the south, but not enough to establish quotable prices.

California apples	$3.50@4.00
Northwest apples	3.50@4.00
Winter pears	3.00@4.00
Persimmons	None
Loquats, per lb.	8@10c
Strawberries, chest	$10.00@12.00
do, crate	None
Cherries, purple Guigne	$1.75@2.00

CITRUS FRUITS.

With the exception of grapefruit, which was advanced 25 cents on fancy stock, there were no changes in the citrus market this week. Valencias are getting a good run.

Oranges, navels	$3.50@5.75
Valencia	4.75@5.00
Mandarins	3.50@4.00
Tangerines	3.50@4.00
Lemons, fancy	4.00@4.50
do, choice	3.50@4.00
do, standard	3.00@3.50
Lemonettes	2.00@3.00
Grapefruit	2.50@3.75

DRIED FRUITS.

There was some bidding for the new crop of apples this week, 16 and 16½ cents being offered. Peaches are stronger and the dealers are paying 14½ and 15 cents for them. Contracts for prunes continue to be made at 12½ cents. No effort has yet been made to put a price on pears or figs, although prices on these may be established any day either by actual bidding or by the associations.

RICE.

The mills have been practically cleaned up of clean rice and they have not a great deal of the damaged stock. Damaged rice is going very fast and the price has been advanced about 20 per cent, but no quotations can be named on this as every lot is subject to change. Dealers are now quoting Fancy Japanese rice at $8 to $8.50, and they are making an advance on all rice on account of the demand.

HONEY.

Honey is stagnant. Dealers say they are not buying and that there is little demand for the stock they have on hand. It is now reported that the shipment of Australian honey which was expected in this market may be diverted and not be put on sale here.

HIDES.

The market for country hides is fairly strong. For light hides there is a steady demand.

Wet Salted—Native steers and cows, 50 lbs. up, 16@18c; 30 to 50 lbs. up, 16@18c; kips, 15 to 30 lbs, 21@22c; calf and veal, under 15 lbs. 31 @32c; bulls and stags, 13@14c.

Horse Hides—Wet salted, large prime, each, $5@$5.50; medium prime, $4@4.50; small $2.50@$3.50; dry, large, prime, $2.50@3; dry, medium, $1.50@2.50; colts and ponies 50c@$1.

LOS ANGELES.

Los Angeles, May 13th, 1919.

BUTTER.

Shipments for the week show a decided increase over a week ago. Prices advance also since last week's quotations. The demand continues good. Receipts for the week, 385,000 lbs.

We quote:

California extra creamery	56c
do, prime first	54c
do, first	53c

EGGS.

The egg market shows an advance since reported last week. The market is steady and receipts continue good. Consumption holding up well with all offerings being taken. Shipments for the week, 2,005 cases.

We quote:

Fresh ranch, extra	50c
do, case count	49½c
do, pullets	48c

POULTRY.

All quotations in this market remain stationary since reported last week. Broilers and hens continue to find a ready sale. Fryers are moving fairly well, while ducks and turkeys are reported slow sale. Fair receipts.

Broilers, 1 to 1¼ lbs	30c
Broilers, 1½ to 1¾ lbs	32c
Fryers, 2 to 3 lbs	40c
Roosters (soft bone), 3 lbs. and up	35c
Stags and olds roosters, per lb.	14c
Turkey	38@40c
Hens	33@34c
Ducks	34@35c
Geese	28c

FRUITS.

This market reports prices firm in deciduous fruits. Strawberries selling well with little changes in prices. Blackberries, cherries and avocados now listed and selling at prices that are very satisfactory to the grower.

We quote from growers:

Apples—	
Black Twigs, Northwest pack	$3.50@3.75
Baldwins, Northwest pack	3.25
White Pearmains, 4-tier	3.50@3.75
Yellow Newtown Pippins, 4-tier	3.25@3.75
Winesap, loose, per lb.	7½@8½c
Roman Beauties, Northwestern, per peck	3.50@3.75
Loquats, per lb.	7@15c
Strawberries—	
30 basket crates, fancy	$3.50@4.00
Poor to choice	$2.75@3.25

VEGETABLES.

Prices on all staples are gradually lowering. A fair demand is reported and receipts continue to be good. New potatoes coming in and quoted at $1.75 and $2.00 per lug box and the demand for them is very good. Cabbage and sweet potatoes remain steady.

We quote from growers:

Peas, per lb.	8@10c
Potatoes—	
Oregon Burbank, per cwt	$2.25@2.35
Idaho Russets, per cwt.	$1.75@1.90
New potatoes, lug box	$1.75@2.00

QUALITY PRICES FOR QUALITY PORK.

The Western Meat Company, San Francisco, announces that until further notice it will pay a premium of 20 cents per cwt. for hogs dressing out over 77 per cent, provided the condemnation for disease does not go over 2 per cent. This system was inaugurated several years ago, but was afterwards discontinued. Progressive hog raisers will welcome the news of its resumption, as it means that they will now receive proper remuneration for turning out well-finished, hard, grain-fed hogs.

Sweet potatoes, per cwt	$3.75@4.00
Garlic, per lb.	.40@.45c
Onions—	
Australian Brown, per cwt.	$4.00@4.50
White Globe, per cwt.	8.00
Imperial Valley white silver wax, crate	$3.25@3.50
Imperial Valley Wax-yellow	$2.50@2.75
Cabbage, per 100 lbs.	$2.00@2.25
Celery, local, per crate	4.00@7.00
Celery, northern, per crate	8.00@9.00
Rhubarb, per 30-lb. box	$1.25
Summer squash—	
Imperial Valley, 4 basket crates	.75@.85c
Asparagus(per lb.	.9@.14c

STRING BEANS

Kentucky Wonders	.16@17c
String, Wax	.11@12c
do, Green	.14@15c

BEANS.

This market is still reported to be very dull. Prices remain steady and the same as quoted last week.

Limas, per cwt.	$7.00
Large white, per cwt.	5.50
Pink, per cwt.	6.50
Small white	6.00
Blackeyes, per cwt.	6.00
Tepary, per cwt.	3.00

HAY.

A fair demand for choice alfalfa from dairymen, but prices are the same as last week. The market reports light shipments. The tone of the market is dull.

We quote f. o. b. Los Angeles.

Barley hay, per ton	$21.00@24.00
Oat hay, per ton	23.00@25.00
Alfalfa, northern, per ton	21.00@23.00
Alfalfa, local, per ton	22.00@24.00
Straw, per ton	9@10.00

The Alfalfa Growers of California, Inc., 525 Central Building, Los Angeles, has sold within the past ten days, five thousand tons loose Standard Alfalfa Hay of the 1919 crop for delivery to concentration points on the Railroad within Sacramento and San Joaquin Valleys, to be prepared entirely for markets outside of the State. Association sales, f. o. b. Los Angeles, for past week, have been at following prices:

No. 1 Dairy	$26.00
Standard Dairy	24.00
Standard Alfalfa	22.00
Stock Alfalfa	$19.00@20.00

Special Livestock Market Report

San Francisco, May 14, 1919.

CATTLE—Cattle buyers are somewhat backward in bidding for offerings, and the market consequently has sagged. It looks now as though lower prices will rule by next week.

Steers—	
No. 1, weighing 1000@1200 lbs.	11½@12c
do, weighing 1200@1400 lbs.	11½@12c
do, thin	8@9½c
Cows and heifers—	
No. 1	9½@10c
do, second quality	8½@9c
do, common to thin	4@7c
Bulls and stags—	
Good	6@7c
Fair	5@6c
Thin	4@5c
Calves—	
Lightweight	12½c@13c
Medium	11@12c
Heavy	8½@11c

SHEEP—Good mutton sheep are scarce, and hardly meet the demand. Milk lambs are in fair supply, but command a strong market.

Milk lambs	13@14c
Yearlings	11½@12c
Sheep, wethers	10½@11c
do, ewes	9@9½c

HOGS—The hog market rules strong in sympathy with the situation in the East A top of $19.25 was reached this week for prime grain-fed hogs of light weight.

Hogs—	
Hard, grain fed, 100 to 150	18½c
do, 150 to 250	19¼c
do, 250 to 300	18¾c
do 300 to 400	18c

Los Angeles, May 13, 1919.

CATTLE—Prime cows and heifers make slight advance. Other quotations remain about the same. The market is weak but the demand continues fair. Receipts light.

Per cwt., f. o. b. Los Angeles:

Beef steers, 1000@1100 lbs.	$11.00@13.00
Prime cows and heifers	9.50@12.00
Good cows and heifers	8.00@9.00
Canners	5.50@6.00

HOGS—No change to report in this market since last week. The demand is holding up fairly well and receipts about up to normal.

Per cwt. f. o. b. Los Angeles:

Heavy avr'ging 275@350 lbs.	$16.00@17.00
Heavy, avr'ging 225@275 lbs.	17.00@18.00
Light	18.00@18.50
Rough docked 20 lbs. piggy sows 40 per cent.	

SHEEP—All quotations remain the same as reported a week ago. The demand continues very light, and slow sales.

F. o. b. Los Angeles:

Prime wethers	$ 9.50@10.50
Prime ewes	8.50@9.50
Yearlings	10.00@11.00
Lambs	14.00@15.00

PORTLAND LIVE STOCK.

Portland (Ore.), May 14

CATTLE—Steady; no receipts. Steers, best, $12@13.50; good to choice, $11@11.50; medium to good, $10@11; fair to good, $9@10; common to fair, $8@9; good to choice cows and heifers, $10@11.50; medium to good, $6.50@7.50; fair to medium $4.50@6; canners, $3@4; bulls, $6@8; calves, $10@12.50; stockers and feeders $7@10.

HOGS—Steady; receipts 208. Prime mixed, $20@20.25; medium mixed, $19.75@20; rough heavies, $18@18.75; pigs, $17@18.25.

SHEEP—Steady; receipts, 1041. Prime lambs, $14@15; fair to medium $12.50@13.75; yearlings, $11@12; wethers, $9@10; ewes $7@11.

EASTERN LIVE STOCK.

Chicago, May 14, 1919.

(U. S. Bureau of Markets)

HOGS—Receipts, 23,000 head, market mostly 10c to 15c lower than yesterday's average; top, $20.80; estimated tomorrow, 26,000 head. Bulk, $20.45@20.70; heavyweight, $20.50@20.80; medium weight, $20.40@20.75; lightweight, $20.10@20.65; light, $19@20.35; heavy packing sows, smooth, $19.85@20.15; packing sows, rough, $19@19.75; pigs, $18@19.25.

CATTLE—Receipts, 5000 head; choice heavy beef steers, steady; others 15c to 25c higher; she stock, 25c higher; bulls, calves and feeders, steady to strong; estimated tomorrow, 8000 head. Beef steers, medium and heavyweight, choice and prime, $16.75@19.50; medium and good, $13.75@17; common, $11.50@14; lightweight, good and choice, $14@17; common and medium, $10.50@14; butcher cattle, heifers, $8.25@15.25; cows, $8.15@15; canners and cutters, $6.50@8.15; veal calves, light and handy weight, $13@14.25; feeder steers, $10.25@15.50; stocker steers, $8.50@13.50.

SHEEP—Receipts, 13,00 head; market mostly 25c lower; estimated tomorrow, 13,000 head. Lambs, 84 pounds down, $13.75@15; 85 pounds up, $13.50@15; culls and common, $10@13.25; springs, $17@18.75; yearling wethers, $12.25@13.25; ewes, medium, good and choice, $10.50@12; culls and common, $5@10.25.

AGRICULTURAL NOTES.

Alfalfa and all irrigated crops in the state are looking topnotch.

Bean planting is proceeding apace, and corn, rice and cotton are in.

Twelve dollars a ton is the price now offered on contract for tomatoes.

Potato acreage is said to be reduced this year by 50 per cent for the State.

Much late-sown barley and oats in the interior and south of the state has been cut for hay.

The price of $4.32 a hundred weight is set by the food administration for California paddy rice for the coming year.

Green peas have been contracted in Lake County at from $65 to $75 a ton net to the grower according to a recent report.

Many barley fields in southern California are being cut for hay. Prospects for the barley crop in that section are just fair.

Tomato growers are not planting with the large confidence displayed last year at this time. Nevertheless the demand is expectd to be a fair one.

Not more than half the acreage normally planted to beans will be devoted to this crop at Turlock this year. Growers have been "fed up, good and plenty."

Small shipments of early tomatoes from Imperial brought $3 to $3.50 a crate last week (ending May 10), while new season egg plant sold for 25 cents a pound.

Government boats carrying supplies to the Pribiloff Islands bring back fossil bones as ballast, for which Seattle firms have offered $14 a ton, to be used as fertilizer.

PRUNE PRICES DOUBLED IN A YEAR.

A dispatch from San Jose, dated May 14, says that the prune-growing section of the Santa Clara valley, practically is prunelss tonight as far as the resident consumer is concerned. According to growers and packers, prunes which sold last year for 6½ cents a pound today sold to 12½ and 13 cents, while the two highest grades went up to 20 and 22 cents. They reported a corresponding increase in practically all grades of fruits. Green apricots, which last year sold for $65 a ton, went from $100 to $105 a ton. Dried apricots sold for 27 cents a pound, almost double last year's quotations, and were in big demand. The increase was attributed to heavy demands from Europe. A scarcity of these fruits, particularly in stores and restaurants, was reported, with prunes leading in scarcity.

WEEKLY BUTTER AVERAGES.

Cents per pound for Extras.

Week Ending	San Francisco 1918	San Francisco 1919	Los Angeles 1918	Los Angeles 1919
Jan. 2	50.40	66.19	50.16	63.16
" 9	51.08	61.00	50.00	64.00
" 16	52.33	61.70	50.50	64.16
" 23	52.50	55.83	52.00	62.16
" 30	53.00	44.91	51.83	49.00
Feb. 6	50.80	43.58	49.66	47.33
" 13	52.00	46.80	48.00	47.60
" 20	51.41	51.58	48.00	53.16
" 27	51.30	53.90	49.33	55.00
March 6	50.66	56.16	50.00	59.00
" 13	51.16	55.58	49.50	58.00
" 20	47.83	54.41	47.00	56.00
" 27	46.30	56.41	43.30	58.00
April 3	43.16	54.23	42.16	55.50
" 10	39.25	57.16	39.50	56.00
" 17	39.00	50.70	36.83	52.30
" 24	40.50	52.41	38.16	54.00
May 1	40.83	52.41	39.00	54.00
" 8	40.66	52.91	39.00	54.00
" 15	40.46	55.16	41.00	58.00
" 22	40.33	....	41.00	....
" 29	42.30	....	39.00	....
" 29	42.30	....	39.00	....
June 5	43.90	....	41.58	....
" 12	44.92	....	40.58	....
" 19	46.50	....	41.75	....
" 26	47.42	....	43.00	....
July 3	48.08	....	46.00	....
" 10	48.90	....	47.50	....
" 17	50.83	....	48.66	....
" 24	52.66	....	45.16	....
" 31	52.16	....	51.00	....
August 7	52.16	....	50.83	....
" 14	51.66	....	49.00	....
" 21	52.25	....	49.58	....
" 28	53.00	....	50.00	....
Sept. 4	53.00	....	50.00	....
" 11	54.90	....	50.33	....
" 18	57.80	....	51.67	....
" 25	61.33	....	56.17	....
Oct. 2	64.75	....	58.00	....
" 9	64.50	....	59.33	....
" 16	62.50	....	60.00	....
" 23	61.75	....	60.00	....
" 30	60.50	....	59.50	....
Nov. 6	59.60	....	58.83	....
" 13	60.00	....	57.00	....
" 20	61.00	....	57.25	....
" 27	61.60	....	58.75	....
Dec. 4	62.60	....	60.00	....
" 11	63.00	....	60.10	....
" 18	63.50	....	61.01	....
" 26	64.60	....	62.16	....

WEEKLY EGG AVERAGES.

Cents per dozen for Extras.

Week Ending	San Francisco 1918	San Francisco 1919	Los Angeles 1918	Los Angeles 1919
Jan. 2	52.80	75.60	48.16	69.50
" 9	60.91	69.91	50.66	66.66
" 16	65.66	58.70	55.00	62.41
" 23	65.66	52.58	58.00	54.66
" 30	61.25	48.75	54.00	52.33
Feb. 6	58.50	42.00	51.66	43.00
" 13	44.40	40.90	44.83	37.80
" 20	44.75	36.41	40.83	39.33
" 27	42.40	37.40	39.58	33.60
March 6	36.83	37.58	35.00	37.00
" 13	37.91	37.16	38.00	37.00
" 20	40.66	38.16	39.63	42.00
" 27	39.50	40.41	40.00	42.00
April 3	38.19	42.41	38.33	45.00
" 10	37.58	42.91	36.33	45.00
" 17	39.16	45.10	36.83	46.00
" 24	40.80	45.00	39.66	46.00
May 1	41.66	45.00	39.33	44.00
" 8	40.08	46.50	37.00	42.00
" 15	39.16	47.91	39.00	50.00
" 22	40.50	....	39.00	....
" 29	38.66	....	37.41	....
June 5	40.80	....	38.83	....
" 12	41.00	....	33.75	....
" 19	43.33	....	33.00	....
" 26	44.32	....	39.08	....
July 3	44.91	....	41.75	....
" 10	48.30	....	45.00	....
" 17	47.66	....	45.50	....
" 24	47.91	....	45.16	....
" 31	48.83	....	46.56	....
August 7	49.50	....	46.58	....
" 14	52.08	....	48.00	....
" 21	56.33	....	50.17	....
" 28	59.20	....	53.00	....
Sept. 4	62.40	....	56.33	....
" 11	63.70	....	58.67	....
" 18	61.30	....	59.00	....
" 25	60.17	....	55.67	....
Oct. 2	65.42	....	59.75	....
" 9	65.08	....	60.00	....
" 16	71.30	....	62.66	....
" 23	78.88	....	70.33	....
" 30	86.41	....	79.33	....
Nov. 6	87.90	....	78.00	....
" 13	86.00	....	78.00	....
" 20	77.25	....	72.00	....
" 27	79.80	....	72.33	....
Dec. 4	82.00	....	73.00	....
" 11	82.08	....	74.33	....
" 18	79.65	....	72.33	....
" 26	82.00	....	71.66	....

Classified Advertisements

Rate in this directory 3c. per word each issue.

MISCELLANEOUS.

REMANUFACTURED PIPE. All sizes standard pipe and wrought iron screw casing. All kinds of fittings. Guaranteed good as new. Write for prices. Weissbaum Pipe Works, 160 Eleventh street, San Francisco.

YUBA ALL-AROUND PLOW FOR SALE—This is a five disc tractor plow and practically new. Has only been used one season to plow sixty acres and cost $525.00 a year ago. Box 1510, Pacific Rural Press.

FOR SALE—One 10-foot cultivator nearly new, made by Ventura Manufacturing and Implement Co. Can be bought for $60.00 less than cost. Call or write to Cox & Sager, Watsonville, Cal.

FOR SALE—SANDUSKY TRACTOR—10-20—Plowed only 110 acres; in best condition. Sell on account of sickness. Apply Box 221, Riverbank, California.

PATENT ATTORNEYS.

WEBSTER, WEBSTER & BLEWETT, Savings and Loan Bldg., Stockton, California. Established 50 years. Send for free book on patents.

ALL SIZES OF PIPE and screw casing, both new and second-hand, dipped and undipped. Guaranteed. Prices right. Shecter Pipe Works, 304 Howard St., San Francisco.

MADE OF REDWOOD, Hawley's Perforated wooden well casing, the best and cheapest well screen made. Send for descriptive circular. G. M. Hawley, La Mesa, California.

CO-OPERATION (not operated for profit) reduces living expenses. Particulars and catalogue from Co-operative League, Commercial street, San Francisco.

FOR SALE—Three 2-unit Empire Milking machines, nearly new. M. S. Garcia, Route 1, Box 56, Marysville, California.

TRACTORS FOR SALE—Holt Caterpillar, 30 H. P. Samson Selve-Grip 10-25. Good condition. Call and see them. Prices very reasonable. E. A Dunipace, Paicines, near Hollister, Cal

BEES FOR SALE—Golden Italians in patent hives John G. Mee, St. Helena, Cal

COUNTRY LANDS.

MOUNTAIN ORCHARD—10 acres ready for immediate possession. Full bearing orchard consisting of peaches apples pears apricots prunes almonds walnuts chestnuts olives figs strawberries and blackberries. Full equipment, including 3 team of mules 31 hogs and pigs. Four-room house barn and outbuildings. All hog tight fenced and cross fenced. All under irrigation. Don't delay a moment if interested. Price $6,000. Paradise Rancho Paradise Butte County Cal

FOR SALE—KNOLLCREST—26 acres in Santa Clara Valley, mostly in apricots and prunes part bearing balance 1 year old trees one acre bearing citrus. No frost. Beautiful building site commands best view of the valley. Best climate in the state. Price $100 per acre, or will sell separately, 12 acres prunes at $350 per acre. Apply Owner, 478 63rd St., Oakland.

FOR SALE—57 acres 3½ miles from town of Healdsburg, Sonoma county. 32 acres young prune trees, 2 and 4 years old; 3 acres old-bearing orchard; 15 acres hay land and 7 acres woods. House, barn and other outbuildings, team and tools. Price $225 per acre. $5000 cash, balance on terms to suit. Owner: J. R. Starkey, Route 4, Sebastopol, Cal.

FOR SALE—15 acres with good improvements, $4,000. Deep soil, cheap irrigation, ¼ mile from good town in Stanislaus County. High school ½ mile. Will sell 20 acres more with it at $250 per acre. Owner, W. L. Bone, Escalon, California.

FOR SALE—Ideal dairy farm, foothills, 80 acres; 70 acres under irrigation, 25 acres white clover pasture, 7 acres red top, 1 acre barley. 19 cows. Registered Holstein Friesian bull. 14 hogs, thoroughbred Berkshires. 2 horses. All farm and dairy implements, furniture, chickens and turkeys. M. A. Lauff, Browns Valley, Cal., Owner.

FOR SALE—40 acres 3½ miles south of Orland, Glenn county. Price $3200. Terms, $1200 cash, balance easy terms. For particulars address, Mrs. Audrey Simpson, Dixon, Cal.

TO LEASE—80 acres near Fresno, part to be put in vines each year for use of land. Buildings, water and implements furnished. Route F, Box 348, Fresno.

AN IDEAL DAIRY FARM—314 acres, 136 under gravity water. Six fields with water in them all. Terms. F. W. Rogers, Palo Cedro, Shasta Co., Cal.

SEEDS AND PLANTS.

SOUDAN SEED—First class in every respect. Plump and well matured. Free from Johnson grass. Price f. o. b. Napa, 12½c. a pound for 100 lbs. or more; 15c. a pound for less. Prices quoted on carload. T. H. Stice, M. D., Napa, California.

CABBAGE AND KALE PLANTS—Any quantity delivered anywhere, 100, 40c; 300 for $1.00. By express, collect, $2.00 per 1000. Tomato, Cauliflower and Pepper, 25c per dozen. I. F. Tillinghast, Santa Rosa, Cal.

FLORIDA SOUR AND CALIF. SWEET ORANGE seedbed stock. The time to plant is propitious; order now. Southland Nurseries, 1941 E. Colo. St., Pasadena, Calif.

ONION PLANTS—1,000,000 California Red, 75c. per 1000. Now is the time to plant. Monroe, The Tree Man, Orland, California.

STOCK PUMPKIN SEED. Good germination and any amounts, 70c per lb. Aurora Seed Mill Stockton California

FOR SALE—Capri Figs for distribution at present time. Large ones containing many wasps. C. E. Christley, Orland, Cal.

HONEY SORGHUM SEED—Recleaned select quality. Price 15c, f. o. b. Holtville. Chas. Bishop

WANTED.

WANTED—Fine opportunity for experienced man with some money to take charge of dairy on shares. Must be sober and industrious. Address Box C Maxwell, Calif

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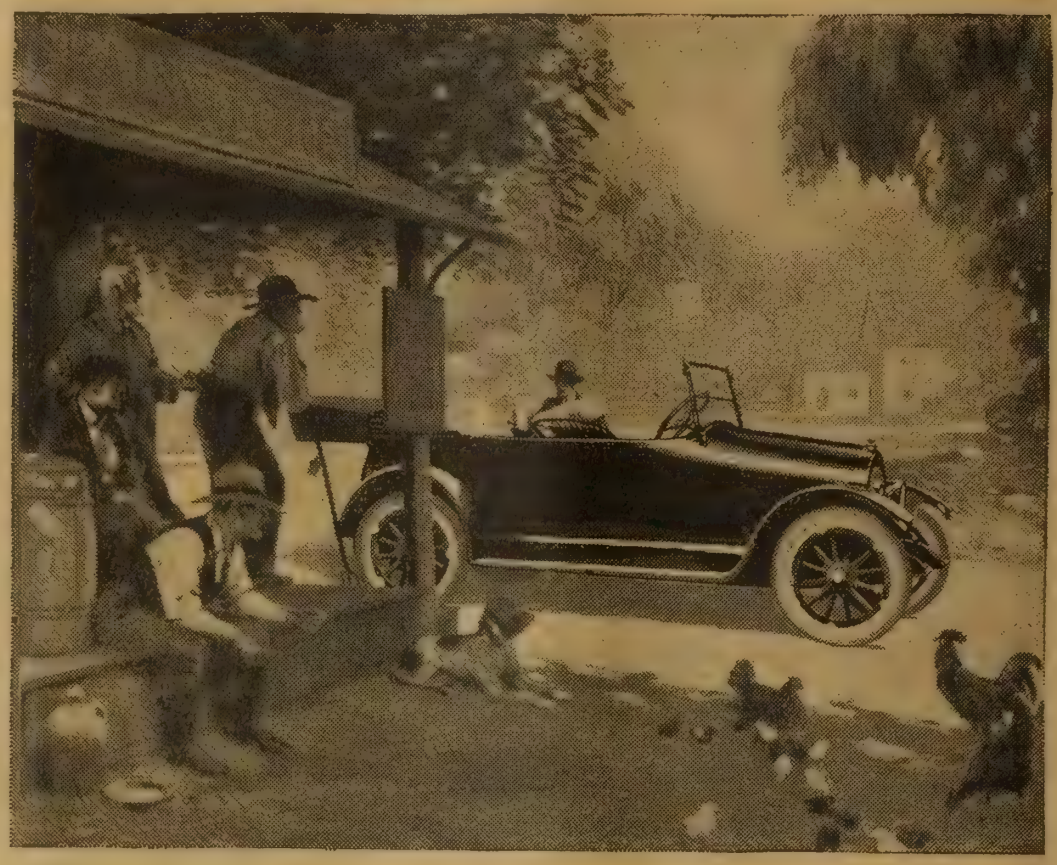
Modesto, April 30, 1919.

PACIFIC RURAL PRESS,
San Francisco, Cal.

Gentlemen: Enclosed find check for $21 to cover advertising bill. I feel very certain that this particular ad was worth $500 to me.

J. M. BOMBERGER.

Overland
TRADE MARK REG.



"Public Opinion"

The practical utility of the Overland Model 90, shown here, has created a constantly increasing sentiment of approval. In awakening public appreciation to the economical value of the automobile in general, the Overland has played an important part. Over Six Hundred Thousand of these dependable cars are serving their owners efficiently and economically. Model 90 is a car of such attractive appearance and sterling performance that owners everywhere praise its economy and practical value. Public appreciation thus won and expressed is your safe guide in buying a car.

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Vol. XCVII—No. 21 Forty-ninth Year

THE PACIFIC RURAL PRESS

SAN FRANCISCO MAY 24, 1919 LOS ANGELES

Combating Apricot Bacterial Gummosis

Written for Pacific Rural Press by Dr. J. T. Barrett, Acting Director, University Citrus Experiment Station, Riverside.

THE DISTRIBUTION OF the disease of the apricot known as "bacterial gummosis" is increasing in California rather rapidly. First found in one of the southern sections, it is now known to occur in eight counties, most of which are located near the center of the state and includes some of the most important apricot sections.

Much interest in the disease has been manifested this season on the part of the growers, and at the request of the editor, this brief general statement has been prepared.

The first indication of the disease is an exudation of gum usually at or near diseased fruit spurs which represent the loci of infections. The gum is characteristc in that when first exuded from the bark it is cream to light orange in color, then changing to a deep amber or mahogany. This gum flow is frequently so copious that it can be detected for a considerable distance.



Bark lesion with gummosis-infected fruit spur at center.

It should be kept in mind that there are other causes for gum exudation of apricot trees. Usually, however, the character of gum formed and the general appearance of the tissue producing it, offers sufficient distinguishing characteristics. As an example the brown rot fungus (Sclerotinia) has been very prevalent and active in causing blossom and twig blights this spring. Twigs thus infected produce considerable gum, but it is almost invariably clear in color. Occasionally, it takes on a pale amber color. However, the character of the diseased tissue is distinctive. Several cases were observed this spring in which both the brown-rot and bacterial gummosis diseases were present on the same branches.

On removing the outer bark over a lesion of the gummosis disease, the infected tissue is found to be discolored, usually reddish to dark brown, depending upon the stage of advancement. A further characteristc is the open structure and gummy consistency of this same tissue. Frequently the insertion of a knife blade into the bark is followed quickly by masses of exuding gum, which apparently exists under considerable pressure in the lesions. Normally this pressure is relieved by a rupture in the bark and the exudation of gum results.

The final result is the formation of variously sized bark cankers on the limbs, main branches, and the trunk. The extent of bark injury on the two latter frequently results in girdling and killing the tree. These dead bark areas, or cankers, tend to weaken the trees and a young grove so affected for two or three years presents a most undesirable appearance.

The disease has not been found of importance on trees over ten years of age and has proven most serious to those up to five. When nursery or young planted trees become infected they are likely to succumb to the disease.



Two lesions with bark removed. Globules of gum still attached to one.

As pear blight, the gummosis disease of apricots is caused by a bacterial organism, though a distinct species. It is probably the same organism that is responsible for the "bacterial gummosis of cherries," which has been so serious to cherry culture in Oregon and first described in 1909 by F. L. Griffin, then of the Oregon Agricultural College. Later Dr. H. P. Barrs, of the same college, extended the investigations and has reported the occurrence of the disease on other stone fruits, among them apricots; although not important on this host. Thus far the writer has found but one authentic case upon cherry in California. However, it should be stated that he has not had an opportunity to inspect all of the more important cherry sections in the state.

This disease, in marked distinction to pear blight, the final result of which is much the same, is active for the most part during the dormant period of the host. Observations and inoculation experiments show that optimum development takes place during January, February and March. A few cases have been noted in which some development has taken place in December. At this time and even in January the disease may produce most serious results without providing the warning signal of gum exudation. Cases have been observed that on the very first sign of gum had already produced bark lesions two feet in length. The significance of this fact will be apparent in connection with efficiency of inspection. The disease is unable to make much progress after the spring growth starts and the new bark growth begins to harden.

Infection, for the most part, takes place in the fruit spurs. As previously stated, the first gum noted in new loci of infections is on or associated with fruit-spurs. Infection may take place in the blossoms or in unopened buds and is probably transmitted by means of insects. Such infected fruit-spurs carry the bacteria over the summer and the following winter the organisms again become active and progress into the bark of the main branch, where they produce the results already described.

Another and very effective method of distributing the disease organisms is by means of pruning tools. Numerous cases of infection by this means have been noted. A five-year-old grove was examined in March of this year in which practically every tree had from one to ten pruning wound infections. The pruning of apricot trees is usually done during the time when both the host and the organism causing the disease are in ideal condition to produce infection.

Naturally the question most frequently asked by growers is how to check or prevent the disease. The full answer cannot as yet be given. However, it has been demonstrated that lesions can be checked by methods similar to those already in practice in the treatment of pear blight. Careful inspections should be made frequently during the winter months and all cases of fresh gum exudation treated by removing the surrounding diseased tissue. With some practice, inactive infected fruit-spurs can be detected and should also be removed. This applies particularly to those on the main branches and trunk, which are more readily accessible and where such infections are more vital. In cases where infection is abundant on the smaller limbs of trees which have received only slight pruning,

(Continued on page 798.)

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EDITORIAL.

OUR STATE FARMER.

THERE is current gossip in the daily papers (which are of course largely given to that sort of thing) that Governor Stephens will approve the bill passed by the last legislature, grouping all executive agricultural agencies of the State under a single Director of Agriculture, and that he will appoint present State Horticultural Commissioner G. H. Hecke to be our State Farmer in that sense of the words. We stated in our issue of April 19 that we did not believe it would be a good thing to stir up all our great specialty-producing farming interests into a hasty pudding simply because the politico-academic experts desired it and in spite of the fact that no actual farmers had asked for it—but the legislature did it, and we accept the fact with our accustomed humility and hope for the best. And the best thing about the business so far is the report that the Governor will appoint Mr. Hecke to be chief-wielder of the pudding stick. For Mr. Hecke has qualifications of which we need say no more at this time than that he is a farmer, which is more than can be said of most men who have used the big stick on the farmers of the country for many moons back. Mr. Hecke is also a broadly informed and experienced farmer, and has lands on which he has grown many crops of many kinds, and he can dip steers for ticks as easily as grapes for raisins. It will take a pretty grouchy farmer to get anything on Mr. Hecke; he will even have to follow him in his swearing—because, from this time on, everything in the farming line will be done his way: "By Heck!"

And so we get great satisfaction from the fact that officially it will be up to Mr. Hecke to boss the State fairs, milk the cows and goats, pedigree the bulls, de-nature the pigs and calves, register the stallions, vaccinate the black-legs, de-scab the sheep—in addition to killing the bugs, making the bottom fruit as good as the top, and other fruit things which he has been previously doing so efficiently. And so, whenever Governor Stephens is ready, we shall hail Mr. Hecke as the greatest mixed farmer in California—and may all the ancient gods and goddesses of husbandry help him to get away with it!

MR. HECKE'S GREAT LAY-OUT.

We are personally aware of most of the things which Mr. Hecke has done since we first saw him as a youth with light in his eyes, nearly thirty years ago, and we know many things which are creditable to his doing; things also giving confidence and promise in the things which he is now to undertake—but we shall not whistle, with him still going deeper into the woods! It will be enough to speak now of what we consider his greatest official achievement—the lay-out for the Fifty-first Fruit Growers' and Farmers' Convention, to fill the week of May 26 to 31, at Riverside. Our columns in this and previous issues have given many details of the things planned to be done during those busy days, and we now rise above all the windmills of horticultural oratory, which are promised to be whirling there, for a bird's-eye glance at the whole affair in its unique significance.

Mr. Hecke has been planning this meeting at Riverside for a year and a half. It was announced to fly last fall, but there were other things in the air then—chiefly the flu. The event has gained breadth and richness in detail by the postponement. We are quite sure, for we have seen most of them, that the first of the second half-century of these State conventions of fruit interests will be greatest of all in its breadth of scope and purposes, in the extent of its geographical representation of fruit production, and in its probable influence upon future development of this greater pomological side of the continent, than any convocation hitherto arranged for. The fact that Mr. Hecke could compass the conception of such a meeting and could secure all the co-operation necessary to put it over in all the reach and variety of its contents, gives us the greatest confidence that he has the power and quality to achieve the organization of all California's diverse agricultural interests—but we promised not to whistle, with him still in the woods.

PROMOTION OF HORTICULTURAL BUSINESS.

To one who studies the outlines of proposed proceedings which we have given in other columns and in earlier issues it will clearly appear that the week will be filled with straight business in the broader aspects of fruit handling and in the protection of all kinds of fruiting plants from farther increase of pest introduction and distribution. These are the lines which the State should pursue through its executive avenues, and they are quite distinct from the research and instructional lines which the State entrusts to the University and academic persons generally. For several years we had to scream ourselves black in the face because horticultural executives kept doing things which showed that they had no conception that an executive function consisted in helping people to understand the law, do business under the law, and to promote the industry of those who knew the law and did by it abide. Neither could they understand that their purpose in arranging popular assemblies should be not to ring the bell for a pedagogical performance, but to call together the people who were doing business to consider how business can be best done, and declare what is needful in law and fact to do it that way—which is the safest and sanest promotion of industry, such as the State should undertake. Mr. Hecke has apparently proceeded from the right point of view, for he manifests in preparations for the Riverside convention a stronger grasp upon the business aspects of horticultural production than has ever yet been secured, and he has a greater list of those who are doing business for producers than were ever before summoned to conference. This alone would make the Riverside convention notable.

PROTECTION FOR PLANTS AND THEIR PRODUCTS.

Not less fundamental than businesslike promotion of our horticultural industries, and perhaps more appealingly picturesque than plain promotion, is universal, reasonable and efficient effort to prevent the dissemination of fruit pests. In this line the Riverside convention promises to be more influential than any of its fifty predecessors—possibly more influential than all of them put together. In this line Mr. Hecke had a vision last year, and it will go on the screen at Riverside. He conceived the conviction that local quarantines against pests are often unreasonable, narrow and impossible of efficiency—working as often against as in favor of the states or districts setting them up, when such districts are contiguous and not under martial law with sentinels within calling distance of each other. And so he worked the higher law of human intelligence and reason to determine if there is not some way in which a consensus of human brains and consciences could make the pathways of pest-transgressors harder than the mere definitions of geography could make them. Hitherto our Pacific states have been arraigned against each other at their boundary lines—each trying to exclude the other's pests and each more or less willing to unload its own pests upon the other if they could be smuggled over its border! It is surely a better idea to get plant growers and pest-controllers in all the states to work together against the pests—rather than try to exclude one's neighbors' pests by local quarantine and to get rid of his own pests by exportation to outside territory. The first step toward an allied warfare against all the pests is to get all pest fighters together to discuss policies and compare methods and plan a continuous campaign so that interstate movement of plant materials and products may proceed safely, because all such merchandise shall be made clean before it is allowed any movement at all from the place where it is grown or produced. The first broad movement toward such an end is that arranged for Riverside next week, where the executives and experts of our farthest western group of states will assemble at the call of the California State Commissioner of Horticulture. This fact alone will constitute the Fifty-first Fruit Growers' Convention greater than any of its predecessors.

NATIONAL HORTICULTURAL QUARANTINE.

Naturally this co-operative work for plant protection in our group of contiguous states aligns itself closely to the broader undertaking for national protection against the older and pest-ridden countries of Europe and Asia—the national quarantine, which is now in operation. This undertaking, proceeding vigorously with all the machinery of national safe guarding and control of imports, will be represented at Riverside by its presiding genius. It is interesting to remember that the first popular call for national protection against importation of plant pests and diseases arose in California. At the Second Fruit Growers Convention, held in San Jose in November, 1882, a standing committee submitted a report including this special declaration:

In view of the possibility of the introduction o the dreaded curculio and other pests, we would gladly recommend a strict quarantine law, but i would require the earnest co-operation of the government, as every mail-bag, express and freigh car as well as steamers and sailing vessels fro China, Japan and the islands are receiving packages of trees and plants liable, at least, to contai these obnoxious pests. In order to prevent thes importations we would require a law as strict a those of some European governments against th phylloxera (Italy and Germany for instance) wher it is positively forbidden to introduce plants, cut tings or scions by mail, express, freight or othe wise. So rigidly are their laws enforced that the will not allow packages of trees and plants to pas through in transit to other countries. Even small package of cherry scions has been returne to this country, its introduction not being per mitted.

This declaration was not approved by the con vention. The discussion showed that it was no considered strong enough, and that an appeal fo a national quarantine might prevent the enactmen of a state quarantine which it was designed to se up and which was afterwards established. Fo many years this apprehension of danger in trustin to a national quarantine prevailed, but in th course of time experience showed that the co-ope ation of national quarantine and state quarantin as ably administered in California by Mr. Maskew constituted a complete system of protection whic the state working alone could not have so effec ively realized. And thus it was that Californi although for a long time distrustful of an appea unto Caesar at Washington for protection again importation of pests, preferred to trust to its ow exclusion acts, really did have the first defini conception of systematic and widereaching nation quarantine, and has recently upheld its operatio most strenuously and is to renew its declaratio of faith and works in national lines at the Rive side convention. This discussion becomes especia ly timely from the fact that Uncle Sam has learne by experience that so many pests are arriving upo imports which have passed inspection by foreig governmental experts, that he has clapped an e clusion act upon all growing plants and nurse trees from abroad after June 1 next, while certa florists' root-stocks, bulbs, cuttings and scio must have a special permit for each importatio It thus appears that the growers of 1882 did n have an adequate idea of the spunk which Unc Sam could manifest when he became thorough

oiled over impositions practiced upon him. He is urely on to his job now and it seems thoroughly easonable that rather than fall heir to all the vorld pests which have not arrived, the United States should grow pest-free plants for Americans o plant and importations for local propagation of novelties of foreign origin should only be admitted hrough fully guarded channels.

POINTERS FOR THIS ISSUE.

We desire to call special attention to the announcement on page 802 of this issue of the coming f eastern agricultural leaders for conference with alifornia farmers. These visitors are representatives of the "temple builders" of the National oard of Farm Organizations at Washington, whose urposes and undertakings we have frequently entioned in these columns. Meetings at Modesto nd San Jose are well placed, but two days in Calfornia and two places for meeting are wholly and oefully insufficient to make these distinguished isitors and California farmers mutually know each ther. At the very least six assemblies properly laced geographically and at least a month's time o make the occasions popularly known, should ave been California's quota of attention. However, such inadequacy is all the more reason why alifornians should make a rush for their visitors t Modesto and San Jose.

Another very significant thing in this issue is he beginning of a series of brief and pointed statements about fertilizers and fertilization by Dr. C. . Lipman of the University College of Agriculture hose research and reasoning on soil science and lant nutrition are attracting attention everywhere. ot only is soil science one of the newest of our iences, but, judged by its current progress in the nderstanding of its philosophy and agencies, it getting away from its own past so fast that it as to repudiate its own contentions of a decade go. A soil chemist and bacteriologist hardly ares to take a nap for fear he would not be able o recognize his own science on awakening! That the reason why we have persuaded Dr. Lipman write down a few things to help us all to get way as fast as we can from notions which are ecoming obsolete and the science which keeps m always awake!

The next thing is not a pointer but an issue e wish to point out. We received a letter the her day from a friend, to whom we personally rote for some special information, which included is sentence: "I note with pleasure that you are vising your 'California Fruits.' I was told rently that you had discontinued the publication this work and am glad to know that this information was wrong."

That surely did give us a jolt. Discontinue doing e biggest thing we ever did? Well, we guess not! wenty thousand people already have this book d twenty thousand more are now waiting for it! course we discontinued printing the Seventh Edion because we can now make a better one—ich the Eighth Edition will surely be. We are tting into the manuscript the very last and best everything in California fruit growing, and exct the printers will be through with it before the ins begin this fall. Then we are going out on trail of the fellow who told our friend it was coming!

QUERIES AND REPLIES

By the Editor.

Inquirer Must Give Full Name and Address.

Not Blooming or Not Setting?

To the Editor: I have a prune orchard at Hopd on the west side of the river. Orchards rth have a very good stand; orchards on the ith have a very good stand; and I am informed t some of the orchards on the east side have a y good stand. But there are some other ords on the west side, as well as my own, that e no blossoms at all. There was no frost in t neighborhood during blossoming time, neither re there any serious rains. I am therefore enly unable to know what to do to ascertain the se. Have you any suggestion to make to me to end that I may make an examination and later ort so that it can be ascertained what is the difulty?—G. A., San Francisco.

We take it you do not mean to say that you "had no blossoms at all," but that you had none which set fruit. Non-appearance of blossoms is usually attributed to youth of trees or to over-stimulation, which may postpone maturity and prevent manifestation of it in the effort to bear fruit. This is rather rare and of limited duration. Failure of blossoms to set fruit is more common and apparently proceeds from several causes, viz.: poor soil and scant moisture the preceding season, which prevents the formation of strong fruit buds; lack of pollination owing to water-soaking of blossoms or weather preventing service by pollinating insects; lack of cross-pollination (when the variety needs it) because of absence of other pollinators or lack of coincidence with such bloom when such trees are adjacent; killing by frost of blossoms otherwise fit for functioning; occurrence of insects, like thrip, which may destroy the floral parts, or of fungi, which may detach the flowers from their normal connection. It will require careful scrutiny into such determinators of effective blooming to ascertain why any lot of trees fails to set fruit while other groups of trees, presumably of the same kind and variety, are bearing well, on similar soil, identical weather conditions and corresponding stimulation of growth by manuring, pruning, cultivation, etc. It is possible that variations in handling of the soil and the trees may account for differences in performance.

How Many Farmers Make a Thousand?

To the Editor: How many farmers are there in the United States and in California? How many farmers are there in California who may be called small farmers, whose income from farms which they cultivate for a livelihood is less than $1,000 a year net cash—not taking into account the food and shelter they derive directly from their farms? If these questions cannot be answered exactly, can you give me approximate information on these points?—J. C. M., Modesto.

We cannot tell how many farmers clear a thousand dollars—either on large farms or small, for limited net income is not restricted to small farms. It is not a question of area, for price-fixing and tax-fixing fall like the rains upon the place beneath and sometimes the more a man has the less he is able to keep dry. It is possible that through the awakened interest in farm economics, the U. S. Census which is to be taken next year may be able to draw a lot of important data from the income-reports which the revenue officials are securing from farmers of all sizes, to see whether they measure up to income-taxation or not. Unless this can be done, we can see no way in which such generalizations as you desire can be anything more than guesses.

As for the number and sizes of farms, the Census gets them and there will be a new gathering next year, to be published probably several years later. The only thing now available is that of the Census of 1910, as follows:

	U. S.	California
All farms	6,361,502	88,107
Over 1,000 acres	50,135	4,693
500 to 999 "	125,295	5.119
260 to 499 "	443,984	7,862
175 to 259 "	534,191	4,689
100 to 174 "	1,516,286	12,015
50 to 99 "	1,438,069	10,680
20 to 49 "	1,414,376	20,614
10 to 19 "	504,123	11,932
3 to 9 "	317,010	9,324
Under 3 "	18,023	1,269

Will Pajamas Kill Palms?

To the Editor: I have a very tall palm tree and have planted Virginia creepers around it. Some tell me it will kill the tree. Please tell me if it will hurt the tree or not?—Subscriber, Knights Ferry.

So long as your creepers confine their covering to the trunk they are not likely to injure the palm, but if they take to enveloping the crown of leaves above the trunk, they will rob it of air and sunlight; reduce its vigor, and probably will eventually kill it and transform it into a high trellis for their own uses. When it reaches this condition you will probably have ceased to mourn for the palm and have taken to enjoying the lofty masses of the creeper. The distress will come to you and to your neighbors while the palm is struggling with its implacable invader. Such palms always remind us of the ancient sculpture of Laocoon and his sons wrestling with the snakes—a most distressing object. The Virginia creeper is too heavy a vine to have a chance at a palm. A light vine, like Boston ivy, or Kenilworth ivy, and many others, is a more reasonable pantalooning for a palm and the effect of such trousering may be very pretty, but one should never forget that a palm has as good a leg as a Scotchman and has as good a right to have it admired, not obscured.

Good Positions for Live Wires.

We can use a few more red-blooded, dead-in-earnest men in our circulation department, attending to our renewals and securing new subscriptions.

Lack of experience no barrier. If you are a convincing talker and are not afraid of hard work, we can use you. We give you proper training and bang-up support.

Straight salary; permanent work, with advancement. Must have a machine and be free to travel. If interested, a letter telling about yourself will bring full particulars. Better investigate.

Darkling Beetles on Tomatoes.

To the Editor: Enclosed find insects that have been destroying my young tomato plants. The cut worms are also very harmful. As I am planting about fifteen acres in tomatoes I would like to know the name of these insects and also a way in which to exterminate them.—J. G., Novato.

The small black beetles about a quarter of an inch long are Blapstinus rufipes—we are not swearing about it: that is their real name. But they have been making tomato growers swear about them because they have been attacking young tomato plants at setting out in the field in the bay region for several years. They can be killed by dusting the plants with lead arsenate powder or by spraying them with lead arsenate paste, one pound to thirty gallons of water. They can be prevented from injuring the plants by wrapping the base and stem of the plants in six-inch squares of newspaper when planting out. They soon outgrow this wrapping both ways and escape the beetles. Cut-worms are poisoned by scattering the bran-arsenic-molassses mixture upon the plants and adjacent ground, as has frequently been described in these columns.

Blister-Mite on Pears.

To the Editor: I enclose some leaves from young pear trees, which have been operated on by blister mite, I think. Is it considered good practice to try to treat such trees thus late in the season, and if so, how? I have often seen it before, but never have known any one to treat it thus late. The trees are otherwise healthy and growing well, and but a portion of the orchard is thus attacked. —Grower, Templeton.

You are right. It is blister mite and no late spraying can reach them. They will do no more harm this year and the injury will probably be only fractional reduction of leaf action as you probably have not much fruit to be blemished. They must be hit next spring (as the buds are swelling and loosening their scales) with lime sulphur.

Dieback of Almond.

To the Editor: I send sample of almond twigs killed by some cause. Please tell me what killed them and the remedy for the evil if any. The killing occurs at closing of blooming time.—W. M. H., Antelope.

It seems to be a die-back from some cause which the specimens do not reveal. It involves shoots one and two years old. No signs of pest or local manifestation of disease are discernible and death occurred previously, although you did not notice it until growth started this spring. It looks like the result of adverse soil or moisture conditions last year.

California Weather Record.

The following rainfall and temperature records are issued by the Pacific Rural Press by the United States Department of Agriculture Weather Bureau at San Francisco for the week ending May 20, 1919.

Stations—	Rainfall: Past Week	Rainfall: Seasonal To Date	Rainfall: Normal To Date	Temperature: Highest	Temperature: Lowest
Eureka	1.12	39.45	44.44	66	44
Red Bluff	.02	26.18	24.74	98	48
Sacramento	.01	17.20	19.73	86	48
San Francisco	0	21.64	21.88	64	50
San Jose	.01	18.87	16.49	90	52
Fresno	0	6.80	9.47	88	48
San Luis Obispo	0	17.90	20.06		46
Los Angeles	0	8.40	15.46		54
San Diego	0	8.44	9.87	66	56
Winnemucca	.02	6.37	7.43	90	48
Reno	0	8.46	10.06	88	46
Tonopah	0	4.81	9.41	86	44

Fertilizers and Fertilization--I.

Written for Pacific Rural Press by Dr. C. B. Lipman, Professor of Soil Chemistry and Bacteriology, University of California.

What Constitutes a Fertilizer?

The problem of fertilizers and their application to soils, as it stands today, is essentially a practical one. The truly scientific phases of it which are being studied have not yet progressed far enough to allow of much application of their results. Of necessity, therefore, most rules and standards in fertilizer practice and in the fertilizer industry must be more or less arbitrary. This includes, of course, the determination of what constitutes a fertilizer material. Nevertheless, it remains true beyond a peradventure that the final decision in such matters must remain with the scientific investigator of soil-and-plant problems. The reason for this is that he has delved so deeply into the subject as to be cognizant of the numerous difficulties and pitfalls which inhere in it, and thus knowing the limitations of it can prescribe with much greater precision and justice then anyone else what should be adopted as a guide or guides. I am assuming this conclusion to be axiomatic; and in accordance therewith without bias or prejudice, and with no recollection of former definitions, if any exist, I have attempted to draw up the following statement in regard to what constitutes a fertilizer and what materials may be included under that head.

Essential Qualities and Characters.

A fertilizer is any substance, subject to the qualifications given below, which furnishes to the soil any one or more of the following chemical elements—nitrogen, phosphorus, potassium, sulphur, and calcium; or which furnishes organic matter. The substances containing the chemical elements named must, in addition, possess the following qualifications:

1. They must contain as simples, if largely insoluble in water, no less than the following percentages of their respective elements or compounds: 3 per cent nitrogen; 20 per cent phosphoric acid; 20 per cent potash; 20 per cent sulphur, and 35 per cent calcium (lime).

2. They must contain as simples, if largely soluble in water, no less than 5 per cent nitrogen (as nitrate or as ammonia), or 5 per cent of phosphoric acid, or 5 per cent of potash. Sulphur and calcium materials do not in the present state of our knowledge need to be delimited in accordance with solubility.

3. In either insoluble or soluble form a material to be a fertilizer must not be poisonous to plants even when applied in large quantities such as 1000 pounds per acre for the soluble and ten tons per acre for the insoluble. This does not include sulphur, which should preferably not be applied even in the form of flowers of sulphur at rates exceeding 100 pounds per acre.

4. A material to be a fertilizer must, in addition to the foregoing qualities, possess a more or less fine or powdery consistency so as to allow of facile distribution in the soil; and it must be of a nature to allow free handling without danger to man or animals.

5. An organic material to be a fertilizer must either contain at least the quantities of any one of the elements above indicated in either soluble or insoluble form, or must be of a nature which is readily decomposed in the soil (four to eight weeks in the summer) and preferably carrying a large bacterial population. Even organic substances containing 3 per cent of nitrogen, mostly insoluble in water, must be of a nature to decompose readily as above indicated if they are to be considered as fertilizer material.

Enumeration of Fertilizers.

In accordance with these definitions, the following common substances can properly be regarded as fertilizers or as sources of serviceable organic matter:

NITROGENOUS MATERIALS.

Sodium Nitrate	Linseed Meal
Ammonium sulphate	Fish meal
Ammonium nitrate	King crab
Ammonium phosphate	Rape meal
Calcium nitrate	Guano
Cyanamid	Bat guano
Cottonseed meal	Slaughterhouse tankage
Dried blood	(All varieties)
Fish scrap	Garbage tankage
Castor Pomace	Meat meal
Horn meal	Hoof meal
Acidulated leather	Wood and Hair waste

PHOSPHATIC MATERIALS.

Raw ground phosphate rock	Acid phosphate
	Double acid phosphate
Phosphatic marl	Steamed ground bone
Raw ground bone	Bone tankage
Bone black	Dissolved bone
Bone ash	Apatite
Basic slag	

POTASH MATERIALS.

Potassium Chloride	Potassium Nitrate
Potassium Carbonate	Double Manure Salts
Kainite	Carnallite
Kieserite	Kelp Ash
Kelp Char	Dried Kelp
Wood Ashes	Plant Ash
Manure Ash	Brine Residues
Cement Plant Potash	Lencite or other minerals with at least 20 per cent potash.
Blast Furnace Potash	
Potassium Sulphate	

Also potassium-magnesium carbonate and sulphate.

SULPHUR MATERIALS.

Flowers of Sulphur	Sulphide minerals
Calcium sulphate	Any of the sulphates mentioned in other lists.
Sodium sulphate	
Magnesium Sulphate	

CALCIUM MATERIALS.

Calcium oxide (quick lime)	Calcium Carbonate (ground limestone)
Calcium hydrate (water slaked lime)	or air slaked lime).

SOLUBLE CALCIUM MATERIALS.

Gypsum	Calcium nitrate

ORGANIC MATERIALS.

Barnyard Manure	Horse Manure
Cow Manure	Hog Manure
Sheep Manure	Goat Manure
Poultry Manure	Green Plant Tissue
Legume Straws	Sewage Sludge

It may transpire through present and future investigations that the carriers of other elements than those above considered may have to be properly included among fertilizer materials whether those elements be essential to plant growth or not, but thus far, there seems to be no warrant for going farther than I have gone above. At the same time, the limitations drawn above will rule out such fake materials as bacterized peat, dried peat, solutions carrying fertilizer elements, cultures, etc.

Valuation of Fertilizers.

Prices on fertilizer materials should be regulated as follows:

1. There should be a schedule of prices on water-soluble ingredients separate and distinct from that on the insoluble materials. A schedule for each is to be made up by a national committee of soil and industrial experts.

2. Organic matter containing less than 2 per cent of nitrogen, mostly insoluble, should be valued only for the organic matter. An appropriate schedule for these is likewise to be arranged by a committee of experts which could allow a small additional value for soluble quantities of the five elements above considered which they contain.

(To be continued.)

Spraying for Thrips Larvae

(Written for Pacific Rural Press.)

"I was a bit late spraying for thrips larvae on the west side and shall suffer for it," said Egbert H. Smith of Napa, who has made a practice of spraying for the larvae for years, particularly on Imperials. He has 90 acres in orchard—prunes and cherries chiefly. He said further, "I ran a band of sheep on my French and Imperials on the home side of the creek. Started in the fall and kept them there all winter till February and then plowed. They ran in the orchard every morning during the winter and I took them off in the afternoon and they were bedded with an even ration of silage and roughage. Where I ran the sheep I had no thrips and no larvae and have a good crop of prunes. Of course I wouldn't attach any importance to this till it is tried out further, for it may be only a coincidence, or it may be due to other conditions, but those are the facts." We asked how the ground turned up after all that tramping.

"The Soil Turned Over Nicely,"

He told us, "and worked down into a good useful mulch. How about the other side of the creek? Well, I had plenty of thrips there. I did not spray for the adults, but started on the Imperials for the larvae—a bit too late. The quarter I sprayed first has a good crop and very little damage was done to buds, but the quarter I sprayed last has few prunes and a lot of bud injury. It is very noticeable.. We got it bad from the larvae this year all right. After this I am going to spray for the adults and then twice for the larvae. It was a bad year. The adults came out—not as they do some years but stringing along over a long period. The larvae are doing the same; they have also had an extraordinarily long inning—in fact there are still some left (May 8)."

When to Spray for the Larvae.

Mr. Smith says that he has the best success in spraying for the larvae by waiting till all the bloom petals have fallen from the French. With the Imperials, however, he sprays before the bloom is entirely off and gets them where there are so many hiding at that time, in the crevices of the little husks. With regard to cherries, if possible he likes to spray them in the bud, then later if necessary for the larvae. It would be interesting to know if anyone else had depastured their cover crop with sheep, and if so, what results were noticeable, both with regard to thrips and the condition of the soil. Mr. Smith's soil is a strong silty clay-loam, and he was fortunate this year to get it plowed when he did. He works his place with a Holt "Midget." We would like to hear from a sheep-keeper on sandy loam or adobe if this practice of depasturing has been tried out.

1919 PRUNE CROP MAY CREATE NEW RECORD.

(Written for Pacific Rural Press.)

In the Santa Clara Valley, Napa and Sonoma districts, in the Sacramento and in the Lower San Joaquin, the prune crop promises well. We have heard complaints of a light crop and in a very few locations have seen them, but plenty of others are very heavy. It would not be surprising if the prune crop of 1919 created a new record. Imperials seem to be running lighter, but Sugar and Robes are full where last year they were scarce. The thrips' larvae did a lot of damage in some places and we are doubtless in for a heavy June drop. We have seen orchards where such a heavy drop will be of benefit by improving the quality.

One can already see a lot of prunes that will drop off and the crop will still be good. The fruit is well distributed over the trees in the prune sections—evenly enough to insure good quality. This is a condition that always pans out the fruit at harvest time and we wonder where they all come from. Even the orchards that were called light had, some of them, very nice crops of fruit on. We didn't expect an overwhelming crop—didn't want it, but we have a crop that will produce quality and the young orchards now coming in will give an increased total yield.

E. D. Petray of Healdsburg reports 50 per cent on French and 75 per cent on Imperials. We were in this orchard this week, and perhaps compared with last year this estimate is correct. But he has a mighty nice crop on that young orchard and so have Baker and Shaw, next to him, and the man next to them—probably two and a half tons dry to the acre on 10-year-old trees. Percy Northrup, nearer Santa Rosa, will have well over three tons dry to the acre on his 15 acres of 12-year-old trees. The thrips or something took them all last year. This year he sprayed twice and has a nice crop and the trees are in splendid condition. T. E. Curtis lost his crop last year, apparently from thrips. He is on Dry Creek at Healdsburg—has 20 acres of orchard here that looks like five tons dry to the acre. He sprayed three times for thrips this year, and unless the June drop is excessive, he will get 5 tons. Three men in Napa county report an estimate of the largest crop they ever had.

We met H. C. Dunlap, Managing Director of the Prune and Apricot Growers' Association, on our trip through. He said, "We have a nice crop of prunes in the Santa Clara Valley and I believe this year's yield will tot up to 250,000,000 for the State."

Everywhere the old trees are making some nice new growth—something we were very shy of last year.

THINNING SUGAR PRUNES.

To the Editor: What do you know about three and four-year-old sugar prunes? My mother has ten acres and the trees are loaded Would you advise thinning and pruning or just thinning?—S. B. S., Los Gatos.

It would not hurt to check such precocious young trees with judicious tipping back and then thin the balance. The claim has several times been made that this treatment (cutting back in May) results in a very shy year following. But where such a heavy crop sets on a young tree, we have noticed that the following year is generally light. If those long whips full of fruit are not lightened they will break off anyway (for the "Sugar" is such brittle wood). Thinning fruit on young Sugars would pay such a year as this even on older trees if they are to size up. For a 90-100 Sugar is about all skin and bone.

Southern California is looking for a 20,000 ton walnut crop.

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Plenty of Nitrate in Chile

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720,000,000 Tons

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Chilean Nitrate Committee
P. O. Box 248 Berkeley, Cal.

Proper Housing Increases Hog Profits

Written for Pacific Rural Press by R. H. Whitten.

PROPER HOUSING is essential to successful swine production. Hogs are not so well protected with natural coverings as most domestic animals. They are quite susceptible to the unfavorable influences of dampness, cold, heat and drafts, and if they are not protected from these elements it will be at the expense of their maintenance. If they are too hot in summer or too cold in winter they will use up flesh or feed which otherwise would be turned into gain and profit.

Yet, how few farmers realize this! As a general rule hogs receive the least consideration, so far as housing is concerned, of any farm animals. This certainly seems strange when the returns from hogs, properly cared for, are greater than from any other kind of livestock, and they can be provided with proper protection at a minimum of expense.

Costly buildings are not essential here in California; in fact, they should be discouraged if it is expected to make the venture pay, for they load the owner down with a big handicap in the way of money uselessly tied up. Some of the best breeding establishments in the State—plants that are raising the finest pure-bred stock and are showing the best profit—have buildings that are very ordinary in appearance and cheap to build. They are homemade, and any farmer of ordinary intelligence can duplicate them.



Iowa gable roof house in summer service. Side and end view, with doors open for shade.

The Chief Requirements.

"What sort of a house shall I build for my hogs?" is the question naturally raised, and to answer it we should consider the essentials of a satisfactory house.

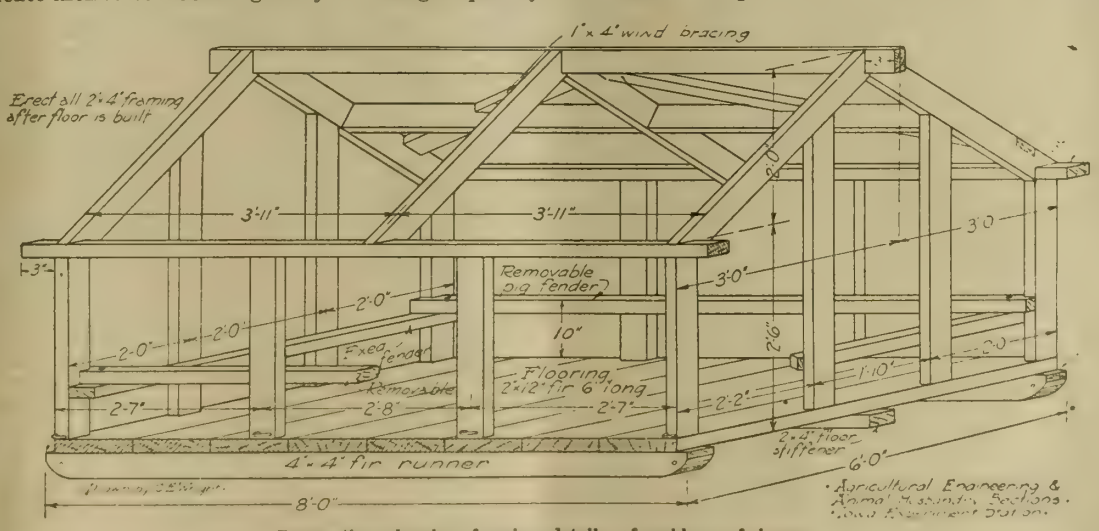
First of all, it should provide protection from heat, cold, wind and rain. In California sows farrow almost every month in the year, and pigs born during the winter months demand warm shelter. Also growing and mature stock will make good use of a protected sleeping bed, and will thrive best when not compelled to shiver from cold, and thus burn up feed which should be used in making flesh or fat. Equal protection is needed from summer sun, for hogs actually suffer more from the heat of summer than from the cold of winter. A high temperature dulls the appetite, and hogs often die under the direct rays of the summer sun.

Light, ventilation and sanitation are necessary. Provision should be made for the safety and comfort of the hogs, and for the convenience of the attendant in feeding and caring for them. The house should be serviceable so that it can be used every day in the year; durable, so that it will stand the wear and tear of constant usage and last for a long time; reasonable in cost, so that the overhead will not be too great. If it is of a neat design and attractively painted, it will have an advertising value which will mean much to the breeder of registered stock.

Movable vs. Centralized Houses.

There are two main types of hog houses: the small, handy, individual, movable kind, and the large, centralized, community or stationary building. Each has its advantages and disadvantages. With the centralized house less labor is required for feeding; closer attention can be given sows if several are farrowing at a time; the exposure of the herdsman is less; the lighting, heating and ventilating can be regulated better; less equipment is necessary, and the durability is greater.

On the other hand, the enthusiastic owners of individual houses insist that they have many advantages not possible with the big houses. They are easy to build, and can be quickly moved. This movable feature is important. The houses can be pulled from one field to another when pasture or water gives out, or a change is desired. They furnish protection from disease; economize fencing to greater advantage; encourage exercise when necessary; keep the sow apart from the rest of the herd at farrowing time; provide for more uniform development of suckling pigs and less danger from loss; allow the segregation of developing boars. Sanitary advantages are greater, in that surroundings may be changed quickly. Rotation of pastures and lots is easily planned. Floors are more dry and sanitary because manure is usually dropped in the field. Artificial heat in just a few pens is more easily provided, and the fire risk is much less.



Perspective showing framing details of gable roof house.

Movable House Preferred.

Beginners and owners of small herds find the individual houses more practicable because they can be built more cheaply than a larger one, and can be increased in number as the herd enlarges. If the farmer is a renter he can take them with him in case he moves.

The ideal system is a combination of a centralized house with several movable houses. Then the large house can be used as a farrowing house, and the movable houses in the isolation of sows with litters, getting them out on pasture as soon as possible so that the sow may have green feed and the pigs exercise. Such a system is followed on most large plants, but the beginner who must start with only one type will get better results from the movable house.

There are two common styles of the movable house—the gable roof and the A shape house. Both have been brought to a state of perfection at the Iowa Experiment Station after years of experimenting, and while each has its merits, the gable roof house is to be recommended for California conditions. It costs but $2 more than the A shape house; the amount of room is much greater; it provides more shade and is much cooler in summer; it can be more easily moved, as a rope put around it will remain snug while one around an A shape house will slide up the roof.

Making a Gable Roof House.

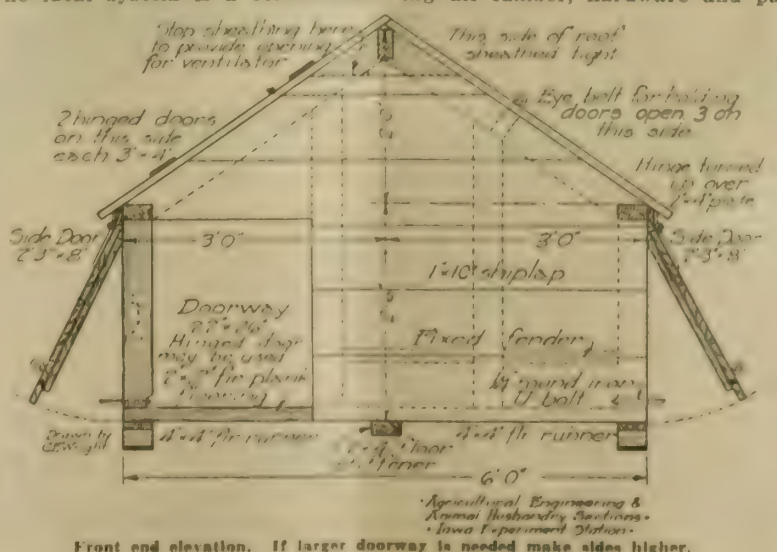
Before the war the material for a gable roof house cost $17.19, including all lumber, hardware and paint. Undoubtedly the material would cost more today, but by utilizing lumber to be found on the average farm the cost may be kept down. The making of a house is so simple that any farmer who is handy with tools can do the work with the aid of the accompanying elevation plans, and the following bill of lumber:

1 4 in. x 4 in. x 16 ft. for runners.
4 2 in. x 12 in. x 12 ft. for floor.
1 2 in. x 4 in. x 8 ft. for floor stiffeners.
3 2 in. x 4 in. x 8 ft. for rafters.
1 2 in. x 4 in. x 8 ft. for girt.
1 2 in. x 4 in. x 10 ft. for ridge.
2 2 in. x 4 in. x 10 ft. for plates.
2 2 in. x 4 in. x 8 ft. for studs.
2 2 in x 4 in. x 10 ft. for studs.
2 2 in. x 4 in. x 10 ft. for fenders.
1 2 in. x 4 in. x 10 ft. for fenders.
1 1 in. x 4 in. x 12 ft. wind brace.
3½ 1 in. x 10 in. x12 ft. for end.
5 1 in x 10 in. x 16 ft. shiplap for end and side.
1 1 in. x 8 in. x 8 ft.
3 1 in. x 10 in. x 10 ft.
11 1 in x 10 in. x 8 ft. shiplap for roof.
3 1 in x 4 in. x 16 for bottoms.

Other materials necessary are: 12 eyebolts, 8 U-bolts, 10 12 in. strap hinges, 2 8 in. strap hinges, 1 door pull, 1 wire for door, 12.5 pounds nails, .6 gallon paint.

This plan calls for a substantial frame of 2x4 material. Two-inch material is provided for the floor, but one-inch boards may be used if properly supported by joists. If the roof is not shiplapped or grooved battens should be used. The runners should not be lighter than 4x4, and should be of redwood to avoid decay.

Hinged doors are provided on one side of the roof, letting in plenty of air and sunshine, and making it easy to care for the pigs. They should be on the sunny side, and there should be wind braces in the roof bracing on the opposite side to prevent racking when the house is moved. The entrance door may be placed in either the front end or the side of the house, but in either case it should be at a corner as the swine are thus better protected from drafts and storms. For big type hogs it may have to be larger than specified. A piece of burlap hung at the top furnishes a good automatic door for winter use, but it should be renewed frequently. The small, high doors in the ends are convenient for ventilation and for observing the occupants. Sometimes they are of glass. The low shade doors are very necessary in hot weather. They should be substantially made and reinforced at the hinges.



Front end elevation. If larger doorway is needed make sides higher.

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BERKELEY, CALIF.

Here and There in the Fruit Business

[Written for Pacific Rural Press.]

Label Fruits and Vegetables.

Fruit and vegetables, when shipped within the jurisdiction of the Federal Food and Drugs Act, must be labelled with the quantity or weight of contents of the package. Shippers who fail to comply with the requirements of the law are liable to prosecution in the Federal Courts. Federal Food inspection will watch interstate shipments of fruit and vegetables during the season to see the law is complied with.

What Few Currants We Imported.

The exports of currants from Greece between August 23, 1918, and January 3, 1919, amounted to 39,286,-682 pounds, compared with 9,127,351 for the corresponding period the previous year, and a total of 101,882,450 the year before that. Most of the fruit was for the United Kingdom and France. The total shipped to the United States during the period year named to January, 1919, was 136,039 pounds.

Flour Paste as a "Spreader."

The following formula for flour paste is from O. E. Bremner, Horticultural Commissioner of Sonoma Co.: "The object of the flour paste is to form a body for the spray materials which do not spread easily or which run on the foliage or fruit. It causes lime-sulphur solution or Black Leaf "40" to spread readily; it increases the covering and sticking quality of arsenate of lead and sulphur pastes. Care should be taken not to use too much or it may cake on the foliage. For that reason we advise the commercial flour paste—handled by most paint stores—such as is used by bill-posters and paper-hangers. It is cheaper than the home-made stuff, too—costs from 2 to 3 cents a pound. Use from six to eight pounds to 100 gallons of spray. If the commercial product is not available, flour paste may be made as follows: Sift three pounds of wheat flour and mix to a thin batter with cold water: boil for at least ten minutes or until clear. Then strain into the spray tank. This is the equivalent of six pounds of the commercial paste."

New Liquid Gas Plants.

Because fumigation of citrus trees against citricola and other scale is found to be less costly and more effective than spraying for these pests, two large hydrocyanic gas plants are being erected by opposing corporations for the manufacture of the chemicals and apparatus. It is reported that last year $3,000,000 was spent in fumigating 10,000,000 citrus trees in Southern California. The practicability of the new method has been demonstrated, fumigating outfits contract the work on a commercial basis and guarantee their work, and now that cyanides are made in America the cost of material will probably lessen. One factory is at Azusa and one at Los Angeles.

The Honey Bee's Prowess.

One super of sixty pounds of honey was filled by the bees of one colony in two weeks this spring—ending April 7. The colony belonged to L. R. Cody, Horticultural Commissioner of Santa Clara county, who is making every endeavor to establish more bee colonies there in the interest of the great fruit industry. It seems to be likely that in course of time the keeping of bees by all fruit men may become a part of the game and that qualified bee experts may be hired co-operatively to travel around and handle them—perhaps on the same lines as district dairymen pay for a qualified cow-tester. We noticed in one apiary that the colony hives rested on a long frame—two by two by fours suspended and swinging from wires. At points of contact they were smeared with crude oil to keep off creeping predatory insects.

The Price of Raisins and a Moral.

The opening price for raisins is not to be named before July 15. Remember how often they were on the trays or in the sweat box—when you needed the money and had to have it—before the independent packers would name a measly price? Those were the dear old days when each grower was king of his own dump. The price he generally had to pay was an empty belly, a hopeless mortgage and a meager exchequer. The value of organization is learned by every boy who has ever played football or any other ball. He learns that loyalty to his own team is regarded as the greatest human virtue by his fellows. And this lesson stands him in good stead throughout his life—in every undertaking that he is to make successful. Play the game! "The boy is father to the man." The ethics learned at school, if properly applied, are the most valuable we have in after life. We vociferously protest against injustice (amongst ourselves and not to our opponents), but we do not drop off the team for petty personal differences. That is moral suicide.

COMBATING APRICOT BACTERIAL GUMMOSIS.

(Continued from first page.)

the treatment mentioned above would not be practicable. In such cases, heavy pruning would be of some value. Such infections, however, are of far less immediate importance than those on the body of the tree.

On cutting out infected areas, it is important that all discolored tissue be removed, therefore cut well out into the healthy bark. Several methods of treating the wounds made by removing lesions have been tried. Some have been disinfected in various ways, then painted with asphalt paint; others have been painted with asphalt without previously being treated with a disinfectant; still others have been left without any treatment. The first method is recommended over the others, although all gave fairly satisfactory results.

The tools should be thoroughly and frequently disinfected. A five per cent solution of formaldehyde has been found very satisfactory for this purpose. The tools can be kept immersed in a pail of this solution without injury to them. The same solution or corrosive sublimate 1-1000 in fifty per cent denatured alcohol, can be used to swab the wound which, after drying, can be covered with the protective covering of asphalt paint.

There are certain conditions which may arise that will necessitate some deviation from the recommendations made. It is not possible, in this brief discussion, to touch upon these.

The future importance of the disease to the apricot industry cannot be conjectured with any degree of accuracy at this time. While there is now some reason for believing that the disease was present in the state previous to 1916 when first identified, it has made rapid progress since that time. It has made more progress in certain sections than in others and its development seems to be influenced by weather conditions as is true with most plant diseases.

Considerable data has been accumulated relative to various phases of the problem which are to be published in due time. The writer desires any data or specimens which will give any further information relative to further distribution of the disease or to its occurrence on other hosts, particularly the cherry.

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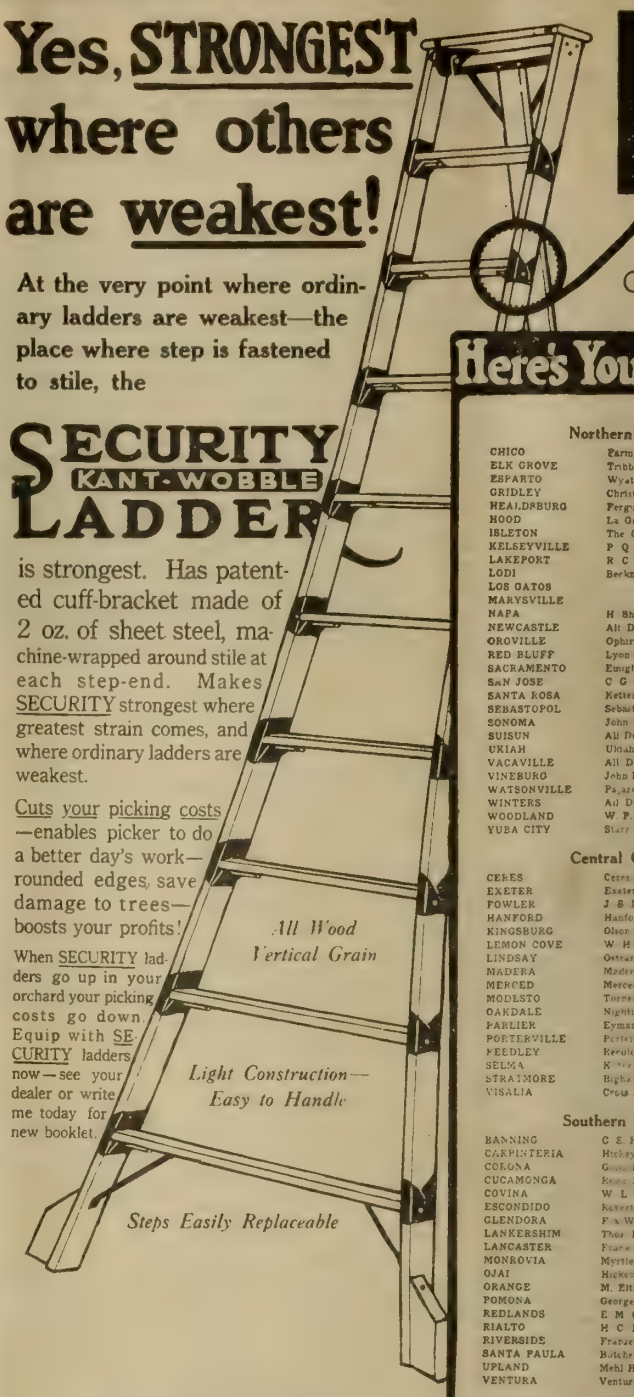
At the very point where ordinary ladders are weakest—the place where step is fastened to stile, the

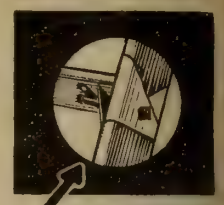
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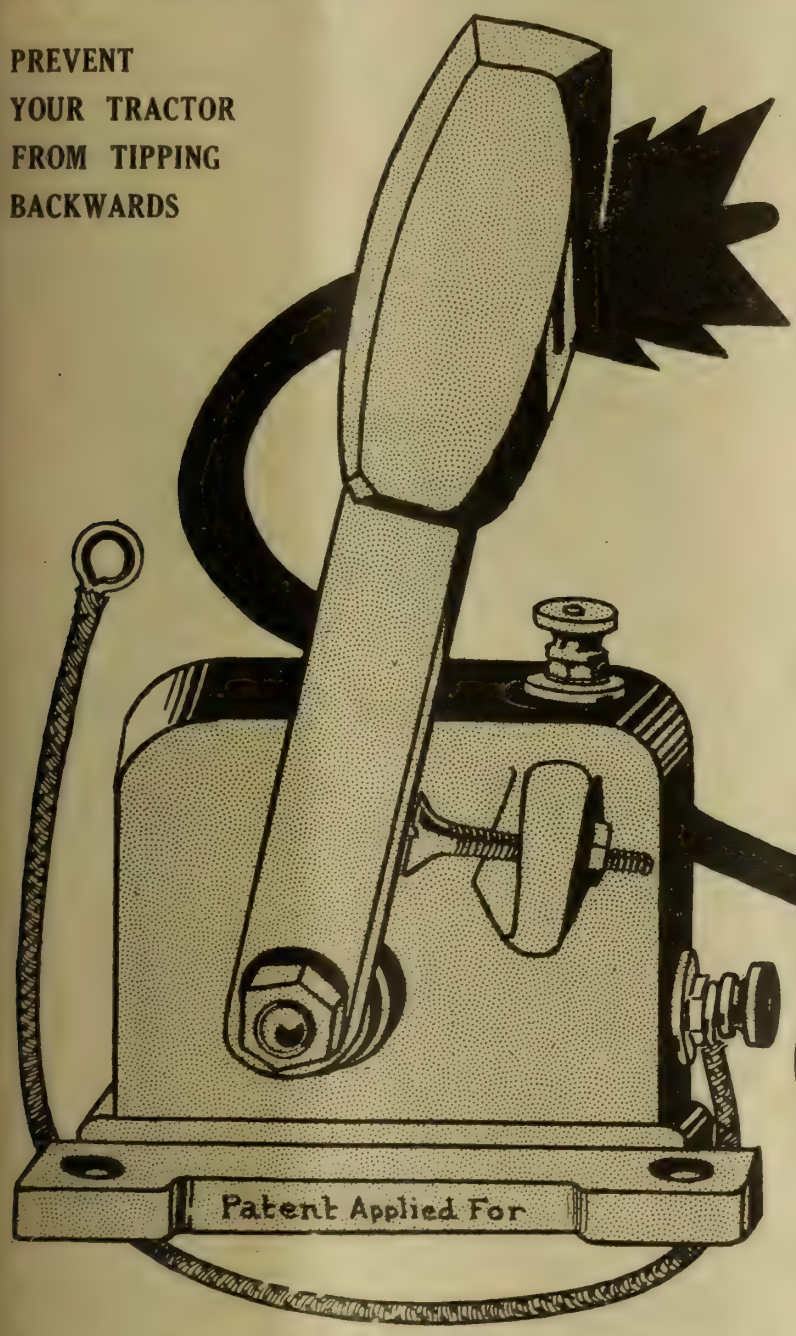
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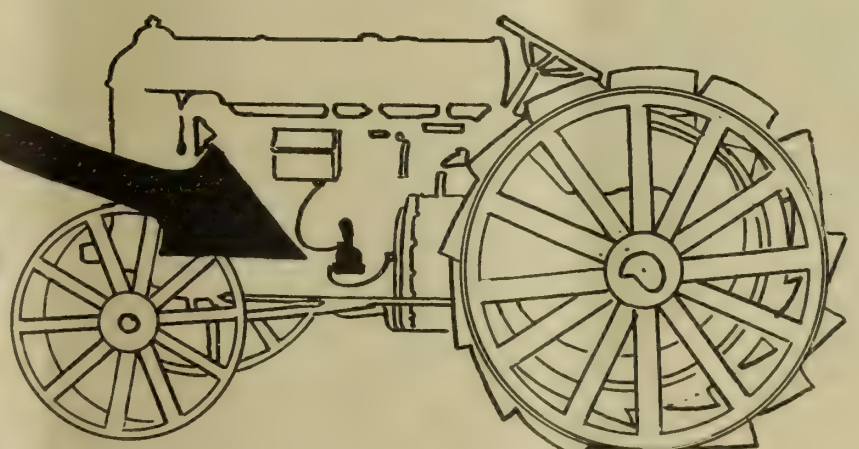


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Send no money. Just write and say that you will put one on your tractor and after trying it out for ten days, either send it back or send us ten dollars ($10.00).

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It will need no attention whatever after installation. Any one can put it right on in less than ten minutes. No fitting, drilling, tapping or cutting. It weighs less than three pounds. It can be adjusted to any angle necessary depending on the job to be done.

It is held in place by two of the crank case bolts near the Magneto plug. It is of neat design and sturdy construction and finished to look like standard equipment.

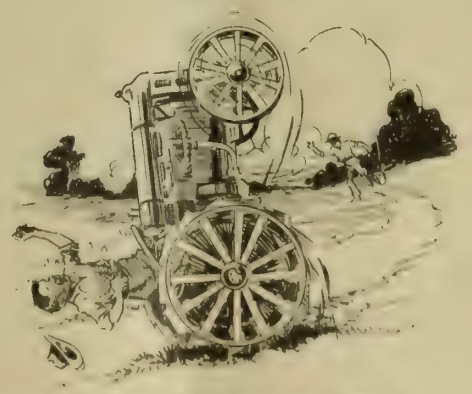
Send in your Request for a Free Ten-Day Trial Today. Don't delay in making your Tractor Safe from Tipping Backwards.

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Don't Let This Happen to You

All wheel tractors, if powerful enough to do their work properly, are also capable of rearing up and falling over backward on the driver.

Several dozen such accidents have been reported and the danger is ever present, even to the skillful driver, for the tractor will rear up almost instantly under the heavy pull if the load becomes stalled.

This happens as quick as a flash and the driver has no chance to escape.

With the Gill's Safety Attachment installed, your tractor is insured against its worst and most common fault. It is folly for anyone to think that he does not need one. Accidents happen to the most careful drivers. A load heavier than it looks, too heavy for the tractor to pull, an unsuspected big tree root in the field you are plowing, numerous others items of this nature, may come up some day, even to you.

Don't take any chances, put a Gill's Safety Attachment on your Tractor and know that you are free from the danger of Tipping Backwards.

Student and School Help in Fruit Harvest

(Written for the Pacific Rural Press by John J. Fox.)

We have been talking from time to time with fruit men regarding the help given during fruit harvest, by high school students, the Woman's Land Army and school children. Although quite a few men comment on the fact that a good deal of fooling takes place, they are bound to acknowledge that the young people have been and will be a very important factor in the harvesting, packing and handling of the coming fruit crop, though the women have been disbanded.

This year's crop of fruit promises to be the most valuable one in the history of the State. Markets for every pound of it are in sight. Although we can manage to forge along with the available man-power in sight for heavy work, we shall need the young people again this year to work in the fruit. It is time now to make provision for this before other arrangements have been made by our educational institutions, which they might dislike to have disrupted later. Every district should take this matter up without delay—take it up with the County Superintendents and with the State, if necessary. It is in work of this kind — special organization — where a Farm Bureau is most useful. Only peak loads of extensive industries will be considered necessary and they vary with localities.



In packing cherries, cutting peaches and apricots and in the canneries, school girls are efficient and tear off a lot of work. They enjoy it, too, for it is a sociable labor and friendly rivalry fends off fatigue by keeping the mind alert.

A Grower's View.

One grower who has employed children and young people for years had this to say, in reply to our questions:

"The Teachers' Institute should be held during the long vacation and the teachers should be paid extra for it as though it came in session time. This would be appreciated by the farmers these troublous times. He would be helpless without the children in our section. Besides, it seems foolish to close up again for a week near to a two months' vacation—it is unsettling to the children and doubtless an aggravation to the parents. To me that is a side issue as I have no children, but I want them when prunes begin to fall and grapes ripen. What should we have done last year and the year before without the young people? Our losses would have been heavy. The loss of any portion of the crop is not only a personal one to the grower—it is a loss to the whole county and to the State. There is just so much less food for the world's consumption, there is just so much less money to spend with your own business men."

One of the Chief Difficulties.

"You cannot put an old head on young shoulders. No man can or should desire to curb the exuberance of youth. But with a little patience and tact it can be directed into useful channels. Children are like men and women—they like to be led but hate to be driven. The younger ones have to be separated from those who are stronger or they become disheartened. They also need a rest and a bite to eat in the middle of the forenoon and afternoon. Then they return to the bat with renewed energy. One of the chief difficulties is that so many men expect the young people to be as anxious and intent on an expeditious handling of the fruit crop as they are themselves. It can't be done. Such men must cork up their impatience as best they can and the crop will be harvested. Of course, one has to "jack them up" once in awhile to get them to clean up their work and fill their boxes and things like that, but the thing can be done without engendering a spirit of resentment or irritation. We must have the children. The fact that we have them is also an added insurance against being "held up" by alien labor, who soon perceive if a crop cannot be entirely harvested and then want to take the whole thing out in wages."

Where the Money Goes.

There is no doubt that every cent of money produced in the country finds its way to our towns sooner or later, through labor, through needed supplies, local investments and improvements. What is good for the rancher is instantly reflected in the business world, the banks and among the manufacturers. The amount and quality of rural production is the basis on which our whole social and economic structure rests. Without the farmer, stockmen and fruit-grower, banks and business houses could not exist. That is the reason that business Men's Associations and Chambers of Commerce keep their ears to the ground to see what is wanted by the farmer. But if they would be still more active, more insistent and more attentive to farmers' meetings—give them even more actual, and, if necessary, financial support; such friendly co-operation would be appreciated and would result in added prosperity in the community.

Many farmers' affairs seem to be perhaps of small moment to business men. But when a number of business-like and successful growers give up their time to attain a special end, it may be taken for granted that they are engaged on something that is important to them and therefore to the community as a whole.

Wolf! Wolf!

One so often sees in city papers reference to a "hysterial cry" of labor shortage. Hysterial! The farmer doesn't usually bawl till his rope is taut.



The Sahara Drier

The Fruit Growers this year will receive the biggest prices ever paid for their crops. Fortunes are to be made in their orchards. Prospects for a bumper crop were never better. Labor is going to be scarce—a big rain may come just as last year.

CAN YOU AFFORD to take the chance? The **SAHARA DRIER** is your insurance. You may buy and experiment with other driers with fans, mechanical apparatus, etc., but soon you will find the "Sahara Unit System"—the nature way—the only practical and efficient Drier on the market. The biggest growers in California are buying our Drier—they make few mistakes. Our Drier will last for years. Fuel costs less than $1 per day. Sold on a guarantee—our patents make this possible.

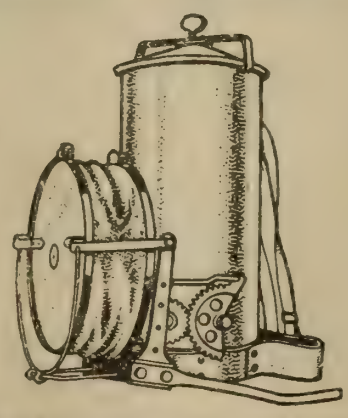
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Sulphurs vines faster and better
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One man does 10 to 20 acres per day in orchard and grove

DON'T WASTE TIME WITH A POOR MACHINE

Standard Size $18.00
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NEW HARNESS

is cheaper than second-hand, dollar for dollar of cost. Come in and see what we have to offer you in **HERCULES HARNESS, Saddles, and Horse Collars.** Our own make and fully guaranteed.

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Catalogue of Harness, Saddlery, Trunks and Traveling Bags sent free on request.

HAUSER'S ORGANIC FERTILIZERS

BUILT FOR CALIFORNIA CONDITIONS
Send for Booklet, "Fertilizer Efficiency" —Tells You Why

HAUSER PACKING CO.
Los Angeles, California

How little the city dweller knows of the shifts the grower is occasionally put to. He does not know that this question of closing schools for help has been obstructed on the ground of its "mussing up" the accounts of the "fiscal year"; or that it will make it inconvenient for the teachers' vacations and that it may interfere with the children's education. And thus some men have got their town friends to believe that the farmers are trying to exploit the children and thus hold the matter up. Now, two or three weeks chopped off of the long vacation and given when prunes, peaches, pears and grapes are being harvested, will not only not hurt the young people, but is a stimulus to them and goes a very long way to solving a difficult problem for the growers in many districts. Therefore, when this matter comes up again, as it will do in sections where youthful aid is needed, it behooves the business men to help the farmers to organize and perhaps even help in transporting the young people. And it is time to take this matter in hand at once.

We Have an Ore Chute to Work On.

There is more than a bare possibility of our harvesting $50,000,000 worth of prunes and raisins this year—to say nothing of any other crop. Can we afford not to arrange beforehand for an adequate number of hands to gather it without taking chances? Or are there enough people who say, "Oh, those high school boys won't pick the pears, peaches, or what not at the tops of the trees; we have to clean up after them." This is sometimes a fair enough criticism, but do we give up using colts because they can't keep on all day with the old team, or because they get sore shoulders, or weave out of the line. I would rather have a colt than an old plug any day.

The State Fruit Growers' Convention

(Written for Pacific Rural Press.)

Following are some of the items on the program for this great convention which embraces all the various factors that go to make up our gigantic producing industries — horticultural and agricultural; from seed time to harvest; from the nursery to the packing house; from packing and inspection to marketing and protection from disease.

On Monday and Tuesday, after the usual opening, Horticultural Inspection Work in Canada will be discussed and the nurserymen will open their two days' sessions. Addresses and discussions on plant quarantine and nursery stock will take place, while the Vegetable Growers' Conference will start in the afternoon. At these meetings Vegetable Standardization and Seed Improvement will be the subjects of absorbing interest, handled by practical men from a purely commercial standpoint. The enforcement of the inspection laws will be clearly shown and the manner of handling standardization.

On Wednesday the fruit growers and farmers meet and Co-operative and Marketing Associations are billed. This is a very meaty day—the leading men from all the biggest farmers' organizations in the State will be there to talk and discuss matters pertaining to the disposition of the various crops and the development of new markets. Also, what we shall have to do to keep and extend those we already have. A number of prominent growers will lead discussions. Land colonization will be discussed by Dr. Elwood Meade—a matter that promises more than anything else to develop this State and build up an independent body of intensive tillers of the soil. Experimental Station work and its practical relation to fruit growers is Prof. J. C. Whitten's subject and one which we are one and all interested in.

A special meeting for deciduous fruit growers will be held at Hemet on May 30 and one at Yucaipa on the 31st, which two meetings are sure to be well attended, for a large number of practical men and specialists will be present. Fairmont Park—half a mile from the convention halls—is made a free camping ground and automobile park with all conveniences for auto parties wishing to camp. The roads are good and the time is convenient.

FINLAND WANTS DRIED FRUIT.

"Dried fruit is sure to have a good opening in Finland," according to consular report, "as all the stock is now exhausted and it will be a long time before any imports from Central Europe can begin. Raisins are mostly imported by direct steamers from Spain." This is another market we can cultivate. There are two institutions in Finland that furnish commercial ratings: O. Y. Cedit at Tammerfors, with branch at Helsingfors, and the Lukemiesten Tiedonanto Yhdistys at No. 6 Mikonkatu, Helsingfors, who give information only to members.

During the five years preceding the war the total quantity of oranges imported by the United Kingdom averaged about 9,908,500 boxes a year (64 pounds to the box). Spain supplied 43 per cent of the total. This season Spain had exported to England 1,679,230 boxes of oranges to March 22.

"My WADE Saws Four Cords an Hour!"



"The Wade is certainly the farmer's friend. I have cut 1600 cords of yellow fir wood with it, and it's as good as the day I bought it."—Dan Ross, Corbett, Oregon.

Why break your back sawing wood by hand, when the powerful little Wade Portable Gasoline Drag Saw will ***outsaw 10 men at one-tenth the cost!*** Light, simple, economical. Cuts wood of any size. Averages 8 cords to a gallon of gasoline. Thousands of Wades now in use. When not sawing wood, the 4 h. p. engine will operate other light machinery.

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Prompt delivery on Wades from over 100 points U. S. and Canada.

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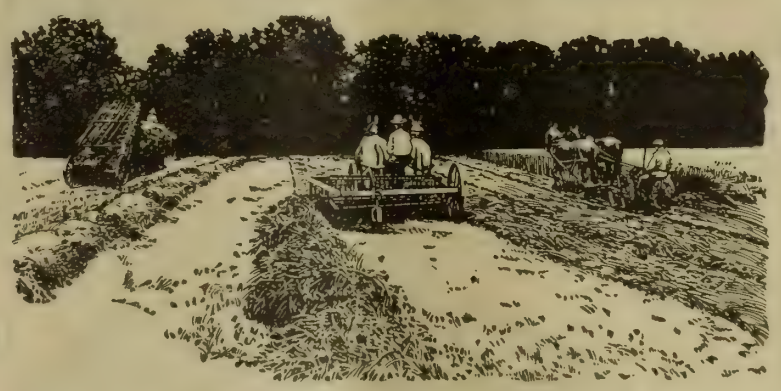
FREE! Big illustrated Catalog of the Wade--also story of "How Dan Ross cuts 40 cords a day." Write today

R.M. WADE & CO. SINCE 1865

347 HAWTHORNE AVE., PORTLAND, ORE.

GIANT WINTER **Rhubarb**

APRIL-MAY decidedly best months to plant for coming winter crops. If interested in Rhubard or Berries, write for special prices. J. B. WAGNER, Rhubarb and Berry Specialist, Pasadena, California



A Clean Clip at a Fast Clip

HAYING time is hurrying time. No other crop is quite so sensitive to weather conditions. A rainy day or two, poor curing facilities—and figures that loomed big shrink to comparatively nothing. Everything hinges on equipment ample to meet all needs and emergencies promptly.

For years you have been cheerfully complying with Government request to save materials by repairing your old machines rather than making replacements. Now that the need for this has passed, would it not be the part of real economy to buy a new machine and be assured of uninterrupted and maximum service at a time when a break-down would mean serious embarrassment and loss.

Deering, McCormick and Milwaukee Mowers, Rakes and Tedders and International and Keystone Side Delivery Rakes and Loaders

are designed to remove all elements of chance from hay making. The mower lays the hay in even swaths down meadow and hayfield. The left-hand side delivery rake follows the mower closely, touching the heads first (not the stems), piling two swaths at once on the clean stubble. This insures proper and speedy curing. Every hay grower should become familiar with the combined side delivery rake and tedder, which has become one of the most popular haying tools. It can be instantly adjusted for raking or tedding.

International and Keystone loaders are staunchly built. Pulled easily by two horses, they load uniformly, leave the field clean, lift hay over 10 feet and do **not** thresh off blossoms and leaves. Sold with or without forecarriage. Release easily from top of load.

You will find that the I H C dealer has just the size and style of all the International Harvester haying machines your work requires. Our organization, being an essential industry, has been speeded to top-notch efficiency. By anticipating your needs and ordering early, you make it easier for us to take back our soldier boys without disturbing our present organization. Order now.

The Full Line of International Harvester Quality Machines

Grain Harvesting Machines

Binders — Push Binders
Headers — Rice Binders
Harvester-Threshers — Reapers
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Tillage Implements

Disk Harrows
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Orchard Harrows — Cultivators

Planting and Seeding Machines

Corn Planters — Corn Drills
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Haying Machines

Mowers — Side Delivery Rakes
Comb. Side Rakes & Tedders
Tedders — Loaders (All types)
Baling Presses — Rakes
Sweep Rakes — Stackers
Comb. Sweep Rakes & Stackers
Bunchers

Belt Machines

Ensilage Cutters — Corn Shellers
Huskers and Shredders
Hay Presses — Stone Burr Mills
Threshers — Feed Grinders
Cream Separators

Power Machines

Kerosene Engines
Gasoline Engines
Kerosene Tractors
Motor Trucks
Motor Cultivators

Corn Machines

Planters — Motor Cultivators
Drills — Ensilage Cutters
Cultivators — Binders — Pickers
Shellers — Husker-Shredders

Dairy Equipment

Cream Separators (Hand)
Cream Separators (Belted)
Kerosene Engines
Motor Trucks — Gasoline Engines

Other Farm Equipment

Manure Spreaders
Straw Spreading Attachment
Farm Wagons — Stalk Cutters
Farm Trucks — Knife Grinders
Tractor Hitches — Binder Twine

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National Board of Farm Organizations

(Written for Pacific Rural Press by Mrs. C. E. Whitmore, Secretary F. E. & C. U.)

The farmers in the vicinity of Modesto are preparing for a busy day on June 6, when the "Big Seven," sent out by the National Board of Farm Organizations at Washington, D. C., will be here for an all-day session. The largest auditorium in this city will be secured, and arrangements will be made for overflow meetings besides. Big crowds are anticipated from all sections of the San Joaquin Valley to hear the message brought by this group of able men, all of whom are National figures and identified with some of the biggest work in our Nation at this time.

The personnel of the Big Seven is as follows:

C. S. Barrett, President of the National Farmers' Union, has the unique distinction of being the only farmer at the Peace Conference. He was in Paris two months as a delegate from the National Board of Farm Organizations and had the privilege of personal interviews with Premier Clemenceau, Lloyd George, and others. Mr. Barrett returned from Paris in April in time to give his report to the National Convention of the Farmers' Union. He has been heard in California before, and is sure of a great welcome.

Thomas P. Gore, United States Senator from Oklahoma, needs no introduction to the people of California. He is chairman of the Agricultural Committee on Wheat, and he has had more to do with law-making relative to the price of wheat, and knows more about wheat, than any other man in the United States.

Gifford Pinchot is a national figure, and was formerly Chief Forester of the U. S. Forest Service under President Roosevelt. He is now President of the Rural Progress Association at Millford, Pa., and is a member of the Building Committee for the Temple of Agriculture.

Milo D. Campbell, of Coldwater, Michigan, is National President of the Milk Producers' Federation of the U. S. He has a large dairy farm in Michigan and knows the business and needs of the dairymen. Mr. Campbell will have an appreciative audience here at Modesto, the metropolis of the leading dairy county in California, for the Biblical allusion to the "Land of Milk and Honey" must mean Stanislaus county.

John A. McSparran, of Furniss, Pa., is Master of the Pennsylvania State Grange with 75,000 members. He is a big man in a big place. He is also treasurer of the Temple of Agriculture Funds, which proves the trust reposed in him by his close associates.

Dr. W. J. Spillman, celebrated economist, and formerly with the Department of Agriculture, is now editor of the "Farm Journal," published at Philadelphia. Dr. Spillman is an earnest advocate of Federation Organization for Farmers, and will be one of the big men scheduled to speak.

Maurice McAuliffe is president of the Kansas Farmers' Union, which numbers over 40,000 members, and is doing a wonderful work in that great grain state. He is also a member of the National Executive Board of the Farmers' Union.

The only cities in California at which these national men will speak are Modesto, on June 6, and San Jose, June 7. They will come here from Salt Lake, where they speak on May 31. Their itinerary will take them over the Northwestern States, ending at Mitchell, South Dakota, on June 18. The object of these great Farmers' Conventions is to impress the need of organization and co-operation among producers, and to bring about the ultimate federation of all existing farm organizations. The meetings in this state are held under the auspices of the California Division Farmers' Educational and Co-operative Union of America. Every farmer should hear these distinguished men. All meetings are free, and are better than a Chautauqua.

Remember the date, June 6, at Modesto. Be there.

[The same speakers will be at San Jose, June 7. They are scheduled to appear at no other places in California.—Ed.]

SAN DIEGO ELECTRIC RATES INCREASED.

San Diego electric power users will pay an average of nearly 10 per cent increase in rates as a result of a railroad commission schedule authorized April 24. The San Diego Consolidated Gas & Electric Company asked for increased rates based on their present practice of purchasing a quantity of electricity from the Southern California Edison Company, transmitting it from San Juan Capistrano to San Diego points. The Railroad Commission, however, held that even with the present high price of crude oil, the San Diego company could generate electricity at a steam plant of its own, which is already in existence, at a lower price than it is now buying from the Edison people. On this ground it was decided that the users were entitled to the advantage which would be gained by running the San Diego Company's steam plant.

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$3,000 Book

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Barn Plans

Going to build or remodel a barn? Then send for this book. 112 pages of the most practical barn plans ever published. Treats every phase of modern barn construction. Cost over $3,000 to compile. Yours free—for the asking.

AND WE WILL ALSO SEND YOU THE COMPLETE LOUDEN CATALOG of modern sanitary barn equipment. Send for these two valuable books today.



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BALANCE GRAPPLE

HAY FORK

Lifts an enormous load. Binds it tight. Drops it clean. Spreads it well in the mow. Leaves no litterings to be cleaned up with a pitchfork. Three or four fork-fulls clear the rack. PERFECTLY BALANCED, slender but strong, will not bend or break. A money-saver in haying time.

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68 Fremont St., SAN FRANCISCO

424 E. Third St., LOS ANGELES

CULTI-PACKER

TRADE MARK REG.

It Cultivates — It Packs





Quick Detachable Wheels
Instantly removable for straddling rows of corn, sugar beets, etc.

Culti-Pack Your Growing Crops

When the soil around your plants is badly crusted or lumpy the Culti-Packer will make it fine and mellow and restore good growing conditions.

In dry seasons Culti-Packing the growing crops will firm the soil about the roots and at the same time stir and mulch the surface thus giving the plants the benefit of all the moisture stored in the soil.

The Culti-Packer can be used on wheat and oats until it begins to joint. On corn, sugar beets and other row crops the **Quick Detachable Wheels** can be removed in less than five minutes permitting the straddling of the rows and still breaking crusts, crushing lumps, and firming the soil close up to the plants.

This is only one of **many** uses for the Culti-Packer—use it before and after seeding and on growing crops. It cuts the work of seed bed preparation, crushing the lumps, firming out air spaces and mulching the surface in one operation. On wheat ground it has actually paid for itself out of the extra crop secured **on ten acres.**

Culti-Packers For Sale By Your Local Dealer
Be Sure It's Marked "Culti-Packer"

The Dunham Company, Berea, Suburb of Cleveland Ohio

HORTICULTURAL JOTTINGS.

Are those newly planted trees protected from sunburn? If not, why not?

$75 a ton seems to be the price for plums in the Fresno district and $40 is offered for peaches.

It is reported from the Santa Clara Valley that $100 a ton is being offered for green apricots for shipping.

Shipment of early peaches has begun at Woodlake (Fresno County) by the Redbanks Orchard Company.

Deciduous fruit of all kinds in Tulare County are expected to create a new record this year both in yield and returns.

The strawberry crop promises to be a record breaker in the State this year. It is said that some canneries are paying as high as 12½ cents a pound for this fruit.

The latest quotations for apricots and peaches at Lodi are quoted as $65 a ton for peaches and $75 for apricots for canning. Canneries are offering 8 cents for cherries.

A codling moth, spraying demonstration was carried out at Yucaipa on May 10 by Geo. P. Weldon, Chief Deputy of the State Commission of Horticulture, which was well attended.

San Jose, the hub of the prune-growing wheel, is said to have sold out of prunes and wholesalers will have to wait for the new crop. There is a heavy European demand for dried fruits.

Five tracts of 20 acres each have been sold at Lingard Colony near Merced. The tracts are to be planted to figs and are to be properly cared for by the vendors for a period of five years.

Many vineyardists are said to be signing up their crops through the State Viticultural Commission with dealers who are in touch with them. A number of these dealers are in Canada.

H. B. Reed of Chico is reported to be installing an 8-unit Sahara dryer as an insurance for his prune crop, and John P. Davidson of Los Angeles is putting in a 10-unit dryer for peaches and apricots.

A systematic campaign of poison dusting for the walnut aphis has been inaugurated in Santa Barbara County according to Eugene S. Kellogg, Horticultural Commissioner, who is hopeful of good results. The aphis are numerous this year.

A full two days' program is issued by the Nurserymen of California at their Convention which takes place at Riverside during the week May 26-31, with the State Fruit Growers and other conventions.

Carload lots of canteloupes are expected to leave the Imperial valley by June 1. With about 14,000 acres in canteloupes in Imperial County and perhaps 10,000 acres in the San Joaquin valley, we stand to eat several melons.

$40 a ton is offered in the Lodi district for Tokay Grapes and the same is said to be offered for Malagas in the San Joaquin. Malaga growers profited by the rains last fall while the Tokay men in the north suffered loss from the same cause.

H. A. Baker Co. are now packing strawberries at their new plant at Gilroy. Last year they were packing Lawton blackberries at their Sebastopol plant (freezing) as late as Oct. 14. 1200 chests were packed in barrels after the season was closed.

In the advertisement of J. B. Patterson, on page 798, advertising their Security Ladder, an injury to the electroplate necessitates the omission of two dealers in their proper place. These dealers are: Los Gatos, Los Gatos Cured Fruit Co.; Marysville, Booth & Herboth.

Ringing the spurs on Zante currants to increase production has been demonstrated recently by Elmer Snyder, U S Viticulturist, to the class of Vocational Agriculture of the Fresno High School. The growing of currants promises to be a new industry within certain bounds in grape growing districts.

Sutter County growers have been contracting their peaches at $80 a ton for this season—those that were not on long-term contracts. These latter, some of whom have their contracts to fulfill at $25 will, it is reported, be met by the canners. There are over 10,000 tons of peaches under contract in this county.

The promise on all fruits in San Joaquin County forecasts an unprecedented crop on all fruits except almonds and pears, according to Horticultural Commissioner Harry H. Ladd, whose experience here extends over 20 years. Almonds and pears are spotted in production, so their yield is estimated at 60 per cent.

Owing to the competition with large shipments of peaches and canteloupes in the near future, the Fruit Growers' Exchange is shipping Valencia oranges as rapidly as possible—1500 carloads a week is talked of—which, it is thought, will put the bulk of the crop on the market before the regular summer fruit season opens.

DOW'S MAGNESIUM ARSENATE
(THE NEW AGRICULTURAL POISON)
May be used in any standard fungicide in same proportion, pound for pound, as Dow's Lead Arsenate. Stock of both now on hand.
C. W. COBURN & CO.
Distributors Dow Chemical Co.
417 MARKET STREET, SAN FRANCISCO



It fits your farm

You buy modern machinery to plow and sow and harvest because you know it pays. Modern machinery on your farm is an investment.

The Calco Bin is an investment—that pays dividends every year just as a savings account at your bank.

It fits your farm—makes buying modern machinery consistent by putting on your farm a modern, grain-saving storage bin also. It saves grain and saves profits for you. The Calco fits your farm.

Write for the free booklet "Calco Grain Bins"

California Corrugated Culvert Co.
LOS ANGELES 417 Leroy Street
BERKELEY 406 Parker Street

AMERICAN ARMCO

CALCO GRAIN BINS

W. R. AMES CO., INC.

Don't Waste Water—You Can't Afford To

Ames Surface Pipe puts every drop where you want it. No levelling, no ditching. No grading. LOCK SEAMED UNDER TREMENDOUS PRESSURE—four thicknesses of metal the entire length of the seam. Most durable surface pipe made.

Send for Folder P-1

Tells you how to irrigate at less cost and describes the most complete line of Surface Pipe and Pipe Equipment in the West.

W. R. AMES CO., Inc., 8th and Irwin, SAN FRANCISCO

SURFACE IRRIGATION PIPE

Glimpses of a California Seed Farm

(Written for Pacific Rural Press by R. E. Hodges.)

When one habitually thinks about himself he is likely to find a stale sort of a subject for his thoughts. But to one who responds to the sunshine and the everchanging cloud shadows, to the thrilling call of the omnipresent meadowlark, thrills to the wonderful waves of a wind on a hillside meadow or a heading field of grain, to the sweet smell of turning earth or the fragrance of well-cured hay, to the brilliance of poppies and lupine, the stately swinging of our roadside rows of eucalypti and the shimmering excitement of poplar leaves in the summer breezes, a drive in the San Juan Valley is a continuous delight. And there he will see in many directions fields as big as the cornfields of Iowa growing vegetable seed for the gardens of America, France, Belgium, Siberia, and the world at large. This is not the principal seed-producing district of California, but it happened to be the one where the writer found time to stop about the last of April. The handiest bunch of workers was in a field of lettuce; and there we found H. W. Tracy of the C. C. Morse & Co. ranch, in the absence of General Manager T. L. Landrum. Mr. Tracy was busy selecting the most typey and promising heads of Los Angeles lettuce and setting stakes beside them to indicate that seed from those plants is to be used for seed growing next year. The millions of lettuce plants in this field had all descended from a single plant selected a few years ago.

Beheading Lettuce for Seed.

A gang of workers was moving across the field on hands and knees cutting the heads off from all the plants which were far enough along to indicate their trueness to type and heading qualities. The heads were cut crosswise and the halves pulled loose with both hands. Some of them were pulled off without cutting. Others were cut horizontally across just above the crown. The latter method was dangerous, for too low a cut would destroy the object of the effort. In all cases the two or three heart leaves just pushing out from the crown were left to protect the heart which is to produce a seed stalk. If the heads were left on, the seed stalks would in the best plants find the hardest job getting out and frequently would turn back in following a leaf around until it emerged from the underside of the head if it emerged at all.

Owing to the impossibility of planting lettuce seed under exactly the same depth of earth and in the same moisture conditions, there was considerable variation in the stage of maturity of various plants. This compels the workers to go over the field again later to cut heads of later-maturing plants and from those which make a second head after the first is cut off. The heads that are thrown away so promiscuously are far better lettuce than much of what we buy on the city markets.

Removing the Rogues.

The field was just being "rogued" the third time and was likely to get the same treatment a few times again. Rogues in society are off-type human beings who are either depraved or too weak to resist temptation. Society places them where they can do no harm. In a lettuce field, rogues are off-type individuals whose offspring would be undesirable in people's gardens. They have to be put where they will do no harm before they do it, for at blooming time they would have disastrous effects on all their associates.

Trial Grounds for Seed.

After looking at other fields of various vegetables going to seed we came to the "trial grounds." A sample of each lot of everything grown on the ranch is tried out in two rows, each about 12 feet long. Notes are taken regarding the number of rogues, trueness to type, etc. If any lots are found bad, the dealers who bought from such lots are notified to return the seed or destroy them.

The stocks which are to be used for seed growing again are tested in the trial grounds the season after they are produced and are then planted in the season following that. Salsify and parsnips are about the only kinds that lose their germination too quickly for such procedure. We never dreamed there were so many varieties of lettuce as were seen growing in these trial rows. They will have to be discussed separately.

Mustard Varieties for Greens.

An interesting feature was the mustard of several varieties to be cooked for greens. We had already seen a field of Chinese mustard whose typical leaves were about 14 inches wide and 18 inches long. Mr. Tracy told us that it is of the best eating quality, milder than the wild varieties. In Texas, where wind blows dust (never does that in California!) this is the favored variety, because dust sticks least to its smooth leaves. It is a favorite with the housewife because six or eight of the leaves are enough for a family, and it takes but a minute to inspect and wash them.

For the gardener who wants something in this line to really admire for its beauty, the Fordhook Fancy would be chosen. It is curled, savoyed, crenated, and edged to the delight of an artist; but some women would take all day getting a mess of it looked over. The Giant Southern Curled or Ostrich Plume is the same only less so. Elephant Ear mustard is somewhat smoother than the Chinese variety and perhaps larger leaved.

Acres of Radish Bloom.

Great fields of radishes there were, some in full bloom and waist high. Other fields were only starting to blossom, the seeds which had been covered deeper being only well started into growth. These gave the impression of a poor stand, but they had been thinned to something like a foot apart in rows about three feet apart to make room for their brushy tops. All radishes are rogued before the seed stalks start to shoot and when it is easier to see the exposed parts of the purple wild radishes. No cross pollenization is to be tolerated, and for this reason no wild radishes are allowed to grow along the roadsides or elsewhere.

Odd Notes on Other Vegetables.

Two fields of endive planted at the same time, but one deeper than the other, show marked difference in development, the deeper planting having germinated after the second rain, while the former received the benefit of the first rain after planting. A field of parsley sown for seed early in April was about to be transplanted. Parsnips were growing for seed in rows three feet apart.

Onion Mildew.

Onions were getting ready to bloom; and peculiarly the seed stalks were free from a mildew or blight which had killed many of the leaves on plants within certain small areas. Bluestone and sulphur had both failed to control the mildew, but Mr. Tracy noted that where winds dried the moisture off before the sun hit the leaves, there was no mildew. This was well illustrated by many leaves healthy on the west side whence prevailing winds come, but mildewed on the east side.

Hours could have been spent picking up interesting items in this strange wonderland, so different from what is ordinarily found, yet withal part of an industry in which California leads America.

COMBINATION LEVELER AND RICE CHECKER.

(Written for Pacific Rural Press.)

The makers said it wouldn't work, but it did, and there will be great economy if many more are working in the same way next season. S. M. Joslin, who with his partner, E. Paillex, form the Lincoln Rice Growers' Company of Placer county, is experienced in preparing land for many of the best rice growers of Glenn county. When the partners undertook the first rice growing ever done in Placer county by leasing over a

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I have owned three spreaders in my time. The first two I didn't think much of. Then I got one of yours and now I am more than pleased with the spreader proposition. I find by hauling manure in the winter time on clover sod and letting the rains leach it down before plowing it under will oftimes double the corn yield or even wheat. Where I used commercial fertilizer and barnyard manure together on 12 acres of wheat last year I got 600 bushels of wheat, an average of 50 bushels per acre. A farmer that owns ten acres can't afford to be without a spreader.

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Have been using your spreader on two different farms for a year and find them lightest in draft of any I have ever used. Two horses will pull them anywhere when the ground is not too soft. The straw attachment is ideal for top dressing wheat ground or any kind of small grain. It gets rid of a great deal of straw which goes to waste and this alone will pay for the spreader in a year's time.

J. D. BLACKWELL, Sec'y.
Missouri Angus Assoc.

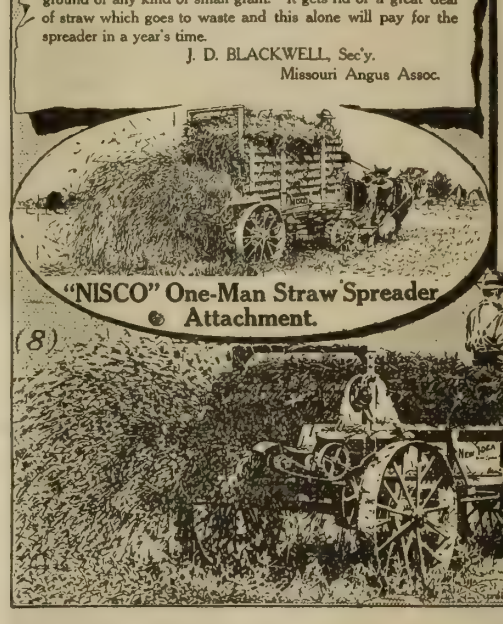
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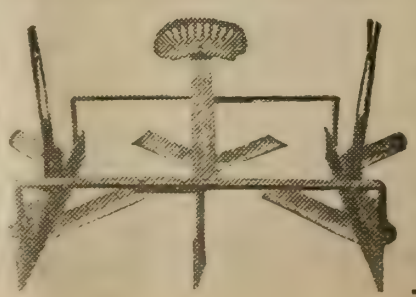
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WRITE FOR CIRCULAR which illustrates and describes the Sigurd Weed Cutter and contains letters from many users.

C. G. SIGURD, Manufacturer
Capital Ave. and McKee Road, San Jose, Cal

thousand acres last fall, they found it considerably rougher than the Glenn county fields. Hummocks of varying sizes and hog wallows or swales of similar variation bumped and pitted the landscape like a mosquito-bitten smallpox convalescent.

Much Leveling before Checking.

Rice should be kept uniformly under seven inches of water all through the growing season, and the general slopes of the proposed rice fields were difficult enough to prepare without the extra irritation of the localized bumps and pits. The first thing to do then, was to put the bumps into the pits. There was no machine big enough to suit Mr. Joslin, so he had one made to order by the firm which had the nearest thing to what he wanted. The Schmeiser Manufacturing Co. makes land levelers which normally cut twelve feet wide and carry about five yards of dirt. A 75 h.p. tractor pulls the machine and supplies fresh compressed air so the only thing to do when you want to shave off a twelve-foot wart from the landscape is to drive over it, turn a little lever, and the machine does the rest. Turn the lever again and the machine is lifted free above the ground. Its construction, roughly speaking, is of a steel or iron plate about 4½x12 feet, set sloping slightly backward, with ends to hold the dirt, a toolsteel edge to cut it, wheels to carry it, and air to lift it. Narrow end pieces hold dirt in front of the leveler.

Rice or Alfalfa Checker.

For $300 extra, Mr. Joslin had a similar leveler made which would handle 6½ yards of dirt and could be used at pleasure to make the high rice checks or low flat alfalfa checks. The change is so simple that one wonders why it has not been worked out before.

A triangular section with about three-foot sides was cut out of the center of the leveler's back plate, the base of the triangle being the lower edge of the plate. This leaves a hole for dirt to stream through when the leveler is set into the ground; and it puts that dirt into a fine check for rice irrigation. To encourage dirt to go through the hole, the corners of the leveler were blocked with wood, and a curved plate extends from the forward edge of the end to the edge of the triangular hole. The central vertical brace, normally built on the leveler, was made removable, so a short one may be put on reaching from the top of the triangle to the top of the plate.

To use this machine as a leveler, Mr. Joslin didn't want this hole, so he had the triangular section replaced and bolted to its parent plate by splice plates behind. The splice plates are of ⅞ inch iron about six inches wide, which proved ample.

Preparing for Rice.

Preliminary leveling on the 800 or 900 acres found suitable for rice cost $15,000 before any checking was done. Mr. Joslin expects to get more than enough greater crop the first year than he would get without such leveling to pay this expense. The place is leased for three years. The "Giant" leveler was used first to shave off the bumps and put them into the nearest hollows. No preliminary plowing was necessary for this.

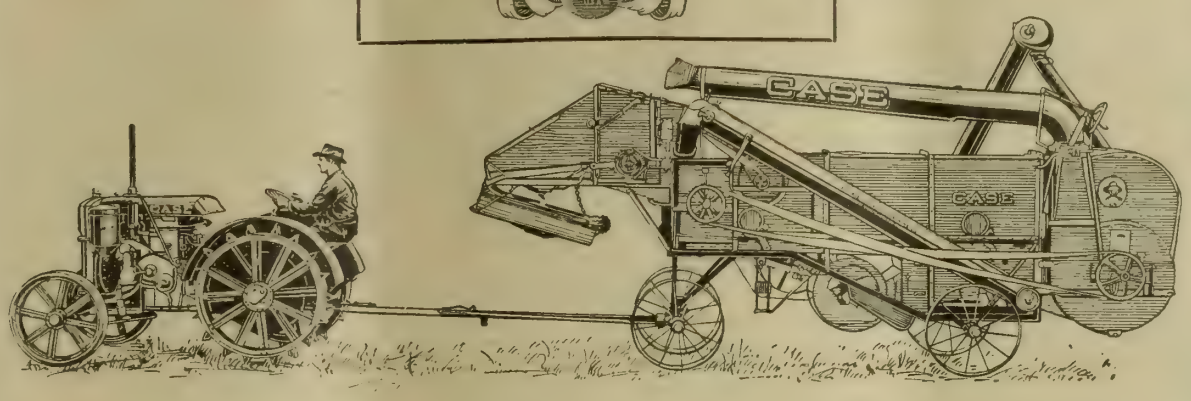
But it left the surface not level enough, especially where holes an acre or more across were filled. So a leveler of simpler construction and 40 feet long was used to finish this part of the work. Land, except what had been freshly moved, had to be plowed before this one would work.

After surveying to get contour lines for the checks, the Giant leveler made them in a way which enthuses Mr. Joslin to this day. It could be set deep for high checks in low places and vice versa.

Makes Alfalfa Checks to Order.

Well, what about making alfalfa checks with a machine like this? The only difference is that the leveler-checker is not let so deep into the ground. It throws up a check three feet across at the bottom and with a wide flat top, the width being less as the height of the check increases. A harrowing gives the low rounded finish needed for easy mowing and raking of alfalfa hay.

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For Quick and Satisfactory Threshing
The Case 10-18 Tractor and Case 20x28 Thresher

For a reliable, small threshing rig use a Case 20x28 Thresher driven by a Case 10-18 Kerosene Tractor. This well known combination will save you valuable time in the rush of threshing days. It will do a thorough, economical job and enable you to thresh at a time most convenient and profitable to you.

The Case 10-18 Tractor provides the even power to run a thresher steadily, as it should be run. The friction clutch belt pulley (fitted with brake) is mounted on crank shaft, the logical place for it.

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A governor-controlled, four-cylinder valve-in-head Case Motor is mounted crosswise on a one-piece main frame. This engine can develop at least 20 per cent more power than its rating.

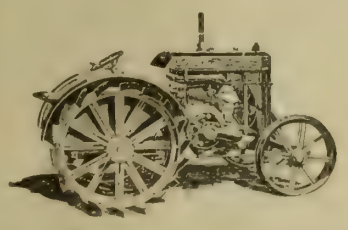
The Case 20x28 Thresher pictured above is built of steel. It is a simple, easy-running machine, noted for perfect separation, cleaning and saving. Operated with a Case Tractor it is an ideal rig.

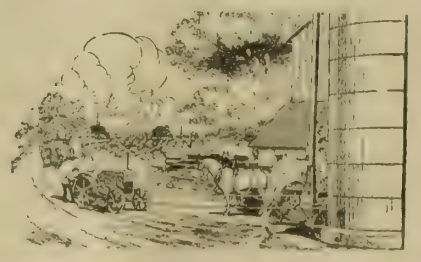
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J. H. Herring, Parlier — C. A. Hughes, Orosi
Sanger Plumbing House, Sanger — Elmer Machinery Co., Porterville
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FARM OWNERS' AND OPERATORS' ASSOCIATION.

State Organization Committee: Albert Lindley, chairman; J. M. Bigger, W. Q. Wright, Edward Powers, Fred H. Rindge, I. L. Borden, S. A. Shearer, Amon Swank, W. C. Ferguson, J. T. Langford and C. C. Woodworth.

Kings County Organizing.

Kings County farmers met at the County Chamber of Commerce last Saturday, to form their organization committee, which is to complete their county unit of the Farm Owners and Operators' Association in that county. John P. Irish, Jr., and W. H. Nixon, of the organization staff, with J. M. Bigger, of Stockton, vice-chairman of the committee, went to Hanford to meet with them. W. A. Long acted as temporary chairman. Attendance at the meeting was representative, practically every part of the county being represented. The situation was discussed thoroughly and it was agreed unanimously that organization should be completed.

The following farmers agreed to constitute the organization committee: J. W. Arthur, of Hardwick, O. L. O. O'Dale of Lemoore, D. H. Gray of Armona, W. L. Haag, of Grangeville, and C. R. Watson of Hanford. The work of districting the county was apportioned to the committeemen, who will at once select two directors from each of the districts, the combined 25 to form the county board of trustees. As soon as the 100 members are signed, a charter will be applied for and the unit will get down to work. The spirit of the meeting was such as to indicate that Kings County will set the pace for the Southern San Joaquin counties.

County and Community Units.

In San Joaquin county the county unit board of twenty-five has been completed by the addition of these men: Dave Young and Herbert Smythe of Farmington; John Tone and Will Thomas of Waterloo; D. O. Castle of Escalon and Robert Ferguson of Roberts' Island. All of these men are well known and active farmers.

Mr. John Tone is moving to organize a community unit in his district. He points out that with a county divided into ten districts and two directors in each, there is an opportunity to bring the units down to every neighborhood; and as a result of their discussions, to carry up to the county board the sentiments and desires of the people.

David Young's Proposition.

David Young, of Farmington, has proposed that each county unit provide facilities for grading grain, testing corn for moisture, and weighing. He would make the service free to each member. During the market period he would also secure for the office of each unit a daily market report, wired from the most impartial sources. He points out that each unit could provide this service from its local funds, and thus introduce a personal and beneficial service

Wanted It Just Right.

When a director of the Association called on Jake Sargent, the Terminus farmer the other day and took up the matter of his joining the Association, the answer was promptly that he would join. But as he has diversified classes of lands, he said he was going to sit down and classify his land and put it in strictly according to the schedule called for on the rate card. The point illustrates how conscientiously the farmers are entering into the business-like spirit of the organization.

CROP REVIEW OF SHIPPING FRUIT.

The California Fruit Exchange believes that the following is about as accurate a crop report as can be furnished at this time, and they do not believe there will be any changes between now and harvest.

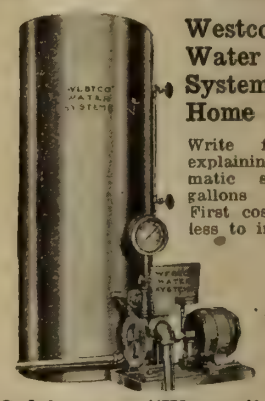
Cherries are now moving, though the supply is very light, the crop having been seriously affected by the cold Spring rains. Judging from present indications, all cherry shipments will be cleaned up before the end of June. There is nothing to indicate that prices will be any lower as the movement will not be heavy at any time.

Early cots will be moving shortly. The crop is about 85 per cent of normal, but canners are offering higher prices than ever have been known before. This applies also to the dried fruit packers. On account of this condition, eastern shipments will be somewhat affected.

Early peaches will be ready to move by the first of June. The crop of Alexanders and Hales is fair; Triumphs, good; Early Crawfords, fair; Elbertas, about 85 per cent mountain peaches and 60 per cent Valley; Midsummer peaches and Clings, light. Very few Clings will be shipped East this season on account of the prices offered by the canners, which are double those of last season. All varieties of plums are light, the total crop not exceeding 50 per cent of last year.

Bartlett Pears will be of better quality this year than for several seasons. The crop is, at the present writing, normal, though we look for a heavy drop during the next two weeks. We estimate that the total deciduous crop exclusive of grapes, will not exceed 80 per cent of normal. Grapes are setting well and if nothing affects the crop between now and harvest, it should be normal.

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GRAIN CONDITIONS IN THE SACRAMENTO VALLEY.

A week's trip by automobile up the east side of the Sacramento Valley as far as Red Bluff and back on the west side, zigzagging back and forth from hills to river, has given the writer a fair idea of grain conditions. As this is written, May 17 at the end of the trip, barley on the uplands is nearly all yellow, including the heads, and that planted early on summer fallow is well filled, almost past the dough stage. While there seems less barley than wheat on the east side, what is there seems to have bigger heads and not to be quite so far along. Barley and wheat on the lower lands along the river and little valleys is greener. Most of the wheat we saw is just getting into the dough stage, though several fields of Early Baart are well in the dough and apparently safe from hot winds. The best field of wheat we saw was on sediment soil on the level ground in Yuba County. Many of the heads in this field stood over six feet tall, the stand was so thick that we couldn't see the ground without parting the plants and bending over. The leaves were still green. Heads on top averaged over three inches long and the small heads underneath could have been much more numerous. Kernels were in the milk. There were generally only two per "mesh." This latter condition held true in most fields of the valley which were inspected.

Very little has been cut for hay except the first few feet around each field. This cut reveals a general drying of the straws about half way up. The ground everywhere is dry and cracking, so the only hope for finishing most of the milk-stage crops is the nutriment and moisture which still remains in the upper leaves and straw. Rain could not help a majority of Sacramento Valley grain now. Cool weather has helped greatly and continues to help in spite of one hot wave which did some damage. There is a tremendous acreage being newly put into rice; and while it is claimed that not a great deal of old rice land has been abandoned, the appearances at this time when planting is so late as to be hazardous, indicate great areas which will not be cropped this year at all. The rice situation is mentioned in another article.

PRINCETON IRRIGATION DISTRICT STARTING PUMPS.

(Written for Pacific Rural Press.)

Six twenty-six inch pumps, each operated by a motor of 150 horsepower, are beginning their new job of pumping water out of the Sacramento River to irrigate about 14,000 acres in the Princeton-Codora-Glenn Irrigation District in Colusa and Glenn Counties, according to Assistant Secretary H. S. Edwards. This district was formerly part of the land irrigated from the "S.V.I." ditches. The main ditch, sixteen miles long and following the general line of the river levee, was used by the S.V.I. and has been bought by the district. Areas included under the new system are very irregular in size, outline and location, but they include principally orchard and rice lands. Mr. Edwards estimates about 4,000 acres of rice under this ditch, and several hundred acres of fruit. It all drains in a southwesterly direction away from the river and into natural "sloughs," which empty some miles below. Half of the land to be irigated fronts on the river, and is all well protected by an old levee. There are no "goose lands" in the district, and even the "back" areas cannot be bought for $125 an acre, while a 42-acre orchard on the river front has recently sold for $20,000.

Three of the pumps are located just above Princeton and three are about 13 miles up the river. The Princeton pumps lift water only eighteen feet and the others probably about the same to get it over the levee. Their intakes are on hard clay bottom close to 18 feet of water.

The district was organized in 1916, but has bought water from the Sacramento Valley Irrigation Company" until this spring. Applicants are charged $2.75 per acre per season for water to irrigate fruit, alfalfa, and general crops, and $8 an acre for rice. The irrigating season begins as early as practicable and ends October 15. The Directors reserve a right to install measuring devices at expense of water users and charge $1.35 per acre foot. It is expected that these charges will cover operating expenses. If they do not, irrigators will be called on to make up the difference when the season has closed.



The DEALER says= "the GIANT mark protects you from imitations"

"It pays me to give my customers what they ask for," says the retailer who knows what's what. "When they ask for 'Giant Powders' I give them GIANT Powders—the real Giant, made by The Giant Powder Co., Con. I don't tell them that 'I have the same thing, only under another brand name,' because it is not true.

"The name 'Giant' on a case or a stick of powder is evidence that the powder is made by the company that originated Giant Powders. Remember this: You can't get Giant results when you use ordinary dynamites that look like Giant but aren't marked Giant."

Look into the new, money-saving methods of clearing land, blasting tree beds, ditches, boulders, etc. They are all described in our up-to-the-minute book, "Better Farming with Giant Farm Powders." A post card will bring it by the first mail.

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STUMPING GIANT FARM POWDERS EUREKA

Field and Garden Suggestions.

Cantaloupe Prospects.

Turlock cantaloupe prospects are good, according to the Turlock Merchants and Growers. Acreage has not decreased during the growing season so much as was expected. The Imperial Valley crop has been delayed a couple of weeks, due to cool weather.

Grain Prospects.

The grain prospects throughout the state are not so good as was reported some weeks ago, owing to the light rainfall during April. However, the increased acreage of wheat assures a greater crop of this commodity than has been harvested in the past twelve years.

California a Cotton State.

The bureau of markets has established official grades and lengths for marketing American-Egyptian cotton. Several thousand acres on the Yuma project and in the Imperial Valley are now devoted to the fleecy staple, which is worth around $300 a bale, when it can be sold.

Value of Fertilizers.

Horticultural Commissioner L. H. Day of San Benito county, experimenting with various fertilizers, finds that on land where superphosphate was used, the yield of hay was twice as great as that on unfertilized ground. This was at a cost of $2.70 per acre. Other fertilizers gave no results.

More Tomatoes in South.

Reports from the Fullerton District are to the effect that the tomato acreage will be increased this year. The crop in Thermal District is about 85 per cent and growing well. Shipments from around Brawley are slow, and carload movements did not begin before the 15th of May.

Potato Acreage.

The early potato crop indicates a larger yield than was first expected. The district around Los Angeles is estimated to be about 75 per cent of normal. Kern county shows a 40 per cent decrease but better yields. The Sacramento Valley acreage is somewhat less than usual and the crop is late.

3500 Cars for Cantaloupes.

To accommodate the cantaloupe crop of the Imperial Valley, 3500 cars have been assembled at various points along the Southern Pacific and Salt Lake lines. These cars will provide for about half the crop. Carlots are expected between May 25 and June 1, and shipments are expected to be 20 per cent more than those of last year.

Imported Wheat Diseases.

A nation-wide survey is being made to determine to what extent two wheat diseases—"white heads" and flag smut—have invaded the wheat fields of the United States. These two diseases thus far have appeared only in Madison county, Illinois. They are supposed to have been brought here in seed shipped from Australia, where both diseases are extensively known.

Good Roads! Good Roads!

We have learned that good roads made transportation to feed our armies possible when no other way would have done. We have learned that good roads, laid down in counties where most money has been spent for them, have not resulted in any tax increase from this cause because enough new development has taken place and enough saved from the old-fashioned patching to pay for all. Even the mountain counties are bonding to the limit for this purpose. The bonds will be voted at the forthcoming election sure. And it will give our returning soldier boys a chance as well.

Cantaloupe Standardization Activities.

At the annual meeting of cantaloupe growers in Brawley, arrangements were made for apportioning inspectors, time for picking, etc., and other business in furtherance of more efficient handling of the crop, was also considered. Commissioner F. W. Waite warned against a violation of the standardization law. There are 14,648 acres of cantaloupes in the Imperial Valley.

Back to Land Movement.

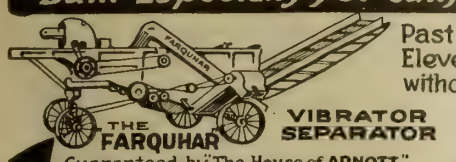
Soldiers, sailors and many city dwellers who are desirous of becoming settlers on the land will be assisted towards that end by the Homeseekers' Bureau of the United States Railroad Administration. Many thousand applications have already been received. There are about 275,000,000 acres of farm land lying idle. This land is mostly in the West and South, and the prices are moderate.

Kill the Devil Weed.

Devil weed is worse than morning glory and harder to kill, according to Monterey County Horticultural Commissioner J. B. Hickman. It has a winter growth and may be in seed before morning glory starts. But its worst feature, like the morning glory, Johnson grass, etc., is its underground stems. It is often spread by carrying these stems to clean land on cultivator teeth or shovels. The weed is "an erect growing, leafy-stemmed pepper grass, with dense clusters of greenish white blossoms like sweet alyssum, stems one to two feet tall." The way to kill it is to cultivate with a weed cutter so frequently that it never puts a shoot above ground. You can starve it in two or three seasons; but if you don't, it may starve you.

BEAN THRESHERS THE TWO STANDARDS

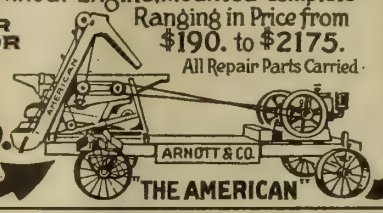
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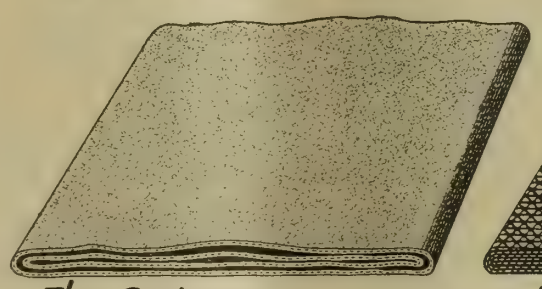


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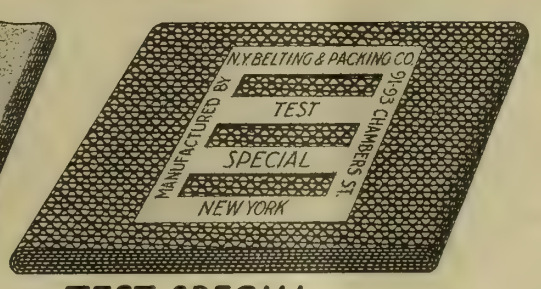
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Test Your Belts



FIG. 1



FIG. 2

Here is a good test to determine the worth of your belting. Take a small piece, cut from end of belt, say 3 inches, and separate plies with a knife (as in Figure 1).

Then grasp the loose end of plies and pull (Figure 2). The amount of strength required to pull them apart determines the length of service you will get.

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Kind of Motor ....
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Diameter of driving pulley ....
Diameter of driven pulley ....
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Distance between pulleys ....
Kind of machinery ....
Name ....
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Tractor Demonstration Postscripts

(Written for Pacific Rural Press.)

Our columns were crowded last week and some of the most important items were either chopped off or held over. One of the items chopped off was in regard to the Whitney tractor dynamometer test. This tractor, weighing 3,000 pounds and rated at 9 h.p. on the drawbar, was tested several times by the Hyatt Roller Bearing engineers, showing 10.97 drawbar horsepower with a pull of 1,763 pounds on the plows at 2.36 miles per hour, 8.5 drawbar horsepower with a pull of 1994 pounds at 1.6 miles per hour, and 10.27 drawbar horsepower with a pull of 1705 pounds at 2.26 miles per hour.

Tractor Aviation.

The Hart-Parr tractor ascension straight up with passengers was accomplished, repeatedly every afternoon. A frame work had been built high enough for the stunt. Two cables hung vertically from the front of this frame, so they passed under the front wheels, which were grooved for the purpose. Ends of the cables were made fast to the faces of the rear wheels near their top. Two other cables hung from the rear end of the frame and passed under the rear wheels, from behind, fastening to their forward surfaces. All aboard! The aviator started his tractor on the reverse and it climbed the cables level as you please and under perfect control. It was labeled "The Hart-Parr Bootstraps."

Tractor Driven by Lines from Drill.

A tractor being started, stopped, and guided by ordinary lines, with the operator sitting on an implement far behind, was the sight which greeted visitors at the La Crosse Happy Farmer tent. Horns had been put onto the tractor to hitch the lines to guide it. A double disk was hitched on, and a La Crosse Power grain drill ten feet wide was hitched behind that. The operator sat on the drill, jerked one line to start, another to stop, pulled one line to turn right, and another to turn left. The machine was far more responsive than lots of farm horses. When the pull was released, the wheels naturally turned again to run straight ahead until a line was pulled again.

Distinctive Kerosene Burner.

A distinctively effective way the Velie tractor has of completely using all the power stored up in kerosene. The fuel is run through a common carbureter, reducing it to a spray and mixing it with the proper amount of air. This spray-air mixture passes through a tube into a chamber built around the exhaust. The temperature in this chamber is about 350 degrees enough to vaporize the spray. Water is led over the manifold where it turns to steam and enters the vaporizing chamber. It is led with the vapor mixture through a hot-water-jacketed pipe over the top of the motor to enter the combustion chamber from the opposite side. This is done to cool the steam-and-vapor considerably so it will not lose too much of its expansive power before the explosion. The steam and kerosene vapor are said to make some sort of a chemical union in the passage. The pipe by which this mixture is led to the combustion chamber is reduced in diameter gradually until it enters the motor through an inch hole at a rate said to be 1,600 feet per second. This process puts it in a form for instant and complete explosion to develop its full power in the engine.

"Aviator Does Some Thrills."

The thrills were cut out from our report of the E. B. aviator's accomplishments headed as above, and various other minor changes were made in other items for lack of space.

Avery Prices Reduced.

The big tent full of Avery tractors and motor cultivators of all sizes showed reduced prices, this being the only indication we noted that prices might come down. They showed a four-cylinder two-row motor cultivator for $850 and a six-cylinder motor cultivator for $950. Horses and harness to do the same work would cost about as much, while with the motor the cultivators are thrown in free of charge. Then the machine will not eat part of the crop you riase.

Steel Mule Does More and Talks Less.

The Bates Steel Mule, 12-20, pulling nearly its own width of plows with its tracks all on solid ground, avoided practically all side draft. It pulled the four Deere disks so deep that they became choked up, although there was not a great deal of vegetation on the ground. Mr. Bates himself was out from the factory at Joliet, Ill., to get all pointers from California regarding our distinctive needs in tractor lines. This is the track type machine which succeeds the wheel type very noisily exhibited at the Puente demonstration. Its tracks, as well as the front wheels, have great flexibility for uneven ground.

Bear-Cat Tractor.

The Bear Cat 10-20 worm-drive tractor, which weighs 4200 pounds and claims a drawbar pull of 3250 pounds normally, pulled three ten-inch plows in general demonstration, and other implements in the individual demonstration. This machine has Timken tapered roller bearings throughout, making adjustment of the bearings simple and speedy.

Four-Drive Tractor.

A trouble with the Fitch Four-Drive tractors first put onto the market was that the transmission was not strong enough for the traction which the four-drive feature gives. This trouble has been corrected, according to Fred Walsh of Glendale, Ariz., who is distributor for Arizona and California. The correction did away with 85 per cent of their troubles. The only agency in California is at Fresno, from which fourteen of these tractors have recently been sold.

Drawbar Helps Steering.

The steering system on the Fageol tractor is considerably aided by its drawbar construction. The drawbar is a heavy curved rod reaching from one side of the rear and to the other side. A spool clevis rolls along this rod so that any small variation in the tractor's steering is not resisted by the plow, which keeps coming straight ahead. This makes a nice furrow, and nice corners, too. The steering system includes two front wheels and an independent clutch on each drive wheel. The clutch on either wheel can be thrown off at turns by a foot lever. Wheels on the right side of this tractor run in the furrow, giving a side thrust, which is rendered harmless by Timken tapered roller bearings.

Patent-Hoist Tractor Plow.

We noticed a big tractor backing up freely with its plows in the air. It was the E-B 20-35, with five fourteen-inch moldboards making the last turn before running the deadfurrow. A foot lever handy for the tractor driver connects the motor to a cam-axle, which raises or lowers a horizontal extension arm. Chains from the end of this arm to three points on the plowgang lift the latter quickly and easily. This was done with five husky men riding the plow.

Impulse Starters for Tractors.

K. W. magnetos and impulse starters for tractors made an attractive and interesting tent exhibit for those who object to cranking much on a tractor. Those who wanted to see them in real action went to the several tractors which use this means of getting hot reliable ignition.

Low-Grade Oil, No Carbureter.

The Fairbanks-Morse Co. had a big exhibit in the accessories tent and on the outside. Of great interest was the 15 horsepower Y oil engine working smoothly without a carbureter, with no valves, no electrical devices, and burning 27 degree oil. A thermometer showed water in the waterjacket to be at 155 degrees.

Spray Gun Worked Outdoors.

A Hayes Fruit-Fog spray gun was demonstrated outside, showing how spray could be placed definitely all over tall trees without long spray

We Manufacture Levelers for Any Power From 6 Horses to a 75 H. P. Tractor

A Schmeiser Leveler

WILL WORK WONDERS ON YOUR FARM



Moving immense amounts of dirt daily, and working on ground too tough for horses and Fresnos to tackle, SCHMEISER POWER LAND LEVELERS are now being used with utmost success by a great many ranchers, large and small—also by contractors—saving their owners time, labor and money.

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Every road district should own one of these machines for constructing roads. They will cut down the high places and make fills quicker and cheaper than by any other known method.

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If you will keep your motor free from carbon. That knocking in your engine—the difficulty you have climbing hills—poor pick-up—lack of power—noisy motor—pre-ignition—in fact 80% of your engine trouble is caused by carbon. Clean it out with

JOHNSON'S CARBON REMOVER

and your engine will run like it did the first 500 miles—quietly and full of "pep". And your gasoline consumption will drop 12% to 25%.

You Can Do It Yourself

For 65c—five minutes' time—no labor—and without laying up the car, you, yourself, can remove all carbon deposits. No mechanical experience required.

If you will use Johnson's Carbon Remover every 500 miles, giving carbon no chance to accumulate, you will automatically eliminate most valve trouble and your engine will always be clean and sweet.

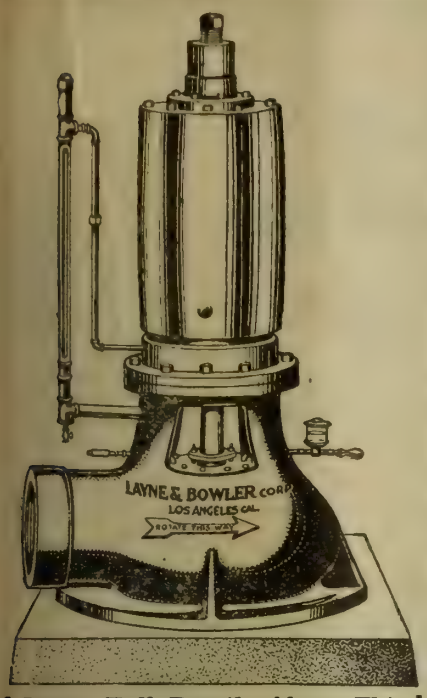
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Johnson's Carbon Remover will also remove carbon from the motor of your tractor, giving it greater power and enabling it to work more satisfactorily and economically. It will make your tractor 100% efficient.



Johnson's Carbon Remover is recommended by many car manufacturers including the Packard and Studebaker Companies. Handled by all representative dealers and jobbers. Insist upon yours supplying you. For further information write
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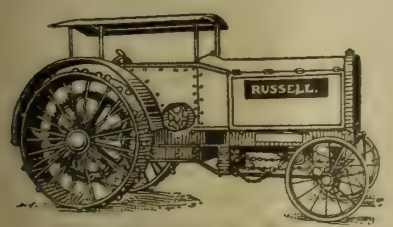


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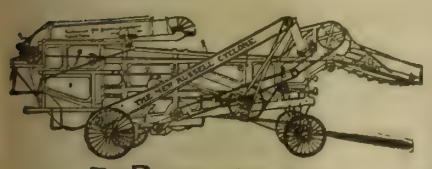
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Agricultural Implements of All Kinds.
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rods, or could be economically applied to low-topped trees at close range.

Regrinding Scored Cylinders.

A regrinding machine for automobile cylinders was shown in action at the exhibit of the Hansen Machine Works. The grindings were continually drawn away by a suction fan. Regrinding was claimed to give a better, closer fit for oversized pistons than reaning or reboring. The top of the Ford piston must be 15 thousandths of an inch less in diameter than the cylinder, to allow for extra expansion due to its solidity and the extra heat. Between the first and second rings the clearance should be 10 thousandths of an inch, and the rest of the piston should be only three thousandths in the clear, so a minimum of oil will pass it upward and a minimum of force and fuel will pass it downward.

Engine Operates Crosscut Saw.

The little four-horsepower two-cycle single-cylinder engine, mounted on a frame and connected to a crosscut saw, performed vigorously 250 to 300 strokes per minute in the R. M. Wade exhibit, sawing slabs from a big log. The whole outfit weighs only 285 pounds. One end of the frame rests on the log and is held there by dogs, while the other end is on the ground and is lifted over for each new cut.

Union-Alls for Tractormen's Families.

Lee Union-Alls properly had a good display at the tractor demonstration, for if there is one thing a tractor operator wants, it is a good-fitting, unrippable, one-piece garment that stays in place when the operator stands on his head or otherwise. Women's Union-Alls were there too, as was proper, considering the numerous ladies who drove tractors at the demonstration. Such women, if they have children, appreciate the boys' and girls' Union-Alls for all ages, because their use eliminates a lot of the patching, sewing, and washing that would otherwise be occupying their mothers' time.

TRACTOR DEMONSTRATION NOTES.

The Yuba Manufacturing Co. is now getting practically all the materials and motors needed. The largest size Waukesha motor is used in their 12-20 tractor and the Wisconsin motor in the 20-35. The big 40-70's are being made as demanded, but most of the call is for the 12-20 size.

The Lauson tractor pulled two specially built sixteen-inch Oliver deep-plows, turning the ground a foot deep.

The national sales manager for Lauson tractors, D. V. Holcomb, visited the Sacramento demonstration after seeing the one at Walla Walla. He likes the California conditions better than those in eastern Washington and Oregon.

The Sandusky 10-20 pulled a four-disk gang plow as much as ten inches deep in the private demonstrations. The same implement was pulled in the general demonstration but not so deep.

The Huber tractor has recently increased its power by enlarging the bore of its cylinders from a diameter of 4¼ inches to 4½ inches.

M. C. LaRue of the Waterloo Boy tractor factory at Waterloo, Iowa, was much pleased with the good job of plowing done by his tractor at the Sacramento demonstration.

W. S. Fredrickson, general sales manager for Hart-Parr tractors, visited the Sacramento demonstration. His headquarters are at Charles City, Iowa.

E. A. Williams of the G. M. C. eastern factory, visited the tractor demonstration.

President A. B. Whitney of the Whitney Tractor Co., Upper Sandusky, Ohio, and "the daddy" of the Whitney 9-18 tractor shown at the Sacramento demonstration for the first time, was there to see his machine work on California soil. He pointed out that his company had made tractors for 13 years to be sold by another company, but that arrangement closed in 1917, a year after the 9-18 was put on the eastern market. H. M. Bennett is general manager of the Pacific Whitney Tractor Corporation, which will handle the tractor on this coast with headquarters in Los Angeles and a distributor in Sacramento.

Enclosed Working Parts

The unit construction of the Bates Steel Mule is such that not only is protection from dust afforded, but a permanent, rigid alignment of transmission parts with the motor is assured, regardless of any severe twisting strains to which the tractor may be subjected.

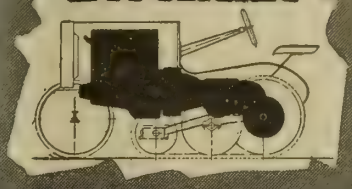
All working parts, of course, operate in an oil bath.

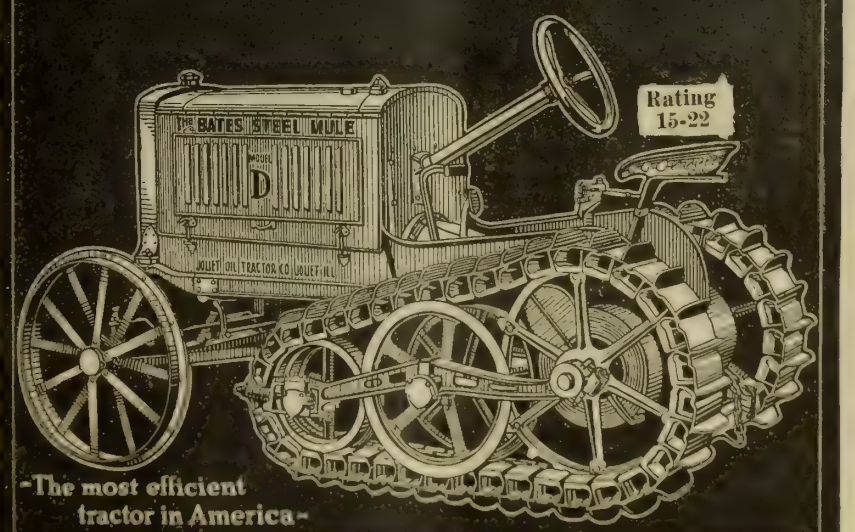
This feature, with the powerful twin crawlers driven by the valve-in head, heavy duty kerosene motor, the hardened cut steel transmission gears and Timkin roller bearings, makes the Steel Mule a long-service tractor.

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Excellent Agency Proposition

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-The most efficient tractor in America-

Irrigate through this pipe –

Water the high spots you can't reach with an open ditch

Your ranch doesn't have to be level if you use Western Surface Pipe. You can carry your stream of water across depressions and onto the high ground you can't reach with an open ditch. There's no waste, either, from seepage or gopher holes.



Western Surface Irrigation Pipe is made from a single sheet of heavy galvanized steel. The seam, riveted and soldered, absolutely prevents breaking of the galvanizing. Write for price list and illustrative booklet today.

Write also for prices on: Riveted Steel Pipe, Riveted Well-Casing, and other Irrigation Supplies.

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Deliver your water where you want it

Power Co. Slow--Rancher Loses Crop

(Written for Pacific Rural Press.)

To the Editor: In the April 19th issue of the Pacifis Rural Press, there appears an article addressed to the ranchers of Madera county entitled

"We Are Afraid to Buy Your Pumps."

I wish to extend my sympathy to the ranchers of Madera county. And if it will do them any good to learn that they are not the only ones under the heel of the various potentates of the San Joaquin Light and Power Co., I will inform them that the article mentioned may well be addressed to practically every farmer who must use the product of that company or none. To those ranchers who didn't get power when they should have had it, because they "did buy any of half a dozen pumps which are offered" in stead of "a certain one," it may be somewhat consoling that, according to a statement of one of the company's own representatives, the certain pump which you didn't buy is a "balanced ration," designed to fatten the pocketbook of his company.

But I am not an orator, or I wouldn't be out here stamping down my little 20-acre farm in an attempt to express my righteous indignation toward the mighty San Joaquin Light and Power Co. Early last fall I made application for electric power, and on March 15 was notified and immediately signed a contract whereby the Company agreed to deliver me power on the first day of April. About three weeks ago (this is May 14), after waiting for the power company to come through, I called at their headquarters in Dinuba to find out when they would be able to connect me up—(there is a line within 100 feet of my plant). I was informed that they would do so in a day or so after I was ready. I immediately went home and wrecked the gas engine plant and foundation, which was then in operation, in order to instal the electric motor which I had already purchased. In a couple of days everything was ready to run except the power company's part of installing a transformer annd hooking me up. I immediately went to their office again, and this time was very politely informed that they would be around in a couple of weeks or ten days possibly! Two weeks have now passed and I have a promise that they will send men here in the morning. But it is all too late, as I have lost half of my peach crop through lack of water and my grapes are going the same way.

I am informed by good authority that they have built lines out in vacant fields and set up transformers, etc., for prospective power users who had not even so much as dug their well yet. They connected a man up yesterday who just finished installing his plant the evening before, while I have been ready and waiting two weeks. The office frankly admits that they are not connecting consumers up in their turn on the priority list, but are "connecting those up first who are ready first." Fair enough, but where do I come in Or, if they have not connected me up according to my order on the priority list, as the Railroad Commission demands, and in view of the fact that their promises repeatedly made and broken have caused me to take out the engine with which I could have saved my crop, would I stand any show in the world of collecting damages from them? My contract calls for them to deliver me electricity April 1. This is May 14.—B. F. J., Fresno county.

Fast Sweet Potato Planting

(Written for Pacific Rural Press.)

Twenty-five thousand sweet potato plants were set out in twelve hours by Mr. and Mrs. J. Mathison and Mrs. H. Hass of Lankershim, Los Angeles county , as told to a Pacific Rural Press representative by Mr. Mathison. Mrs. Hass, was the faster of the women, having planted one row of 165 plants in six minutes.

How It Was Done.

Two acres were listed up into rows fourteen inches apart. Rows run crosswise from the direction of prevailing wind, because the soil is sandy and drifts a bit. Before planting, an irrigation was run to hold the sand solid. Mr. Mathison then took a small balling spade, sunk it deep on the lee side of the ridge just where he wanted each plant to grow, which was about half-way up the side of the furrow. Now, with the balling spade deep in the soil, he gave it a pull sidewise and then lifted the spade out, leaving a deep hole for planting.

Then followed the ladies. They held the plants in their left hands with roots all extending outward. With the right hand, a plant was grasped at the top, placed in a hole, and almost simultaneously, dirt was pushed against it with the right heel or foot to close the spade gap.

After planting, another irrigation was run. Planting on the lee side, the sand drifts so much that by the time potatoes are ready to dig, they are growing in the center of a hill instead of on the wind-protected side where they were planted.

SACRAMENTO WEST SIDE CANAL.

(Written for Pacific Rural Press.)

About 28,000 acres of rice are being irrigated from canals of the Sacramento West Side Canal Company, according to Assistant General Manager L. Hoffmaster, of the Superior California Farm Land Company, which originally held 137,000 acres in Glenn and Colusa Counties. Of this, 70,000 acres were originally planned to be irrigated from the canals mentioned, but some areas have been withdrawn and others added, making probably 75,000 now. Much of this land has been sold. Most of what remains is leased on one-third share rent; and all lessees but one are white people. With such leases, the tenants furnish the water; but where the company furnishes the water it gets 35 to 38 per cent of the crop. Most of the rice is of Wataribune and Early Prolific varieties, though considerable acreages of other varieties are being planted. About 12,000 or 15,000 acres of general crops and a great many orchards are also supplied.

The water is pumped from the Sacramento River over its levees at a point about four miles above Hamilton City, except what is obtained in springtime by gravity from Stony Creek. The main canal extends southwesterly to Willows and thence almost to Williams. Practically all of the irrigated land is between the canal and the river.

BERKELEY LAND BANK GOING STRONG!

In his letter of April 16 to the National Farm Loan Associations in his district, President W. H. Joyce said this:

On April 1st your Bank "went over the top." All of our organization expense has been absorbed and we have begun to accumulate a surplus. The Farm Loan Board has congratulated us on this achievement, and has added that now as the principal problem of organization has been solved, it remains for us to hold down our expenses and jealously and carefully guard our securities. Our loans are now $11,400,000. Applications for loans are flowing in in a most satisfactory manner, and the affairs of the Bank are in good condition.

GAS AND OIL 30 CENTS PER ACRE.

It costs 30 cents per acre for gas and oil to plow rice land in Butte county with a Sandusky tractor as figured by the contractor, G. G. Hunter. Mr. Hunter hired a couple of steady, reliable boys to run the tractor 20 hours a day. He himself attended to the greasing and adjustments. When this note was taken, the tractor had been running 60 days at this rate and was still running. It is used to plow down checks as well as for regular plowing, and seems highly satisfactory for this purpose.

A New Kerosene Engine

There is now no reason why every farmer in the U. S. should not be successfully using kerosene for engine fuel. This new 1½ H. P. size completes a *line* of

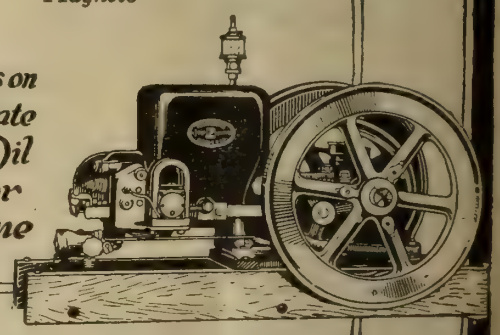
KEROSENE

engines—1½ to 15 H. P.—all of which deliver engine performance even in excess of your expectations. The local dealer who displays the "Z" sign—will show you the "Z" and explain why it is the best engine "buy" for you at these prices—1½ H. P. $61.00—3 H. P. $100.00—6 H. P. $179.00 F. O. B. Factory.

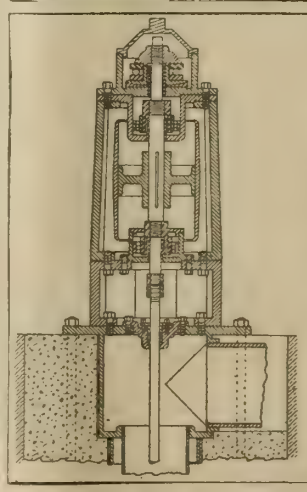
Throttling Governor—Built-in Oscillating Magneto

FAIRBANKS-MORSE "Z" FARM ENGINES
LOOK FOR THE DEALER WHO DISPLAYS THIS SIGN

Also runs on Distillate Coal Oil Tops or Gasoline



Fairbanks, Morse & Co.
MANUFACTURERS CHICAGO



DEAL DIRECT WITH MANUFACTURER
SAVE AGENTS' PROFITS

When goods are sold through agents or middlemen you can rest assured that the agent's commission and dealer's profit are added to the price received by the manufacturer, and as "the consumer foots the bills," he pays all these profits and commissions.

After twenty-one years experience with agents we have decided that in the future we will sell direct to the consumer at wholesale prices giving the buyer all these profits and commissions.

Therefore, if you want to save money, BUY AT WHOLESALE and at the same time get the

Best Pump On Earth

Write for catalog N. and price list of the
P.K.WOOD DEEP WELL PROPELLER PUMP
WOOD PUMP CO. 935 N. Main St., Los Angeles, Cal.

Dealers in PAPER
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37-45 First St., San Francisco
Blake, Moffitt & Towne, Los Angeles
Blake, McFall Co., Portland, Ore.

THE SELF-OILING WINDMILL

has become so popular in its first four years that thousands have been called for to replace, on their old towers, other makes of mills, and to replace, at small cost, the gearing of the earlier Aermotors, making them self-oiling. Its enclosed motor keeps in the oil and keeps out dust and rain. The Splash Oiling System constantly floods every bearing with oil, preventing wear and enabling the mill to pump in the lightest breeze. The oil supply is renewed once a year. Double Gears are used, each carrying half the load.



We make Gasoline Engines, Pumps, Tanks, Water Supply Goods and Steel Frame Saws.
Write AERMOTOR CO., 2500 Twelfth St., Chicago

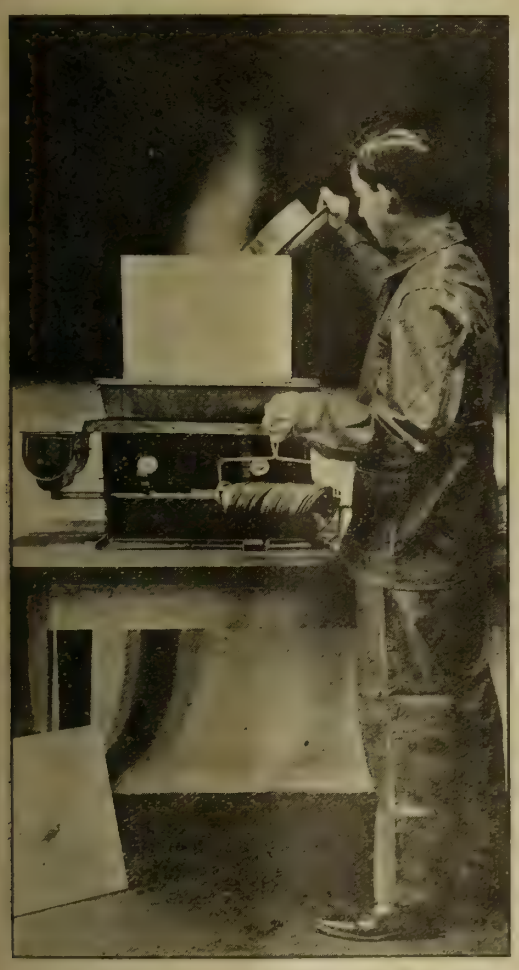
A Simple Sterilizer for Small Dairies

(Written for Pacific Rural Press.)

At this season of the year it is important to give special attention to the care of milk and cream in order to keep them from spoiling. Bacteria produces the changes which spoil them, and every effort should be made to reduce the bacteria content as low as possible. The important factors are:

First—A clean dairy barn, clean milkers and clean cows. It is customary to curry horses daily, yet cows are hardly ever touched, regardless of the fact that they produce human food. Their hind quarters and udders can easily and quickly be cleaned with a curry comb, brush and damp cloth or sponge.

Second—Small top pail, to prevent the entrance of flies and dirt while milking. It has been found that one fly left in milk will produce over a million bacteria in a very short time.



Getting all of the milk-souring germs out of cream separator parts with a simple, inexpensive, home-made sterilizer.

Third —Cooling the milk and cream to 50 degrees or lower and keeping them at this temperature, for at a temperature a little above 50 degrees there is a decided change in the growth of the bacteria which causes souring.

Fourth—Clean, sterilized utensils. It is not enough to wash dairy utensils thoroughly, for this does not insure freedom from infection and contamination. Steam is necessary to kill the disease germs and harmful bacteria that lurk in the cans, pails, separator parts, etc.

As a rule dairy utensils on small farms have not often been sterilized because steam has not been available, but specialists of the Department of Agriculture have devised a sterilizer which can be made on the farm at little expense and with which the work can be done easily and cheaply.

To Make a Sterilizer.

This sterilizer is designed to be of greatest use to those who have one, two or three cans with a similar number of pails and a strainer cloth, but it can be used to advantage where a larger number of cans are required. In its construction are needed a roasting pan of standard size (20 inches long, 14 inches wide and 3 inches deep), a close fitting insulated cover to fit over this pan, and a box with a removable top to fit over the cover.

To make the cover, take a sheet of heavy galvanized iron and cut it large enough to allow it to project ¾ of an inch over the edge of the pen. Bend the edges of the sheet so as to form a shallow box with sides ⅜ of an inch high. Then cut out a cover for the shallow box thus made. Cut a hole 1½ inches in diameter in the center of both the cover and the box. Iron braces should be placed crosswise on the box to strengthen it. then fill the shallow box with paper or asbestos sheets, after which carefully solder the top of the box on. Solder a round, galvanized iron pipe 4½ inches long and 1½ inches in diameter in the hole in the center of the cover.

The box with the removable cover previously referred to should also be made of galvanized iron. This box should be 11 inches high and large enough to fit on the cover just described. The complete cost of this outfit should not be more than $8 and if a soldering outfit is available it can be made at home, or any tinner can do the job.

Using the Sterilizer.

To sterilize cans, the roasting pan should be placed on two burners of a cook stove. The pan should be filled with water to a depth of one inch and the cover placed over it. As soon as the water heats sufficiently, steam will come out of the outlet pipe, and as a rule it takes less than fifteen minutes to develop enough steam for sterilization. When steam of sufficient heat (at least 205 degrees F.) has been reached, place the can over the steam outlet for five minutes; then remove, shake out any water and place upright on the floor. The can should be absolutely dry in two or three minutes. If not dry in that time it shows that the steam was not as hot at 205 degrees, or that the can had not been washed clean.

Pails and other utensils are sterilized in the same manner. But to sterilize can covers, strainer cloths, separator parts and other small utensils it is necessary to use the box having the removable cover. When the steam begins to issue from the outlet pipe place the box over the sterilizer, put the small utensils in it and place the cover over the box. See that all parts fit snugly so the steam will not escape, and then proceed as in sterilizing cans.

When properly operated, this sterilizer destroys practically all bacteria in the utensils, including all disease germs. It will accomplish the same results as any sterilizer in which steam not under pressure is used. Experiments with this sterilizer show that the 5-minute steaming is, for practical purposes, as good as the 15 to 30 minutes usually recommended.

Don't Forget Washing.

Before sterilizing, rinse all utensils in cold water; then wash thoroughly with hot water and washing powder. Sterilization is not a substitute for washing. If the sterilizer is to be used longer than 40 or 50 minutes more water should be added to the roasting pan to make up for loss of evaporation. It is advisable to have an accurate thermometer with a scale reading to 212 degrees F. in order to determine when the steam has reached enough heat for efficient sterilization. When sterilization is being done in a cold room some form of insulation should be used over the utensils. A blanket can easily be made for this purpose. This is desirable in order to keep the pans or pails hot long enough after sterilization to dry out quickly. After the utensils are sterilized and dried they should be placed in a room free from dust and should not be touched until milk is placed in them.

JOIN CALIFORNIA DAIRY COUNCIL NOW

Don't wait for someone to call on you and argue you into it.

Everyone admits that milk and all milk products should be advertised to the public, but there is no one to furnish the money unless it be those who will profit by the increased trade that is sure to follow.

The present high prices are admittedly profitable, but they spell danger in the future.

Thousands of consumers are already using substitutes and many more will do so.

Substitutes are persistently advertised — dairy products are not.

California Dairy Council will advertise them if YOU will furnish the money.

Send in your subscription voluntarily—don't wait.

If the money of those who have already subscribed is spent in sending solicitors to see those who have not there will be just so much less to spend in getting new business.

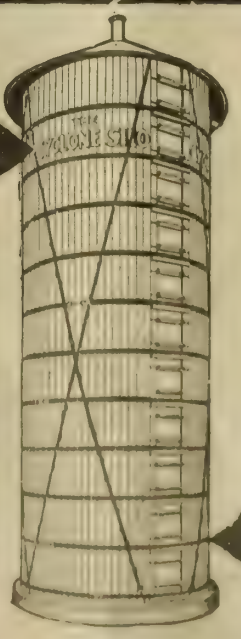
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No other Silo has 'em!

Famous Trussed Steel Bracing



The Cyclone Silo is unequalled for strength and durability. Can't twist, lean or blow down. The strongest silo made. Wind proof, storm proof, twist proof.

The Cyclone Silo Trussed Steel Bracing is fastened to the top of the silo and firmly anchored in the concrete foundation. Each stave is not only stapled to each hoop but also to the bracing. Every staple fits into notches pressed in each edge of the steel, so there can be no slipping, no twisting or sagging. Every stave must stand upright regardless of shrinkage or expansion. This is the silo for you. Write for details of our Free Book on Silos and Feeding. A postal will do.

Cyclone Hoops Need no Tightening

National Tank & Pipe Co.

275 D OAK ST., PORTLAND, OREGON.

"Cyclone" Silo

Bridgford's Best in Black and Whites

(Written for Pacific Rural Press by R. H. Whitten.)

It was in the Travelers' Hotel at Sacramento during the last State Fair. The lobby was packed with important people. Suddenly the crowd began to surge to a certain corner and surround a tall gentleman with a long, four-bit cigar in his mouth. They fought to shake hands with him.

"Who is that—an eastern millionaire?" inquired a casual observer.

"Nope," was the answer.

"Senator, may be?"

"Wrong again."

"Well, he's a big gun, anyway. Who is he?"

"Why, that's Harry Bridgford, one of the owners of one of the finest Holstein herds in the State, and he's just won the grand championship prizes for both bull and cow, together with 16 other prizes. Oh, he's some breeder."

Yes, H. V. Bridgford, of the Bridgford Company at Knightsen, is s-o-m-e breeder, but to me it is proved in quite a different way than by his winnings at the State Fair. True, it requires mighty good judgment to pick cattle that can win, and exceptional skill to condition them so that they will win. But a man with plenty of money and sense enough to hire a good fitter can generally make a pretty good showing. Also, he can buy cows with high records and thus have a notable herd. But suppose he stops buying and depends upon the calves raised to take the place of their mothers. How long will the herd be a notable one?

To me, the real test of a breeder's success is not in the standing of the herd he has been able to get together, or in its prize-winnings, but in the way his calves come and grow up. Is he developing an improved type? Does each generation show an improvement over the previous one? If so, he is entitled to the wreath of victory. As someone has aptly put it, "No one does a greater work than he who takes animals domesticated to furnish milk, meat or clothing, and leaves them yet more useful, profitable or beautiful."

And that is why we take off our Panamas to the Bridgford Company, for our Mr. McConnell, who recently visited the ranch, says that the calves are the finest he has seen anywhere in his travels throughout the state. And that is saying a whole lot, for he has seen some mighty fine ones. "The minute I saw those calves," said Mr. McConnell, "I was sure that someone who knew his business was at the helm."

Mr. H. V. Bridgford, the junior member of the firm, is both a man of business and a man of busy-ness. He is always on the job, giving his careful, personal attention to every part of the work. He is a keen observer—quick to detect a need—and the way the young animals are developing shows that he has sized up their needs correctly. Think of it—four years in business, raising a very large number of calves, and not a single loss! Also, out of 48 calves over the age of six months, tested last year for tuberculosis, there was not a single reactor! Certainly a healthy herd.

All milk fed to the calves is pasteurized. The young animals are housed, and have outside paddocks with only 4 or 5 in each. Calves of like age are kept together—that is, calves of two weeks are not in the same bunch with calves of two months. This is an excellent system, and certainly much better for the calves. The pens are kept clean and well bedded, and everything about them has a fresh, sanitary appearance.

Perhaps in telling about the calves we have been too lavish in our praise of Mr. Bridgford's business methods. Perhaps we ought to have saved some bouquets for the sires of these calves, for at the head of this herd are two of the greatest sires to be found anywhere—Kings Segis Alcartra Abbekerk and King Segis Alcartra Prilly. Both are sired by the $50,000 bull King Segis Pontiac Alcartra, who already has 79 A. R. O. daughters. The senior sire is out of a 30-pound 4-year-old, and his eight nearest dams average over 30 pounds. He is proving that he will transmit this wonderful producing ability, coupled with high butterfat percentages, for the first two of his daughters to freshen have just made remarkable records: one 24.87 pounds in 7 days at 2 years and one month; the other 21 pounds at 2 years and 2 months, and both showed a test of over 4 per cent—in each case higher than the dam.

The junior herd sire, King Segis Alcartra Prilly, is out of a cow with a record of 30.44 pounds in 7 days at 4½ years—a world record when made.

He has an excellent record in the show ring, both as an individual and as a sire. He has never been defeated and has two grand championships to his credit. At the last State Fair, out of five of his heifers shown we find first and fourth senior heifer, first and second junior heifer, junior champion heifer, first get of sire, and first calf herd. And isn't that about all that could be expected of one bull?

It would require a whole book to do justice to the many good cows in this large herd, but we must make particular mention of Adirondac Wietske Dairy Maid with records at 6½ years of 41.03 lbs. butter from 831.7 lbs. milk in 7 days; 158.31 lbs. butter from 3,603.1 lbs. milk in 30 days, and 305.96 lbs. butter from



Adirondac Wietske Dairy Maid, queen of the Bridgford herd. Holds Pacific Coast butter record for 7 days, and United States combined milk and butter record for 30 and 60 days. Dam of the $5,000 yearling bull calf.

Buy Berkshire Boars

Money invested in a young boar increases faster than in any other way. You can get more for your money, and your money will earn more for you. Buy a young boar and grow him out yourself.

ANCHORAGE BERKSHIRES

If he is an Anchorage Farm Berkshire of Star Leader blood you can bank on him, for our customers are unanimous in the statement that they can make more money with Star Leader Berkshires than with any other strain or breed.

Here you find the kind of stock you have been looking for—toppy youngsters with good bone, strong backs, lots of stretch, well-sprung ribs and heavy hams.

The pigs are all ready to go ahead and make money for you. They will produce the stock that will fill the pork barrel and swell your pocket-book.

ORDER NOW. AVOID DISAPPOINTMENT.

Now is the time to buy. A grand lot to select from. Also 50 classy gilts for Fall sale. They will put the profit in farming. For full descriptions and prices write your wants, and ask for free illustrated booklet.

ANCHORAGE FARM

P. O. Box 163A ORLAND, CAL.

OAK KNOLL FARM

LAKEPORT CALIFORNIA

We have sold all our young boars and are now booking orders for toppy weanlings. Highlander, the $1,000 Grand Champion Boar, heads our herd of

CHESTER WHITES

SAN FRANCISCO OFFICE, 601 BALBOA BLDG.



REGISTERED DUROC-JERSEYS

We have for sale right now, big, heavy-boned, high-up, four-months-old boars. Also some A-1 weanling pigs, either sex. Also some young gilts. Our herd boar has the best blood of the breed and was a prize-winner at the State Fair last year.

Write for prices.

ROUTE 4, BOX 735 THE GARDINER RANCH, SACRAMENTO, CAL.

4 Good Young Boars—Excellent Prospects.

—from California's leading herd of Duroc-Jerseys. They are sired by ORION'S GOLDEN COL. and UNEEDA WESTERN HERO. Priced reasonable but they have the quality. Write for full particulars.

SOME CORKING GOOD WEANLING BOARS.

ALLEN THOMPSON, Tulare, Cal.



HAUSER'S DIGESTER TANKAGE

Gives Great VALUE for LEAST MONEY. IT MAKES THEM FAT.

HAUSER PACKING CO. LOS ANGELES

DIGESTER TANKAGE

Send for Sensible Folder on Feeding Hogs

WESTERN MEAT COMPANY

Animal Food Dept. 704 Townsend St., San Francisco

Grand Champion Herd of Hampshires

FOR SALE.

Brood Sows, litters at foot. Sows bred for fall litters. Young Boars and Gilts

[illegible] families.

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Address F. V. GORDON or F. A. LANGDON, Llano Vista Ranch, Perris, Cal.



BIG BONED POLAND-CHINAS

The fashionable, prolific kind that everyone wants.

Service boars, gilts and weanling pigs sired by the 1,000 pound boar

Big Bone Bob

Don't send East when you can get better at home. Come and see them and be convinced. Stock for foundation herds or exhibition.

N. K. HORAN

Lockeford, Cal.

Ranch 2 miles east of highway.

TAMWORTHS

(The Bacon Hog)

Largest Herd in the State

DURCO-JERSEYS

Mature Stock and Weanlings of both sexes. Sure to please.

SWINELAND FARM

W. O. Pearson, Prop. Woodland, Cal.

ROC STEIN RANCH DUROCS

Crimson Monarch, Gold Model and Orion Cherry King breeding. Weaned pigs and bred gilts and one service boar for sale. Write and get our prices before you buy.

W. M. Way & Son

Rt. 1, Box 320, MODESTO, CAL.

7,242.4 lbs. milk in 60 days. Her 7-day record is a Pacific Coast record, and her 30 and 60-day records are United States records for combined milk and butter production. She certainly looks the part of a 41-pound cow. Notice her clean-cut head and neck, her straight top line, her good heart and lung capacity, her wedge shape, her well-balanced and well-veined udder. Young breeders can hardly do better than to keep this picture before them as an ideal type toward which they should breed. A pretty good proof that it will pay them is the fact that this cow's yearling son sold in the recent Guaranty Sale for $5,000.

Another state record has been made in this herd by Spring Farm Pontiac Maid 2nd, with 35.70 lbs. butter from 623.7 lbs. milk in 7 days and 139.29 lbs. butter from 2,886.7 lbs. milk in 30 days at 4½ years. Other good records are: Piebe Laura Ormsby of Vina, 32.67 lbs. butter in 7 days at 5 years; Mercedes Inka Hengerveld, 34.03 lbs. in 7 days and 140.57 lbs. in 30 days; Countess Katie Hengerveld, 31.033 lbs. in 7 days, and 127.376 lbs. in 30 days; Spring Farm Pauline Pontiac 2nd, 33.029 lbs. in 7 days; Empress Korndyke Pontiac, 29.67 lbs. in 7 days as a junior 3-year-old; Sarah Segis Alcartra Abbekerk, 24.87 lbs. in 7 days and 99.75 lbs. in 30 days at 2 years and 1 month; Luzette Segis Alcartra Abbekerk, 21 lbs. in 7 days at 2 years and 2 months, and still on test; Nattaline Walker, 34.45 lbs. butter, 818.05 lbs. milk in 7 days as a junior 2-year-old. This milk record is believed to be a world's record for her class. She is still on test and promises to make over 130 lbs. butter and 3,100 lbs. milk in 30 days, which will give her a world's record for her age for combined milk and butter for both 7 and 30 days.

How is that for a list of records to be proud of? And think what may be expected of the many young heifers when they freshen! Someone has said that the man who runs his business for today alone is selfish, but he who develops a business for the future is a real benefactor. Bridgford, the benefactor—how does that sound? Not far out of the way, is it?

IS SALT GOOD FOR HOGS?

(Written for Pacific Rural Press.)

There are differences in opinions about the value of salt for hogs, but Prof. John M. Evvard of the Iowa State College, probably the leading swine feeding authority in America, says not only that hogs need salt, but that they should have free access to it.

Experimental tests at Ames have shown pretty clearly that common salt allowed at free will is a valuable addition to the ration. The hogs that received salt required less feed for 100 pounds of gain than did those receiving no salt; also when hogs had free access to salt they made better gains than when it was mixed with the feed.

There have been bad results from the use of salt, but in every case probably the trouble was caused by too much being fed suddenly. Pigs should be accustomed to eat it slowly, and brine in which salt pork has been kept should not be thrown in troughs, because in this case pigs, particularly if they have not been getting tankage or similar feeds, will like the meaty flavor of the salt brine and will consume such a large amount that the salt in it may kill them.

Also, when pigs are allowed free access to salt, they may eat so much as to cause sickness or death if they have been starved from it for a long time, so if your pigs have not been receiving salt start in with a little, and then after they are accustomed to it you will be safe in giving them free access to it, according to Prof. Evvard.

H. C. H. Kernkamp, of the veterinary division of the Wisconsin University Farm, claims that it is not advisable to have salt alone in any kind of a container at the free disposal of hogs. He says that it should be included as an ingredient in a mixture similar to the tonic which has often been prescribed in these columns. This can be placed in a self-feeder where the hogs will have free access to it.

When hogs are salt-poisoned they usually show no symptoms for twelve hours or more. Then they show increased thirst, dizziness or a deep stupor, frothing at the mouth, refusing feed, and sometimes being afflicted with vomiting or diarrhoea. Death usually follows after 24 hours.

Treatment in such cases should consist of a dose of two teaspoons of cornstarch boiled in two ounces of water until transparent and then diluted with enough water to make one pint. Or use a teaspoon of unground linseed mixed with water until it makes a mucilaginous mass.



The cream of cream separator prosperity goes to De Laval users

There was never greater need than right now for the best separator, skimming cleanest, having greatest capacity, turning easiest, requiring least care, and producing the most perfect product. In all these respects the De Laval has no equal. Take nothing for granted, simply let it be demonstrated to you. See the local De Laval agent or address the nearest general office.

DE LAVAL DAIRY SUPPLY COMPANY

EVERYTHING FOR THE DAIRY

61 BEALE STREET SAN FRANCISCO



THE OTIS HERD

Milking Shorthorns

WILLOUGHBY, OHIO.

BEEF MILK



LADY OF THE GLEN.

Bred by us and acknowledged the best and most valuable individual of the breed.

Largest herd in America with the best combination. Many cows weighing 1,500 lbs. and above with records of over 10,000 lbs. of milk. Winners at the recent Congress sale owned by us or of our breeding. Sale cattle in carload lots or single. Calf clubs a specialty.

Write T. H. Harrison,
Santa Rosa Stock Farm, Santa Rosa, Cal
California Representative.



The Profitable Dairy Cow

The farmers of Antwerp will have only to do with such cattle as produce the largest amount of milk upon the smallest amount of food, and for this they prefer the pure Holstein-Friesian cow.

HOLSTEIN CATTLE

Send for our booklets—they contain much valuable information

The Holstein-Friesian Assn. of America
Box 141 BRATTLEBORO, VT.

Calf Profits



Are you getting them? Calf profits mean more to you now than ever before.

Blatchford's Calf Meal

Write for New Data

COULSON CO. - - - Petaluma, Cal.

HOLMES STOCK FARM

WATERFORD RD., MODESTO, CALIF.
Registered Holstein Friesians.

YOUNG SERVICE BULL FOR SALE

Prince Abbekerk Aralia Walker,
No. 204267—Three-quarters white.

Write for pedigree and price. Inspection invited and satisfaction guaranteed.

REGISTERED HOLSTEINS

Creamcup Herd offers service bulls and bull calves of 34 lb breeding. Females offered for foundation stock. Tuberculin tested

M. M. Holdridge, San Jose, Cal.
R. D. "A," Box 637.
Two miles out North First Street.

RHOADES & RHOADES

EXPERT LIVESTOCK AUCTIONEERS

Purebred Stock Sales a Specialty

Sales Conducted in All Parts of California.

BEN A. RHOADES, Auctioneer

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Livestock and Dairy Notes

Livestock breeders all over the state are invited to send on postal cards, notes regarding their sales, State and County Fair intentions, new stock, etc.

NO VACUUM IN EMPIRE MILKER.

A serious error crept into the advertisement of the Empire Milking Machine in our issue of May 3rd. The caption under the cut of the Milker was "The Empire Double Vacuum Milking Machine, made also in single ends." It should have been, "The Empire **Double Unit** Milking Machine, made also in single units."

The Dairy.

A new cow-testing association is being formed in Merced county. Already over 1,000 cows have been signed up.

The two-months-old Guernsey bull calf, Florham Leader, sold at auction at Madison, N. J., for $25,000, a new record price for any animal of the breed; the previous record price being $10,500. Eighty-three head sold for an average of $2,172.

R. C. Sturgeon, Tulare, is greatly pleased with the first of the calves from his herd sire, Segis Pontiac Abberkerk, bought at Sacramento last June for $3,200. They are a uniform and well-marked bunch, and 6 of the first 7 calves were heifers.

Geo. P. Robinson and Ord. L. Leachman of Sacramento, dealers in livestock, have sold over 400 head of grade Holsteins during the past ten days at the high average of $160 per head. One carload went to Cook and Horriger of Orland, to whom they also sold the Holstein bull, Prince Lunde Korndyke 2nd.

Glen of Claremont, the senior two-year-old Guernsey in the herd of L. D. Smith, Berkeley, has just completed a record of 573.11 pounds fat from 11,163.3 pounds milk, placing her first for the breed in class F. F. She calved ten days before finishing her test. This heifer is one of the finest typed animals in the Smith herd.

Interested Jap's Santa, the phenomenal Jersey cow in the University Farm herd at Davis, will finish her yearly test May 23. She is now making about 17 pounds of fat per week, and it is expected that she will complete a yearly record of from 930 to 933 pounds, which will be the highest made by a cow in any similar institution in the United States.

W. J. Higdon, of Tulare Holstein Farm, has sold to A. J. Pellerin of Tulare, a 14 months' old son of Prince Gelsche Walker for $1,000. His dam is Leda Hengerveld De Kol Korndyke, who made 30.87 pounds butter from 648.7 pounds milk and will soon finish a 90-day test, having around 330 pounds of butter and about 9,200 pounds milk. It is claimed that this is the first bull ever sold in Tulare county to reach the $1,000 mark.

The California Dairy Council, although in existence only a short time, is already doing effective work for California dairymen. In Berkeley an effort was made to boycott milk as a means of reducing prices, but the Dairy Council stepped in and started an advertising campaign in Berkeley papers, distributed literature about the food value of milk and the cost of producing it, and the result was that the boycott was squelched.

Beef Cattle.

Conejo Ranch, Newbury Park, will receive a carload of registered Herefords about June 5th., purchased from J. H. Tschudy, near Kansas City. They are mostly of Anxiety breeding.

The average at the O. Harris and Sons' recent sale of Herefords at Harris, Mo., was $1,919, instead of $1,000 as previously stated. The top was the bull Repeater's Model who sold for $35,000.

Wm. Bemmerley, the Hereford breeder of Woodland, has sold bulls to the following: Cutler Brothers of Visalia, M. F. Lovelace of Bakersfield, Charles Anderson of Weldon, J. L. Stubbs of Lower Lake, Clyde B. Locke of Walnut Grove and Joe Mackey of Eureka.

Rancho San Julian, of Lompoc, owned by the estate of Thos. B. Dibblee, reports a very heavy demand for Shorthorn bulls, and the following long list of sales: Frank E. Collier, Wildemar Ranch, Riverside county, a richly bred bull calf by Hallwood Flash and out of an Orange Blossom cow. R. B. Canfield and L. L. Fox, Los Olivos, 3 bulls; Thos. B. Bishop estate, for their Los Alamos, Corona, and Tecolete ranches, 12 bulls; D. J. Sheehan, Rawlins, Wyo., 25 choice two-year-old bulls; F. A. Fickert, Tehachapi, 25 two-year-old bulls; Oakley and Bonetti, Los Alamos, 2 bulls; Glines and Halloway, Santa Maria, 2 yearling bulls; L. S. and F. L. Hall, Rosecrest Farm, Perris, 2 yearling bulls.

Swine and Swinemen.

C. H. Schleuter of Van Nuys, is establishing a herd of registered Poland-Chinas, having purchased a bred sow and 2 bred gilts from the Olsen Hartwell Ranch of Van Nuys.

Col. Ord. L. Leachman, the hustling livestock auctioneer of Sacramento, is entitled to another feather in his cap as the result of his efforts at the Weisendanger swine sale, where the stock brought $1,000 more than the appraised value.

Donald Graham, of Lancaster, reports a continued heavy demand for his Durocs. He has recently sold a boar to Fred W. Dow for shipment to Sonora, Mexico; also a boar to Munz and Maxwell, Roosevelt, and a young sow to E. E. Benedict, Lancaster.

Mrs. Viola L. Renwick, of Renwick Poland-China Ranch, Santa Barbara, recently purchased at the sale of Chas Herring, Columbus, Neb., the sow, Big Helen, for $300. She farrowed 12 pigs by Longfellow Price and when the pigs were only a few days old the top boar was booked for $150 at weaning time. That's making money fast.

Anchorage Farm, Orland, has just shipped 8 Berkshires to the Philippine Islands. They will be used by the Philippine Government for breeding purposes. This is the second shipment of hogs made to the Philippines this season from Anchorage Farm.

The second Western Berkshire Congress promotion sale was held at Dixon on the 17th., and 30 head of young stock brought an average of $42.08. This was considered satisfactory, as the stock went into the hands of new breeders. The next sale will be held at Santa Rosa, June 7, and will be managed by J. Francis O'Connor.

Gardiner Ranch of Sacramento recently sold 3 bred Duroc gilts to D. H. Hitchcock, of Colusa; 1 boar pig to Jas. Fitzgerald of Gilroy; 1 service boar to U. S. Indian School at Greenville; 1 boar to W. Blodgett at Amsterdam. Mr. Gardiner says he gets better results from advertising in the Rural Press than from any other paper.

The newly formed Tulare County Poland-China Breeders' Association has set the date Thursday, October 9, for the first consignment sale which will be held in the new livestock pavilion now under construction. A committee will pass on all stock submitted to insure the highest quality. The association will guarantee all pedigrees and every effort will be made to make this initial sale a notable one.

Ireland Ranch, Owensmouth, has sold already this month 3 young Duroc gilts to Mrs. Ina S. Farlow, Van Nuys; a gilt to F. O. Elms, Owensmouth; a fall boar to T. A. Morrow, Calabasas; September boar to Conejo Ranch, Newbury Park; an August gilt to Mr. Lord of Marion, and a litter mate to the Bard Estate, Ventura county. All were sired by Cherry Volunteer 2nd., the grand champion of Southern California in 1918.

Sheep.

The highest price paid for wool so far this season was that received by H. C. Compton of Chico, who sold 30,000 pounds for 57⅛ cents per pound.

Ellenwood and Ramsay, of Red Bluff breeders and importers of Corriedale sheep, have a new importation coming from New Zealand about the first of July. The shipment will consist of 10 ewes and 6 rams. One of these rams cost $1,000 in New Zealand. The firm expects this individual to be the best animal of the breed that has ever left its native country.

IS $29.60 ADDITIONAL PROFIT A YEAR PER COW OF INTEREST TO YOU?

IS AN ADDITIONAL DAILY GAIN OF APPROXIMATELY FIVE-TENTHS POUNDS IN FATTENING HOGS OF INTEREST TO YOU?

IS THERE A LOT OF ROUGHAGE NOW ON YOUR FARM BEING WASTED JUST BECAUSE IT IS NOT PALATABLE?

You can make this additional profit; you can get this increased pork production, and you can turn what is now waste into profit by using that great CONSERVATION FOOD, PURE HAWAIIAN CANE

MOLASSES

Write us at once and let us tell you how.

W. H. YOUNG COMPANY

58 SUTTER STREET, SAN FRANCISCO



No Trouble to Milk with an Empire

ANYONE can milk a herd with the Empire, because there is so little to do. Simply start the engine, attach the milker by hose to the pipe line, apply the teat cups to the cow, and carry away the milk after the machine has done the work. One man with an Empire can milk more cows than three men by the hand method.

Not only does the Empire Milking Machine cut dairy costs, but it enables you to increase your herd and still handle it successfully with your present help. And the bigger your herd, the bigger should be your dairy profits.

The action of the Empire teat cups is always soothing and perfectly uniform, thus tending to make the cows give down their best. No trouble need be looked for, even with the nervous kicker and the "hard milkers"; they will like it better than hand milking, because of the absolute uniformity.

Why should you continue the drudgery of milking by hand? Why should you disregard those extra dairy profits which can easily be yours? Send for our catalog and ask us for the name of the nearest Empire dealer.

EMPIRE CREAM SEPARATOR COMPANY, Bloomfield, N. J

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America's Pioneer Dog Medicines

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LIVESTOCK DIRECTORY

ate in this directory 3c. per word each issue.

SWINE.

Berkshires.

CASTLEVIEW

GIANT TYPE BERKSHIRES

e are booking orders for spring pigs from rand Champion Sows and sired by Mayfield ookwood, sire of Champion Barrow at 1919 estern Berkshire Congress.

CASTLEVIEW RANCH, SANTA ROSA.

A SHOW PROSPECT

FOR $75.00

A September Boar sired by Baron Duke 01st, 780 pound, $1100.00 Grand National hampion, from Rookwood Belle 7th (sired Rivals Champion Best), a sow that won at e State Fair, Salem, Oregon, and the Naonal Swine Show at Omaha. This boar romises to be a large, vigorous boar and is snap at the above price. Sandercock Land ., 23 Montgomery St., San Francisco, Calif.

ANCHORAGE FARM.

MONEY-MAKING BERKSHIRES—The prolific, easy-feeding kind that make the highest riced pork from the lowest priced feed. They ill increase your profits. Prices reasonable; tisfaction guaranteed. Write for free book-t, describing our world's reserve champion TAR LEADER. We are now making a ecial offering of classy boar pigs.

Anchorage Farm, Orland, Calif.

GRAPEWILD FARMS BERKSHIRES
A few spring boars and fall pigs by Big ader, Grapewild Farm Leader and Majestic ng
A B. Humphrey, Prop., Escalon, Calif.

CROLEY'S BALANCED HOG FEED—The eapest feed to fatten hogs. Write Geo. H oley Co., Inc., Livestock Supplies, 8th and ownsend Sts., San Francisco, Calif.

BERKSHIRE BOAR PIGS—From large litrs. Order one if you want the best. Satisction guaranteed. R. J. Merrill, Morgan ill, California.

RIVER GARDEN FARM BERKSHIRES—eanlings and gilts. They'll surely please ou. E. H. Whiting, Route 2, Box 631, kiah, Cal.

BERKSHIRES—Sired by Star Leader, the 500 boar. Kounais Registered Stock Farm, odesto, Calif.

FOR REAL GOOD BERKSHIRES write rank B. Anderson, B. 724W., Sacramento, Cal.

CARUTHERS FARMS BERKSHIRES — holera immune. Live Oak, California.

REGISTERED BERKSHIRES—Write R. D ume, Dos Palos, California.

BERKSHIRES—Fair Oaks Ranch, Willits, alifornia.

Poland-Chinas.

POLAND CHINAS—A few fine Fall gilts red by Big Bone Bob; also some top Spring oar pigs sired by Long Big Bone Jr.; junior hampion, and Golden State King, out of mooth Beauty, Black Beauty 5th, grand hampion and champion, Black Beauty C, ra Price, the dam of champions and others. igh-backed, good-footed, the kind that make ood. Sold worth the money. W. A. Young, odi, Cal.

MARCH BOAR PIGS—Out of sows selected rom the best herds of the corn belt. One ne-bred Big Bob pig sired by Bridges' Bob onder, Missouri, grand champion, and out f my great sow, Bridges' Bobby. Two sired by he noted Boulder Buster and out of the plendid sow Bob's Giantess. These are real ops and guaranteed to please. H. C. Shinn, . F. D. 1, Tulare.

EL PROFITO—Our great herd boar, will ut profit-making qualities into your herd s off-spring have size, stretch, bone, good ecks and feet, and easy feeding qualities o make the right start with big-type Poland hinas; get one of his boar pigs. Prices ght. Correspondence cheerfully answered ouis L. Renwick, Santa Barbara, California

SOW BARGAINS—We are offering some exceptionally nice tried sows, bred and open gilts, t attractive prices. They are all sired by the ndefeated and world's grand champion Superba and out of big type sows, which cost me 00 and over. Investigate before buying elsehere. Rough's Greenfields, Arlington Station, iverside, California.

POLAND-CHINAS—Am booking orders for pring boars sired by King's Massive. Orange nd from such noted sows as Rosebud Quality t, sired by President and out of King's osebud, grand champion sow of 1917 and heir big sows. H D McCune, Lemoore, Cal.

NOW BOOKING ORDERS for spring pigs. ither sex from my prize-winning, large type oland-Chinas hogs. Also will book a few rders for bred gilts, February and March arrow, and a few good serviceable, aged oars. Hale I. Marsh, Modesto, California

ELDERSLY FARM—We are offering some xcellent tops from our fall, and spring pigs t attractive prices, sired by one of America's est-bred boars, Big Black Bone Wonder, with rand championship breeding on both sides. e is a real 1000-lb. boar. J. H. Ware, Live ak, California

THE BEST IN THE WEST—California erstdale and President's Equal are my herd res. Fall and spring boars now ready to ove—each one a corker. Dr. J. A. Crawaw, Hanford, California.

BRED AND OPEN JULY GILTS by King ig Bone Leader for sale. Also September ilts by California Jumbo Buster and a few oppy young boars. A. Buckland & Son, oute E, Box 126, Fresno.

LARGE TYPE POLAND-CHINAS. Winton oland-China Farm, Winton, Cal.

HARTSOOK BIG TYPE POLANDS—A fine lot of young boars. Both bred and open gilts for sale. Toggenburg goats and Holstein bulls ready for service. Fred Hartsook, Lankershim, California.

BOOKING ORDERS for spring pigs sired by "Bob Big Bone" 281289, litter brother of the Junior Champion of Sacramento, 1918, P. E. Mitchell, Atwater, California.

OXBONE HERD offers March boars for sale from King's Big Bone leader, grand champion at State Fair, 1918. Write F. E. Fay, Tipton, California.

SPRING PIGS—Big type Polands. Best blood in State. Write for particulars. White Oak Farm, A. F. Busch, Prop. Potter Valley, California.

BIG-BONED POLAND-CHINAS—From Eastern prize-winners. Sold out of boars; a few choice October gilts for sale. D. H. Forney, Route G, Fresno, California.

FALL BOARS by a son of Caldwell Big Bob at bargain prices. Also booking orders for spring pigs. Forest View Ranch, J. H. Cook, Paradise, Cal.

WAUKEEN HERD POLAND-CHINAS—Big type herd boar, the $700 Grand Champion of California. Les McCracken, Prop., Ripon, Cal.

BIG TYPE POLAND-CHINAS—Stock from the best herds of the Middle West. N. Hauck, Alton, Humboldt County, California.

LAKE SIDE STOCK FARM—Large smooth and big boned Poland-Chinas. Geo. V. Beckman & Sons. Lodi, California.

REGISTERED POLAND-CHINA SWINE—Prize winners. Finest stock in the State. M. Bassett, Hanford, California.

POLAND-CHINAS—Young stock for sale. Edward A. Hall, R. 1, Box 39, Watsonville, Calif.

POLAND-CHINA PIGS—Bernstein Trewhitt, and Ross blood. B. M. Hargis, Tulare.

POLAND-CHINAS—A few young service boars for sale. R. F. Guerin, Visalia, Calif.

REAOAKS RANCH herd of registered Poland-Chinas, W. J. Hanna, Gilroy, Calif.

BIG BONED POLAND-CHINAS—Stock for sale. E S. Myers, Riverdale, California.

POLAND-CHINAS—Young stock for sale. H. E. McMahan, Lemoore, California.

POLAND CHINAS—Strictly large type. J. F. Lehman, Lodi, Cal.

Chester Whites.

BILLIKEN CHESTER WHITES—Just a few left to offer. One 1917 fall boar and one 1918 fall boar; both cholera immune. Spring farrows are all sold except 10 boar pigs. Will have 10 more sows farrow during May, June and July and will book orders now from these coming litters, delivery at weaning time. C. B. Cunningham, Mills, Calif.

Duroc-Jerseys.

DUROC-JERSEYS AT IRELAND—Home of Cherry Volunteer II., Grand Champion Boar at Riverside. Ireland's Orion Defender and Orion's King of Ireland are excellent sires in service. Booking orders for spring delivery. Ranch at Owensmouth. City office, 1219 Brockman Bldg., Los Angeles, Calif.

WEANLINGS sired by Trailblazer, son of Pathfinder, Derryfield Col. and Derryfield Wonder Boy—King's Col. boars, ex Burke's Good Enuff, Golden Model, and Model Col. sows. Bred Gilts. Service Boars. Derryfield Farm, Capital National Bank Building, Sacramento.

LITTLE PIGS WITH BIG FUTURES—Weaned pigs of either sex from Crimson Monarch, Royal Muncie, Gold Model and Crimson Wonder breeding. Tops of litters only will be registered and crated at $30 apiece and up. Geo. L. Horine, Winton, Calif.

THE JOHNSON HERD OF DUROCS—Two yearling service boars for sale at farmers' prices. These are well grown out, rugged animals. Weaned boar pigs, $25. Frederick M. Johnson, Napa.

SWEETWATER DUROCS—The most popular herd in the West. Our Durocs make money for us—they will do the same for you. Winsor Ranch, Bonita, San Diego Co. Address R. K. Walker.

REGISTERED DUROC JERSEY WEANLINGS—$15.00 each, 3 for $40. Satisfaction guaranteed. First come, first served. A few brood sows for sale. Red Rock Ranch, Glen Ellen, Cal.

BIG TYPE DUROCS—Herd headed by California Orion King. Am offering a few selected boar pigs. Inquiries invited. Harvey M. Berglund, Dixon, Calif.

WE WON MORE MONEY on Durocs at the State Fair than any other exhibitor. Why not buy some of this winning stock? June Acres Stock Farm, Davis, California.

REGISTERED DUROC JERSEYS — Open and bred gilts. August and November boars. Great herd headers. Weanling pigs, both sexes. Stock of the big strong type so much desired. Jack Borge, Dos Palos, Cal.

DUROC WEANLINGS for the farmer. Easy feeders. 200 lb at seven months. W. W. Everett, River Bend Farm, St. Helena, Calif.

DUROC JERSEY SWINE FOR SALE—Best blood lines. Bred sows and gilts. Service boars. Jersey Queen Farm, San Jose, Calif.

DUROC JERSEYS—Fine big type gilts bred sows and boars. Eastern and California bred. H. P. Slocum & Son, Willows, Calif.

HEAVY-BONED DUROCS—A few service boars for sale. Ormondale Co., Route 1, Redwood City, California.

DUROC-JERSEYS—A few choice September gilts. Weanlings either sex. H. L. Boudier, Napa.

REGISTERED DUROCS—All from prize-winning stock. W. P. Harkey, Gridley, Calif.

REGISTERED DUROCS—Stock for sale. W. J. Fulgham & Sons, Visalia, California.

Yorkshires.

LLOYTON HERD REGISTERED YORKSHIRES—Bred gilts and pigs from eight weeks up. Lloyd & Tointon, Llano Road, Santa Rosa, California.

Hampshires.

HAMPSHIRES—Fine quality Weaned pigs, dandy young boars. Uneeda Hampshire Swine Farm, Tom M. Bodger, Prop., Gardena, Cal.

MY HAMPSHIRES are money makers. Stock for sale. Buy now. L. W. Denker, Saugus, California.

HAMPSHIRE SWINE—Young stock for sale. Ira Hart, Dos Palos, California.

Miscellaneous.

LARGE YORKSHIRES—The ideal hog for the progressive farmer. Young stock for sale. A. L. Tubbs Co., Calistoga, Calif.

MULE-FOOT HOGS—Large type. H. T. Bailey, P. O. Box 37, Lodi, California. "The Blue Gums."

DAIRY CATTLE.

Guernseys.

GRAPEWILD FARM GUERNSEYS.
A 21-months-old bull out of dam with record of 615 pounds in A. A. class, and a few young bulls up to 1 year of age.
A. B. Humphrey, Escalon, California.

HIDDEN VALLEY FARM offers for sale 2 young Guernsey bulls, ready for service, out of high record advanced register dams. A. J. Welch, proprietor, Redwood City, California.

EDGEMOOR FARM GUERNSEYS —First in the show ring and in official records. Few animals of either sex for sale. Edgemoor Farms, Santee, California.

PALO ALTO STOCK FARM, Palo Alto—Breeders of registered Guernseys; both sexes; prices reasonable.

Ayrshires.

ELKHORN FARM AYRSHIRES— Choice young bulls at reasonable prices. J. H. Meyer, 440 Montgomery St., San Francisco, Calif.

NORABEL FARM AYRSHIRES—Purebred young stock for sale at reasonable prices. Le Baron Estate Company, Valley Ford, Calif.

AYRSHIRES—Registered; all ages. E. B. McFarland, 412 Claus Spreckles Building, San Francisco, California.

REGISTERED BULL CALVES—Ready for service. Redwoods Ayrshire Farm, La Honda.

Jerseys.

THE WEST'S GREATEST JERSEY SALE

TUESDAY, MAY 27, 1919,

State Fair Grounds, SACRAMENTO, CAL.

Complete dispersal at public auction of the famous producing and show herd of registered Jerseys owned by Clifford F. Reid, Portland, Oregon, and including the highest record Jersey cow ever offered at public auction, the world's record cow,

GOLDIE'S NEHALEM BEAUTY,

together with her dam, two sisters, one daughter, two sons, fourteen granddaughters, and six grandsons, making up the most wonderful Jersey family group ever offered in a public sale.

Register of Merit cows, imported cows, grand champion show cows, and offsprings of these cows make up the balance of this splendid offering.

This herd is under Federal supervision for health, and tuberculin test certificates issued by a Federal veterinarian will accompany all animals over six months of age.

Mr. Reid is dispersing this herd solely because his large and varied interests demand his entire time, and in dispersing his wonderful herd at public auction, absolutely without reserve or limit, he is affording other Jersey breeders a very rare opportunity to strengthen their herds and beginners to secure foundation animals of the best quality.

For free catalog of sale address sales managers, CALIFORNIA BREEDERS' SALES AND PEDIGREE COMPANY, 211 Ochsner Bldg., Sacramento, Cal. Auctioneer, Col. Ben A. Rhoades, Los Angeles.

SUNSHINE FARM JERSEYS—Tuberculin tested. Production counts. E. E. Greenough, Merced, California.

Milking Shorthorns.

BREEDERS OF REGISTERED SHORTHORNS—Milk strain; choice young stock for sale. John Lynch Ranch, Box 321, Petaluma.

INNISFAIL DAIRY SHORTHORNS—Registered young bulls for sale. Alexander & Kellogg, Suisun, California.

Holsteins.

A PRICE ON EVERY ANIMAL.
Herd free from tuberculosis. All sales subject to sixty days' retest. Sons of **Finderne Soldene Valdesa,** whose dam is not only a world record cow in seven-day division but has two sisters holding world's records for yearly production.
Tovon Farms Association
670 Mills Building San Francisco

HIGH-CLASS HOLSTEINS—I have for sale some sons of Sir Veeman Korndyke Pontiac from A. R. O. dams. Write for particulars or come see them. R. F. Guerin, Visalia, Calif.

PALO ALTO STOCK FARM, Palo Alto, breeders of registered Holsteins. Heifers and service bulls. Reasonable prices.

REGISTERED HOLSTEIN BULLS with world's record backing. Kounias' Registered Stock Farm, Modesto, California.

CREAMCUP HERD—Registered Holsteins. Pontiac bull calves. M. Holdridge, Rt. A, Box 437, San Jose, California.

BREEDERS OF REGISTERED HOLSTEIN cattle and Berkshire pigs. Whittier State School, Whittier, California.

E. H. STENZEL, SAN LORENZO, CALIF.—Breeder of Registered Holsteins. High test producers.

THE VICTORY HERD—Registered Holstein cattle and Duroc Jersey swine. H. E. Spires, Hillcrest Farms, Caruthers, California.

REGISTERED HOLSTEINS—Young stock for sale from A. R. O. dams. La Driver Stock Farm, Nicolaus, Cal.

REGISTERED HOLSTEINS — Best blood lines of the breed. R. L. Holmes, Modesto, Cal.

REGISTERED HOLSTEINS—We breed for production. Leeman and Kilgore, Ripon, Cal.

REGISTERED HOLSTEINS—A. W. Morris & Sons Corp., Importers and Breeders, Woodland, California.

J. W. BENOIT, Modesto, Calif. Breeder of registered Holsteins.

GOTSHALL & MARGRUDER—Breeders of registered Holstein-Friesians. Ripon, Calif.

CHOICE HOLSTEIN bulls for sale. No females. Millbrae Dairy, Millbrae, California.

BREEDERS OF REGISTERED HOLSTEIN cattle. McAlister & Sons, Chino, California.

REGISTERED HOLSTEINS and Duroc-Jerseys. Sturgeon Stock Ranch, Tulare, Calif.

HOLSTEIN BULLS and bull calves from A. R. O. cows. C. A. Miller, Ripon, California.

REGISTERED HOLSTEIN CATTLE—E. E. Freeman, Route B, Modesto, California.

EL DORADO HERD OF HOLSTEINS—Alex. Whaley, Tulare, California.

BEEF CATTLE.

FOR SALE—15 thoroughbred unregistered Shorthorn heifers, yearlings. Absolute bargains. Also offering one 14 months old dual purpose bull, grandson of P. P. I. E. champion and out of Idlewood 12th, who weighs near 1450 and has milked 3700 lbs. of milk in last ninety days and is still milking 40 lbs. A real herd header. Chas. L. Weaver, Tulare, Cal.

PABST STOCK FARM—Registered Shorthorns. Herd Sires, Maxwalton Style 564168 and Maxwalton Lavender 626612. For Sale, Maxwalton Style and four of his sons. L. N. Pabst, Cedarville, California.

RANCHO SAN JULIAN SHORTHORNS—Purebred range bulls, unregistered, for sale. Estate Thos. B. Dibblee, Santa Barbara or Lompoc, Calif. John Troup, Supt.

ALAMO HERD REGISTERED HEREFORDS (founded by Governor Sparks). Herd and range bulls. Reasonable prices. W. D. Duke, Likely, Modoc county, California.

REGISTERED YEARLING SHORTHORN BULLS—Heavy-boned, thick-meated. Scotch and Scotch-topped breeding. Ormondale Co., Route 1, Redwood City, California.

REGISTERED MILK AND BEEF SHORTHORNS, bulls and heifers for sale; catalogue free. Thomas Harrison, Santa Rosa Stock Farm, Santa Rosa, California.

HEREFORDS—One hundred head of fine Hereford heifers two and three years old. Have been bred up for eighteen years. Box 428, Bishop, Cal.

HEREFORDS—Sierra Vista Herd, Minturn, California. Over one hundred registered animals. Fairfax and Repeater bulls head the herd. On highway.

THE NEVADA HEREFORD RANCH, Jno. H. Cazier & Son Co., Props., Wells, Nevada. Registered Hereford cattle. Breeding stock for sale.

REGISTERED SHORTHORNS—A few choice young bulls, grandsons of Fair Knight. Prices reasonable. Fair Oaks Ranch, Willits, Calif.

HOPLAND STOCK FARM—Registered Shorthorns. Prices on application. Hopland, Calif.

REGISTERED HEREFORDS—H. H. Gable, Diamond G Ranch, Esparto, California.

SIMON NEWMAN CO., breeders of Registered Hereford, Newman, California.

GEORGE CALLAHAN, breeder of registered Herefords, Milton, California.

GEORGE WATTERSON—Breeder Registered Herefords, Bishop, California.

HEREFORDS—Mission Hereford Farm, Mission San Jose, California.

REGISTERED SHORTHORNS — Julien Ranch, Grenada, Siskiyou Co., California.

SHORTHORNS — Carruthers Farms, Live Oak, California.

HORSES AND MULES.

SHIRES —Broodmares— Stallions. Also stallion and filly colts $100 to $700. Jack London Ranch, Glen Ellen, Cal.

FOR SALE—A-1 Breeding Jack. Bargain. Have quit raising mules. W. P. Harkey, Gridley.

SHEEP AND GOATS.

F. A. MECHAM ESTATE, Petaluma, Cal.—Breeders and importers of Shropshire, Rambouillets and American Merinos, both sexes. Also Red Polled cattle. Take electric car at Petaluma or Santa Rosa for Lave Oak Ranch.

ANGORA GOATS — PERSIAN SHEEP—Bucks from $25 to $50 each. Only fine stock for sale. C. P. Bailey & Sons Co., San Jose, Calif.

HAVE FOR SALE fifty head of fine yearling Shropshire rams. Also 75 head of high grade Rambouillet rams. These are big fine wooled rams. E. D. Dudley, Dixon, Calif.

R. J. BLOOM, DIXON, CAL.—Breeder of Shropshire rams out of pure blood ewes and imported registered rams. Single and car load lots.

40 HEAD OF ANGORA GOATS for sale or will trade for beef cattle. K. J. Easby Jr., Merced, Cal.

DORSETS AND ROMNEYS—Dorset ram lambs for sale. John E. Marble, South Pasadena, California.

ONE TWO-YEAR SHROPSHIRE BUCK for sale. C. J. L. Stonebraker, Route A, Chico, California.

BISHOP BROS., SAN RAMON CALIF.—Breeders and importers of Shropshires.

KAUPKE BROS., WOODLAND, CALIF.—Breeders and importers of Hampshire sheep.

CHAS. KIMBLE—Breeder and importer of Rambouillets. Hanford, California.

CALLA GROVE FARM, MANTECA, CALIF.—Breeders and importers of Hampshire sheep.

MISCELLANEOUS.

BUTTE CITY RANCH—Shorthorns, Shropshires, Berkshires and Shetland ponies. Write for prices and descriptions before buying. Butte City Ranch, Box P, Butte City, Glenn county, Cal. W. P. Dwyer and W. S. Guilford, owners. **Special Notice:** Second Farm Sale. Shorthorns; Shropshires; Berkshires; Ponies. August 2, 1919.

Rubbing Elbows with Other Breeders

(Written for Pacific Rural Press by Thos. F. McConnell.)

Benoit Breeds Them Better.

Some breeders of registered dairy stock buy animals of great promise, or with records already made, and then by extra care and feeding they increase these records. In this way it is possible for a dairyman with unlimited means to quickly establish a great herd of high producers, and for such work he is entitled to great credit. But there is another class that is entitled to even more credit, and it consists of those who by proper care and attention build up from ordinary cows a herd of the very highest-class animals in both type and performance. To the latter class belongs J. W. Benoit, the Holstein breeds of Modesto. To go through his herd and see the wonderful animals and know that he has raised nearly all of them himself, and has constantly increased the records of his cows, compels one to class him as a real constructive breeder.

Mr. Benoit has been in the registered Holstein game for 11 years and was the third breeder in Stanislaus county to do official testing. He is always thinking of some way to improve his cows and their surroundings. He has no trouble with calf scours, as he has discovered a remedy of his own that he claims is a sure cure. He has never placed it on the market, but has treated many cases for his neighbors and friends with uniform success.

Space forbids mention of all the good animals in the herd, but the cow, Vera Walhalla Princess, is such an outstanding individual in appearance, and has made such a creditable record, that mention must be made of her. In long-time tests she led cows of all ages in California for the months of September and October, with 117.53 pounds butter for September and 126.6 pounds for October. Vera Walhalla Princess 2nd held fourth place in October with 105.4 pounds butter for the month.

Three other cows have recently finished splendid 7-day tests. Fern Pontiac Ruby Burke holds the county record as a three-year-old, having made 29.49 pounds butter; Clella Pontiac Ruby Burke, a three-year-old, made 22.15 pounds butter; Tessie Zenobia Pontiac, a three-year-old, made 21.22 pounds. All of these cows were bred and developed by Mr. Benoit. They are being continued on yearly test and from all appearances will make high records.

The new herd sire, Lone Oak Terzool Korndyke, is a junior two-year-old bull, almost white, with lots of stretch. He is quiet and kind in disposition, but not sluggish. He has wonderful quality, as is evidenced by a loose skin combined with a very rich yellow secretion. His breeding is of the very best, as his dam produced 959 pounds butter in 303 days, and his sire is a half brother to Rag Apple Korndyke 8th, the great bull at the head of the Cabana herd in New York.

Bernstein Brings the Best.

John M. Bernstein, of Hanford, who recently returned from an extensive trip through the swine-raising states of the Middle West, brought back with him a very stretchy, upstanding lot of gilts to put in the public sale that he will hold in September in connection with W. L. Haag & Son. They are of the type and breeding that are so fashionable in the Corn Belt and are bringing such long prices at the different sales.

Better yet, Mr. Bernstein will breed many of these gilts to The Yankee Jr., the great young son of The Yankee, that was purchased at a long price to assist President as a junior herd sire in his great herd. The Yankee Jr. is now in his new home and is a big, smooth, high-backed fellow on an ideal set of legs and feet, and with action and vitality to the limit.

Those who know Mr. Bernstein's ability as a swine breeder and feeder, and consider the fact that he traveled the seven principal Poland-China states in selecting the gilts and the boar, can realize how judiciously he will carry them along to the time of the sale, and know that these bred gilts will be well worth buying for either foundation stock or show purposes.

Mitchell Has Great Herd Header.

Everything grows well on the ranch of P. E. Mitchell of Atwater—alfalfa, other hog feeds, and the hogs themselves.

Speaking about the prolificacy of Poland-Chinas, Mr. Mitchell mentions that his senior herd boar, Jumbo Timm, bred to 5 grade sows, produced 55 strong, husky pigs. This boar is certainly a crackerjack in every way, and his breeding entitles him to be an outstanding individual, for he is sired by Mouw's Long Smooth Jumbo, a boar purchased from Peter Mouw himself, and considered the best son of Long Smooth Jumbo for whom Mouw refused $2,600 in the days when thousand dollar boars were almost unheard of. His dam was sired by Big Timm, the 1,125 pound champion of the Nebraska State Fair in 1915, and known as one of the most prepotent sires of the breed.

At two years of age Jumbo Timm measures 72 inches long, 37 inches high, 71 inches heart girth, and 10½ inch bone. He will weigh 700 pounds in breeding condition, and could go into the show ring weighing 900 pounds without being hurt a bit. He has wonderful conformation, a perfect back and heavy bone, and properly fitted he would be in the money almost anywhere. As the writer looked at him he wondered why so many people send back East and pay outlandish prices for boars that can not be compared with those raised right here in this state. Certainly anyone will have to go a long way to find a better boar than this one, who was bred in Tulare county and developed in Merced county.

Freeman Forges to the Front.

About seven months ago E. E. Freeman of Modesto commenced to officially test some of his registered Holsteins, and in that time out of a herd of 18 milking cows he has established 12 records. This certainly is an excellent showing.

Recent records from this herd are as follows:

Belle Faskie De Kol Witkop, as a junior two-year-old, produced 24.86 pounds butter in 7 days with an average fat test of 4.1 per cent, also 98 pounds butter and 2,061 pounds milk in 30 days. This heifer is a daughter of the grand champion cow at Sacramento in 1918.

Verona Hengerveld Glen Eva, made the highest county record for 7 days of 32.16 pounds butter with an average fat test of 4 per cent, and 131 pounds butter from 2,700 pounds milk for 30 days. Julia Clothilde of Sleepy Hollow made 29.59 pounds butter in 7 days and 116 pounds in 30 days.

Mr. Freeman has 40 acres, most of which is producing alfalfa, although enough is planted to Indian corn to fill the silo. Last year some old alfalfa land was sown to barley, which yielded 35 sacks per acre, and then was double-cropped to red beans and 15 sacks harvested and sold before the slump. Such methods are bound to bring success.

Herefords Make Quick Weight

(Written for Pacific Rural Press.)

The value of purebred Hereford sires for use on range herds was clearly demonstrated by the result of the recent shipment of steers to the Kansas City market by the Tehachapi Cattle Company, Bakersfield. As already announced in these columns, there were 800 head of yearlings and short two-year-olds, and they brought an average of $15, with the top lot of 235 selling for $15.50.

Roland G. Hill, manager of the company, said that the steers were too young to sell to advantage, but the

BIG

AUCTION SALE

SATURDAY MAY 31, 1919

At the Hunt Ranch of the Yolo Orchard Co.

(2½ Miles North of Woodland.)

80 Head of Horses and Mules

WILL SELL AT PUBLIC AUCTION, TO THE HIGHEST BIDDER, THE FOLLOWING DESCRIBED STOCK:

13 Head of Work and Brood Mares with Mule Colts by their side

7 Head of Work Horses	13 Two-year-old Mules
4 Three-year-old Fillies	15 One-year-old Mules.
6 Two-year-old Fillies	1 Four-year-old Stallion
1 One-year-old Colt	1 Jack
1 Four-year-old Mule	1 Registered Duroc Boar
20 Three-year-old Mules	2 Milch Cows

SALE WILL START PROMPTLY AT 1 P. M.

TERMS: 6 Months' Time with Bankable Note 7 Per cent Interest. Cash on sales amounting to $20 or under.

YOLO ORCHARD CO., Owners

W. G. HARRIS, Auctioneer. By A. B. PARKER, Supt.

ORMONDALE SHORTHORNS

All are heavy boned, and of Scotch and Scotch-topped breeding.
Suited for either the range grower or breeder.
EVERY ANIMAL POSITIVELY GUARANTEED.
Whether you buy or not, visit our ranch, 7 miles from Palo Alto on Woodside Road
We welcome inspection. Prices and pedigrees on application.

SHORTHORN CATTLE
DUROC-JERSEY SWINE
ORMONDALE CO.
REDWOOD CITY, CAL.
R. D. No. 1

Carruthers Farms

LIVE OAK CALIFORNIA

Second annual SHORTHORN sale will be held on July 10th, at San Francisco, at which time and place 60 head of bulls and females of rare breeding will be offered.

BRIGHTON FARM SHORTHORNS

One three-year-old bull bred by H. R. Clay.
Two outstanding yearling bulls sired by Sir Type, a son of Cumberland Type.
A few yearling heifers of same breeding.
Also registered Berkshires of both sexes of best breeding.

H. L. & E. H. MURPHY, Perkins, Sacramento Co., Cal.

RAMBOUILLET RANGE RAMS

One hundred purebred yearlings. Big, smooth and heavy-wooled sheep.
Big money in using this kind.
Write or call for further particulars and prices.

MERRITT RANCH,

G. N. & J. B. MERRITT. WOODLAND, CAL.

STOCK RANGE WITH FARM LAND

Splendid opportunity for cattle or sheep. 3800 acres rolling range. 480 acres good grain land nearly level. New pump at headquarters, 180 gallons per minute. Good road five miles to railway station and three-quarters mile to State highway, located between Dunnigan, Yolo County, and Rumsey. Heirs wish to sell or lease by June 15. Wire or write for particulars.

L. M. D'OYLY 685 BERENDO AVE., LOS ANGELES, CAL.

fact that they averaged $15 per hundred shows the value of using good bulls on grade herds. The steers were practically all whitefaces, and with a few exceptions were sired by registered Hereford bulls. "We formerly used a few grade bulls," said Mr. Hill, "but have disposed of all of them and are now using only registered Hereford sires. The dams are native cows, but the steers were high grade and many of them looked like purebreds. We find that the better the bulls the better the calves and the greater the profit. These steers had some cake meal and barley. The light shrinkage of only 67 pounds per head showed that they were in good condition. We are running between 3,000 and 4,000 grade cows in our herd.

"Herefords are growing in popularity in California. The ranchmen are taking into consideration more than ever before the hardiness and healthfulness of the Herefords, and their remarkable prepotency when used on native cows. I look for quite a Hereford boom on the Pacific Coast during the next few years."

The estimated total value of farm live stock in Canada in 1918 was $1,326,766,000; horses, $459,155,000; milch cows, $307,244,000; other cattle, $398,814,000; total cattle, $706,058,000; sheep, $48,802,000; swine, $112,751,000.

Preparations for Lambing Pay

(Written for Pacific Rural Press by A. C. Barrett, District Ranger, Plumas National Forest.)

Now that the price of wool and mutton is high, it behooves all who are engaged in sheep raising to safeguard the lambs in every way possible. More thought and effort is being made along this line than formerly, especially by large stock companies, and the methods of caring for the ewes and lambs at lambing time are very interesting.

At the Pyramid Land & Live Stock Company's ranch at Constantia, California, very extensive preparations for the lambing season are made. An area of about ten acres is enclosed with an eight-foot fence constructed of cedar posts with an interlacing of willows. This makes a very effective windbreak, as well as an inexpensive one. Solid wooden gates are provided for all openings. Within this enclosure small pens, to hold about 200 ewes, are constructed of sectional feed racks, which can be removed when not needed for this purpose, thus leaving a large field to be used for other purposes. Within each of these small pens is a corrugated iron water trough, where a supply of good clean water is always kept. In these pens the ewes are kept until they lamb.

After lambing, the ewe and her lamb are immediately removed to the sheds situated at one side of the large enclosure. A large wagon containing eight small pens is used, one ewe and lamb being placed in each pen. This wagon is constantly going about the driveways of the enclosure and but little time is lost in getting the ewe and lamb into the sheds after the lamb is born.

Within the sheds, which are roofed and boarded on both sides, small pens about four feet square are ranged along both sides of an alley way—the latter allowing easy access for feeding. Each small pen is equipped with a small corrugated iron water trough in which the supply of water is kept fresh and clean. These pens are bedded with straw, and into each pen one ewe and her lamb is placed. Here the ewe and lamb are kept until the lamb is strong enough to travel, and the ewe claims the lamb as her own. Then they are both driven out onto alfalfa pasture.

A special ward for "bummers" is an important feature of the sheds, where motherless lambs are fed cow's milk. A long row of bottles of milk with nipples extends down one side. These bottles are on a shelf, or rack, which is tipped forward so that the milk will readily flow from them—the necks of the bottles being thrust through holes put at regular intervals in the rack. These bottles are refilled frequently with fresh cow's milk.

The little lambs soon learn to drink from the bottles, and it is an interesting and amusing sight to see them wagging their tails and crowding each other in their eagerness to get hold of a nipple. They do as well, apparently, as those having mothers.

When a ewe loses her lamb the lamb is skinned and the hide is fastened to a motherless lamb, which is then put with the ewe. The lamb wears this borrowed clothing until such time as the ewe has become accustomed to it and claims it as her own.

Alfalfa hay is ground up for feeding at this time, but two large silos have been erected and a mixed feed will probably be adopted. Provision was made for the care of 6,600 ewes at one time, with the result that enough ewes and lambs were saved in one season to pay for the outlay. The same method for the care of the sheep at lambing time has been adopted by this company on another large ranch at Smoke Creek, Nevada.

The Everlasting Pacific

A Silo That Stands The Test of Time

When you build a barn you build it of the best lumber for that purpose. You do so because you want it to stand and give service.

That's why we use California Redwood in Pacific Silos—we build them to stay built and give you service all the time.

All staves are milled to the true circular outline of silo, both inside and outside. Each piece is chosen for its durability and permanency—is free from pitch, knots and other imperfections.

The foundation for a silo is a very important point. It must be perfectly level and strong. We will supply foundation plans for the Pacific silo or will install it complete for you.

Pacific slos are very simple and easy to build. Once built they stay built, need no attention and are not affected by changes of weather.

All Pacific silos are fitted with self-adjusting, straight-pull spring lugs. By using spring lugs at even distances around your silo, it is not necessary to tighten and loosen hoops. This is one of the most important features of silo construction.

Solve Your Water Problem

Nothing adds so much to the efficiency and convenience of a farm as a water tank. It saves time, labor and money, and assures you of water all the time.

Pacific Redwood tanks are built like Pacific silos—strong and everlasting. Our patent non-shrinking feature does away with all chance of leakage. A Pacific tank is always tight—the hoops never need adjusting.

For your irrigation system or pipe required on the farm, let our engineers lay out your plans and solve your problems. Pacific machine banded pipe lasts a lifetime.



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Poultry and Rabbits for Profit

Conducted by R. H. Whitten.

ELECTRIC LIGHTS INCREASE PRODUCTION.

Is the use of artificial light to stimulate egg production practical? This question is being asked by many poultrymen who are giving the matter serious consideration, and results of experiments may prove interesting.

At the New York State School of Agriculture the following results were obtained:

Item	Light	No Light
No. of hens	48	48
Lbs. of feed	627	594
Cost of feed	$19.97	$19.18
No. of eggs	1093	500
Value of eggs	$61.64	$28.20
Cost of light	2.00	

The experiment was carried on from December 12 to February 12 and it will be seen that during these two months there was a difference in favor of the pen having artificial light of 593 eggs, of $30.65 in profit on the flock, and of 64 cents in profit per bird.

At Cornell University Prof. Jas E. Rice tried out two pens of 100 hens each for 48 weeks. Those having artificial light laid 135.3 dozen more eggs, and earned $71.88 more than their sisters who went to roost earlier.

At the British Columbia Experiment Station tests were made with two pens of 20 birds each, commencing in November when the days became short and continuing until the middle of March when light was unnecessary. The results were as follows:

Item	Lights	No Lights
No. of eggs	1106	636
Value of eggs	$54.93	29.46
Cost of feed	22.53	21.09
Cost eggs per doz.	0.26	0.39

Thus, at a cost of only $2.40 for light and $1.44 for extra feed, the profits were increased $25.47. Similar satsifactory results have been obtained by individual breeders. One commercial poultryman near Chicago figures his increased profits for a season from 2,000 hens at $800. He further states: "The lights must be good—almost as light as day. No mere glimmer will do."

As a rule lights are turned on at 6 a. m. and left until daylight; then turned on again before dusk in the afternoon and left until 9 p. m. This is generally started in November when the days become short, and continues until the middle of March. In some cases lights are used to lengthen the day throughout the greater part of the year.

V. C. Aubry, specialist in poultry husbandry at the New Jersey Experiment Station, claims that the practice is not a stimulation in its accepted sense and is not a strain on the birds. He says that aside from its use on commercial plants to increase egg production it can be applied to flocks of exhibition poultry to hurry them into condition for a show; to bring a bird back into production or condition immediately after a show; to increase the production during the winter of the birds which are not to be exhibited; and to help early hatched, late hatched and long maturing birds.

Mr. Aubry further states: "Artificial lights have been used by all classes of poultrymen for many years, but the method is only just becoming common practice because most poultry keepers have had the erroneous idea that its use would be a strain on the birds, and be detrimental to their health and vigor. If thoroughly studied and looked at from the proper angle, it is found to be a practice which will help to maintain the constitution and health of the birds, and could be practically used were that the only factor of its beneficial results. It is a practice which the commercial market egg producer will in years to come generally practice and is a method that the breeder of exhibition poultry will find to his advantage, practical and beneficial, if wisely used."

EGG-BOUND HENS.

I am having a great deal of trouble lately with egg-bound hens and some cases are so severe that the vent turns out. What can I do to overcome this trouble?—J. H. Q., Mountain View.

When hens are egg-bound it shows that there is an irritation of the lower part of the oviduct which stops the natural secretion of the mucus and causes the membrane to become dry. When it lacks this normal lubrication the egg does not move through the oviduct as it should. The same trouble reults from birds being too fat or from an egg being too large, and it is aggravated by constipation. In severe cases it leads to straining, which causes the vent to turn out as you mention. In the early stages it is sufficient to inject a small quantity of olive oil and gently manipulate the parts. Afterwards give cooling, laxative feeds, such as plenty of green stuff, and if the hens are too fat reduce the ration and make them exercise more. If the egg will not come out after the injection of oil, immerse the vent and lower part of the body in water as warm as can be used without injury, and hold there a half hour or more until the parts are relaxed. Then inject oil and assist the bird by careful pressure and manipulation. In an extreme case it may be necessary to puncture the egg, allowing the contents to escape; then crush the shell and remove it in pieces. Fluid extract of ergot is helpful and may be given in five-drop doses three times a day.

HOW TO FEED BARLEY.

Wheat is considered the best grain for poultry, and under normal conditions it is fed in larger quantities than any other grain. But it is still too high in price to be used profitably, and for some time yet we shall have to use barley in its place.

Whole barley, fed in its natural hard, dry state is not very palatable, and hens will not eat it unless starved to it. When hulled they will eat it much more readily, and it should be used in this form when fed as a dry grain.

Some poultrymen feed dry rolled barley, but it is better when steamed. At night put the rolled barley in a pail and cover it with water, keeping it on the stove until it nears the boiling point. Let it stand all night, swelling and softening, and feed in the morning. Or start in the morning and feed at night. The objection to this feed is that it is difficult to get just the right amount of moisture into it. If too little water is used the barley is dry and the hens don't like it. If too much is used, it is sloppy and liable to cause digestive troubles. However, when it is just right—moist but not watery—it is excellent for young stock and a fine change for hens.

Probably the best method of preparing barley is to soak the whole kernels for about 12 hours, then pour into sprouting trays, a flat box with cracks in the bottom, or a barley sack, and let it drain. Keep moist until tiny white roots begin to show; then feed it. Don't let the sprouting continue until green sprouts begin to grow, for it then becomes green feed and loses much of its value for egg making. Also, if the sprouts grow to a length of an inch or more the hens will not care for them unless cut up.

Some poultrymen feed the barley after it has drained 24 hours without waiting for it to sprout, using it



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Here's the proof. Mohawk tires contain

No Reclaimed, Shoddy Rubber
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Only the very purest rubber on the market—the very highest grade produced, is used in Mohawks. And another point—many supposedly good tires today contain in their treads "numerous fillers" that cheapen quality, barytes, clay, glue, whiting, lead, rosin.

You won't find a single one of these "fillers" in Mohawk tires, for the reason that if we used them we would cut down the expense of and increase the profits from the Mohawk tires, but at the same time, we would cut down the mileage yield that Mohawk tire gives. That we will not do—for we believe you prefer to buy your tires on their mileage ability rather than on price.

Add to pure material an extra ply of standard weight fabric—the fact that Mohawks are hand made by the highest paid tire builders in the industry—and you will understand why once an automobile owner buys a Mohawk he will have no other make.

Either cord or fabric tires—in ribbed and non-skid treads. Hand made, extra ply, Ford size tires, also.

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PROTEIN SPELLS Poultry Profit

FOR BEST RESULTS feed high-grade Beef Scraps of Uniform Quality.

The dealer who induces poultrymen to use High Protein Beef Scraps is a benefactor to his customers. The best is always the cheapest.

GOLD BEAR BEEF SCRAPS

Backed by a guarantee which assures the poultryman, high and uniform quality.

Made in a government inspected packing house. Contains only blood and offal.

Food elements plainly marked on every sack.

Made and Guaranteed by

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Write for our booklet, "PROTEIN FOR PROFIT."

either alone or with wheat, milo kaffir or oats. But if it is held until the tiny white roots begin to show its palatability will be increased without reducing its food value very much, and the hens will tire of it less readily than of barley in any other form.

But it should be borne in mind that hens crave variety, and probably the best results will be secured and the hens will be induced to consume a larger amount of barley if it is furnished them in all of the different forms mentioned as desirable—hulled one time, soaked and steamed another, and slightly sprouted another. Variety in the ration keeps the appetite keen; a keen appetite means heavy consumption of food; and heavy consumption means heavy laying, if the hens are of the laying type.

AGRICULTURAL NOTES.

Grain in the upper San Joaquin valley will make a fair crop, though many fields will not even be good enough to make hay. In the district north and west of Tulare Lake in Kings county the greatest acreage ever known has been seeded. Much of it is now headed out and the owners expect from 20 to 30 sacks per acre. On the west side of Fresno and Madera counties the crop is very poor, while east of the river there will be many good fields. In Stanislaus county on the east side, the grain is reported very good, in the central irrigated sections prospects are fine, while on the west side they are poor. About 75% crop is the estimate for the county. Many fields are being cut for hay, and grain harvest will commence very soon.

The bean acreage in Ventura and Santa Barbara counties will be about an average. Some fields in the hills will not be planted owing to shortage of rainfall during the past winter. In the little Santa Clara valley beans are already above ground while in most fields seeding is now progressing.

A large acreage will be planted to the sohghums and gyp corn in Merced county next month.

Poultry Breeders' Directory

YOU ARE NOT TOO LATE—Our early maturing, winter laying strains. May, June hatch develop quickest into profitable winter layers. "My thirty pullets laid at four, sixth month (January) cleared $31." Why? Bred 20 years to lay winters. 200-290 eggs yearly. White, Brown, Buff Leghorns; Reds; Anconas; Rocks; Minorcas; clearing customers $5. Many repeat orders, monthly, yearly. Valuable circular with proof free. 70,000 egg hatcheries supplying chicks. Thousands shipped promptly, below ordinary chicks. Breeders (Pullets). Sale beginning. J. Beeson, Pasadena, Cal.

WHITE LEGHORNS are the most profitable breed of poultry. If you are in the business for profit, you will eventually have them. Early broilers; early layers; early profits; we sell only **White Leghorn Baby Chix** from heavy laying **Hoganized** hens. Safe delivery of full count live chix guaranteed. Prices per 100: February $15; March, $14; April, $12.50. The Pioneer Hatchery, 408 Sixth street, Petaluma, California.

SINGLE COMB BROWN LEGHORNS—The large, modern, heavy-laying type that won high honors for us at the National Egg-Laying Contest. No better layers, none others so hardy. For 20 years our strain has won highest prizes at New York, Boston, Chicago, San Francisco, etc. Absolutely the finest Brown Leghorns in America. Eggs, $3 and $5 per $15; $15 per 100. Williams Bros., Fullerton, California.

LARM'S RHODE ISLAND REDS were never better. Rose and single comb hatching eggs from winners of the leading shows. Bred to lay. Eggs, now half price from the best breeding lines in existence. Remember a few June and July chicks reared into winners for the December and January shows. Send for circular. 3 Rose-comb cockerels. Wm. Larm, 3915 39th Ave., Fruitvale, Cal.

BARRED PLYMOUTH ROCKS—Champion prize winners and wonderful layers. Choice cockerels, hens and pullets for sale. Hatching eggs from twelve grand matings. I have made a specialty of Barred Rocks for over twenty years. That's why I win at all leading shows. "Nothing Better In Poultry" than Vodden's Barred Rocks. Catalog free. Chas. H. Vodden, Box 300, Los Gatos, California.

S. C. WHITE LEGHORN CHICKS—Any quantity from A-1 Hoganized and Line-bred stock; winners of 1st, 2nd and special for pullet and 1st cockerel at Pacific Coast Land Show. Orders taken for June 7. A. O. & P. M. Forester, 2018 Otis St., Berkeley, Calif.

ATKINSON'S PEERLESS ANCONAS lay more and eat less than other breeds. 50 big husky cockerels $5 and up. 200 pullets, hens and cocks for sale. Hatching eggs. Catalogue free. J. W. Atkinson, Box E, 130 Willard Street, San Jose, Cal.

FOR SALE—Guinea eggs, $2.00 per 15 eggs. Pigeons. Extra fine birds, $1.25 to $3.50 per pair. E. A. McKinley, R. F. D. 1, Lodi, Cal.

PACIFIC COAST ARISTOCRATS—S. C. Rhode Island Reds exclusively. No more chicks for sale this season. Eggs for hatching at reduced prices. $5.00 setting now $3.00; $3.00 now $2.00. Utility $1.50 per setting; $7.50 per 100. Order from this ad. Rosedale Poultry Farm, Route A, Box 200A, Ceres, Calif.

BABY CHICKS—Barred Plymouth Rock, R. I. Reds, Buff Orpingtons, Black Minorcas, Brown, White and Buff Leghorns from Hoganized stock, bred to lay. Tobener Poultry Ranch, Washington Ave., San Jose, Cal.

BABY CHICKS—Hatching season ends June 1st., except for special orders. A few chicks still available for later part of May—leading varieties. B. M. Archibald, Soquel, Santa Cruz Co., California.

SULLIVAN'S FAMOUS Buff Orpingtons—Eggs for hatching, $3.00 for 15; $12.00 per 100. No "baby chix." Trios and pens for breeders; write for prices. Mr. and Mrs. W. S. Sullivan, Agnew, Santa Clara Co., Cal. Phone San Jose, 5205 R 5.

WHITE LEGHORN BABY CHICKS—Every week, good strong youngsters from fine layers. Also other varieties. Write for circular. Stubbe Poultry Ranch and Hatchery, Palo Alto.

SANTA CLARA VALLEY HATCHERY has the chicks for you from six different standard breeds, all bred for egg yielders. Can furnish references from my old customers if desired. Lincoln Ave., San Jose, California.

RHODE ISLAND REDS—Best all-purpose bird. Oakland show. First cock, second cockerel, fifth pullet on four entries. Hatching eggs. Prices for asking. John L. Reed, Route C, Box 36-B, San Jose, California.

CROLEY'S RED STAR CHICK FEED—California's standard Baby Chick Feed for twenty-five years. Manufactured by Geo. H. Croley Company, Inc., 8th and Townsend Sts., San Francisco, Calif.

MODEL POULTRY FARM—White Leghorn specialists. Our fifteenth year. Baby chix and hatching eggs for sale. Our prices are right. W. C. Smith, Prop. Corning, Calif.

BARRED PLYMOUTH ROCK EGGS for sale. Good range flock headed by cockerels from 260 to 290-egg stock. $1.50 per setting. Mrs. J. A. Vassar, Laytonville, California.

EGG BRED—Buff Brown, White Leghorns, Golden Campines, Dark Cornish. Winners wherever shown. Send for circular. Percy Ward, 3142 Ward St., Fruitvale, California.

GOLDCROFT BUFF ORPINGTONS—Winners San Jose show. Eggs, $5.00 and $3.00 setting. Heavy laying. Choice breeders for sale. Samuel Abrams, Los Altos, Cal.

BABY CHICKS—We have the large heavy-laying S. C. White Leghorns, severely culled last year. Send for prices. Tupman Poultry Farm, Ceres, California.

EASTMAN'S BRED TO LAY Hoganized and trapnested Barred Plymouth Rocks. September chicks. Fairmead Poultry Farm, Fairmead, Calif.

BARRED ROCK AND WHITE ORPINGTON hatching eggs. Stock bred to win and lay. Settings reduced to $1.50, $2.50. R. P. Lutzi, 1217 20th Ave., San Francisco.

CHICKENS, DUCKS, GEESE, GUINEAS, Pea Fowl, Pigeons. Wm. A. French, 545 W. Park St., Stockton, California. Stamps.

BABY CHICKS—Booking orders for spring deliveries. White and Brown Leghorns, Rhode Island Reds, Barred Rocks. E. W. Ohlen, Campbell, California.

BUFF ORPINGTONS, BUFF DUCKS, BOURBON RED TURKEYS—The Ferris Ranch, Rt. 2, Box 144D, Pomona, California.

BRONZE TURKEY EGGS—No more eggs till further notice. Albert M. Hart, Clements, California.

RABBITS.

JOIN THE CALIFORNIA COMMERCIAL RABBIT Assn., and get real information on rabbit-raising. We issue an educational bulletin each month, which is free to members. Membership, including 16 back bulletins, $1.80. H. A. Sanderson, Secy., Eagle Rock, California.

NEW ZEALAND REDS—Pedigreed registered from prize-winning stock. Pedigreed does bred to registered buck, $5.00. Does 4 months eligible to registration, $4.00; 5 months, $5.00. Satisfaction guaranteed. E. Peppin, 86 Cambridge, San Leandro, Cal.

WILSON BROS. FEEDING BULLETIN tells how and what to feed rabbits. Price, 25c; catalog, 10c; circulars free. Wilson Bros. Flemish Rabbit Farm. Rabbits and Remedies. Highest award World's Fair, Route 4, Box 13R, Los Angeles, Calif.

FLEMISH GIANTS—3 young bucks, 2 does 4 months old. Fine stock, sure to please. Only $3 each. Edw. Marston, Route 9, Box 521, Los Angeles.

FLEMISH GIANTS—2 young pedigreed, purebred bucks about 2½ months old for sale. Write for prices and particulars, Box 6, Sycamore, Cal.

NEW ZEALAND RED RABBITS—Young stock for sale. O. C. Thompson, St. Helena, Cal.

NEW ZEALAND REDS—First class utility does bred $5.00 each. Young does, $2.50 each. F. R. Caldwell, Broadmoor, San Leandro.

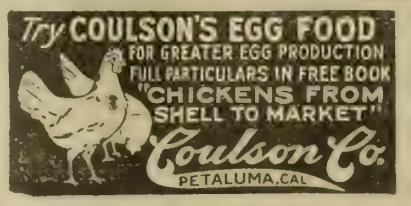
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THE HOME CIRCLE

THE NIGHT COMETH.

Cometh the night. The wind falls low,
The trees swing slowly to and fro;
Around the church the headstones grey
Cluster, like children strayed away,
But found again and sheltered so.

No chiding look doth she bestow;
If she is glad, they cannot know
If ill or well they spend their day,
Cometh the night.

Singing or sad, intent they go;
They do not see the shadows grow;
"There yet is time," they lightly say,
"Before our work aside we lay";
Their task is but half done, and lo!
Cometh the night.

—Lieut. Col. John McCrea.

TILLIE'S KNITTING-WORK LESSON.

When my grandma was young, little girls were taught to do many useful things. Little girls thought it no hardship to wash and dry the dishes, and spread up the beds after a stronger hand had shaken the great feather mattresses; and all the doll-clothes of those days must have been well made, because the "little mothers" were given every day a lesson in sewing, crocheting, or knitting, as soon as they were old enough to learn.

One day, one summer, grandma's mother called her three little daughters to her, and said: "I am going to teach you to knit. I will give a reward for the first pair of socks; and how proud father will be to wear them!"

Then she gave Lucinda, Alida, and little Tillie each a great ball of yarn and a set of shining knitting-needles. She patiently spent a great deal of time in showing them how to "set up a sock" on three needles, and how to hold it, and how to use the fourth needle to really "knit."

The upper maid, Dinah, was to show them how to shape the heel and toe, and "narrow" and "bind off," as she herself was to be away for some weeks.

So every day, very soon, each little girl took her ball and needles, and went away to her own favorite nook, and for some time a very lively race went on for the prize.

For at least a fortnight the little girls knitted industriously. Then Alida began to weary, even before one sock was completed; and Lucinda's sock grew very slowly, though the knitting always showed even and smooth.

But how little Tillie did work! Her small fingers fairly flew. Her little white pet rabbits nibbled at the ball of yarn, and wondered why Tillie did not have a word to say to them. Every day she took her little stool out into the grape-arbor and diligently knitted away, though the shouts of the children paddling in the brook came to her ears, the loudest among them the voices of her two sisters.

'I will finish first," she said. "I will win the prize! I know I can!"

After a very long time to Tillie, and a surprisingly short time to the sisters, Tillie announced—it was on the day after mother's return home—that her socks were finished; and then Alida wished she had not been having such a good time and had more to show than just one-half of a sock, not very tidy-looking. Lucinda had finished one sock, and it was very prettily and evenly knitted; but she, too, was ashamed that little Tillie had outdone her.

Tillie laid the pair of socks on mother's lap with a triumphant little smile.

The three little girls hovered near while mother slipped one of the socks over her hands.

But what do you think?

There were about a hundred little holes where Tillie had dropped a stich every now and then! Alas! And the other sock was quite as bad.

Mother smiled as she said, "These socks will have to be darned before they can be worn."

Alida laughed merrily, but Lucinda put her arms around poor little Tillie, whose tears were falling softly over the careless work.

"Never mind, Tillie," she said; "you will get the prize, for you did knit the first pair."

Well, grandma's mother—grandma was Tillie—gave them each a prize for learning to knit—a little work-box, with needles, scissors, thread, and tiny thimble.

"Tillie has learned something else, too, I think," said mother as she stooped to kiss the tear-stained and sorry little face. Then she gave Tillie her work-box, a pretty blue one, and said in a whisper, "Make haste slowly!"

Grandma says it has been over fifty years since she won that prize, and she has forgotten how to knit; but the lesson she learned along with her knitting she will never forget.—Mary Goodwin Hubbell, in Little Folks.

VALUE OF VEGETABLES.

With the exception of beans, peas and lentils, not many vegetables possess a high food value. They are necessary to the diet, however, on account of the salts they contain. Different vegetables contain different minerals, all of which are required by the system and each vegetable in season should be given a place in the menu.

The vegetables valued chiefly for salts are usually eaten raw and to this class belong the sala plants.

All green vegetables should be salted, placed in boiling water, and cooked in an uncovered pan to retain the color and flavor.

Root vegetables should be cooked in unsalted water.

All sweet vegetables, as peas, asparagus, string beans and the like, should be cooked in a small amount of water while strong vegetables, as onions and cabbage, should be well covered with water.

TAMALE PIES.

Chicken Tamale Pie.—Take a large chicken and joint as for a fricassee; salt and pepper each piece and roll in flour. Have ready frying pan containing part lard and butter or butter substitute. Fry chicken until brown; then place in stew pan, with one can of tomatoes, one sliced and fried onion, two or three red or green peppers and small piece of garlic. Add a little water and the gravy from the chicken and stew until chicken is tender. Thicken the gravy, add a cup of olives, four or six hard-boiled eggs, sliced. Place in casserole and cover with a rich biscuit dough. Bake twenty minutes and serve in the dish.

Beef Tamale Pie.—One pound of beef, ½ pound pork, one cup raisins, one pint tomatoes, two heaping tablespoons chili powder. Have the meat ground fine and fry with one onion and one clove of garlic until brown, then pour a little water and the tomatoes into the pan and cook until done. For the crust, use two cups of cornmeal, 1 cup of flour, two eggs, four heaping tablespoons lard or butter substitute. Make mush of the cornmeal; when cool, stir in the eggs, well beaten, and then the flour and lard. Line the casserole with the crust, put in the meat mixture and cover with more of the corn meal mixture. Bake slowly for forty-five minutes.

FOR SUMMER USE.

All housekeepers who live in climates where it grows very warm in the summer, should try to eliminate the heavy stuffed furniture and dark window draperies during the heated season. At the windows a change to chintz gives the rooms an airy cheerful appearance. If heavy chairs cannot be replaced by cane or wicker for the hot season, have linen slip overs for them to give them a cooler feeling.

Fireplaces may be filled with grasses or flowers or a small Japanese screen will cover the opening nicely.

FASHION NOTES.

The small Mitzie sailors with narrow brims and low crowns are very popular with the young girls. Many of them are trimmed with a wreath of flowers and ribbon streamers nearly to the waist at the back of the hat.

The length of skirts seems to still be an unsettled question—the pleated and sport skirts are all short, while the skirts of afternoon and street dresses are scant and long.

The new henna shade is used as facings for hats and for embroidery and sashes and occasionally a whole garment in that color is seen. It is more effective, however, as a trimming.

Many of the stores are showing full lines of graduating dresses in all sorts of dainty materials—the styles are largely simple as befits a garment for a young girl.

The blue serge capes with the jacket fronts, made without lining and no trimming except a facing of the shawl collar and bright buttons, make attractive wraps for girls.

All silks have advanced until the silk for the slip under the sheer marquisette or chiffon costs as much as the material for the dress.

Ginghams made in very simple styles are popular for informal wear and made more elaborately with much button trimming are used for almost any occasion.

At some of the good stores may be found petticoats of light weight sateen with a flounce of silk—they cost nearly as much as silk, but are much more durable.

The new fur scarfs are made with arm slits and pockets.

Combinations of satin and leghorn are shown in the new hats.

A little tip on washing chamois skin that may be valuable is to wash it in warm suds—not hot—and rinse in a clean, warm suds. Don't rinse in clear water, as it stiffens the skin, while the warm rinsing suds makes it soft and pliable when dry. This same rule applies to washing chamois gloves or washable kid.

RHUBARB RECIPES.

Rhubarb Pie—Cut in rather coarse pieces enough rhubarb to fill a pint bowl. Beat one egg thoroughly, adding a pinch of salt. Add rhubarb, one cup sugar and two or three soda crackers rolled fine. Mix thoroughly, then turn into pie tin lined with pastry. Put a few bits of butter over the top and a little nutmeg, and bake as a tart pie with bands of pastry laid over the top.

Rhubarb and Raisin Jam—Thoroughly wash and wipe and cut in small pieces; stone and chop roughly four pounds raisins; slice four ounces preserved ginger and grate the rind of three large lemons; cover with eight or ten pounds of sugar and boil for one and one-half hours, stirring frequently. This preserve is delicious.

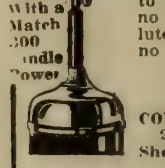
Rhubarb and Apple Jelly—Wash and cut the rhubarb, cook without any water at all. Use good, sour apples, pare, quarter and cook in a very little water. Strain the juice from both and cook together for fifteen minutes. Then add the heated sugar, three-fourths as much sugar as juice. Boil hard for twenty minutes and turn into glasses. Seal with paraffine the next day.

MORE LIGHT THAN 20 OIL LAMPS

AT LAST—the light of lights—A beautiful lamp that lights with common matches just like oil lamp, but makes and burns its own gas from common gasoline, giving a brilliant, steady, restful, white light of 300 candle power.

MOST BRILLIANT LIGHT MADE

Brighter than the brightest electricity More light than 20 oil lamps. Cheapest and best light made. Costs less than one-third of a cent per hour. Safer than the safest oil lamp. The



COLEMAN QUICKLITE

No wicks to trim—no globes to wash. No dirt, no grease, no glare or flicker. Absolutely safe. Fuel can't spill—no danger even if tipped over. —will last a lifetime.

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FLIES, MOTHS, ALL FLYING INSECT PESTS,

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One Gallon Can Non-Poisonous Fluid. Price ..... **$2.00 per can**

Properly Used Will Last One Trap Four Months.

FLY-MOTH OAKLAND CALIFORNIA

Fly-Moth Trap

19 in. high, 10½ in. square.



Galvanized Iron, substantial and sanitary. It is collapsible and is shipped in knock-down form, making it easy to handle in quantity. There are no screws or bolts, and a child can put it together.

Price ..... $2.00 each

Each Trap includes BAIT-CUP and BRAN.

Bait and Trap (knocked down) shipped in one flat package (weight 17 lbs.)

AN ANALYSIS

of a catch in a FLY-MOTH trap, half-filled, showed flies of 15 varieties and moths of 10 varieties, and also a large number of mosquitoes, gnats and wasps. The BAIT does not lure the honey-bee

Shipments by Express—Charges Collect.

FLY-MOTH BAIT & TRAP CO.
221 Broadway, Oakland, Cal.

A HIGH TRIBUTE.

A very fine tribute to farm women appears in an exchange from the East. It follows:

"In one way the country woman is in a distinct class and a very important one. She is pretty sure to be an expert in one or more self-supporting businesses, as poultry raising, bee-keeping, dairying, gardening and almost always cooking, canning and preserving.

Along with this knowledge, the country woman is, from her environment, the possessor of a resource so intelligent and capable that it behooves those who observe to admire. She can hitch the horse and drive it, too; she can round up the cows that have broken through the pasture fence; she can put out the fire in the chimney when the men are far a-field; she can administer first-aid treatment to bad cuts, or burns, or broken arms, as well as such minor ills as hornet stings, chilblains and stone bruises; she is apt to be a pretty shrewd judge of cattle; she can make and mend her own and her children's clothes; she knows how to cure meat, to shoot a marauding hawk, to prune a rose bush, to make soap, to beat the carpet, to scale a fish—and she looks on none of these things as an adventure or a unique experience, but simply as part of her day's work.

"Her interest in politics is clean and clear. Ask her who is sheriff of the county, the State attorney, the county clerk—she will tell you. Because she lives with the actualities of life, she is not likely to put undue emphasis upon its non-essentials. Comfort, neatness and cleanliness, above style, are desired in her home. Her table is supplied with wholesome and palatable food, neatly served. She does not worry about the lack of lace centerpieces or monogrammed linen, or the position of the knives and forks; she knows that if she is comfortably dressed in neat, clean clothes befitting the occupation in hand and suitable to the weather, she is truly a well-dressed woman. She asks, "Will it wear?" when she goes to buy, and she is a very astute purchasing agent, keen at a bargain and knowing exactly what she wants and what she wants to pay for it. There is just one phrase that fits her—"salt of the earth." Let us by all means put her in a class apart and yield her the respect due her."

TO REMOVE LETTERS FROM FLOUR SACKS.

The cloth of which flour sacks are made is very useful for towels or children's garments, but sometimes there is difficulty in getting the lettering removed. One generally accepted method is to soak the letters very thoroughly and then boil in a strong soda water for fifteen or twenty minutes. After they have cooled in the water, wring out and repeat the process. If the sacks are thin, a couple of boilings will clear away the color, but the heavier cloth may require five or six boilings.

Another method is to soak over night in a strong borax water, the next day cover with a naphtha soap and rub hard on the wash board. If the color does not entirely fade out, it will sometimes bleach out on the line or grass if wet frequently.

Women with much energy insist that cold water, strong soap, and a washboard make a combination that is hard to beat, but it takes much perseverance and hard rubbing to get rid of the letters.

STORAGE OF FURS.

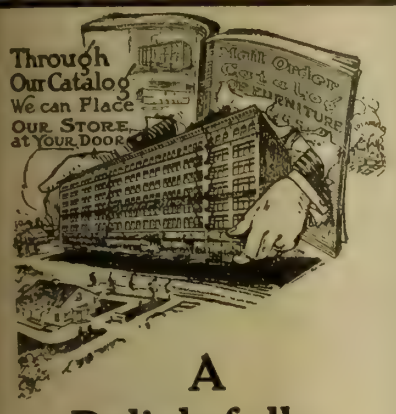
Some of the largest fur houses make a business of storing furs for the summer. They are stored in cold storage vaults with the temperature below freezing and their safety guaranteed.

The cost of fur storage is trifling compared with the loss sustained if neglected, being based upon the value of the garment. Two dollars is the charge for a season's storage for a garment worth $75, and the storage charges may be paid when the garment is removed.

APPLE SAUCE CAKE.

One half cup butter, 1 cup sugar, 1 teaspoon cinnamon, ½ teaspoon cloves, a little nutmeg, 1 cup apple sauce unsweetened, 2 teaspoons baking powder, 2 cups flour, 1 dash salt, 1 cup raisins, 1 cup currants, 1 teaspoon soda. Cream butter, add sugar, dry spices and floured fruit. Dissolve soda in one tablespoon boiling water and add to the cold apple sauce. Put the two mixtures together and sift into it flour and salt. Bake from one to one and a quarter hours in moderate oven in greased pan lined with paper.

"I have just received my first copy of the Rural Press. It is all that your representative claimed it to be, and a great deal more."—G. W. Barnum, Santa Ana.



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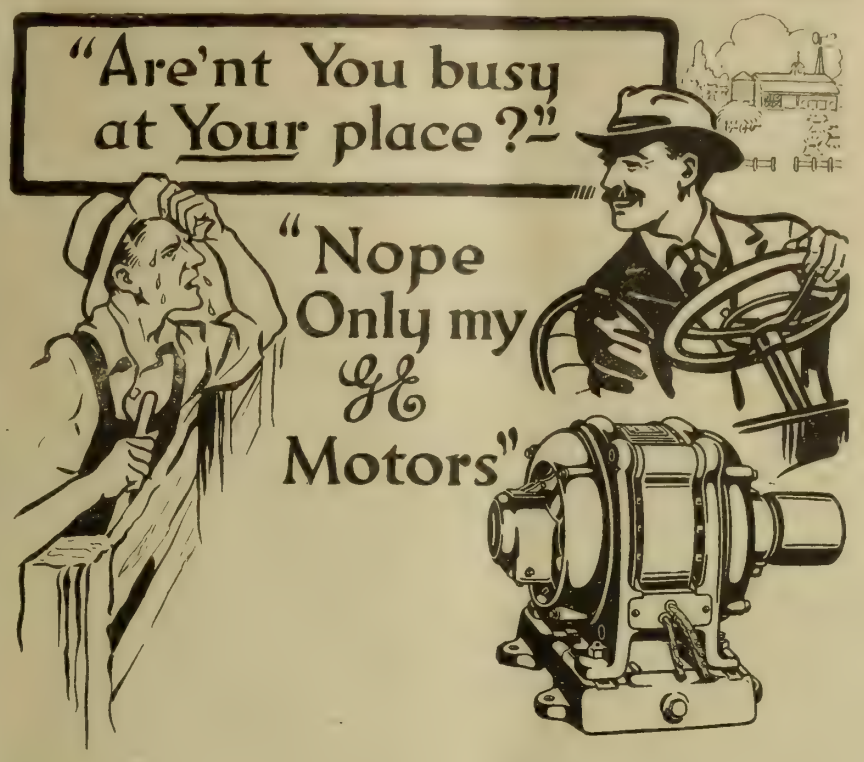
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A varnish food, made by varnish makers, for keeping varnished surfaces permanently bright. Removes white spots, blue bloom and surface scratches. Contains no grease, acids or grit. Will not collect dust nor soil clothing.

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"My wife is keeping her eyes on the churn; young Johnnie is dumping feed now and then into the cutter; one hired man is feeding fireplace wood across the teeth of a saw; the other man is attending the irrigation canal in the west field—but the real work in each case is being done by my

G-E. FARM MOTORS

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LOCAL OFFICES: Rialto Bldg., San Francisco; Corporation Bldg., Los Angeles

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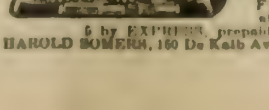
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Market Comment

Cherries in Strong Demand.

Cherries are running as high as 15 cents a pound this season. Twelve cents a pound has been offered for Royal Annes for canning purposes.

Egg Discount Raised.

It has been announced by the San Francisco wholesale dairy producers' exchange that hereafter eggs selling above 60 cents will get the 8 per cent discount, instead of a 6 per cent discount as heretofore.

Barley Selling Well.

Practically all of the surplus barley of last year has been sold and moved out of the State, so that this season's crop will meet a clean market. Some contracts covering the growing crop have already been made at $2.25 per hundred, f. o. b. shipping point.

Hay Interests to Meet.

The annual convention of the National Hay Association will be held at Detroit, Mich., July 12 to 18. Our California hay dealers anticipate this will be the largest meeting held since the association was organized, owing to the vast increase in membership, and that some effort will be made looking to the stabilization of hay prices.

Fruit Prices Soaring.

Never was the fruit market higher than at the present time, owing to the great demand from European countries for California fruit. Here are some quotations: Green apricots, $1.00 to $1.05 a ton. They sold for 65c cents last year. Dried apricots, 27 cents, and very strong. Prunes are quoted at 12½ cents by the packers. and Imperial and Sugar prunes are quoted as high as 22 cents. Dried peaches are 15 cents.

Hops Are Hopping.

A big demand has developed for California hops during the past few weeks. Practically all of the left-over 1918 crop has been sold and most of the 1919 crop contracted for, besides many contracts have been made convexing the 1919, '20 and '21 yields. Many sales of the '19 crop have been made at Santa Rosa for 32½ to 35c per pound, and for Sacramento hops about two cents less. On the three year contracts, prices are 31½, 25 and 25c, respectively. The crop will be good on the Coast this season, but the output will be short, owing to many fields being dug out, but it is anticipated many growers will plant new acres for next year. For the Coast the crop this season is estimated at 120,000 bales, of which California will produce nearly 75,000 bales.



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will reduce inflamed, swollen Joints, Sprains, Bruises, Soft Bunches; Heals Boils, Poll Evil, Quittor, Fistula and infected sores quickly as it is a positive antiseptic and germicide. Pleasant to use; does not blister or remove the hair, and you can work the horse. $2.50 per bottle, delivered.
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ABSORBINE, JR., the antiseptic liniment for mankind, reduces Painful, Swollen Veins, Wens, Strains, Bruises; stops pain and inflammation. Price $1.25 per bottle at dealers or delivered. Will tell you more if you write. Liberal Trial Bottle for 10c in stamps.
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THE MARKET REPORTS

Figures Given Are Independent and Reliable.
Prices Quoted as Paid to Producers.

SAN FRANCISCO.

San Francisco, May 21, 1919.

WHEAT.

The following prices were announced by the Federal Grain Corporation last year and are still in effect. They are figured f. o. b. San Francisco, Los Angeles, Seattle, Tacoma and Portland and guarantee the grower a minimum of $2 f. o. b. shipping point:

Per bushel—	
No. 1 hard	$2.20
No. 2	2.17
No. 3	2.13
No. 1 soft	2.18
No. 2	2.15
No. 3	2.11
Club or Sonora, No. 1	2.16
Do, No. 2	2.13
Do, No. 3	2.09
Recleaned, per ctl.—	
California	$4.30@4.40
Early Baart	None

BARLEY.

Barley continues strong and its price steadily advances. Trading in futures is light, with December quoted at $2.50.

Feed	$2.57½@2.62½
Shipping	2.75@2.80

OATS.

Oats have maintained last week's quotations notwithstanding the slack demand in this market. As long as barley continues in its present demand for export, oats are expected to be firm.

Red feed, per ctl.	$2.30@2.40
Red for seed	Nominal
Black for seed	Nominal
Recleaned Red or Black for seed	Nominal

CORN.

The demand for first-class corn showed something of an increase this week, and the grain was firm at slightly higher quotations.

California	$3.30@3.50
Egyptian, choice	Nominal
Milo	Nominal

HAY.

Receipts of hay for the past week were 1,587 tons, compared with 1,846 tons the previous week. Nearly all this hay is of medium grades of last year's crop, and most of it has been used to complete the Government orders placed in this market some weeks ago. The market throughout is dull. Considerable first cutting alfalfa has arrived, some in good condition and other heavily charged with foxtails, grasses, etc. That which is in good order and properly baled is selling at from $10 to $13 per ton, although the demand is light. Hay which is arriving in bad condition is difficult to dispose of, and it cannot be stored on account of its liability to heat in the bale. Farmers are therefore warned not to bale their hay until it is thoroughly cured.

No. 1 wheat, per ton	$16.00@18.00
No. 2 Wheat, per ton	12.00@15.00
Choice Tame Oat, per ton	17.00@19.00
Wild Oat, per ton	11.00@14.00
Barley Hay, per ton	11.00@14.00
Alfalfa, per ton	15.00@19.00
Stock Hay, per ton	11.00@13.00
Barley Straw, per bale	.50@ .80

FEED STUFFS.

Very little interest was shown in the feedstuffs this week. The market is dull and prices remain the same.

Cracked corn	$68.00@70.00
Rolled barley	53.00@54.00
Rolled oats	52.00@53.00
Alfalfa meal	33.00@34.00

POTATOES, ONIONS, ETC.

New red onions came on the market this week, and a temporary spurt sent the price to $4.25. This was not maintained, however, and the actual quotation for the week is $3.25 to $3.50. Otherwise there were no changes in new onions. The old stock is running low. Old potatoes are in the same condition, and the market is tending entirely toward new stock. As a whole, the vegetable market was dull this week. New garlic is plentiful and the price is getting down to a normal basis.

String beans	8@10c
Peas	5@7c
Lima beans	None
Carrots, per sack	$3.00@4.00
Asparagus	6@8c
Lima beans	None
Rhubarb, Strawberry, box	$1.00@1.50
Cucumbers, hothouse, box of 30	$1.50@3.00
English, per dozen	$1.75@2.00
Eggplant, per lb	None
Lettuce, per crate	75c@$1.25
Celery, crate	Nominal
Tomatoes, Southern, per crate	None
do, Mexican	$3.00@4.00
Sprouts	Nominal
Summer squash	$1.00@1.25
Potatoes—	
Rivers	$2.00@2.40
Oregon	2.00@2.40
Washington	1 95@2 25
Idaho	2 00@2 40
Garnets, new on street	5@5½c
Other new on street	3½@4½c
Sweets, per sack	None
Onions, Warehouse Stock—	
Australian Browns	$3.75@4.00
Onions, new, red	$3.25@3.50
Bermudas—white	3.00@3.25
do, yellow	$3.00
Green Alameda	2.00@2.25
Garlic	15@20c

BEANS.

The life seemed to go out of the bean market this week. Buyers were scarce and dealers are not optimistic regarding the future. Limas are pretty well cleaned up and an effort obtained an advance in the price of 50 cents. Otherwise last week's quotations stand.

Bayos, per ctl.	$6.25@6.40
Blackeyes	$3.40@3.60
Cranberry beans	5.75@6.00
Limas (south, recleaned)	8.00
Pinks	5.80@6.10
Mexican Reds	4.75@5.25
Tepary beans	2.50@2.75
Garbanzos	11.75@12.00
Large whites	6.00@6.25
Small whites	6.90@7.00

POULTRY.

The market for poultry this week was very quiet, and while hens are firm there is a weakening tendency on all other descriptions. Lower prices are quoted on the heavier grades of broilers, especially on medium sized. These came in in greater quantity than the trade could absorb. Fryers are considerably lower on an almost entire absence of demand at former prices. Geese and ducks are both lower.

Turkeys, live, young spring, lb	30@38c
do, old	34@36c
do, dressed	42@44c
Broilers, 1½ to 2 lbs.	38@45c
do, 1¼ lbs.	30c
do ¾ to 1¼ lbs	35@36c
Fryers	45@50c
Hens, extra, per lb. colored	36@38c
do, Leghorn	36@38c
Smooth young roosters, per lb. (3 lbs. and over	48@50c
Old roosters, colored, per lb.	22c
Geese, young, per lb.	35c
do, old, per lb.	33c
Squabs, per lb.	45@50c
Ducks, young	35c
do, old	34c
Belgian hares	15@16c
Jack rabbits	$3 00@3.50

BUTTER.

Butter continues to show strength and advances in price. The price of 59 cents to the producer means 62½ cents for extras on the floor of the Exchange. That is the highest for the year since January 18, when approximately the same quotation was made. During May of a year ago the high price of butter was 45 cents, or 17½ cents below the present record. The reason for the high prices are difficult to understand, except for the fact that a large amount is going into storage. During the past week an average of about 40,000 pounds a day was sent to storage, and the amount on hand in San Francisco increased to about three-quarters of a million pounds. The same conditions prevail in the eastern markets, where 9,538,602 pounds were in storage Tuesday morning compared with 3,676,648, the corresponding day a year ago.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extra	56½	57	58	58	59	59
Prime firsts				Nominal		
Firsts	54½	55	55	55	..	..

EGGS.

Extra eggs at 50½ cents to the producer means 54½ cents on the Exchange. Compared with a year ago extra eggs are 12 cents higher than the high price of last May. At 54½ on the Exchange eggs sold at the highest price of the year since January 24. It is reported that very few eggs were shipped out of the State during the past week. Some were shipped to Los Angeles from Petaluma and went into storage there. The movement towards storage in this market continues at close to 2,000 cases a day.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	48	48½	48½	49½	50½	50
Extra first	..	..	..	..	..	..
Firsts	45½	45½	45½	46½	46½	46½
Ex. pullets	45	45½	46	46½	47	47

CHEESE.

Little interest was shown in cheese this week although some of the dealers were inclined to buy a little more freely. Prices are unchanged except in the case of California flats, which sold off half a cent.

Fancy California flats, per lb.	28½c
First	27c
California Y. A., fancy	30½c
Oregon Y. A.	34c
Oregon Triplets	34c
Monterey cheese	22½@24c

FRESH FRUITS.

Cherries are rapidly becoming the feature of the fresh fruit market, although the market as a whole is dull. Both black and white cherries are now being sold in bulk. Loquats are lower, while strawberries remain at last week's quotation. These berries are not expected to go lower during the season. Some blackberries appeared on the market, but their condition was not good and their price was too irregular to quote

California apples	$3.50@4.00
Northwest apples	3.50@4.00
Winter pears	3.00@4.00
Persimmons	None
Loquats, per lb.	7@9c
Strawberries, chest	$10.00@12.00
do, crate	None
Cherries, purple Guigne	$1.75@2.00
Black, bulk	15@17½c
White, bulk	12@14c

CITRUS FRUITS.

Mandarines and tangerines have now about run their season. Grapefruit is steadily advancing in price and the best now sells at $4. Oranges and lemons are unchanged.

Oranges, navels	$3.50@5.75
Valencia	4.75@5.00
Lemons, fancy	4.00@4.50
do, choice	3.50@4.00
do, standard	3.00@3.50
Lemonettes	2 00@3.00
Grapefruit	2.50@@4.00

DRIED FRUITS.

The dried fruit market is becoming more active. The Apricot Growers' Association has announced its prices, which range from 20 to 26 cents, with variations running higher on some brands. These prices and most of the other dried fruit prices show an increase of about 100 per cent over the prices obtained last year. The following quotations are the figures at which contracts were made during the past week:

Apples	16@16½c
Pears	17c
Peaches	14½@15c
Apricots	20@26c
Prunes	12½c
Figs, Adriatic	14@18c
do, Calimyrna	15@20c

RICE.

The mills have been practically cleaned up of clean rice and they have not a great deal of the damaged stock. Damaged rice is going very fast and the price has been advanced about 20 per cent, but no quotations can be named on this as every lot is subject to change Dealers are now quoting Fancy Japanese rice at $8 to $8.50, and they are making an advance on all rice on account of the demand.

HONEY.

Orange honey from the south is expected to be offered in about two weeks' time. It is thought that this honey will open at 16 cents for the white or light amber, extracted. The opinion is expressed that there will be very little comb honey offered on this market this year.

HIDES.

Wet Salted—Native steers and cows, 50 lbs. up, 16@18c; 30 to 50 lbs. up, 16@18c; kips, 15 to 30 lbs, 21@22c; calf and veal, under 15 lbs. 31 @32c; bulls and stags, 13@14c.

Horse Hides—Wet salted, large prime, each, $5@$5.50; medium prime, $4@4.50; small, $2.50@$3.50; dry, large, prime, $2.50@3; dry, medium, $1.50@2.50; colts and ponies, 50c@$1.

LOS ANGELES.

Los Angeles, May 20th, 1919.

BUTTER.

This market continues to advance. Owing to light receipts, it will be noted that prices steadily increased since the quotations of a week ago. There is a good demand reported. Receipts for the week, 370,000 lbs.

We quote:

California extra creamery	59
do, prime first	57
do, first	56

EGGS.

Eggs still advancing. Receipts coming in well and show an increase over last week's quotations. The market also reports good sales. Receipts for the week, 2,543 cases.

We quote:

Fresh ranch, extra	51
do, case count	50
do, pullets	49

POULTRY.

All prices in this market remain stationary since reported last week. Hens selling good and in fair demand. All young stock reported slow sale. Turkeys and ducks moving slow. Receipts only fair.

Broilers, 1 to 1¼ lbs.	30c
Broilers, 1½ to 1¾ lbs	32c
Fryers, 2 to 3 lbs.	40c
Roosters (soft bone), 3 lbs. and up	35c
Stags and olds roosters, per lb.	14c
Turkey	35@40c
Hens	33@34c
Ducks	34@35c
Geese	28c

FRUITS.

All prices in this market continue firm. Deciduous fruits in good demand. Blackberries and cherries selling well, with fair receipts. Raspberries now quoted on this market and are finding a ready sale.

We quote from growers:

Apples—	
Black Twigs, Northwest pack	$3.50@3.75
Baldwins, Northwest pack	3.25
White Pearmains, 4-tier	3.50@3.75
Yellow Newtown Pippins, 4-tier	3.25@3.75
Winesap, loose, per lb	7½@8½c
Roman Beauties, Northwestern, per peck	3.50@3.75
Loquats, per lb	7@15c
Strawberries—	
30 basket crates, fancy	$3.50@4.00
Poor to choice	$2.75@3.25
Blackberries, case 30 boxes	$3.50@4.00
Raspberries, case 30 boxes	6.00

ALFALFA MARKET.

Sales of alfalfa by the Alfalfa Growers of California, Incorported, 525 Central Building, Los Angeles, for the week ending May 17, have been at the following prices to purchasers of carload lots, FOB Los Angeles.

No. 1 Dairy	$26.00 ton
Standard Dairy	$23.00 ton
Standard Alfalfa	$20.00 to $21.00 ton
Stock Alfalfa	$18.00@$19.00 ton

VEGETABLES.

Oregon and Idaho potatoes going up in price while new potatoes show a decline. Peas firm. Cabbage declines and onions show a sharp advance. String beans coming on in good quantities and the price shows a drop. All other quotations remain the same as reported last week. The demand for all staples is very good.

Imperial Valley Wax-yellow	$3.25@3.50
Cabbage, per 100 lbs.	$1.75@2.00
Kentucky Wonders	11@12
String, Wax	11@12
do, Green	9@10
Oregon Burbank, per cwt	$2.40@2.50
Idaho, Russets, per cwt	$1.90@2.00
New potatoes, lug box	$1.25@1.50
Sweet potatoes, per cwt	$3.75@4.00
Garlic, per lb.	40@45c
Onions—	
Australian Brown, per cwt.	$4.00@4.50
White Globe, per cwt.	8.00
Imperial Valley white silver wax, crate	$3.25@3.50
Imperial Valley Wax—yellow	$3.25@3.50
Cabbage, per 100 lbs.	$1.75@2.00
Celery, local, per crate	4.00@7.00
Celery, northern, per crate	8.00@9.00
Rhubarb, per 30-lb. box	$1.25
Summer squash—	

Imperial Valley, 4 basket crates..75@85c
Asparagus, per lb. .....9@14c
We quote from growers:
Peas per lb. .....8@10c
Potatoes—
Oregon Burbank, per cwt. ....$2.40@2.50
Idaho Russets, per cwt. .....$1.90@2.00
New potatoes, lug box .....$1.25@1.50

STRING BEANS

Kentucky Wonders .....11@12c
String, Wax .....11@12c
do. Green .....9@10c

BEANS.

This market is still reported to be very dull and all quotations remain the same as given last week.
Limas, per cwt. $7.00
Large white, per cwt..... 5.50
Pink, per cwt. 6.50
Small white 6.00
Blackeyes, per cwt..... 3.00
Tepary, per cwt..... 3.00

HAY.

The hay market shows a sharp decline this week's report. With the exception of choice dairy alfalfa ,there is little demand and very little moving.

We quote f. o. b. Los Angeles.

Barley hay, per ton .....$19.00@22.00
Oat hay, per ton .....$21.00@23.00
Alfalfa, northern, per ton ....$19.00@21.00
Alfalfa, local, per ton .....$20.00@22.00
Straw, per ton ..... 9@10.00

Special Livestock Market Report

San Francisco, May 21, 1919.

CATTLE—Cattle market declining from the extremely high prices so long maintained.

Packers claim they are losing heavily on every animal they kill, and are trying to get the market in line to avoid such loss, while cattle raisers, so long accustomed to the high prices, are loth to accept lower prices, but there are indications that in the next two weeks they will come nearer to the packers' views.

Steers—
No. 1, weighing 1000@1200 lbs., 11@11½c
do, weighing 1200@1400 lbs...11@11½c
do. thin ..... 7@ 9c
Cows and heifers—
No. 1 ..... 9½c
do, second quality ..... 8@ 8½c
do, common to thin ..... 5@ 6c
Bulls and stags—
Good .....6½@ 7c
Fair ..... 4½@ 5½c
Thin ..... 3@ 4c
Calves—
Lightweight .....12½c@13c
Medium .....11@12c
Heavy .....8½@11c

LAMBS—Lambs are still being marketed in large numbers, but receipts are not as heavy as during the last few weeks. To relieve the situation, packers have shipped large numbers of live lambs and also frozen dressed lambs to the Eastern markets. They claim that first shipments turned out fairl y well, but that prices are falling in the East, and that later shipments will probably be without profit and possibly with some loss.

Milk lambs .....13@13½c
Yearlings .....11@11½c
Sheep, wethers .....10½@11c
do, ewes .....8½@ 9c

HOGS—Hogs are still coming in freely, and are more desirable on account of fewer soft and oily hogs coming in.

Hogs—
Hard, grain fed, 100 to 150 .....18¾c
do. 150 to 250 .....19¼c
do. 250 to 300 .....18¾c
do. 300 to 400 .....18¼c

Los Angeles, May 20, 1919.

CATTLE.

Prime cows and heifers are quoted lower this week. The same is true with beef cattle prices. This market is weak and dull. No other change in prices noted.

Per cwt., f. o. b. Los Angeles:
Beef, steers, 1000@1100 lbs...$11.00@12.00
Prime cows and heifers .....9.00@10.00
Good cows and heifers ..... 8.00@ 9.00
Canners ..... 5.50@ 6.00

HOGS.

All prices remain the same as reported last week. The demand is fair and receipts up to normal.

Per cwt. f. o. b. Los Angeles:
Heavy avr'ging 275@350 lbs. $16.00@17.00
Heavy, avr'ging 225@275 lbs. 17.00@18.00
Light .....18.00@18.50
Rough docked 20 lbs. piggy sows 40 per cent,

SHEEP.

No change in prices to report in this market since last week. The demand is light and very slow sales.

F. o. b. Los Angeles:
Prime wethers .....$ 9.50@1050
Prime ewes ..... 8.50@ 9.50
Yearlings ..... 10.00@11.00
Lambs ..... 14.00@15.00

PORTLAND LIVE STOCK.

Portland, May. 20, 1919.

CATTLE—Steady; no receipts.

Steers, best, $13@13.50; good to choice, $11@11.50; medium to good, $10@11; fair to good, $9@10; common to fair, $8@9; good to choice cows and heifers, $10@11.50; medium to good, $6.50@7.50; fair to medium, $4.50@5.50; canners, $3@4; bulls, $6@8; calves, $9@12.50; stockers and feeders, $7@10.

HOGS—lower; receipts, 85 head.

Prime mixed, $19.50@20; medium mixed, $19@19.50; rough heavies ,$18@18.75; pigs, $17.75@18.20.

SHEEP—Steady; receipts, 79 head.

Prime lambs, $14@15; fair to medium, $12.50@13.25; yearlings, $11@12; wethers, $9@10; ewes, $7@11.

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REMANUFACTURED PIPE. All sizes standard pipe and wrought iron screw casing. All kinds of fittings. Guaranteed good as new. Write for prices. **Weiss-baum Pipe Works, 160 Eleventh street, San Francisco.**

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TRACTORS FOR SALE—Holt Caterpillar, 90 H. P. Samson Seive-Grip 10-25. Good condition. Call and see them. Prices very reasonable. E. A. Dunipace, Paicines, near Hollister, Cal.

FOR SALE—2½ H. P. Alpha Distillate Engine $60; 5x20 brass pump cylinder, $10; Stover Jack, $30. Near Concord Calif. Address P. W. Treat, 560 10th Ave., San Francisco.

FOR SALE—8 H. P. Corliss Gas Engine and three extra pulleys. In fine condition. Price, $150. J. H. M., 440 Montgomery St., San Francisco, Calif.

BEES FOR SALE—Golden Italians in patent hives. John G. Mee, St. Helena, Cal.

COUNTRY LANDS.

FOR SALE—57 acres 3½ miles from town of Healdsburg, Sonoma county. 32 acres young prune trees, 2 and 4 years old; 3 acres old bearing orchard; 15 acres hay land and 7 acres woods. House, barn and other outbuildings, team and tools. Price $225 per acre. $5000 cash, balance on terms to suit. Owner: J. R. Starkey, Route 4, Sebastopol, Cal.

FOR SALE—40 acres 3½ miles south of Orland, Glenn county. Price $3200. Terms $1200 cash, balance easy terms. For particulars address, Mrs. Audrey Simpson, Dixon, Cal.

$35,000—85 acres, 50 yards from school; county road on two sides. 10 room house (hot and cold water), 3 wells, windmill and tank, new gas engine and pump; barn, chicken and brooder houses; 2 horses, 1 cow, 350 chickens; 300 fruit boxes, 200 trays; complete set of implements to run place, including 4 wagons, $250 power spray pump, cider press, etc.; garage and work shop. Average income $5,000 per annum. Will guarantee $7,000 crop this year. 2 miles from Windsor station between Santa Rosa and Healdsburg, Sonoma County. 30 acres prunes of which 18 acres bearing, balance 3 to 5 years; 1 acre peaches; 10 acres apples; 2 acres pears; 14 acres resistant vines; plenty of berries, beans, corn, potatoes, etc. About 30 acres of this is deep rich bottom land with plenty of water to irrigate if necessary. Mortgage, $12,000 5%, can remain. Umbsen, Kerner & Eisert, 20 Montgomery St., San Francisco.

MOUNTAIN ORCHARD—40 acres ready for immediate possession. Full-bearing orchard, consisting of peaches, apples, pears, apricots, prunes, almonds, walnuts, chestnuts, olives, grapes, strawberries, and blackberries. Full equipment, including a team of mules, 34 hogs and pigs. Four-room house, barn and outbuildings. All hog-tight fenced and cross-fenced. All under irrigation. Don't delay a moment if interested. Price, $6,000. Paradise Ranchita, Paradise, Butte County, Cal.

FOR SALE—KNOLLCREST—26½ acres in Santa Clara Valley, mostly in apricots and prunes, part bearing, balance 4-year-old trees, one acre bearing citrus. No frost. Beautiful building site, commands best view of the valley. Best climate in the state. Price $400 per acre or will sell separately 15 acres prunes at $350 per acre. Apply Owner, 1738 63rd St., Oakland.

SALE OR EXCHANGE for stock ranch, 36 acres near Orland on highway. U. S. irrigation, half alfalfa, 7½ acres trees, balance suitable leveled. $400 per acre, terms. J. A. Roosberry, Owner, Box 167, Orland, Glenn Co., Cal.

880 ACRES—Mountain stock ranch, well watered and partially fenced, government land adjoining which can be homesteaded. C. P. Gould, Pacific Grove, Cal.

FROM OWNER SAVE COMMISSION—160 A. stock ranch, miles free range, $1,000, terms. 30 miles from Vallejo. Write T. H. Spencer, P. O. B. 106, Vallejo, Cal.

WANTED.

MARRIED MAN—sober, steady, understands trees. Can milk, feed hogs, care for feed. Wants permanent employment on ranch after July 1. Salary or shares. Give full particulars. Wiley Lewis, Turlock, Cal.

WANTED—Married man to work on ranch, to feeding, testing, calf raising, and milking machines. Must be sober, etc. Send work Ranch, Willits, Cal.

SEEDS AND PLANTS.

CABBAGE AND KALE PLANTS—Any quantity delivered anywhere, 100, 40c; 300 for $1.00. By express, collect, $2.00 per 1000. Tomato, Cauliflower and Pepper, 25c per dozen. I. F. Tillinghast, Santa Rosa, Cal.

FLORIDA SOUR AND CALIF. SWEET ORANGE seed-bed stock. The time to plant is propitious; order now. Southland Nurseries, 1941 E. Colo. St., Pasadena, Calif.

ONION PLANTS—1,000,000 California Red, 75c. per 1000. Now is the time to plant. Monroe, The Tree Man, Orland, California.

HONEY SORGHUM SEED—Recleaned select quality. Price 15c, f. o. b. Holtville. Chas. Bishop.

In spite of the fact that farmers have lots of last year's crop of beans on hand, it is reported that the bean acreage will be very large in the section west of Turlock this season.

"We sure enjoy the Rural Press. We find it a great help in solving problems of all kinds."—Mrs. J. M. Currell, Paso Robles.

Eight to ten hundred acres in Stanislaus county are being used to raise garden seeds this season.

The Whitney 9-18



At Sacramento Demonstration scored 100 per cent on every test.
Pulled two 14-inch Oliver M'Board Plows, 8 inches deep.
Pulled three 10-inch Oliver M'Board Plows, 8 inches deep.
Pulled Killefer No. 4, 13-tooth Cultivator.
On Dynamometer Test, registered 2300 lbs. at draw-bar on two 14-inch Oliver M'Board Plows, at 2nd speed.

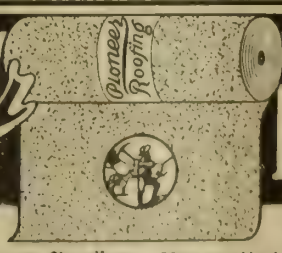
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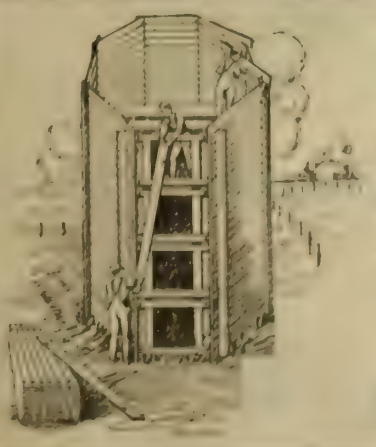
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Vol. XCVII—No. 22 Forty-ninth Year

THE PACIFIC RURAL PRESS

SAN FRANCISCO MAY 31, 1919 LOS ANGELES

The Trusty Pilot of the Milky Way

The Babcock test is the infallible guide to success in dairying. It points out the "stars" in the herd as accurately as the mariner's compass points out the star of the north. The dairyman without a testing outfit is indeed in as bad a fix as a mariner without a compass.

(Written for Pacific Rural Press by R. H. Whitten.)

"JIM, I'LL BET THESE ARE THE BETTER FOUR," said Hank Smith, as he stood in front of an exhibit of eight grade cows at the 1918 National Dairy Show. Jim Brown, his companion, sized up the cows carefully. They looked very much alike, and it was difficult to make any choice, but finally he picked out his four. Then they looked up the production records and found that of those Hank had chosen only one was in the better class, while Jim's choice included two.

"Guess I got you that time," said Jim. "Try your judgment on these three." The cows referred to were triplets, and looked as near alike as peas in a pod. They had been fed exactly alike and had received the same care. It didn't seem as though there could be any marked difference, but finally both picked the same cow. Then they sought the records and found that she was the poorest of the three, with a record of 256.3 pounds of butterfat. One sister had beaten her by 55 pounds; the other by 108 pounds.

Jim and Hank looked sheepishly at each other. They saw the fallacy of trusting to looks alone in determining a cow's producing ability. The exhibit had taught them that the use of the scale and Babcock test was the one and only way of telling accurately.

A similar lesson was learned by hundreds of dairymen at the National Dairy Show again last winter. Every visitor to the exhibit of 11 cows shown by a cow-testing association was asked to pick the best five. Also two noted Jersey judges placed the awards, and special interest was aroused because all of the cows were Jerseys. One cow in particular had every appearance of a heavy milker, and they placed her among the best five, but when the record cards were displayed, it was found that she had only produced 2,523 pounds of milk and 149 pounds of fat in a year. Two cows having records of 417 and 421 pounds of fat were placed among those to be discarded and classed as "boarders." Many experienced and successful dairymen passed on them, and almost without an exception the good cows were judged bad, and the bad cows good. More amusing still, the best of the good cows were rated as the worst of the bad cows.

The selection of cows for profitable milk and butter production cannot be done according to appearances. Type and conformation, although indicating to some extent the dairy tendencies of an individual, are by no means reliable in selecting good cows. Few farmers can pick out the best or poorest cows in their own herds, even when they milk them daily. Up in Washington the members of the Walla Walla Cow Testing Association tried to pick out their best cows before testing began, and at the end of a year the estimates were compared with the tester's yearly report. Not one member succeeded in picking out his best two cows. The cow picked by one member as his best producer came out 28th, and his second choice came out 15th.

"The Stone Which the Builders Rejected."

Otto Zielke had a grade Holstein which he pronounced "no good," and he decided to sell her for beef. But just then a cow-testing association was organized and he entered her. She produced 363 pounds of fat and made a profit of $94.20 above the cost of her feed. Nowadays, when anyone talks to Mr. Zielke about condemning a cow without testing her, he reads a verse on rash judgment from the seventh chapter of Matthew.

C. F. Binning had a very common cow that he considered the poorest in his herd, and he tried to sell her for $50. Failing in this he put her in a cow-testing association, and she produced 487.9 pounds of fat at a profit over feed of $150.25. Theodore Louck went him one better. He had the same experience with one of his cows, and she made a profit of $198.97 over feed. Mr. Louck also quotes scripture nowadays, his favorite verse being Psalms 118-22.

These illustrations are given because the average dairyman thinks that testing simply points out the poor cows. It points out the good ones also, and many cows considered poor or only average are found to be the best in the herd when real records supersede the guess system. Under the guess system sentiment is a strong factor in rating the cows. The easy milkers, and those giving a large flow at freshening time, are generally given the preference. One dairyman paid $190 for a grade Holstein because she gave over 8 gallons right after freshening. But she soon let down on her flow to almost nothing and her records showed that at the end of the year she lacked $2.76 of paying for her feed.

Another dairyman who was bottling milk from individual cows lost several customers because of dissatisfaction with the quality of the milk. Investigation disclosed the fact that the milk of his pet cow—a very heavy milker—tested only 1.48 per cent. She must have been sired by a pump. She ate as much as other cows testing 6 per cent, and of course did not pay for her keep, so she went the canner route for $65.

(Continued on Page 848.)



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EDITORIAL.

ANCHORS IN THE SKY.

Upon another page of this issue we print a letter from Assemblyman Harry Polser, of Red Bluff, dissenting from views which we recently expressed as to the desirability of requiring from state-aided farming colonists a small payment in money before land is given to them on long-term payments, and a loan for buildings, implements, farm stock and seeds, is made to them. Mr. Polser seems to believe that this pledge of serious intention on the part of the colonists for whom the state undertakes to do so much will defeat the beneficent purpose of the state, viz: to settle people on the land and give them a chance to pay out for the final ownership of it. He argues that the State ought to trust to the mind-reading discernment of its officers to select settlers who will pay out and place all such capable and steady-minded people on the land and, with no pledge of capability and sincereity on their part, furnish them with everything they need to live upon the land, and to make the crops which will keep them going and yield enough profit besides to pay for all the land and working capital which is entrusted to them. Mr. Polser hopes that this vision will come true. His doctrine is that hope is "an anchor of the soul both sure and steadfast and which entereth into that within the veil." In other words, instead of dropping his anchor over the bow of his craft to catch firm hold upon the sea bottom of experience in helping people to get land, Mr. Polser rigs up a mortar of faith (which is the substance of things hoped for) fills it with a charge of fervid, humanitarian impulses and shoots his anchor into the sky! Mr. Polser evidently honestly believes it will hook its fluke upon a star and not fall back through deck, cabin and keel and sink his craft. Harry Polser is the Harry Hawker of our land-settlement enterprise. We do not prophesy that he will never succeed in demonstrating the truth of his views, for that would mean that we hope too little. Rather than hope too little we prefer also to hope too much, though in our present state of conviction we cannot follow either Polser or Hawker in their trust to anchorage in the sky!

SKY-ANCHORAGE NOT PROVEN.

Mr. Polser surely has faith—which is "the evidence of things not seen." For there is not in the experience of mankind any demonstration that any public undertaking in staking wholly empty-handed people on land has come across. Completely empty-handed people have earned farms for themselves. Generous people have staked young farming people on land simply because of their faith in them and they have not always been disappointed. It is one of the glories of our American farming progress that these things have been done, but even that glorious thing does not constitute a proper basis for public ventures to entrust public money, which comes from responsible taxpayers, to those who put up nothing to pledge their enduring intention nor to recompense the public for loss if they change their minds, or fail for lack of determination or energy. And, of course, in making that claim we declare our belief that no scheme of mind-reading and character-judging, such as Mr. Polser contemplates under his provision of selecting or "hand-picking of settlers," would work up to his expectation of it. We know of no persons possessed of such discernment that they can afford to dispense with one of the best evidences of quality to carry on—to wit the modicum of cash in hand which itself demonstrates ability to earn and self-denial to save!

It should, of course, be borne in mind that this idea of public enterprise to establish landless people of good ability and serious intent upon land, which shall ultimately become their own, is not new. It has existed as a governmental undertaking for several decades in Europe and until Europe was upset by the war, was proceeding with acceleration year by year. We saw much of the results of it, and the way it was being administered during our participation in an American investigation of European rural credit and agricultural development abroad in 1913. In the several countries visited there was striking uniformity in the conditions required of those who were put upon the land. These conditions seemed to be prescribed on the basis of generalized thought and observation and in all of them the public interest safe-guarded itself by attaining the fullest evidence of energy, ability and steadfastness of purpose in the accepted candidates for settlement on land. Some of the chief requirements were farm birth and farm ancestry—the more generations of it the better—youth passed in farm work which won the commendation of the farming community in which it was done; marriage to a young woman of farm birth and ancestry, also with a local record for home and field work (a strictly European ideal of bridal qualification) and a joint possession of financial assurance that the pair had not only a sincere desire to live a farm life, but also could in the face of everything short of a calamity, stick to the land and improvements with which the government endowed them on terms which would make them full owners thereof in their declining years. We visited many such assisted settlers in various stages of progress toward ownership and, though their achievements and environments would not reach great altitude from an American point of view, they were sticking by the land and were working contentedly toward final ownership of it. In no public undertaking in land settlement known to us, even with the advantage of dealing with young people naturally and sociologically tied down to the land, is land entrusted to those who do not show a reasonably small working capital as evidence of seriousness and good intent on their part.

WILL STAR-HITCHES HOLD?

Since the late war began there has come into the old philosophy and practice of governmentally assisted land-settlement a new idea. It is a grand idea for it is nothing less than a public expression of gratitude to the men who risked their lives, and in many cases sacrificed physical comfort and power, that honorable and humane nations might continue to exist on the earth. To furnish homes for such men as an expression of public obligation is a grand idea indeed, but it is a serious question whether, on the whole, the men really desire such farm homes, long for the life which must be lived on them and know how to live it comfortably and successfully, or whether such location on farms, even when most generously provided and endowed, may not make them wish themselves back again on the battlefields of Europe? What General Sherman said about war has nothing on the struggle of a man on a farm on which he can find neither profit nor joy and in a life which brings his wife only discontent and loneliness. If a man does not prefer the chorus of the frogs to the jargon of the trolley gongs or if his wife cannot find more inspiration in bird songs than in the jangle and thump of a jazz band, it is a crime against nature to install them on a farm. It does not matter how careful the arrangements may be to teach colonists what they should do to make their animals and plants come through or to show colonists' wives how to create irresistible culinary temptations out of home-grown materials—unless there is the eagerness to learn and the enthusiasm to do, there can be joy and profit neither in corral nor kitchen. It is idle to claim that successful farm-colonists can be "hand-picked" by any clairvoyant process. It is deceptive to believe that men can be made successful farmers against their tastes and wills by even the best qualified advisers. It is self-deceptive to believe even the most humane and patriotic motive capable of sounding a real call to farming. All this transcendental reasoning about rewarding soldiers' services by wishing farms upon them, whether they desire them or not and whether they know what to do with them or not, is calculated to result in disappointment and chagrin. It is common experience that the best test of a man's desire and serious purpose is to require him to pay something, even a little, for everything. Our debt to these noble sons of the nation is great and our reward for their services should not be equivocal. Let us give them bonuses in money as a token of our appreciation because transfer of money is the most widely accepted cognizance of obligation. If they wish farms let them use the money to meet the first requirement of ultimate ownership. It is no more fair to the men than it is to the good repute of the farming industry to tempt them by free land and cash advances into a business in which they have made no investment whatever, and have therefore declared no serious desire and incurred no obligation on their part to stick it out. Farming is a good business and the farming life is a fine life for those who know and love it, but to enter it because much is offered for nothing is not a promising line of approach.

WHO MAY GIVE AWAY LAND.

Mr. Polser makes an interesting statement about the bill which he tried to get enacted into a law and says the associated efforts of bankers, land owners and promoters is only undertaking to do the same thing and therefore should be above our criticism. In that matter Mr. Polser is right. We have neither right nor desire to criticise them for they are strictly within their own rights and privileges in planning their enterprise as they desire—providing they do not undertake to commit the state to their private affair. Private enterprise may undertake many things which are not proper state policy because private enterprise may do what it wills with its own and because it can take risks which the legislature has no right to force the taxpayers to incur. If private capitalists desire to try out the plan of finding security in the heart of a man rather than in his hand or pocket, we certainly have no right to object. We are deeply interested in their experiment. If they have a stethoscope which they can clap upon a man's diaphragm and listen to the inmost desires and purposes of him and locate his determination to make good just as though he had his money at stake, it will be a very important demonstration, for there will then be a chance that money-lenders may use the same method in giving credit to real farmers as to farmers of their own manufacture—a loftier standard of rural security and credit will be set up and the traditional rural Shylock, who has no respect for anything he cannot fix a chattel mortgage upon, will find his occupation gone.

But while we freely concede the right of individuals and corporations to give a man a start on a farm duly equipped with buildings and tools "without a nickel of cost to him," it is not a proper function of government to use other people's money in doing that, and this is not only in the risk of it as a plunge into a new principle of financing industry, but because as between men to be rewarded for patriotic service, it is discriminating and unfair. It aims to endow those who really deserve farms, or think they do, and it leaves all those who prefer to start in other industries to shift for themselves. To be fair to all returning soldiers the state should build and equip carpenter shops, poolrooms and soft-drink emporia, law offices, picture palaces, pulpits, etc., so that all veterans could follow their individual desires and qualifications. It is unfair also to farming, because by exaggerating the chances and attractions in that line it makes all the misfits chargeable to agriculture and the effect will be to endanger the recognition of a farm basis of security in agricul-

tural credit and investment in farm bonds which has recently advanced so rapidly.

KEEPING DOWN ON EARTH.

Just as we write there comes from Washington a copy of a bill introduced by Representative Mondell, the intention of which is to actuate and provide for Secretary Lane's plan to prepare land, now waste in the several states, for subdivision into ready-for-cropping farms for returning soldiers and sailors and appropriating five hundred million dollars to be used in co-operation with states providing their own funds for the purpose. The proposition is essentially the same which was lost in the shuffle at the close of the last Congress in March. Our present purpose in alluding to this new bill lies in the fact that this provision is made:

—the price fixed for each farm, tract or lot shall represent as nearly as practicalble its relative and comparative selling value. Approved applicants shall at the time of entering into contract of purchase make a first payment of 5 per centum of the sale price. The balance shall be paid in amortizing payments over a period not to exceed forty years.

"See the hump?" It is a little thing, but it is just enough to guard colonization by tripping up those who rush to grab anything which costs them nothing and who are apt to value everything at what it cost them. Mr. Polser's plan is full of pathos, but for all earthly purposes it is, in a secular sense, a vision of mansions in the skies!

QUERIES AND REPLIES

By the Editor.

Inquirer Must Give Full Name and Address.

Summer Treatment of Artichokes.

To the Editor: Please advise us about the proper method of caring for the Green Globe artichoke plants to keep them alive for next year after through bearing this season.—Subscriber, Orland.

In light cutting of the garden plants, as buds are desired for home use, good growing conditions should be maintained by summer irrigation adequate to such continuous growth. In heavy cutting, as in commercial practice, where the whole shoot is removed with the top bud so that the roots will send up more shoots with top buds, cutting should stop in May and the plants be encouraged to grow and bloom at will for the reinforcement of the roots—just as asparagus plants are allowed to make a free summer growth. Then in July they should be allowed to dry to mature this growth and after reaching a stand still and showing signs of inactivity in the foliage, the whole top growth is cut off, covering the roots lightly with some of it in the interior where the heat is high. New growth is started by September rains or by fall irrigation in order to have buds for December and January. Plants allowed to grow at will, will start new growth later in the fall, and have buds ready in the late winter and spring.

Apple Mildew.

To the Editor: I send a few apple leaves and ask what it is that is on them. Some varieties show quite a little, others none at all.—R. D. F., Hemet.

It is apple mildew, which whitens and deforms the clusters of new leaves. It is usually repressed by cutting out the infected leaf clusters to a lower bud on the shoot and burning the diseased parts. This is systematically done in some large orchards as the occurrence is scattered. If abundant enough for spraying, the wettable sulphur spray described on page 726 of our issue of May 10, is commended. Proceed cautiously, however, for some apples do not like sulphur sprays.

Blister Mite of Walnut.

To the Editor: I am enclosing leaves of a walnut tree. You will notice a blight on them. What is this, and what is best to do for it?—P. M. T., Columbia.

It is the work of the blister-mite of the walnut producing irregular oval swellings on the upper sides of the leaves and corresponding, lighter colored cavities on the undersides. It is never abundant enough to warrant treatment as the injury is negligible. If not, the treatment would be spraying with lime sulphur just as the buds are swelling and before the leaves appear just as with the peach mite, which does more injury both to leaves and fruit, and therefore has to be fought.

Snap-dragon Rust.

To the Editor: I have a very fine bed of snapdragons, but a blight seems to have attacked them. What is it? I am cutting out the worst ones and dusting with sulphur.—T. F. F., Orland.

The trouble is snapdragon rust, a brother of the rust of grain and even more destructive when conditions favor. We gave some account of this pest in our issue of July 6, 1918. It seems to be getting its work in earlier than usual this year. Generally it comes on late enough so that one can get quite a run of flowers before it strikes the plants seriously. Dry sulphur is a specific for the powdery group of fungi like rose mildew and vine mildew, but does not arrest the rust group perceptibly. The proper spray would be Bordeaux mixture or lime sulphur (1 to 50), but these treatments make the plants look so hateful that they are no longer garden ornaments. Until some one is ready to put in half a lifetime selecting and improving rust-resistant varieties, we may have to divide our snap dragons with their natural enemies.

Abortive Almonds.

To the Editor: I a m sending you a sample of almonds, asking you to kindly tell me what it is that makes them turn so yellow and soft. I have many trees that show a considerable amount of such nuts. What can I do to minimize this loss?—S. G., Manteca.

The yellowing almonds are apparently losing their hold upon the tree from the same conditions which cause the "June drop" of other fruits. These causes have been assigned: lack of pollination; abnormal conditions due to sour-sapping and irregularity of aerial or atmospheric moisture. Dr. Coit and Mr. Hodgson have pointed out that the last-named is largely involved in dropping of oranges and the operation is promoted by the ability of the foliage to rob the fruit of the moisture which is necessary to maintain itself, when the dry air causes rapid loss of moisture from the leaf-surfaces by evaporation. Your specimens, though failing as you describe, do not lack pollination for the kernels are forming normally. They are not dislodged by sapsouring for there are no symptoms of that. They are probably being disconnected from their proper sap-movement by the action of the leaves during the practically rainless springtime. If this is a good guess, surface flooding might prevent it, if applied in advance of the trouble. As it is not a disease no medication by spraying could be indicated.

Podabrus and Polycaon.

To the Editor: I am enclosing a small bug, which works in at the leaf-bud on the young growth of prune trees, and this growth falls over as the wind blows. They work mostly on young trees.—Reader, Healdsburg.

To the Editor: Kindly tell me what is the best way to kill the enclosed specimen. The olive tree was set out last year, made a splendid growth, and has quite a number of clusters of blossoms on it now, and along comes this pest.—G. F. W., Sonoma.

Our first querist has the wrong pig by the ear. The insect which he sends is a podabrus beetle, which is wandering around the tree looking for plant lice to eat. He does not bore into the twigs. That work is, however, sometimes done by another beetle of about the same size, similar in color, but less active, called polycaon—for which there is no very good remedy if there are old logs or vine-stumps near by. They will multiply in such decaying wood faster than you can kill them. If you are near wild land which cannot be cleaned up you will have to lose some twigs on your fruit trees. You will, however, never find the polycaon running around on the tree as the podabrus does.

Our second querist has made the right catch. He sends the polycaon, and therefore the most of the foregoing answer is for him.

The Apple Leaf-Roller.

To the Editor: There is a new pest here and in Pajaro Valley now, on apple trees. It is a worm on the leaves in a web; the leaf curls around it in such a way it is hard to reach it with spray. Can you tell us how to destroy them?—A. M. S., San Juan Bautista.

It is the "leaf roller." It was recently stated in these columns, on the basis of trials at Watsonville, that all summer sprays are ineffective and apparently the winter use of an oil spray, which penetrates the egg-masses on the bark, must be relied upon.

Good Positions for Live Wires.

If you want to earn more money, we want you. The work is in our subscription department, attending to renewals and getting new subscriptions. You will like the work, and the opportunities are unlimited. Lack of experience no barrier. No investment necessary except that you must have an automobile.

Permanent work; straight salary, with advancement. Tell us a little about yourself and we will tell you about this opportunity that you cannot afford to overlook.

How Long a Run for Rice?

To the Editor: How many years can rice be raised on land, and is the land good for anything afterwards?—E. M. N., Marysville.

Rice is harder on land fertility than other grains, but that is not the limitation of its continued profitability on the same land. The land will be killed for rice before that condition arrives by fouling with water-grasses, "red-rice" and other weeds which like to have their feet in the water quite as well as rice does. Therefore, the number of successive crops of rice which will be profitable will depend on how long the land remains reasonably clean and that condition depends considerably upon how free your seed-rice is from weed seeds. There is no definite answer to your question. Rice does not kill land for other crops if rotation with winter-growing grains or other rainfall crops is arranged for—breaking up deeply and thoroughly aerating the soil as soon as the rice is harvested. This rotation also cleans the land considerably of water-growing weeds. Land should not be allowed to run down on rice crops alone.

Melon Wilt and Thrips.

To the Editor: I have watermelon plants wilting. The wilt affects the leaves first, stem stays green for a few days. The roots appear to be in good shape. What is a remedy? In another fields the leaves have a long-shaped, light-colored bug, that moves very quickly. It is more like a louse than a bug. It sometimes hops or jumps. Will these do the plants much injury? If so, what must I do for them?—A. H., Gridley.

The wilt of melons is understood to be caused by organisms which enter the plant from the soil and multiplying in the sap courses, obstruct the movement to the leaves and cause them to wilt without producing noticeable effect on the roots and stems, until they are killed by the defoliation. There is no demonstrated treatment for melon wilt. The escape from it is rotation—by which plants are brought into soil which is not infested with the germs. The louse-like insect you speak of is probably thrips, which can be killed by nicotine-soap spraying, but the cost is too great in material and labor to warrant recourse to spraying for field crops.

Sow-bugs on Strawberries.

To the Editor: I have been bothered with sow-bugs eating my strawberries as soon as they are ripe. What would you advise me to put on them?—A. R., Arcata.

We know of nothing which could be applied to repel or kill the sowbugs which would not also render the fruit worthless or dangerous to eaters. You can trap them by placing pieces of board or flat stones near the plants. The bugs will collect in such shelters. You can dust slices of potato, carrot, etc., with Paris green and lay them around if you can keep poultry and other animals from eating them. If you space your plants and keep the soil frequently hoed so that the surface will be dry most of the time, you will not have many sowbugs nor slugs, which also like ripe strawberries.

California Weather Record.

The following rainfall and temperature record is from the Pacific Rural Press by the United States Department of Agriculture Weather Bureau at San Francisco for the week ending May 27, 1919.

Stations	Rainfall: Past Week	Rainfall: Season To Date	Rainfall: Normal To Date	Temperature: Highest	Temperature: Lowest
Eureka	.56	30.74	44.66	68	50
Red Bluff	0	26.18	31.15	102	60
Sacramento	0	17.50	19.85	98	50
San Francisco	0	22.61	22.07	80	50
San Jose	0	18.85	16.63	92	44
Fresno	.02	6.85	9.40	98	54
San Luis Obispo	.07	17.01	20.50	76	48
Los Angeles	.16	8.56	15.24	76	54
San Diego	.28	8.71	9.04	68	56
Winnemucca	.10	6.42	7.64	92	50
Reno	.24	8.50	10.11	92	50
Tonopah	.42	5.36	9.59	84	46

Scientific Control of Root-knot

Written for Pacific Rural Press by John J. Fox.

Root-knot, crown gall, black-knot, or whatever the tumors may be called that affect all our stone fruit and nuts and even apples and pears, seems to be native to many of our soils, according to Professor Clayton O. Smith, who says there are numerous instances of crown gall in nurseries on land where trees have never been grown before. The writer will go further, and say that no nursery on the coast can boast of having never had a knotted tree, though no affected tree is knowingly permitted to go out for planting. The black-knot on the vine is said to be the work of the same species of bacterium that produces tumors on our peaches, almonds, etc., and is found all over the world, on every continent and in every climate, and on many kinds of trees, bushes, vines and plants. In vineyards the aerial form is not infrequently found growing on one-year wood, and this is attributed to injury from early frosts and the infection entering the cracked bark. On trees, as everyone knows, the galls that we have learned to dread are those that occur near the surface of the ground, or on the main roots near the surface.

Crown Gall in Infected Soil.

Some years ago the writer was asked to examine some prune trees in an orchard (3 years old) which had been interplanted with vines at the same time, but no trees had ever grown there before—nothing but grain had been raised. Yet 50 per cent or more of the trees showed large galls and their presence was indicated by the poor growth of the trees. The owner produced a letter from the nurseryman who had supplied the trees, offering to replace them if the writer's verdict was that in his opinion the infection proceeded from the nursery. Of course, it was a pretty safe "bet," because that was impossible. We were satisfied in this instance that infection was subsequent to the trees being planted though it was impossible to say why. We thought it pretty decent of the nurseryman (whom we did not know at that time) to replace half the trees gratuitously. But this shows that it is possible, even in virgin soil so-to-speak, to find root-knot infection. The orchard was on a hillside, facing northeast, with timber and brush above it and on two sides.

Scientific Work in a Commercial Orchard.

Early in May we went out to the Hunt Bros. orchards east of Linden (San Joaquin county) to learn the methods of control (and their results), which have been practised in a business-like way here for the past three or four years. We were fortunate in finding F. A. Dixon, the general manager here for the day, and from him gathered the history of the work in question as well as other matter in regard to varieties, of sufficient importance to growers to merit mention in a separate article. Because Hunt Bros., who are canners on a very extensive scale, know well what the market demands. And what the consumer demands consistently and in large quantities is generally a safe thing for the grower to produce. But to return to our root-knot.

Mr. Dixon started the work of control of this disease some years ago, because of the havoc it was wreaking in the bearing orchards. After consulting the University experts, he went to work along the lines recommended, even getting out and doing some of the work himself.

Extent of Investigations.

Good results were obtained, and later, by practice and on systematic lines, it was possible to carry on this work so that the expense was no bar to the effort expended. Mr. Dixon says that now they dig down round any tree where conditions of growth indicate trouble, looking for root-knot just in the same way as growers in the Santa Clara Valley explore for borers. It is only on the crown or the main root that work is applied—they don't bother about any knots that may be on roots away from the tree. Having found the gall, they proceed to cut it out with a chisel and gouge, cutting down in the center till a concave is formed, because it seems to go down to a core like a corn where a large gall has formed on the side of the crown or large root. After having been thoroughly cut out clean and the chips cleared away, the wound is disinfected with bordeaux and a smear of bordeaux paste applied. The wound may later be plastered over with asphaltum. The aerial form—that is, galls appearing on the trunk or on the branches above ground—are always easily destroyed, but the others need more attention later in case of reinfection.

Shallow-Rooted Trees Most Susceptible.

Those trees whose habit it is to be shallow-rooted have shown themselves to be more susceptible to root-knot. This may be because the roots are more easily subject to injury from plow, cultivator or what not than those rooting deeper. It is suggested that a good may galls appearing just below the surface are the result of injury by gophers, the gall bacteria entering through the wounds so made. We were shown instances where work had been successfully completed. The one small portion where infection had been most rife was, strangely enough, on the site of an old corral. This fact was perhaps a coincidence and was not suggested as contributing to the infected condition.

In the last four years, records had been kept of three only. These were carried out by a young Syrian or Turk—Amram Khazanoff—who had left the ranch the day before our arrival to return probably to the flesh-pots of Mesopotamia. And they are going to be pretty good flesh-pots too, by the way, if the irrigation projects inaugurated by the British Government are carried out—and they will be. For Mesopotamia is another California in productiveness, from all accounts. Anyway we were afforded an opportunity to look over his records. They were a mass of painstaking detail, and from his general summary, I took the following notes, which are worth keeping:



Course of Infection.

"While infection undoubtedly takes place during the dormant season, it remains latent till growth starts in the spring and the galls form during the actual growing season. The rate of the growth of galls as well as the appearance of new galls is proportionate to the growth the trees make. While work has not been carried out over a sufficiently long period to warrant definite conclusions concerning the rate of appearance of new galls in relation to the age of the trees—

The Following Impression Is Gained:

"There seems to be a steady rise in the rate of appearance of new galls from the first to about the sixth year; a slackening of the pace for a couple of years following, with a possible decline in later years, when the rate of growth is decreased or it comes to a standstill. It should therefore be possible, by removing the galls from the trees, during the first eight years or so, during which nearly all their growth is made, to ultimately reach a condition when there would be so few new galls coming as to be negligible. The trees should be gone over every year for good results."

"As for reinfections, while these do occur, the low rate of their appearance (something like 10 per cent) is not such as to warrant great concern."

Reinfection.

At this point we came across a remark that occasioned some surprise. Thus: "It is questionable, however, whether it pays to go to the expense involved in the control of crown gall, seeing that it is not a very injurious disease." Then, his remarks continue: "I doubt if better results could be obtained (with regard to reinfection) by any other method than that we have followed. A lower rate of reinfection might perhaps be obtained by using some of the penetrating disinfectants of the phenol group—particularly the Avernarius creosote extract, which is said to have been successfully used to kill gummosis in citrus by merely smearing it on the diseased area without having to scrape away the bark, etc. All such disinfectants have to be used with caution, as they will burn healthy bark."

Bacteria Enter Through Wounds.

"Crown gall bacteria cannot enter into perfectly sound tissue and infect it. There must be a wound or abrasion—no matter how small. It is hard to account for some galls on the basis of mechanical injury. Most of those we found were apparently traceable to bruises caused by overlapping roots galling one another so as to expose interior bark. Judicious pruning of the roots at planting time will help to reduce this risk. Diseased trees were usually located where water happened to be standing during the summer.

"The practice of leading water to the base of trees with a shovel is to be deprecated. There are no feeding roots there to render it necessary and there is danger of injury to the tender bark of the roots through which infection may enter. And the moisture aids in the reproduction of fungus and bacteria."

Mr. Dixon said that he did no worry about the crown gall after th sixth year, but up that period it woul be fought. In using the Bordeau paste a certain amount of resin soa is used to make the paste adhere an prevent its scaling off so quickly Hunt Bros. run these orchards (34 acres) in connection with their can neries, and they are administered wit the same businesslike precision tha is necessary to the success of an other great concern. Certainly th expense of treating the crown gall over a period of years would neve have been continued if it was felt tha the cost exceeded the benefit.

The peach trees here are as even lot as can generally be seen, and would be hard to pick out those tha have been treated for crown gal The trees are built on the vase sys tem, and the fruiting wood has fo years been cut on the "long system advocated by the university. The cor sequence is that the trees are easil pruned and at harvest time the fru is easily reached and gathered. N broken-down trees are in evidenc The crop looks like an average 1 ton one this year. A force of me had started thinning the Lovells th day we were here (May 2).

HOW TO KEEP COOL IN SUMME

(Written for Pacific Rural Press.)

Last month we drove out to th ranch of Dr. S. W. R. Langdon Atwater (Merced county), who h some 400 acres in fruit here besid 185 acres of farming land. The coo ing system round the porch struc the writer as being worth recordin though it is the adaptation of a sy tem which is old as the hills. A cu tain rod runs around the plates which is hung a solid curtain ov each panel, of coarse burlap-sackin The curtain rod is really a three-qua ter-inch water pipe with a small pe foration every seven inches so th water-jets can be kept going co stantly to keep the burlap sheets w The hotter and dryer the day, t better it works. On the hottest d Mrs. Langdon told us they could r duce the temperature inside th screened porch to 74 degrees Fa Each side of the porch the water fl is controlled by separate faucets that the curtains can be kept ju damp or thoroughly saturated.

Fertilizers and Fertilization--II.

Written for Pacific Rural Press by Dr. C. B. Lipman, Professor of Soil Chemistry and Bacteriology, University of California.

The Basis of Fertilizer Practice.

The practice of using fertilizers, as now in vogue on farm lands, is based necessarily in only a slight degree on a clear and precise understanding of the needs of soils and plants, and hence, on a truly scientific appraisal of the problem. This statement is made despite our full cognizance of its non-agreement with the teachings and beliefs of the overwhelming majority of agricultural teachers and investigators, and to the opinions of practically all laymen. Through the work of de Saussure, carried out more than a century ago, and the amplifications of it which were made by Liebig and others during the last century, science did show that plant growth was absolutely dependent on the presence in the air and soil of a few of the known chemical elements, but it has accomplished little beyond that as a basis for fertilizer practice. This is true despite the fact that agricultural investigations have shown that among the few elements essential to plant growth, nitrogen, phosphorus and potassium are most likely to be lacking in soils which are deficient in anything. For the latter conclusion is not scientific because it is not precise; it cannot be used as a general guide to fertilizer, and its use in any case is clearly empiricism run riot. If there is any of these three elements regarding which we do know something regarding specific effects on plant growth, it is nitrogen, but even such knowledge is only a crude indicator and of limited use in fertilizer practice. The importance of four of the other so-called ten essential elements to the problem of soil amendments or fertilizers has been but slightly appreciated and has received only scanty attention at the hands of our experimenters. This is a field which may be pregnant with great possibilities.

Old Studies of Narrow Application.

The first thought which will arise in the mind of the reader of the foregoing lines is that the writer of them is unaware of the long-time fertilizer experiments of the world, including particularly those of England, Germany and the United States. But such is not the case. These words are written advisedly and with a thorough knowledge and appreciation of such experiments as those of Rothamsted, Pennsylvania, Ohio and others. These experiments have served a good purpose and it does not detract from their value to say that they are of little significance to the practical problem which confronts every farmer who desires to know whether or not he should use fertilizers.

These fertilizer experiments have shown that fertilizers will considerably, and at times, profitably, increase the crop on a given piece of land. But each little plot of soil, no matter how small, is a problem in itself. This has been shown by the enormous variability which characterizes soils that seem to be most uniform and in as small areas as one pleases.

A New Scientific Basis Essential.

The amounts of fertilizer which are best to use constitutes an unknown factor, from the scientific standpoint, despite the fertilizer experiments. The best combinations of the elements have never been decided by them. The time or times of application is an unsettled problem. The use and values of other elements than the three usually employed is an unknown factor. The substitution of organic matter for much, or at least some, of the fertilizer used, has not been studied in the true scientific spirit. These, and many othes fundamental problems, including a more thorough knowledge of soil systems, and of plant physiology, must be studied and solved before we can lay claim to a scientific basis for fertilizer practice. Obviously, we can only mention these important matters here since an adequate discussion of them is necessarily precluded here. Suffice it to say that the fertilizer experiments now running and those of the past have been of little service toward the formulation of a truly scientific procedure as a basis for fertilizer practice. The experiments of Illinois are of no assistance to states west of it, and frequently have no application throughout that state. The experiments of Pennsylvania are by no means a guide to all Pennsylvania farmers. The Rothamsted results and results of many other experiments are true for the particular plots on which they are carried out, but not necessarily one hundred miles or even one hundred yards away.

The country must learn to regard soil and fertilizer problems from a different angle than that which it has employed heretofore, and must, as a starting point, recognize what has been so strikingly shown at the California Agricultural Experiment Station recently to be the enormous variability of soils.

The Way Which Is Now Open.

As things stand now, almost the only way to find out how to fertilize a given piece of land is to try different fertilizers and then only on sufficiently large tracts of land to allow for the probable error and the co-efficient of variability of both plants and soils.

The latter procedure is, however, almost wholly empirical and should be replaced by a scientific system, if possible. At the present time, the manufacture and compounding of fertilizers, as well as their uses, are entirely empirical and commercial procedures in which the small grain of scientific justification that they contain, is lost to view. To the end that our fertilizer practices may become scientific, we must strike out boldly and regardless of tradition, precedent and cost, carry on in all experiment stations much more research of a fundamental nature in plant physiology and in soil chemistry. We need to understand the laws which govern in simple and in complex solutions the absorption of nutrients by plant roots; we need to apply to our soil solutions the physical chemical principles of equilibrium, moss action, and the phase rule; we need to learn more about the activities of bacteria in soils from fundamental standpoints; we need to determine by exact experiments how we can make the best and most economical use of organic matter in soils, how we can employ cheap instead of expensive materials in making soil constituents available; how larger quantities of nitrogen may be fixed economically by soil bacteria; and we need to know by precise methods about a host of other things concerning plants and soils, without which we will continue to flounder in the shallow waters of empiricism forever.

These tasks call for better trained men than we have had, for more leisure for research untrammelled by other activities, for inspiring scientific leaders with vision and balance, for time enough to study things thoroughly. We are optimistic enough to believe that these and other desiderata to good scientific work in the interests of fertilizer practice are coming and their time is at hand.

Experimental planting of date palms on a commercial basis is being made in the foothills near Porterville.

The 14--Counties' Plan of Land Settlement

Written for Pacific Rural Press by Hon. Harry Polsley, Assemblyman, Fifth District.

In your editorial of your issue of May 3 is criticism of the land "settlement plans," suggested by the Fourteen Counties' Association.

This plan is the carrying out of the best provisions of the English, Australian, and Canadian laws. These were embodied in my Assembly Bill 596. The United States are far behind in their provisions for the helping of the returning soldiers to obtain homes.

The Fourteen Counties' plan provides for the selection of the settlers—"hand picking," as some one has called the system. It also permits for his direction and instruction by the local boards provided. He receives no title until he has fulfilled the terms of his contract, but puts his time, ability, experience, and labor, against the amount put up by the owner of the land. A simple business proposition, as he works the land and turns in the proceeds of the property, he acquires a larger and larger interest in the land until the home finally becomes his own. If he has some money to put into the investment he can do so, thus shortening the time when he will pay out. In my bill a supervising agent was provided, with a small guarantee fund. This fund was to be used to induce the owner to give better terms and to also help out the settler, and give him confidence. It would also act as an insurance revolving fund, to care for failures, or lapses, or any of the incidences, or accidents, that may come to any business enterprise. The bill did not reach the Senate until the last hour of the session and did not have time for proper consideration, and failed of passage. But parties connected with the Fourteen Counties' Association have been considering the using of some of the provisions of the bill in the handling of their lands.

Real estate dealers are not falling over themselves, thinking that the "Durham" plan is some new thing, as you infer in the editorial. Any one can buy land almost anywhere in the state, on about the same payment as is required by the State Land Settlement law. There is nothing new in the Durham plan except that to the favored few a little longer time is given, and the state is able to let these have lower rates of interest than a private person could afford to do.

But a private corporation would have to pay thousands of dollars for the advertising that is given free to the Durham Scheme. The Durham plan is all right so far as it goes, as it helps the man who has something, to get his money's worth. But I fail to see how it is going to prevent Bolshevism. What good to say to the returning soldier, that you will provide for him if he will put up twelve or fifteen hundred dollars. And also say, as has been said recently, that if a man has not saved up that much by the time he is thirty, he will never have anything. Such is the cold-blooded doctrine of the State Land Settlement Plan. It will be said that if the man has money put up he will take more interest in the land; or the converse, that if he has no money at stake, that he will not take interest in the place. Both of these statements are absolute falsehoods, and can be proven in hundreds of instances. First, that the payment down does not prevent the settler from abandoning his investment as a failure, is shown in thousands of cases in California. Again, on the other side, the incentive of getting a home to the person who has never had the chance offered will be so much the stronger, because of the fact that he has not the money to go everywhere and buy. I believe that a man who has so little confidence in mankind as to make some of the statements mentioned would rob if he had the chance to get away with it.

What is the payment down of fifteen hundred dollars required for? Is it not so that if the settler should have an accident or for any reason not be able to carry out his plans, for the State to rob him of this sum, and also his time, and work, and improvements? There is no other reason for the requirement of the advance payment, a sort of bond to be forfeited in case anything should happen to the settler's plans. The state would be ahead just that much, would have taken so much from the man without giving any return. Land owners will lease and turn over the use of their property to persons for terms of years. Why is it not just as much of a business proposition to let the settler have chance of paying for the land from the proceeds? I have no sympathy with the idea that because a man is poor, therefore he is good for nothing and will always be a failure. There are many men, for reasons beyond their control, who have not had a chance to save large sums of money, and yet given an opportunity will make good.

There is a movement among large land holders to dispose of their holdings. Laws are being talked of and made to discourage land monopoly, and large owners are beginning to see that if they do not take action voluntarily there may come a time when they may be compelled to do so.

And since the war, there seems to be a more altruistic spirit among the people. More of the tendency to give the other fellow a chance, and especially those of our own people rather than those of another race.

Red Bluff.

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Cal. Nurserymen in Important Session

(Written for the Pacific Rural Press by John J. Fox.)

The eighth annual meeting of the California Association of Nurserymen held at Riverside May 26 and 27, was one of the most important and significant to the Horticultural Industry in its annals. Not only because of the extent and importance of the matters discussed but because it reached out for closer co-operation with the State and County officers in the matters of quarantine and inspection and with the growers in matters dealing with types and varieties of fruits and suggestions for their improvement. As six great conventions were held here during the week ending May 31, opportunities were afforded the nurserymen of taking part in the deliberations of the fruit growers, while the latter were urged to reciprocate in the councils of the nurserymen.

After a generous address of welcome to the assembled nurserymen from the Hon. Horace Porter, Mayor of Riverside, the meeting was opened by Max Crowe of Gilroy, President of the Association. On the points brought out in his address, (which comprised a report of conditions, present status of the industry and future possibilities) the earlier discussions hinged. The following points were taken from his address:

During the nineteen months since we last met matters of utmost importance to the nursery trade have occurred. Chief among these is the Federal Plant Quarantine, the now famous "Quarantine No. 37." Undoubtedly each of you has a very decided opinion as to its merits and defects. That it will necessitate great changes in the business of plant production in the United States goes without saying, particularly along the lines of florist stock and ornamentals. While this quarantine will undoubtedly work some hardships, yet in the end it will result in great benefit not only to American horticultural interests in general, but to the legitimate American nurseryman. Within the confines of our broad country, there is to be found the proper soil and environment for the perfect production of everything in the plant line that we are now using or are likely to use.

The New Quarantine Law.

There are a number of features connected with the production of many of the plants and bulbs, which we have been importing from foreign countries, which at this time are puzzling us, and notably among them the matter of skilled labor.

This quarantine is an entering wedge for a policy which will have a much greater bearing on our business within the near future. There seems to be a tendency to draw quarantine lines somewhat indiscriminately and with little real regard for results as compared with the cost. A movement has been started to prohibit the bringing of all nursery stock into the Pacific Coast States from all states east of the Rocky Mountains. Even within our own state we have a number of quarantines affecting limited districts so that it is even now scarcely possible for any one nursery to ship the full line of its products into all of our counties.

State Fumigating Experimental Plant.

It is greatly to be regretted that Senate Bill No. 490 was killed in committee. This bill provided for an appropriation of $20,000 to be used by the State Horticultural Commission in having built and equipped a vacuum fumigating plant and making the necessary experiments with vacuum fumigation of various kinds of nursery stock. This method of fumigating has been so very effective in destroying not only all insect life, but also the eggs in seeds, baled cotton and products of like nature that it is considered by many authorities as likely to be of inestimable value in destroying all insect life infesting nursery stock, not excepting the well-protected root-borer. The appropriation was not allowed by the legislative finance committee, so nothing can be done along that line for another two years.

The past season has been a fairly successful one for growers of both deciduous fruit trees and ornamentals. Planters seem to realize the fact that if the nurseryman is to live he must now have more for his trees that he had a few years ago. A conservative estimate indicates that the cost of growing the coming season's trees is at least 25 per cent greater than the cost of the stock sold last season.

I feel it would be a great mistake to neglect and lower the quality of our trees. Rather should we advance the price to where a reasonable profit can be made. With all fruits selling at the present unheard of prices, planting will undoubtedly be greatly stimulated.

Quality, Not Price, Should Decide.

Of course we will always have with us the average planter who on purchasing nursery stock considers price the greatest of all consideration. In buying nursery stock, if the tree is fairly well rooted and of good size, the fellow who cuts the price usually gets the order. The inherent worth of the tree is not considered. Still at horticultural meetings and elsewhere when such matters are discussed planters emphatically demand for a nursery tree the very best of stocks, the most careful selection of buds and grafts, the best of cultivation, careful inspection and grading. And yet in the face of present extremely high costs, some balk at paying the careful, reliable and responsible nurseryman a fair price for a product which meets these requirements, providing a few cents per tree can be saved by giving the order to some grower who considers little beyond producing a fairly good looking tree.

Co-operation Among Nurserymen.

Within the last few years considerable has been said about co-operation among nurserymen. With practically every industry with which we do business co-operating in some kind of a business association it does seem as though the nurserymen, if they expect reasonable recompense for their time and fair interest on their investments, will have to evolve some plan to work together and eliminate cut-throat methods. We are still handicapped by burdensome, inefficient legal rules and regulations, although there has been great improvement along that line within the last few years; but I very much doubt if all the local inspections of nursery stock have been of much real benefit to the horticultural interests of the state and I am convinced that they never will be until the whole matter is placed under one head and inspections made at the nursery before the trees are packed for delivery, by trained men employed by the state. I believe this association should go on record as favoring state control of all nursery inspection. I know our State Horticultural Commissioner believes it practical and far more efficient than the present system.

The President's report was adopted by the meeting and the following is taken from George C. Roeding's address, on which subsequent discussion was based:

Geo. C. Roeding's Suggestions.

"California has made more rapid advances in its horticultural development than any other state in the Union. It is possible to grow within its confines a greater variety of fruits and ornamental trees and shrubs than in all of the other states combined. Further advances have been made in the protection of our great horticultural interests by thorough methods of spraying and fumigating combined with the careful attention that has been given to fostering and the breeding of parasitic and predacious beneficial insects than in any other section of the United States.

"It is true that the nurserymen have played a very important roll in the up-building of horticulture in California and it must be conceded that they have had more to contend with and have been compelled to bear greater burdens in the prosecution of their business than has any other branch of the industry. There seems to be no lessening to their difficulties. The noose is being drawn tighter all of the time.

"This is not a tirade against the Horticultural Commissioners or any other men whose duty it is to prevent as far as it is in their power th



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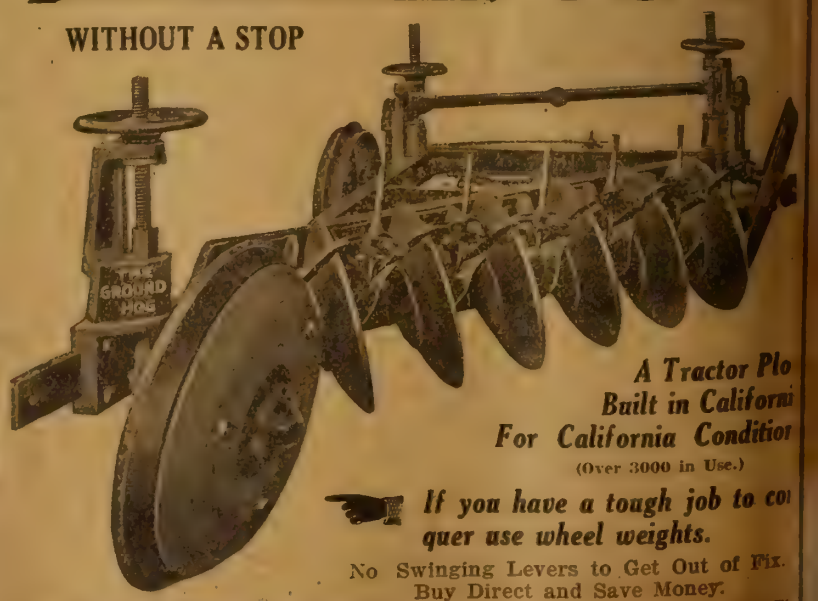
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semination of insect pests, but her a plea to exercise more discre- in such cases where a pest is nd on a nurseryman's trees which be as common in the particular ality to which they have been pped as a housefly.

A Nurseryman's Qualifications.

"Unlike any other business, the sonal equation is an important tor in raising nursery stock. There few lines of business where a n must get so close to nature, and ere it is demanded of him that he nbine within his repertoire that of ng a grower, historian, and sales nager. He must find suitable und to grow his trees. He must rcise great care in the selection of d. If he imports any seedlings, s up to him to free them of in- t pests by fumigating and dipping. must scour the country during summer months to secure buds the many varieties of trees he ws. He must keep a careful rec- both in a book and by staking his nursery rows. When he gets dy to deliver his stock to his tomers, his ability as a historian st come into play because he st give accurate information as to ere the trees he ships were grown. d then he must sell the trees. If endeavors to recommend a variety fruit tree which does not happen be in demand that particular sea- , he is liable to be accused of at- npting to persuade customers to nt something which would prove be a detriment rather than a bene-

rserymen Are in a Class by Themselves.

"There is no business, and I bar ne, in which greater risks are in- red. Just to illustrate, during past season hundreds of thou- ds of apricots and almonds were troyed because of the lack of de- nd. I venture to say that next son, the demand will exceed the pply. Nurserymen are in a class themselves and they are deserving en all of the risks they incur are en into account to more consid- tion than is usually accorded to them. This does not necessarily mean that their stock should not be inspected both at the point of origin and destination. I do want, however, to make a plea for greater leniency on the part of the commissioners to clean up infested stock, if it is practical to do so, providing the nurseryman is willing to bear the cost of doing the work.

"It is a nurseryman's duty to do all in his power to send out clean stock and in order to bring this about there should be closer co-operation between him and the Horticultural Commissioners. There is not going to be any diminution in pests, but an increase, which will keep pace with our horticultural development. With this fact facing us, why not in every possible manner co-operate with our quarantine guardians and clean up nursery stock during the height of the growing season?

Co-operation with County Officers.

There is not a nursery in this State growing any great variety of stock which has not some pests or disease to contend with. Nurserymen must understand once for all that they are not going to accomplish anything by abusing the men who have been selected to enforce our quarantine laws. On the other hand, Horticultural Commissioners should exercise more forbearance than they are in the habit of doing and they should not condemn any nursery stock if it is practical to clean it up.

"The nurserymen of California are vitally interested in the National Quarantine Law which goes into effect shortly. The men connected with the Federal Horticultural Board should be praised for their foresight rather than condemned for putting into effect a law which is going to be of such lasting benefit to every branch of horticulture in the United States.

"According to my idea, this measure should have been put into effect years ago. I am not going to attempt to give figures on the millions of dollars which would have been saved to this country had we had such a law 30 years ago, for the word 'millions' would merely be beggared by any estimate I might make in referring to the innumerable insect pests and diseases, introduced from foreign shores, which have been so detrimental to the great horticultural and agricultural resources of this country.

"It is true that some sections of the United States may derive benefits which may not be shared by others. Even if this is the case the narrow view of the matter should be set aside and the broad issue should and must have our first consideration.

"There should be no such a word in our language as 'Can't.' I contend that we have the climate, the soil, and the brains to grow any variety of plant and fruit tree that is grown in any other part of the world regardless of what any one may say to the contrary. It is our bounden duty to spring to the support of the Federal Horticultural Board and exercise every means in our power to support and uphold them in enforcing this law which has such an important bearing on the advancement of our business and of horticulture in general."

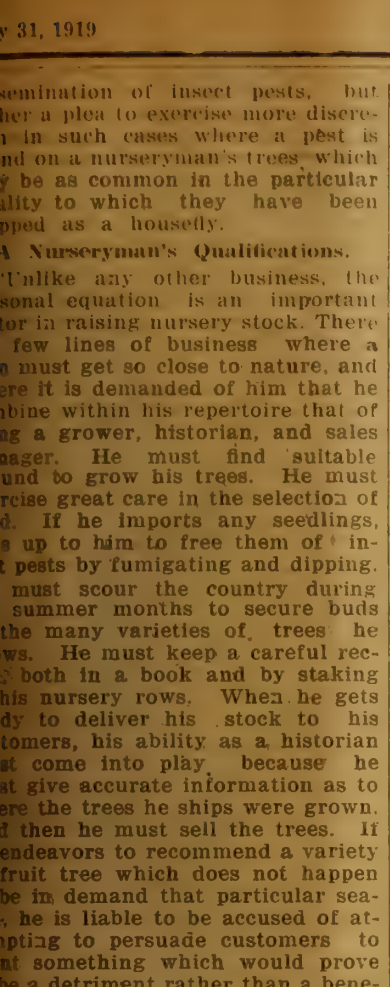
The Federal Quarantine order No. 37, was approved by the meeting on a vote. Leonard Coates suggested the formation of a committee to endorse the action of the growers in favor of deciduous fruit Experiment Stations—part of which experiments should be the trying out of deciduous fruit stocks and varieties and this was acted upon and approved.

Bud Selection.

One of the most interesting discussions was on bud selection led by Professor Shamel and extended by many men present. Though this matter will come under a separate article, we should say here that it was decided that bud variations should be used to improve existing varieties rather than to evolve new types. Growers and nurserymen are all very much alive to the vast importance of bud selection.

A record is kept of whence the buds are taken. A get-together meeting of the nurserymen and Horticultural Commissioners had a full attendance and the working of Federal Quarantine Law was expounded to the assembly by C. L. Marlatt, Chairman of the Federal Horticultural Board, who had come from Washington to address the conventions.

The Nurserymen's Convention was still in session when this was dispatched. The members are very much alive to their necessity for making and maintaining a strong organization similar to those of all other great industries.



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"A Ladder with the Wabble left out

Bound and supported at every step by a patented steel cuff bracket. *Cuts your picking costs.* Saves picker's time by enabling him to reach out farther and feel a greater sense of security, means a better day's work, *reduces picking costs!*

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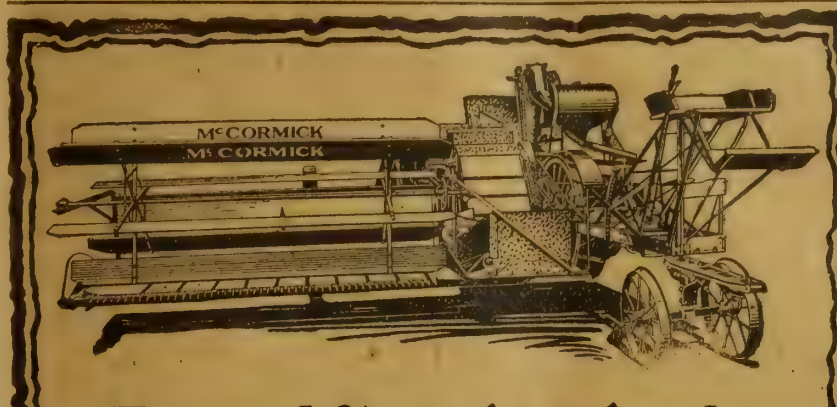
Most all big Sunkist orange growers use SECURITY, used in many orchards of Sacramento and San Joaquin, recognized standard ladder in big apple districts of the Northwest. SECURITY is the ladder YOU need NOW!

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Here and There in the Fruit Business

[Written for Pacific Rural Press.]

Prunes Light on Gravensteins.

A large grower in the Sebastopol district told us that he tops his Gravenstein apple trees only once in four or five years—just to keep them in shape. Otherwise he says they go making wood growth (if pruned every year) and yield very little fruit.

Pear Growers Met by Canners.

Pear growers who are members of the association are to get the same terms as last year on long-term contracts it has been decided. This is a $10 a ton advance to not exceed $47.50 a ton. Thus, if these contracts call for $35 the price is raised to $45. If the contract is written for $40 the advance will only be to $47.50.

Money in Olives.

P. Boyer of Oakdale (Stanislaus County) says there is good money in olives. From three acres of full bearing trees he sold $1200 worth of olives for pickling. He believes in deep plowing and thorough cultivation, and uses as much fertilizer as he can get near at hand. Manure beats them all, he says.

Trays for Raisins.

Don't let us forget that thousands of tons of raisins were lost last year by using paper. It is a good time after the early cultivation, sulphuring, irrigation, suckering and tying have been done to buy that tray material and make it up in good time for the crop. All practical fruit men have decided that it is better to have too many trays than to be shy at crop time.

Large Crops of Plums.

At the Hunt Bros. orchards at Linden we saw the largest crops of plums we have seen—Jeffersons and Reine Claudes. The latter is a new variety of gage and is a "comer," both from the growers' and canners' point of view. It is said to be a heavy producer, meat of fine quality, fruit of good shape and is remarkable for its evenness in size even under a heavy yield.

Highway Bonds Carry.

All the counties voting highway bonds seem to be carrying them with a whoop. Fresno County bonds carried by a vote of seven to one. At Coalinga the voting was 3,422 for and 11 against the bonds, according to Ben Blow of the Highway Commission. He did not say what was the matter with the 11 but he was sorry for them. Anybody could see that. Now that the Federal Government is matching pennies with us is a good time to get in—while the getting is good.

Trapping Codling Moth Larvae.

Bands of sacking or rags set round the trunks of apple trees with thumb tacks about the first of June will trap a lot of codling moth worms if there be many about. These should be steamed or the worms destroyed every ten days till the apples are picked. The burlap bands should be of three thicknesses and about five inches wide. This is according to a recommendation made by Geo. P. Weldon, Chief Deputy of the State Commission of Horticulture.

Vertical, Pointed Orchard Props.

"Propping orchard trees is a cheerful business," remarked E. A. Dunipace of the Paicines Orchards in San Benito County. He was referring to his system of putting a sharp lower end on the props and setting them vertical. An ordinary notch is used in the upper end. Many a fruit tree loses a branch or two because its props are set slanting and without being pointed. Swaying of the branch causes the prop to "walk" out from under. The Paicines orchards require propping this season.

Cost of Disking.

We find that custom men are charging $1.50 an acre for double disking an orchard in heavy ground and should do a fine job for the money. At present prices of labor this seems to be satisfactory. The power machines make short work of the cultivation and thereby save much moisture. In small orchards one finds the owner with his team following the work of the power disk with a harrow or clod smasher and making very pretty work. The custom machine men will surely increase and get contract work by the year.

Kings County to Have Its Own Label.

Kings County raisins, packed in Kings County by the Associated Raisin Company will bear labels on each package marked "Packed in Kings County." This follows a request made by the Hanford Board of Trade. We have heard the desire expressed by prune men to have their own counties accorded similar treatment and the request is a fair one. We all think our fruit is just a little better than the other fellow's—it is only natural. And the name of our county on the package puts it "on the map" to good advantage.

Future of Figs and High Prices.

J. C. Forkner, President of the Fig Growers' Association, perceives a menace to the fig industry in the marketing of figs at unwarrantable prices as tending to reduce consumption instead of building up a popular demand and appetite for them. When the industry is thoroughly organized and stable; when standardization of grades have been definitely established and suitable factories built up for the use of small stuff in by-products, then figs will automatically find their value relative with other dried fruits and we need fear no competition.

Berry Prices at Sebastopol.

The following (cannery) prices are being paid by H. A. Baker Co. at Sebastopol for berries for freezing: $120 a ton for Logans; $90 for Blacks; $200 for strawberries and $220 for raspberries. All berries in this section look fine at this date (May 14) with a heavy set of bloom and the soil in good shape. If no hot weather damage occurs at harvest time the crop will certainly be heavier than last year at Sebastopol—even half a ton more in bush berries is suggested. W. A. Batten on the Bodega Road has about an acre and a half of Logans which should go over four tons to the acre. Sebastopol berry growers have a bright outlook for the season.

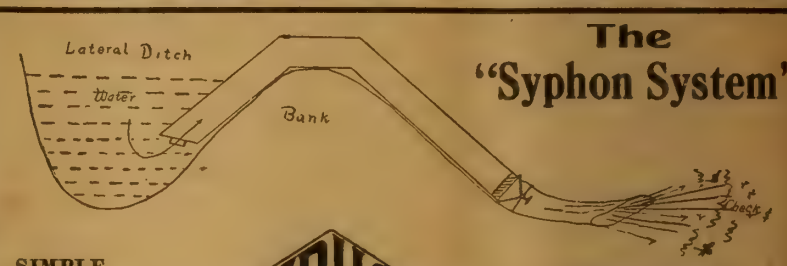
State Pear Crop Most Promising.

This is a pear year and the promise of a crop is good all over the State. In Nevada the crop is clean but not very heavy. Almost everywhere the fruit is free from scab owing to chiefly to the care taken in spraying. We have seen some very heavy settings where the drop has begun and where the June drop promises to be considerable. But from present appearances plenty will be left on, for the fruit is well distributed. When prices are so good as they are this year the drop appears larger than it really is very often. The ground beneath the trees will have to be put into very good shape at harvest time—perhaps a little straw mulch laid to catch those that drop—for every windfall will have value if properly handled this year.

WALNUTS PAY, BUT VARIETIES DIFFER.

While certain varieties of walnuts have proved most satisfactory in various districts, no one variety can be claimed best for the whole State. It is highly desirable that in each community, some one could try out numerous varieties before many of any new kind are extensively planted. This has been done in the Tres Pinos district, revealing highest favor for a variety but little exploited in California.





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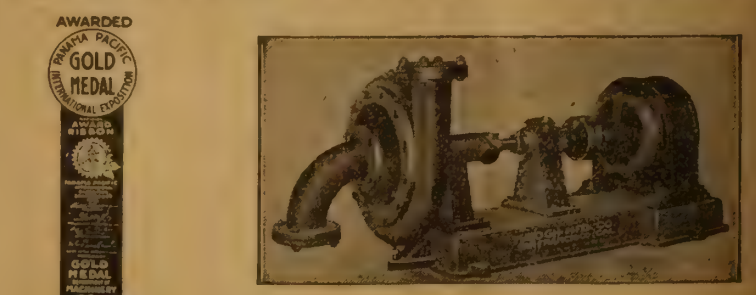
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WETTABLE SULPHUR VERSUS DRY SULPHUR.

To the Editor: In your issue of May 10, in reply to a correspondent, you give a formula for making sulphur paste. Your correspondent complains of the difficulties he encounters in using dry sulphur "on dewless mornings when we want to use it," because of its being always windy on such mornings, and the fine sulphur gets in the operator's eyes.

Several years' experience and study have taught me the following points: (1) The less moisture on the trees when the sulphur is applied, the better the sulphur fumes. An excessive amount of moisture causes the sulphur to cake and retards fuming almost entirely, excepting in extremely warm weather. (2) The fine particles of sulphur adhere to every part of the foliage when the trees are dry, and the extremely fine sulphur is the part that gets results. (3) One application will not eradicate spider, no matter what is used. The tree is infested with eggs as well as spider; and, if every spider were killed, the eggs would continue to hatch over a period of from 10 to 14 days, which means that it is necessary to keep the trees under the influence of an active killing agent for a period of 20 days in order that the eggs may all hatch and the spider be destroyed. I have found that sulphur loses its active killing properties after about 6 days' exposure to the atmosphere, and that best results are obtained by giving the trees 4 treatments with fine dry sulphur, allowing a period of 5 days between treatments. The sulphur must be applied very thinly, but thoroughly, covering every part of the tree surface. It will require about 8 lbs. of sulphur per acre on average trees—some more, some less—and one man with a good machine will do from 10 to 20 acres per day. One of the worst mistakes of the past has been the application of too much sulphur. (4) It is not necessary to go all around the tree if you have a good machine. The sulphur cloud will completely envelope the tree and cover every part of the surface. Dry sulphur is effective if properly applied. The secret lies in light, but thorough dusting, with very fine sulphur, applied at intervals of 5 and 6 days—John S. Davis, Los Angeles.

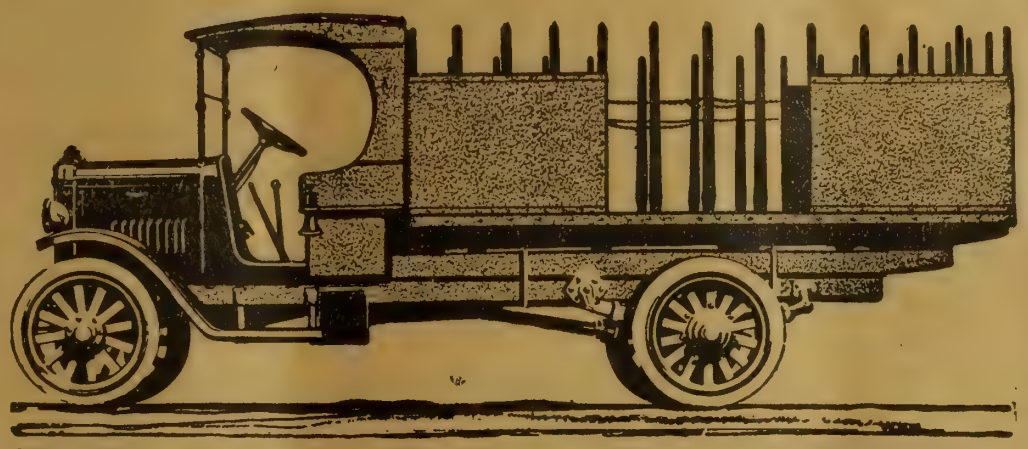
THE CALIFORNIA PEACH GROWERS IN THE MOVIES.

This association has completed a reel of moving pictures showing every phase of the peach industry, which will be exhibited as an educational and advertising medium all over the country. This film, which has only recently been completed, is the result of nearly two years of work and is the result of co-operative effort on the part of the association, the State and County Horticultural Commissioners, experts from the University of California and a number of practical orchardists throughout the State. By setting forth on the screen the most successful orchards, farmers in other sections are able to see from their theater seats the most approved methods of budding, pruning, supporting, thinning and methods of harvesting peaches under varying conditions. To see is to be convinced. Also they will see on the screen the various pests and diseases which the peach grower has to combat and the methods of dealing with them.

The whole system of curing, grading and packing of this fruit in the most sanitary manner possible will be of the greatest interest to the consuming public. It is by co-operative methods that the great dried peach industry has been enabled to increase its markets by such advertising as this and other equally serviceable attractions. For the peach acreage is increasing by leaps and bounds, and new markets are being continually sought and established by the association. Over 1,000 peach growers are members.

During April Harry H. Ladd, Horticultural Commissioner of San Joaquin County, inspected 478 cars of potatoes of which 25 were condemned, being infected with eel-worm—a grave menace to this great industry.

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TRUCK Gardeners find the Nash rear drive trucks economical and reliable hauling units for bringing their fruits and vegetables to market. Quick transportation is necessary in handling this perishable produce and Nash equipment supplies it.

With pneumatic tires furnished at additional cost, either of these units can make up to twenty miles an hour and their smooth running motors bring the goods to their destination as fresh and sound as when they were loaded.

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HORTICULTURAL JOTTINGS.

Peach growers in Sutter County are busy thinning the heaviest crop in history.

The California Fruit Exchange states that Newcastle, Placer County shipped the first box of peaches this season.

To the first of the month, Tehama County Horticultural Commissioner G. H. Flournoy estimated all kinds of fruit in perfect condition for a full crop.

A large vineyard in Dinuba, planted to Muscats, Malagas and Shompsons was purchased from J. A. Larson by K. K. Isaak for $33,000 cash, or at the rate of $1,100 per acre.

Mrs. Lizzie Onstott of Sutter County reports an excellent crop of apples and Thompsons' seedless grapes. Mrs. Onstott has been a subscriber to the Press for over thirty years.

As high as $110 per ton f.o.b. cannery, was recently refused by a peach grower at San Jose for his Tuscan cling peaches. Last year $70 per ton was the highest price offered.

County Horticultural Commissioner, Harry Ladd, reports that the deciduous fruit crop around Lodi will be 100 per cent. Other fruits also promise tremendous yields, and growers are jubilant.

Tulare orange growers are reported to have been greatly benefited by a recent thunderstorm as the rain practically eliminated the orange thrips which usually cause injury to the fruit.

The California Fruit Distributors report that on May 20, two boxes of apricots and five of peaches were shipped from Vaccaville to the East, making Solano County the first to ship from California.

Many of the Santa Barbara walnut growers are competing for the 10,000 prize offered by the California Walnut Growers' Association. One rancher at Lompoc, is reported to have turned in a device that will place its brand upon every walnut in the pack.

C. W. Clough, of San Jose, has purchased 750 acres (comprising the Oakdale Colony) from L. Hickock, for the purpose of planting an almond orchard. Later he anticipates selling this land in 20-acre tracts.

Approximately 12,000 acres of vineyard in the San Joaquin VaVlley have been sold as a result of prohibition. The price per acre range from $500, to $1,000. The largest sale was that of the Great Western Vineyard of Reedley, containing 3,700 acres, at a price of $1,300,000.

Arrangements have been completed between the Canadian Trade Commission and the United States Food Administration by which the U. S. authorities will grant permits for immediate export to Northern European neutral of Canadian grain through United States ports.

Orchardists who have used the new spray gun find it has many advantages over the long-pole method. The "gun" is a short pipe-like apparatus used in connection with a power-driven pump. The operator stands on the ground and is able to throw a fine spray into the tops of tall trees.

A horticultural museum of varieties of fruit and flowers imported from many foreign countries may be seen growing on the ranch of J. K. Schick at Proberta, Tehama County. One of the trees is a four-year almond, four inches through the trunk and loaded with nuts Its peculiarity is that the blossoms hang downward and are thus better protected.

A large meeting of bean growers convened at Turlock on May 3 to discuss the low prices for beans and ways and means to obtain relief. Figures produced by growers show that while beans are selling at 5 cents a pound it costs from 7 to 9 cents to produce them last year. The average production last year for California was 8 sacks an acre. The bulk of the bean crop is said to be still on the growers' hands.

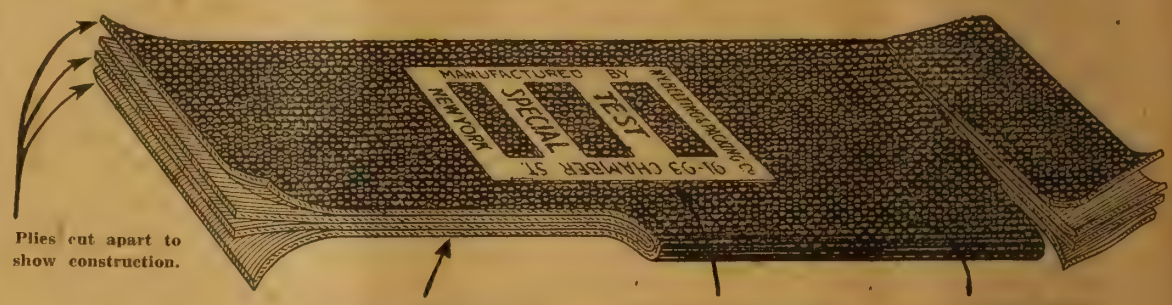
Horticultural inspectors found considerable difficulty with Florin strawberry growers this season. The north wind ripened berries too fast, and having been irrigated, they quickly became soft. This condition was aggravated by many growers who held their fruit all night after packing and before delivery for shipment. One day 353 crates had to be thrown out. Shipments May 11 totaled 8,000 crates.

A dispatch in the daily papers tells of a patriotic act by Geo. C. Roeding, of Fresno, that all who know him will readily credit him with doing. The dispatch states that Mr. Roeding has just refused $50,000 as his commission for the purchase of nut shells and fruit pits, used during the war in the manufacture of gas masks for American soldiers. He contracted with the government to purchase pits for $12.50 a ton, and later managed to corner this market at a price of $6 a ton. The remaining $6.50 a ton he has refused to accept from the government for purely patriotic reasons. Secretary of War Baker has written Roeding thanking him for his efforts and lauding his patriotism.



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on the market today that the average Belt user is at a loss to know what kind to buy. In a way they all look alike to him and he does not know the difference, even though he has given them all a trial. He is continually buying new belting and having numerous shut-downs with heavy losses.

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Examine the cotton weave. See that it is of long, fine fibre. See that it is tightly woven, strong and elastic.

See for yourself. Don't buy a belt that you don't **know** is right. Don't buy a belt that can't stand your test.

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FARM OWNERS' AND OPERATORS' ASSOCIATION.

State Organization Committee: Albert Lindley chairman; J. M. Bigger, W. Q. Wright, ward Powers, Fred H. Rindge, I. L. Borden, A. Shearer, Amou Swank, W C. Ferguson, T. Langford, and C. C. Woodworth.

or Citizenship and Property.

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eads: "In order to combat further ncroachments upon the property ghts and interest of the farmer and prevent any encroachment upon the ght of citizenship and representa- on by seditious and disloyal elements our commonwealth, we, the mem- ers of the Farm Owners' and Oper- ors' National Association, repre- nting all branches of agriculture, nd ourselves together to gain that rength which comes from a compact, presentative organization, that we ay bring that protection to the busi- ess and citizenship of the farmers this county which the magnitude of eir interests and their importance the nation demands.

is a Business Organization.

This is not a political movement; it not a farm marketing organization; is not dealing with special agricul- ral educational work. The Associa- on is organized on a strictly business an. It will authoritatively speak the farmer on legislative ques- ons affecting his interests. It will ek to provide through general co-op- ation for the prompt sale and dis- ibution of farm products. It will ring united support to the specialized rricultural organizations. The Asso- ation will be a clearing-house for l classes of agriculture through hich each can have the backing of l.

arming Is a Business.

"There are many efficient special ganizations which are operated by e farmer in intensifying, increasing, nd protecting his production. There no general organization to speak r the farmers' investment or to de- nd his right to just consideration of s principal (investment), or to assure speedy market and reasonable divi- ends (crop prices) when his prod- cts are harvested and sold. Realiz- g that the exploitation of the far- er by naturally selfish non-agricul- ral interests must be checked if ag- iculture, the basic industry, is to be tabilized; and finding in broad organ- ation the only available means, a umber of representative farmers of an Joaquin county determined to unch this movement. Its appeal as met quick response. The Associa- on is to become state and nation ide. The work of extension is being arried forward by the aid of practical armers in the several counties. The embership dues are based on the creage coming under the Associa- on's protection. In San Joaquin ounty more than 100,000 acres were igned before the movement was re- ased for state-wide organization. he Association's chairman and di- ectors pledged their faith in the ini- al work and finance, and their plan nd work have been fully certified by armers from other counties who made lose personal investigation."

tanislaus Organizing.

At a meeting held May 22 in Mo- esto for a preliminary organization f a Stanislaus unit of the Farm wners' and Operators' National As- ociation, more than fifty well known armers were in attendance. The eeting was addressed by J. M. Big- er, vice-chairman of the State Or- anization Committee, John P. Irish, r., and several Stanislaus men.

It was unanimously voted to organ- e a unit forthwith.

The following five directors at large ere elected: J. F. Stewart of Crow's anding, Frank B. Lord of Modesto, . O. Davis of Modesto, J. W. Scott of eres, and Frank Cox of Westley.

Each of these five men hope to se- ure five men, apportioned to ten dis- tricts in the county, and they in turn will sign up the membership necessary for securing a charter. The Stanislaus farmers are full of enthusiasm, and held another meeting Saturday at which substantial progress was reported.

The Lockeford Picnic.

At the big inter-county picnic of farmers held at Lockeford, May 23, 12,000 people were present. It is estimated that there were 1600 automobiles on the grounds during the day, and most of them belonged to farmers. J. J. McDonald of Santa Clara made an address to the farmers on organization work. Albert Lindley, chairman of the State Organization Committee of the Farm Owners' and Operators' Association, spoke on the progress of the work, and Sam'l M. Shortridge delivered an eloquent patriotic address.

THE NATIONAL HIGHWAY POLICY AND PLAN.

Growing support and co-operation from organizations throughout the United States is being shown in the National Highway Policy. To date 720 organizations have endorsed the Chicago Highway Resolution calling for the National Highway Policy and Plan as set forth in the Townsend Bill. These organizations have assured the Highway Industries' Association of their hearty support of the necessary legislation. Every State in the Union is represented in the following list: 393 Commercial Organizations, 62 Traveller's Protective Associations, 27 National Trade organizations, 76 United Commercial Travellers, 72 Rotary Clubs, 10 Transcontinental Highway Associations, 37 State and County Good Roads Organizations.

Of the above organizations, 238 have already apointed Good Roads Committees to co-operate directly with the Highway Industries' Association in its work for better highways, both National and State.

GEORGE P. WELDON RESIGNS.

We regret to record the resignation of George P. Weldon, Chief Deputy of the State Commission of Horticulture, whose services for the State have extended over many years. His going will be a distinct loss to the Commission. He leaves to head a deciduous fruit enterprise at Ontario (San Bernardino county) and will also have charge of the Experiment Station of the Chaffey Union High School Junior College. Mr. Weldon's practical field experience in deciduous fruits, from the nursery to the finished package of fruit, is perhaps as wide as that of any man in the State. Our best wishes follow him.

Full-fledged, vigorous, and joyous at birth is the Santa Clara county Exposition being held in San Jose, May 24 to 31. The event opened on the first Prune and Apricot Day ever celebrated. A tremendous parade featured the prune and apricot growers, one of the many elaborate floats having come from Visalia. Prizes were offered for the best floats of several kinds.



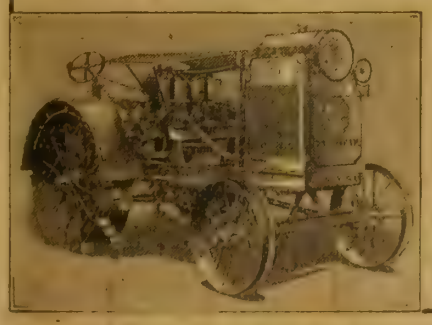
WHITNEY 9-18 WITH TWO 14-IN. "OLIVER" BOTTOMS

STRONG POINTS:

SIMPLICITY—We have built the WHITNEY so simple that any man or boy with ordinary intelligence ought to be able to learn how to operate it successfully, and how to take care of it in just a few hours' time. With more complicated tractors there is always considerable time lost—in fact, with some of them you lose time every day. No so with the WHITNEY; it has a simple, sturdy, two-cylinder motor; a simple, powerful transmission, nothing complicated, nothing to get out of order, nothing to wear excessively, nothing unprotected. From the day you get your WHITNEY we know that you or your boy or your hired man will get good service out of it.
ACCESSIBLE—For all adjusting and repairing under adverse conditions. Parts handy to reach—a very important feature.
SERVICEABLE—Is readily driven about from one job to another. Easy to operate. Adapted to road, belt and draw-bar work. Shields protect operator from dust. Seat is spring mounted.
POWERFUL—Will pull two 14-inch plows; two 8-foot binders, or 5-foot mowers; has reserve power for belt or draw-bar work. We doubt if there is any tractor of the same rating that will outpull a WHITNEY. We know positively that none of them can be used more successfully on plowed ground or for early spring work when the ground is full of moisture. There is no excessive weight to pack the ground, and yet there is ample traction. Develops 9 H.P. on draw-bar; 18 H.P. on belt.
DURABLE—Strongly constructed and fully equipped. All working parts enclosed, which enables it to stand up under the most severe field work.
SPEED—We have learned in our fifteen years' experience that the farmers want and must have a tractor with more than one speed. The WHITNEY has three—the slow speed of a mile and three-quarters for tough going in difficult plowing—a standard speed of two and a half miles per hour for ordinary plowing, disking, harrowing, and other field work. When you're on the road you can hit up at four miles an hour. Do you know of any other tractor that is better equipped in the matter of speeds than the WHITNEY?
ECONOMICAL—Permits of the plowing of a maximum acreage with a reasonable amount of fuel. Light draft saves fuel.
LIGHTNESS—The WHITNEY, one of the lightest tractors built, develops the H.P. of many heavier types. Due to its lightness it does not pack the soil, and will work on marsh land as well as heavier soils. The angle lugs insure good traction at all times.
EFFICIENT—The WHITNEY is an all-'round tractor; its wide-range of capabilities makes a truly eficient tractor.

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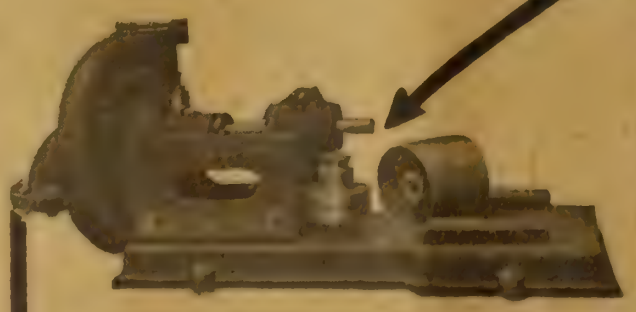
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Belt strains do not affect the operation of **PELTON** pumps. The large, solidly cast bearing housings guarantee continuous cool running. The bearing linings are of liberal area, amply lubricated and held rigidly in line. The unit bearing load is reduced, further insuring cool running. **PELTON** bearing linings may be quickly removed from the housings.

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Farmers Federated Mass Convention

C. S. BARRETT,
President of the National Farmers' Union and Delegate to Paris Peace Conference,
"THE PART THE FARMERS TOOK IN THE PEACE CONFERENCE."

UNITED STATES SENATOR THOMAS P. GORE,
Chairman of Senate Committee on Agriculture
will speak on
"FARM ORGANIZATION and GOVERNMENT PRICE FIXING."

GIFFORD PINCHOT,
President of Pennsylvania Rural Progress Association,
will speak on
"THE FARMERS AND RECONSTRUCTION PROBLEMS."

MILO D. CAMPBELL,
President of the Milk Producers' Federation of the United States,
will speak on
"THE DAIRY FARMER AND THE SHERMAN ANTI-TRUST LAW."

MAURICE McAULIFFE,
President of the Kansas Farmers' Union,
will speak on
"ORGANIZATION AND CO-OPERATION IN KANSAS."

JOHN A. McSPARRAN,
Master of Pennsylvania State Grange,
will speak on
"FEDERATION OF FARM ORGANIZATIONS."

DR. W. J. SPILLMAN,
Formerly Chief of the Bureau of Farm Management, Department of Agriculture,
"FARM ORGANIZATION AND THE COST OF FARM PRODUCTION."

A. A. ELMORE
Chairman "Temple of Agriculture" Committee,
WILL EXPLAIN THE PLANS OF THE COMMITTEE.

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Does the Nation Recognize Your Importance?

Should There Be an International Bureau of Agriculture Created as a Part of the League of Nations?

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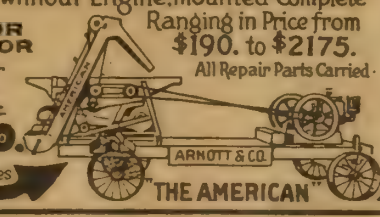
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See the 1919 Catalog of the

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Field and Garden Suggestions.

Belgium Thirsty.

It is interesting to note that Belgium must be recovering some from her hunger. During the week ending May 3 there was exported from New York City to Belgium 1,553,236 pounds of malt. Do they use this for food or drink?

Wagons to Fit Automobile Tracks.

Does your wagon run in the automobile tracks where roads happen to be muddy or does it run out in the soft mud or rough clods on one side? If it is wider than standard automobiles, you will frequently have heavy pulling and rough riding, where it would be smooth and easy if you could follow the tracks. Wagons of the proper width are on the market.

More Water for Stanislaus.

A $3,000,000 dam in the Tuolumne river above the present La Grange dam is proposed for the reclamation of 80,000 acres additional to the 336,000 already in the Modesto and Turlock irrigation districts. It is announced that bonds are soon to be voted on, the Modesto district proposing to issue $2,000,000 and Turlock the rest. This is the "Don Pedro" project.

Iron Canyon Work Renewed.

Equipment is on the ground for additional borings and surveys at Iron Canyon for the proposed reservoir to irrigate 225,000 acres on the east side of the Valley. Engineer H. J. Gault in charge of the Federal and State work is establishing an office in Red Bluff, which is a few miles down the river from the dam site. A report covering 146 book pages was made after investigations in 1914, which showed the feasibility and cost of the plan as well as the nature of banks and foundations for 120 feet below the bottom of the canyon.

Vegetable Standardization.

The principle of Standardization, as applied to vegetables, is new, and F. B. Reynard of the California Vegetable Union believes that the growers are keenly interested and will be glad to discuss grades and grading rules at the forthcoming Riverside Convention (May 26-31). Prominent potato growers are actively endorsing the new potato seed bill passed by the 1919 legislature. Decrease in cost and increase in quality is aimed at and nothern vegetable and potato growers should attend this great convention in large numbers.

To the County Supervisors.

There is one thing not quite so bad as purposely strewing broken glass entirely across the road, and you are responsible for it. Automobilists are your constituents and you want automobilists to come to your county from other parts. They have a right to expect you to keep the plank-floored bridges on your public roads safe for automobiles to drive over. The writer recently drove over a bridge in Tehama county, where a stiff spike in the roadway, projecting over three inches, was only one of several in that bridge, which would have easily ripped our tires wide open. Not many miles from that place, we saw other automobiles, whose drivers had not watched for spikes, repairing their tires near the ends of the bridges. Maybe there are laws to prosecute supervisors for permitting such conditions.

H. J. Webber Promoted.

Of agricultural interest in the faculty changes made by the University Regents, May 13, the chief is the promotion of H. J. Webber, formerly Director of the Citrus Experiment Station at Riverside to the position of Director of the Agricultural Experiment Station. Thomas Forsyth Hunt, Dean of the College of Agriculture and formerly Director of the Agricultural Experiment Station, will concentrate on his college work as Dean. Thus will all of the agricultural experimental activity of the University, both north and south, be under one head. Dr. Webber has proved remarkably successful in this line. J. T. Barrett, Professor of Plant Pathology at the Citrus Experiment Station, now becomes its Acting Director, subject to Dr. Webber as the latter formerly was to Dr. Hunt.

Money in Cabbages.

Many farmers and gardeners, when considering different crops with a view to profits in production, have overlooked the possibilities of profitable returns from growing cabbages. At the present time the supply, even in the city markets, is so meager that they are not listed in market quotations, and the few that may be found, although of exceedingly poor quality, readily bring five cents, and retail at about ten cents per pound. Good plants set at this time of year should attain a weight of five to ten pounds each, and mature in about ninety days from planting. About five thousand plants are usually set on an acre, and may follow a crop of peas, lettuce, or early potatoes. At five pounds per head, and five cents per pound, the gross returns would be $1,250 per acre. To be conservative, discount this fifty per cent, and it is still one of the most profitable crops that can be grown, and one which will find a ready sale in most home markets if more are produced than needed for home consumption.—I. F. Tillinghast.

"GOVERNMENT" ACCOUNT BOOKS FRAUDULENT.

To the Editor: There is a "Government" agent around selling account books for $3.50. He says if the people, farmers and all, don't keep an account of all of their business, they are liable for trouble. Yesterday, while in town, every store I went into had a new book to keep accounts in, and the clerks were so busy telling what would happen to me if I did not use them that they had no time to sell me anything else. I was told that if I didn't keep account of all money paid out and received, no matter how small my income, I would be in Dutch with the U. S. It looked to me like easy money for the agent, and I told them I would write to the farmers' friend, the Pacific Rural Press, about it.—J. W. T., Tuolumne county.

Any man representing himself to be a Government agent selling account books is subject to criminal prosecution and should be reported at once to E. C. Yellowley, Revenue Agent in Charge, 343 Sansome St., San Francisco. Tell who publishes the book, the agent's name and approximate location, and other particulars. Farmers and all others should keep accounts showing with close accuracy incomes and expenditures, itemized so that the various items can be separated in figuring whether the net income is taxable. But you don't have to keep these accounts in any particular kind of books. However, whenever an internal revenue officer may think you are trying to evade payment of tax, he has a right to find out what your gross income is and what deductions may be made before figuring its taxability. If you keep account books, you yourself know whether you are on the safe side, and you can prove it to the revenue officer if you should be charged with evasion. No one has yet been compelled to keep books if his income is in such shape that he can prove it without accounts (for example, daily wages). But farmers who take enough time to keep accounts save so much by knowing where they are at in various operations that their prosperity increases.

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Niney pert cent of the difficulty in changing from jute sacks to Calco Grain Bins—is overcoming a long habit. We are all creatures of habit. After we make up our mind—we act. Making up our mind takes more energy, often, than the action which follows.

Your pencil and scratch pad will SHOW you that a Calco Bin on your farm will SAVE money for you—immediately.

But your problem is to make up your mind to forsake the "old stand-by" jute sack—as costly as it is to you.

Even after your pencil and scratch pad have said: "It Will Save Money for me," you are very apt to say in return, "Well, next year I'll look into it further."

But this year jute sacks are costing you money you could just as well put into the bank. And this year if you say, "next year"—then next year it will be easier to say again, "next year."

Meanwhile you will be spending money on jute sacks—needlessly.

The Calco Grain Bin can be shipped to you immediately after your order is in our hands—giving you time to have it erected and in use for this year's crop of grain.

Start saving money—this year—through the use of the Calco Bin. Get sizes and prices—now.

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State Rice Conditions Bright

Probably 85 per cent of the 1919 rice acreage is planted and most of it is ready for water, said Secretary C. H. Merriam of the Pacific Rice Growers' Association, May 12. Many farmers in the rice districts said about the same thing, but we saw after that date a whale of a lot of land just being checked and a lot more not yet planted. Growers agreed that it was too late to plant Wataribune, which needs a longer season than it sometimes gets; but due to the good work of the U. S. Rice Experiment Station at Biggs and to the initiative of a few private growers, there are several "early" varieties of the Japanese type now available. These ripen soon enough so the late planters are not worrying about the harvest. Canals in the Sacramento Valley rice districts are full and many of the fields have been flooded, as this is written during the week following May 12.

The Rice Growers' Association has been busy helping the Rice Committee of the Food Administration to dispose of last year's crop. Mr. Merriam says it may be the last of June before all of that is shipped. This is the reason for a lack of definite figures regarding the 1919 California rice acreage. In the absence of such figures, it is estimated that there will be between 140,000 and 150,000 acres this year. There seems to be an abundance of water except in the district supplied from Clear Lake, where water could be promised for only half of the 12,000 acres proposed for rice. Other developments this spring in Yolo county using wells and river water will, however, make up a large part of the shrinkage which results from shortage of Clear Lake water.

GRAIN GROWER PESSIMISTIC.

To the Editor: I notice the report of Department of Agricultrue regarding wheat, in the Rural Press of May 3. I wish their field agent would make a trip through this valley now. From what I have seen and reports from various districts, the grain outlook is poorest it has been for several years. We have in 500 acres of wheat and expect in the neighborhood of a thousand sacks, mostly off summer fallow, if weather is favorable for filling. I have heard that there is practically complete failure in other nearby districts. A number in this vicinity are cutting barley for hay. Our wheat will not make even that. I have just received a letter from my uncle, who has in 1100 acres of wheat near French Camp. He says he will be lucky to get 3,000 sacks, but that grain in San Joaquin County which was put in early was very good.

Prospects were never better on April 1st. But about that time we got some dry, hot winds which cooked the grain, and in two days things went to the bad. Our summer fallow was headed and came through O. K., but 300 acres just going into the boot was cooked brown. An inch of rain any time up to ten days ago would have brought grain out wonderfully. All of our wheat was in by Christmas. This year it will all be in by Thanksgiving. Just sold some barley for $2.50.—C. M. B., Tulare.

GRASSHOPPER WARNING.

G. H. Hecke, State Commissioner of Horticulture, has issued a warning concerning the grasshopper situation in which he says this pest is making its appearance in great numbers. In some of the hills certain species are already flying. Many localities may expect thousands of dollars worth of crops destroyed, says Hecke, if the most drastic control measures are not taken at once. Special warning is given to farmers in the counties of Tehama, Glenn, Colusa, Yolo, Trinity, Merced, Tulare, Kern, San Luis Obispo, Placer, Stanislaus, Yuba, Sutter, Plumas, Siskiyou, Shasta, Butte, Fresno, Kings, Ventura and Imperial.

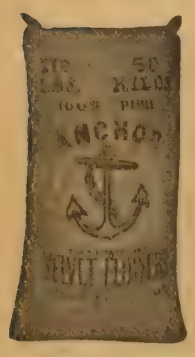
Hecke advises that the grasshopper be poisoned with a mixture of the following:

Bran	25 lbs.
Paris green	1 lbs.
Cheap molasses	2 qts.
Lemons (ground very fine)	½ doz.
Water	4 gal.

The wet mixture is to be spread very thinly where grasshoppers are present.

One grape grower near Fresno, who gave up his raisins last fall, installed a Sahara drier in emergency time and saved 40 tons.

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It has been proven and so recommended by the University of California that if you sulphur your grape vines and orchards 6 times they will not be affected by MILDEW or RED SPIDERS.

ANCHOR Brand Velvet Flowers of Sulphur, also EAGLE Brand, Fleur de Soufre, packed in double sacks, are the fluffiest and PUREST sulphurs that money can buy; the best for vineyards; the best for bleaching purposes, LEAVING NO ASH.

VENTILATED Sublimed Sulphur—Impalpable Powder, 100% pure, in double sacks, for Dry Dusting and making Paste—(Atomic Sulphur).

For LIME-SULPHUR SOLUTION, use our DIAMOND "S" BRAND REFINED FLOUR SULPHUR. We can furnish you this Sulphur at such a low price that it would pay you to mix your own solution and net you a profit equal to the amount paid out in labor for spraying your orchard, even if you pay your men $4 per day for making the solution and applying same.

To create additional available plant food, drill into the soil 100 to 400 pounds per acre DIAMOND "S" BRAND POWDERED SULPHUR, 100% pure. This has increased various crops up to 500%.

Also PREPARED DRY DUSTING MATERIALS, Tobacco Dust, Dry Bordeaux, Dusting Sulphur Mixtures, etc. And "Anchor" Brand Standard LIME-SULPHUR SOLUTION 33 deg. Be., Sulphur Paste, Nicotine, Black Leaf 40, etc. Fungicides and Insecticides. Carried in stock and mixed to order.

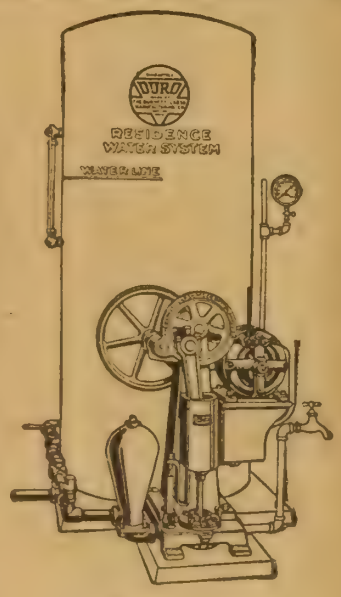
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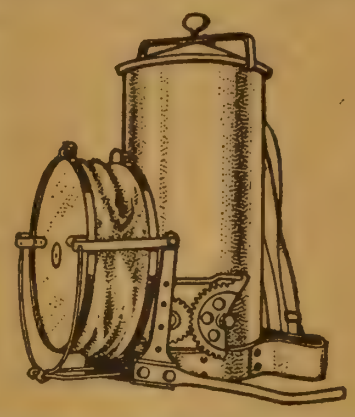
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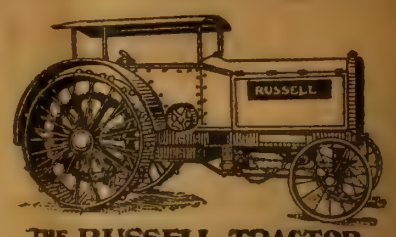
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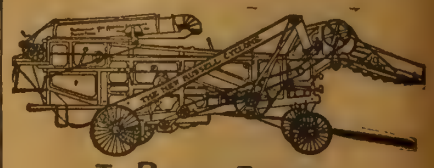
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NILES, CALIFORNIA

Los Molinos Crops and Stock

(Written for Pacific Rural Press.)

Farming on the Los Molinos project in Tehama county is undergoing a change according to C. D. Conway of the Los Molinos Land Co. Most of the alfalfa which formerly occupied about 6,000 of the 8,000 acres under irrigation is now seven or eight years old, and is being plowed out. Hence the tendency is to go out of cows; and since fruit has done so well here, there has been considerable planting, especially of prunes. While peaches do well here, there has been but little recent planting. Several hundred acres have been reseeded to alfalfa, but Mr. Conway estimates a total of only 3,000 acres of this crop now.

Land that is not in fruit or alfalfa is generally in grain, about half barley, and half wheat with some oats. A big grain crop on the project is assured, since wherever it seemed to need water it was irrigated not long before it headed out. The alfalfa has had a subsoiling effect and has added nitrogen and humus in a way that is showing remarkable results in this year's crops. Mr. Conway has a field of barley shoulder high and ready for harvest last week. A field of wheat on old alfalfa land is six feet tall. Practically all of the grain is in fine shape.

Water for Summer Crops.

There has been plenty of water on this project even through last summer when irrigation was scarce in so many places. A number of settlers bought land here the past few months for this reason. The water permits them to grow a second crop after grain. This will be mostly of the grain sorghums in 1919, because beans are out of favor. The grain sorghums can be fed at home and they fit well into the livestock industry. Some sudan grass has been grown for seed, though it has generally been allowed to mature too far to make good hay for milk cows. Dry stock has used the small amount of sudan hay heretofore made.

The vegetable shipping business which made a promising start a few years ago, was completely knocked out last season by establishment of one of E. C. Horst's drying plants near Los Molinos. This took all of the vegetables and all of the spare time of settlers. It superseded the Los Molinos Canning and Shipping Association which had opened good markets throughout the mining regions to the north as far as Eugene, Oregon. The Association had rebuilt its burned cannery building and installed an engine, but never got any farther. Secretary S. R. Dales of the Association expects to buy what few vegetables are grown for shipment and market them on his own account. The drier will probably not run this season.

Poultry and Purebred Livestock.

In the livestock line, there is increasing favor for Guernseys. C. L. Eustis who had a purebred bull and bought three purebred bred heifers a year ago is enthusiastic about the offspring and the outlook for Guernseys. H. N. Woodward is going into Guernseys, but J. Risse is staying by his Jerseys. C. S. Day, who imported over a dozen Polled Herefords from Oregon claims to be getting quite a cream check from his cows. A. L. Stephenson still keeps the locality known for registered Berkshires.

Quite a few people are going exclusively into poultry, while more of them have large flocks as a sideline. The latter system seems to fit best the conditions and the times.

Agricultural Notes

The peak of lettuce shipments from Colma, San Mateo county is expected about June 1.

Onion acreage in the Delta is estimated at 7,780 most of which is not under contract.

The Fullerton district shipped 30 carloads of cabbage last week, growers receiving $50 to $60 per ton. Quality was very good.

Southern California counties are producing 11,230 acres of early potatoes as against 14,070 harvested last year, according to R. G. Risser.

An extensive advertising campaign to increase consumption of California rice is being planned by the Pacific Rice Growers' Association co-operating with the millers' organization.

During April Harry H. Ladd, Horticultural Commissioner of San Joaquin County, inspected 478 cars of potatoes of which 25 were condemned, being infected with eel-worm—a grave menace to this great industry.

R. N. Davis, associate farm advisor, says that of the 60,000 acres of wheat planted in Fresno county, 20,000 is a total failure, and that only about 11,000 acres will make a good crop. The barley crop is in about the same condition as the wheat crop.

First cars of early red onions were shipped May 15 from Stockton and Merced. They were a trifle immature, but high prices led to the movement as reported by R. G. Risser of the U. S. Dept. Agriculture. Crops yielding 400 sacks, 90 pounds average.

The hotels in El Paso charge 25 cents for a baked potato. Just across the Rio Grande River in Juarez, Mexico, the spuds can be purchased for less than half the price of the American article in El Paso. Heavy export duty prohibits shipment to the U. S.

Arrangements have been completed between the Canadian Trade Commission and the United States Food Administrafion by which the U. S. authorities will grant permits for immediate export to Northern European neutral of Canadian grain through United States ports.

May day enlistments in the U. S. school children army brought the total number enrolled up to nearly 3,000,000 including the Philippines and Hawaii. The Bureau of Education says this indicated the promise of $100,000,000 of food stuffs on 100,000 acres of otherwise idle land.

"Contrary to the opinion of many sincere people," said Dean Hunt in a recent speech, "the wholesale price of farm products during 1918 has not been high. The prices have been strictly related to the amount of currency and other instruments of credit and to the price of articles which farmers must buy in the conduct of their business."

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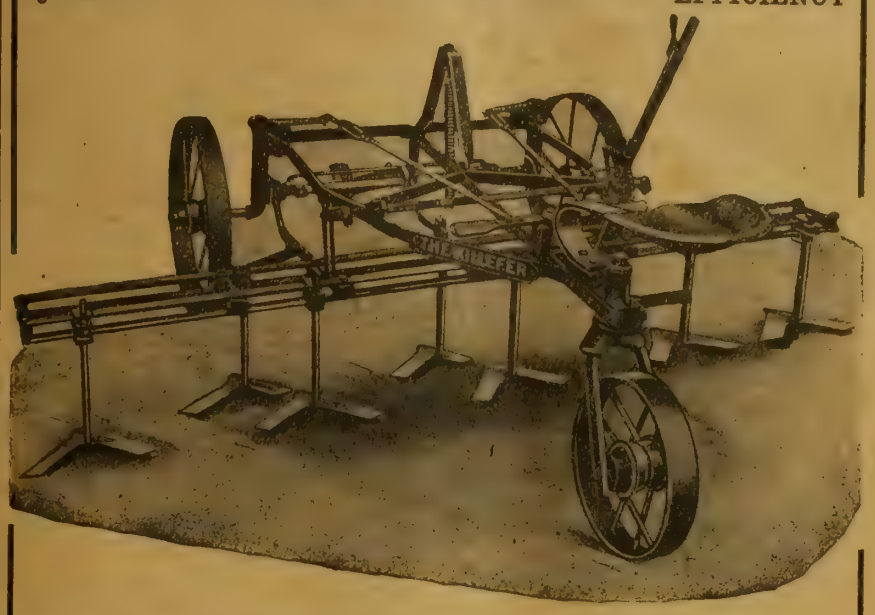
A large meeting of bean growers convened at Turlock on May 3 to discuss the low prices for beans and ways and means to obtain relief. Figures produced by growers show that while beans are selling at 5 cents a pound it costs from 7 to 9 cents to produce them last year. The average production last year for California was 8 sacks an acre. The bulk of the bean crop is said to be still on the growers' hands.

SAN BENITO OUTLOOK.

To the Editor: Crop prospects in the fruit line are very good here this year. Apricots in some orchards had to be thinned. Brown rot on peach trees showed a good deal when leaves first came out. A great many trees died, but new ones are coming on to take their places. On small trees many have lumps of gum on limbs, especially where limbs were cut off last fall. Aphis show on apple trees, but we are using nicotine sulphate and controlling them. We are also using atomic sulphur for mildew, with the arsenate of lead for worms.—A. M. S. San Juan Bautista.

K 4 Row Bean Cultivator K

KILLEFER QUALITY KILLEFER EFFICIENCY



One man will cultivate four rows of beans perfectly with this cultivator, which, like most of our implements, has been developed at the request of dealers and ranchers, for a strong simply controlled cultivator, capable of doing their work better than would be possible with a lighter tool.

The frame is one piece high carbon steel, (no joints to work loose or sag), holds the wheels always true and in line with the rest of the machine. The double frame bar gives ample clearance between the standards and eliminates the tendency to clog in trashy ground. This frame bar has a double lifting device, which holds it rigidly on both sides. The steering device is easily operated and very accurate.

The cultivator is equipped with K. Q. sweeps of our own design and made to do the best work and wear the longest. Furnished with either tractor or team hitch and made to cultivate rows of any width, from 20 to 36 inches. This cultivator is also built to cultivate two rows.

WRITE FOR CATALOG AND BOOK ON DEEP TILLAGE

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Put one of these attachments on your tractor and you will never be in danger of tipping backward.

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Easily and quickly attached and SURE to work.

WE WILL SEND ONE FOR A TEN DAY TRIAL FREE

A set to fit your tractor if fixed on wood skids for $10.00

If you send cash for 30 days' use

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FRESNO, CALIFORNIA

Mechanical Power on the Farm

Users of tractors, engines, pumping plants, motor trucks, automobiles, electric motors, and other mechanical farm power are invited to make this department an exchange of their experiences and troubles.

DYNAMITE AND CULTIVATION TREBLE ACREAGE.

(Written for Pacific Rural Press by R. E. Hodges.)

Dynamite and cultivation are better than irrigation for young orchards in the opinion of J. K. Schick, who blasted before planting 40 acres of almond trees in Tehama County in 1915. The soil is typical upland red clay loam with a cement-gravel hardpan at varying depths, but close enough to interfere with tree growth sooner or later if it is not broken up.

While these trees have never had any irrigation, they have made good growth and all of the four-year trees now have more nuts than Mr. Schick thinks they ought to bear. Trees planted where the roots must go downward do not make as much growth early in their lives as those which are irrigated; but they make up for it later both in quantity and quality of crop, and no tree should be planted on "red land" without shooting.

Cultivation but No Irrigation.

But while dynamite opens the soil to store winter moisture and to give roots, air, and bacteria a chance at the extra acres under his top acres, the job is only half done when the blasting and planting are done.

This land must be worked at just the right time or it is likely to make a lot of round-shouldered clods that stay all summer. If worked at the right time, it crumbles beautifully. Then it can be made into a mulch which preserves the extra moisture stored below until it is needed by the trees.

We asked Mr. Schick just how he handled the cultivating and this is what he said: "I plowed 20 acres in two days with my 25-horsepower Best tractor, going ten to twelve inches deep. I didn't let it get dry, but immediately worked diagonally across it with an eight-foot double disk which was angled so it would go deep and leave no sign of the tractor's tracks. Then I worked the other diagonal direction with the double disk and followed square across with a twelve-foot springtooth from which was dragging a twelve-foot railroad rail. The trees are 25 feet apart, so a round trip with this just finished a row. I expect to springtooth and drag with the rail at least once a month all summer, setting the teeth hereafter so they will go only deep enough to stir the surface without exposing moist dirt. A knife weed-cutter going just under the surface would be better, but I have too much money already invested in machinery. The springtooth is needed the first time after disking in order to level the surface nicely. This is the way I did the home 20 acres, and the other 20 is just about the same."

Dynamiting for Trees.

"How did you handle the dynamiting?" we asked.

"The dynamite was what is called '25%,' three sticks per pound. In September, 1914, before the rains, I shot one stick three and a half or four feet deep where each tree was to be planted. The depth varied according to location and thickness of the hardpan. I dug out several holes and found the dynamite had worked as far down as it did up, and it cracked the soil in all directions. I could run a rod down six feet in most any hole. The work was done in the fall while the ground was dry so it would have the cracking effect and so the opened subsoil could aerate all winter and slack with the rains, filling all air pockets. It would be all right to dynamite any time from June until fall if you don't want to use the ground during that period. Dynamiting for trees should not be done when the soil is wet on accounting of compacting it."

While the four-year trees are all that could be desired, it is only fair to those who may see the orchards to say that the uneven size of the trees is due to their varying age. Half of the trees first planted were lost because Mr. Schick had just come to California and did not know our conditions very well. It rained until late in the spring, so that many of the trees had started to leaf out when they were planted. Then they were not cut back enough and many died. A large number also contained borers from the nursery and these also have died. Many of the trees were leftovers from the year before, which the nurseryman had cut back and held to sell a year later. These did not do well. But every dead tree has been replaced by a live one, using the lessons of experience so that now the 40 acres are thriving nicely, showing great advantage from dynamiting where no irrigation is available.

WALKING TRACTOR.

A tractor can pull its rated capacity only where the footing is such that there is no slippage of the wheels or tracks. Every tractor adopts some system of avoiding this slippage in sand, mud, and soft, well-cultivated ground. When the necessary number of revolutions to travel an hour at the rate of plow speed have been made, and slippage has reduced the distance which has been travelled, the tractor has done practically as much work, consumed practically as much fuel and oil as if it plowed the whole distance. One of the ways by which such slippage has been avoided by giving traction without loss of power and without packing the soil, and without complicated moving parts is the one finally worked out on Rush Hamilton's "walking tractor," which was described in the Pacific Rural Press some years ago as having been demonstrated at the California Fruit Growers' Convention held at Napa. The present arrangement instead of having U-bolts with their legs projecting parallel with the spokes of the wheels has V-shaped legs projecting in the same direction. On each wheel of the tractor there are 32 of these wedges. As each one strikes the soil or the plow pan at the bottom of a furrow it acts somewhat like a sub-soiler by puncturing, loosening, and partially lifting it.

BARGAINS IN AUTOMOBILE TIRES—SUCKERS IN SEASON.

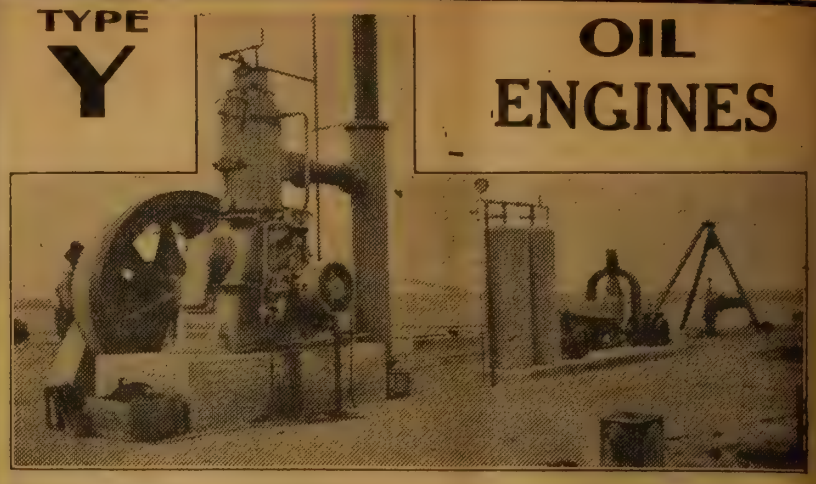
Have you been stung buying bargain automobile tires? Did you join a League or Club whose agent promised that in return for your membership fee the League would sell you tires at "reduced" prices? From what were they "reduced"?

Did you buy "second" tires? Maybe these gave you full mileage, but more likely they did not. They were "seconds" because they had defects which prevented reputable manufacturers from leaving their names on them. These defects made the tires a gamble. Maybe you won once.

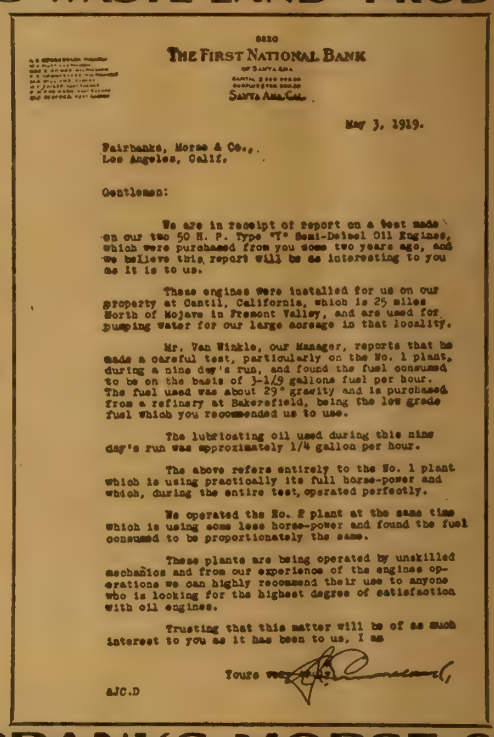
Did you buy a tire on the guarantee that if it did not deliver the guaranteed mileage you could buy another at half-price? One man figured what it would have cost him for tires under this guarantee to run 4,000 miles at the rate the first set lasted. If he had taken complete advantage of the guarantee, and all tires had run as the first set did, his tires for 4,000 miles of travel would have cost $18,858!

Did you subscribe for stock in a nebulous tire manufacturing company on the representation that you could thereafter get tires at suckers' prices? Give us the facts for publication. We won't print your name. Beware! Beware! Beware!

TYPE Y OIL ENGINES



MAKING WASTE LAND PRODUCTIVE



THE FIRST NATIONAL BANK
SANTA ANA, CAL.

May 3, 1919.

Fairbanks, Morse & Co.,
Los Angeles, Calif.

Gentlemen:

We are in receipt of report on a test made on our two 50 H. P. Type "Y" Semi-Diesel Oil Engines, which were purchased from you some two years ago, and we believe this report will be as interesting to you as it is to us.

These engines were installed for us on our property at Cantil, California, which is 25 miles North of Mojave in Fremont Valley, and are used for pumping water for our large acreage in that locality.

Mr. Van Winkle, our Manager, reports that he made a careful test, particularly on the No. 1 plant, during a nine day's run, and found the fuel consumed to be on the basis of 3-1/2 gallons fuel per hour. The fuel used was about 29° gravity and is purchased from a refinery at Bakersfield, being the low grade fuel which you recommended us to use.

The lubricating oil used during this nine day's run was approximately 1/4 gallon per hour.

The above refers entirely to the No. 1 plant which is using practically its full horse-power and which, during the entire test, operated perfectly.

We operated the No. 2 plant at the same time which is using some less horse-power and found the fuel consumed to be proportionately the same.

These plants are being operated by unskilled mechanics and from our experience of the engines operations we can highly recommend their use to anyone who is looking for the highest degree of satisfaction with oil engines.

Trusting that this matter will be of as much interest to you as it has been to us, I am

Yours very truly,

AJC.D

One of Two 50 H.P. "Y" Engines pumping water on the Crookshank Ranch, Cantil, California

Conclusive Proof of the Economical Operation of Type "Y" Oil Engines for Irrigation Purposes

FAIRBANKS-MORSE & CO.
Los Angeles San Francisco Portland Seattle Spokane

This Plug withstands severest service



The plug with the Green Jacket

A tractor must be ready for hard, exacting work—*always*. It must stand the hardest kind of usage. And when it is out of commission by reason of the breaking of a spark plug or the failure of a cylinder to fire, the loss of time can only be expressed in terms of actual dollars.

Don't take chances with porcelain plugs. Splitdorf Spark Plugs *DON'T BREAK*. They cannot crack or chip and they'll never leak oil or gas. In a busy season, they'll save you very many times their cost in the efficiency they add to your farm machinery.

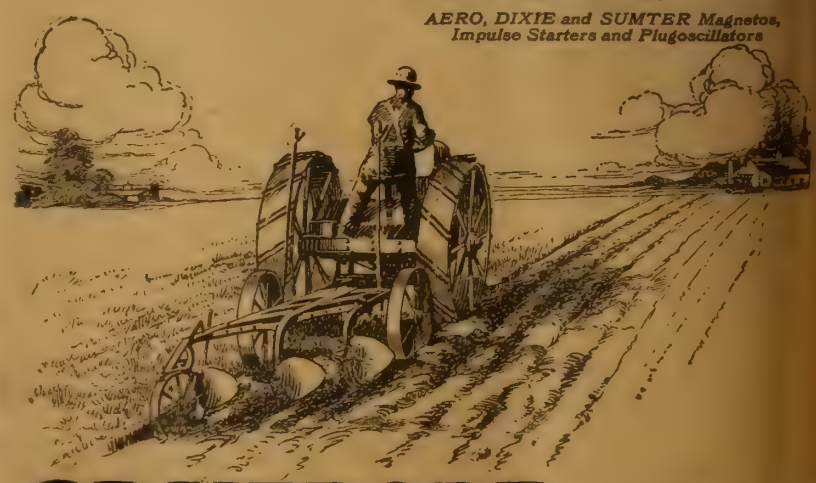
It's important to bear this in mind—when you find SPLITDORF Plugs as regular equipment you'll know that the engine manufacturer is determined to give the purchaser the highest priced and longest lived plug made.

There is a type of Splitdorf Plug best suited to every engine. Our booklet will tell you the exactly right type for YOUR engine. Write for it TODAY.

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AERO, DIXIE and SUMTER Magnetos, Impulse Starters and Plugoscillators



SPLITDORF SPARK PLUGS

TRADE SPLITDORF MARK

ENGINE HAY BALER ON TRUCK.

It takes ten gallons of distillate to bale 35 tons of hay in a day with the Dain hay baler, operated by an eight horsepower engine belonging to Albert Labrucherie of Tracy. The distillate costs about 14 cents per gallon. Would horses do the same work cheaper?

Mr. Labrucherie was baling his own first-crop alfalfa when we called on him. He was tending the engine, tieing the bales, and piling them, while another man pitched hay from a 24-foot wagon-rack into the baler, and attended to the blocks which separate bales and furnish passages past their ends for tie wires.

The hay-press and engine are both mounted on an iron-wheeled truck, whose frame is made of angle irons heavy enough to bear the weight and vibration. The whole outfit is moved from place to place by two horses. It has an automatic pusher to force hay down into the baling chamber so nobody's fork or foot need ever get caught. It has a grooved frame into which a block is put at leisure. When enough for one bale has been pressed, the grooved frame is shoved forward by a lever and the block is placed at the end of the bale by the pusher with no loss of time.

Two men are needed to haul hay. One should be free to load his wagon while the other unloads. One could then help with the engine or with the piling part of the time. Long, low hay racks are used so it requires only the pitcher to put a big load on.

"Do you prefer an engine-baler rather than the one run by horses?" we asked.

"Say, I ran a horse baler last year and I wish I'd never seen it. I sold it for $75 and bought this. It took five men to put up 120 bales a day. We had to stand on our knees to put the tie wires in and tie them, and we had to work hard all day. With this engine baler, three men could put up four hundred 18x22 bales in a day. We did that in France two years ago, with a six horsepower engine and a smaller baler."

MOTOR ROUTE PRELIMINARIES.

In figuring on establishing a rural motor transportation route the U. S. Department of Agriculture points out four factors which must be considered: First—Volume of farm products produced along the contemplated route. Second—Volume of miscellaneous hauling with which to supplement regular loads. Third—Competition from other carriers. Fourth—The character of the roads. In California it will be necessary to show our State Railroad Commission that the present service is not sufficient to meet the situation. An additional consideration must be a working out of a satisfactory system of delivery, and collection of charges.

The prospective motor truck operator should communicate with the Public Service Commission or such other body as may have jurisdiction over the operation of trucks in his territory and inform himself in advance as to legal restrictions covering the operation of trucks on the highways.

MAGNETOS FOR WAR TRUCKS.

Early in the war the Standard Class B Motor trucks of the U. S. Government had a double-unit ignition system, a timer-distributor-battery system, and also a magneto system. General Pershing soon cabled an order that the battery system be discontinued, and thenceforth only magnetos were depended upon for ignition. Germany had practically controlled the magneto production of the world, but as soon as America arranged to manufacture our own magnetos in large quantities they were found to be as good or better than those made in Germany.

POWER NOTES.

J. R. Johnson, General Sales Manager for La Crosse implements, was an interested Demonstration visitor from the East. Chas. E. Hicks has just come from the La Crosse factory to take charge of implement sales and service for the California Tractor and Implement Co., who handle the La Crosse tractors and implements. C. E. Quest is Pacific Coast sales manager for the La Crosse Happy Farmer tractors.

Plowing 1880 acres in a day with 52 tractors is the feat claimed for a two-million dollar corporation which has undertaken to grow wheat on 200,000 acres of Indian lands in Montana and Wyoming.



BOSCH

The Bosch Magneto with Impulse Starter

A SURETY of SERVICE

FOR year 'round unfailing continuous tractor service, specify Bosch Magneto with Impulse Starter.

Bosch superiority is unquestioned. From the earliest days of the gasoline engine Bosch High Tension Magnetos have been building a performance record unparalleled in the ignition field.

Rip roaring Bosch Sparks get all the power from all the fuel, cut operating costs and add to your tractor, gas engine or motor car dependability.

Stop in at the nearest Bosch Dealer and have him demonstrate the Bosch Magneto with Impulse Starter.

Write for descriptive booklet.

Be Satisfied.

AMERICAN BOSCH

Main Offices and Works:

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Specify Bosch.

MAGNETO CORPORATION

Branches:

New York, Chicago, Detroit, San Francisco

in over 200 Cities

AMERICA'S SUPREME IGNITION SYSTEM

MOTOR TRUCKS - TRACTORS - AIRPLANES - MOTOR CARS - MOTOR BOATS - MOTORCYCLES - GAS ENGINES - ETC

PUMP CHEAP WATER

LAYNE & BOWLER PUMPS

Produce 180 to 4500 Gallons per minute



Ask for Folder No. 36

Layne & Bowler Corp.,

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WITTE

Prices Lower

Twice the Power at Half the Cost

Sizes 2 to 30 H-P.—Select Your Own Terms.—Direct-from-Factory prices. Write your own order. Save $15 to $200. Prompt Shipment. Engine" Finish. In return mail. Postpaid. Engines. Engines. Engines

A Model Stock Farm at Palo Alto

(Written for Pacific Rural Press by R. H. Whitten.)

No one was in the office of the Palo Alto Stock Farm when I called, so I wandered over toward the south wing of the mammoth dairy barn, where the official testing is done. I had just about reached the doorway when my courage failed me and I went no farther. For this is what I heard:

"You dear thing—bless your heart—I certainly do love you—my pretty girl—just the sweetest thing that ever was—I wouldn't swap you for a million dollars—you're the best on earth—come, let me pat your face."

Just then an attendant came along, and I asked him what the love skit meant. "That!" he exclaimed, as he pointed his finger in the direction from which the sweet stuff was coming, "Why,, that's only the boss talking to Laurameka, his favorite cow. She has just made a big record."

So I bolted through the door, and sure enough, there was M. H. Tichenor with his arms around the neck of the famous Laurameka, caressing her as only a true lover of stock can.

I say, "a true lover of stock," for Mr. Tichenor is no novice at the game. His inherent love for animals has been increased and intensified by years of intimate connection with them. Twenty-five years ago, when I was a young kid back in New York state, I watched the big Tichenor sales and thus forming a livestock corporation as sound as the Rock of Gibraltar.

An ideal location was found at Palo Alto. Starting with 550 acres of the oak-studded lands of the Stanford Estate, they converted the old vineyards into fields that would raise alfalfa and other crops for stock, and then they took on more land until today the farm comprises 4,600 acres—part tillable land, part rich grazing land.

The three-story brick winery, 70x170, was converted into one of the finest dairy barns in the State, with cement floor, and metal stanchions to accommodate 160 cows. One wing, 56x50, is used for cows on official test, and has metal test pens 10 feet square, with metal feed racks, etc. The north wing is used as a maternity ward, and has a large number of calving pens.

But why continue along this line? To describe all of the different buildings and the equipment would fill a whole issue of this paper. So, in a word, you find here everything necessary to carry on the work in a systematic, sanitary, successful way.

Someone once asked Andrew Carnegie which he considered the most important factor in industry—labor, capital or brains. The canny Scot replied, "Which is the most important leg of a three-legged stool?" The same reply might well be given to the question, which is the most important in raising purebred animals—brains, equipment , or stock? Brains and equipment had been provided at Palo Alto, and because Mr. Tichenor had brains he knew he would not get very far along the road that leads to the goal of sunset hue unless he procured the best foundation stock in the land.



Alta Goldleaf, the first calf dropped on the Palo Alto Stock Farm, and the first heifer tested. She made 23 pounds butter from 524 pounds milk as a junior two-year-old.

as closely as any cat ever watched a mouse, because of my deep interest in livestock. Later on, when I migrated westward to Michigan, I watched his operations at Chicago, and I came to look upon him as one of the big livestock men of the country. Evidently others did, too, for when the Carnation Stock Farm decided to make a mammoth showing at the Panama-Pacific Exposition, they looked around for the most capable man in the land to put in charge, and their choice fell upon Mr. Tichenor.

The success of his venture came to the notice of Mr. Herbert Fleishhacker, the banker and capitalist. He was an ardent lover of livestock and wanted to get into the game, but a man who is interested in many different corporations, besides being president of the Anglo and London Paris National Bank of San Francisco, does not have much time to devote to such an enterprise, so it was the most natural thing in the world that Mr. Fleishhacker and Mr. Tichenor should join hands and decide to develop a ranch that would be a whopper in size and a model in every respect. They incorporated, taking Victor Klinker, C. F. Hunt and J. C. McKinstry into the directorate with them, and thus forming a livestock corporation as sound as the Rock of Gibraltar.



But don't think that Holsteins comprise the only stock on this place. It is all that its name implies—a real stock farm. There is a fine herd of registered Guernseys with 2 herd bulls of royal breeding. There are 1,117 head of Shorthorns, and there is a big band of sheep to clean up the waste.

It requires much skill and executive ability to operate a ranch of this size so that it will progress constantly. The success of the undertaking naturally hinges upon so many details that only by dividing the business into departments and putting an expert in charge of each, can things be kept running smoothly. That is just what has been done at Palo Alto. P. L. Warrell, formerly manager of the Week's interests at Haywards, has been made manager, and James Armo superintendent of dairy cattle. All other departments have their heads, and you will have to travel a long way to find a better example of a smooth running, highly organized enterprise, carrying out clearly defined

JOIN
CALIFORNIA DAIRY COUNCIL
NOW

Don't wait for someone to call on you and argue you into it.

Everyone admits that milk and all milk products should be advertised to the public, but there is no one to furnish the money unless it be those who will profit by the increased trade that is sure to follow.

The present high prices are admittedly profitable, but they spell danger in the future.

Thousands of consumers are already using substitutes and many more will do so.

Substitutes are persistently advertised — dairy products are not.

California Dairy Council will advertise them if YOU will furnish the money.

Send in your subscription voluntarily—don't wait.

If the money of those who have already subscribed is spent in sending solicitors to see those who have not there will be just so much less to spend in getting new business.

JOIN NOW. WRITE TO

CALIFORNIA DAIRY COUNCIL
268 Market Street, San Francisco
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Large Production and Fine Type



are combined in the get of
PRINCE RIVERSIDE WALKER

Aaggie Acme of Riverside 2nd and Miss Valley Mead De Kol Walker, his two sisters, made the highest official yearly butter record and the highest butter record for three-year-olds, respectively, for 1917-18. His get won first prize at Sacramento last year. We are breeding his daughters to King Korndyke Pontiac 20th, our young $6,500 sire, whose great individuality, fine type, and backing of an unbroken line of great producing dams are hard to beat. Come and see the result of this breeding or write us for further particulars.

Our Entire Herd is Tuberculin Tested.

TULARE HOLSTEIN FARM
W. J. HIGDON, Owner TULARE, CAL. H. L. REDD, Herdsman

THE JOHNSON HERD OF DUROCS
We have for sale only a few yearling sows and tried sows bred for fall litters, bred fall gilts, two yearling boars and weanling pigs from
PRIZE WINNING SOWS
F. M. JOHNSON, Napa, Calif

ASK YOUR DEALER FOR
El Dorado Cocoanut Oil Cake
for Milk Cows and Chickens and Young Pigs and Hogs. Cheapest food in the market today. If your dealer doesn't carry it, address
EL DORADO OIL WORKS
433 California Street, San Francisco

practical aims in a businesslike way.

Palo Alto Stock Farm is always open to the public for observation of the most modern methods in dairy farming, and Mr. Tichenor and those under him are glad to give information and advice to beginners who are desirous of studying sanitary buildings, labor-saving equipment, up-to-date methods, and heavy producing stock. This great show place is only 30 miles from San Francisco and fronts on the state highway. It is well worth a trip from a foreign country to see this paradise for livestock; in fact, it was visited a short time ago by a large plantation owner from Peru, and he thought so well of the stock that he took home a son of King Pontiac Segis Korndyke—even after careful investigation all over the United States. But whether or not you want to buy, the latchstring always hangs out—a right royal welcome awaits you.

McALISTER HOLSTEINS SELL HIGH.

The average of $588 on 159 head of registered Holsteins sold at the McAlister dispersal sale at Chino, May 21 and 22, is not a true indication of the real worth of most of the stock offered. For over eight years the name McAlister has stood for the best in Holsteins, and some of the finest animals ever led into a sales ring in this State were put up. However, there were quite a number of young bulls and animals not in sales condition that sold at from $110 to $200, and this kept the general average much lower than it otherwise would have been.

There was an attendance of about 800 each day, made up of real buyers, who came from as distant points as Texas. They were quick to appreciate the quality of the stock offered and the bidding was keen. R. F. Guerin of Visalia picked the plum when he secured the noted 34-pound K. P. Tola for $3,950, the high price for the sale. He took two others home with him, one being Allenvail Clothilde Walker, with a junior 3-year-old record of 26 lbs. for which he paid $1,025.

P. H. Krick paid $1,750 for the 35-pound 3-year-old K. P. Idyl Segis; R. E. Babcock secured the 32-pound 4-year-old Allenvail Pauline Walker for $1,425, and C. F. Heil, the 20-pound 3-year-old Finderne Valdessa Korndyke, for $1,425.

There was much speculation as to what the great sire, It, would bring. He has 17 A. R. O. daughters, but on account of his age did not bring a high figure, going to C. F. Heil for $2,000. The 2-year-old bull, Prince Gelsche Korndyke Segis, was picked up by M. Babylon for $1,375.

M. O. Pulliam was the heaviest buyer in point of numbers and total price paid, taking 14 head for $8,275. Burr Farm paid $6,680 for 12 head. Other heavy buyers were Agee Bros., Leeman & Kilgore, Bost & Johnstone, W. D. Millard, American Beet Sugar Co., O. K. Clammer, A. R. Magruder, G. W. Short, W. T. McAlister and L. [illegible] Bonnt.

The sale was ably cried by Col. Ben A. Rhoades of Los Angeles, assisted by his son, Harold B. Rhoades. It marks the passing into many different hands of one of the greatest herds in the State, and the loss to the industry of the well-known firm of McAlister & Sons.

HUMBOLDT CAN TEACH STATE

Sam H. Greene, secretary-manager of the California Dairy Council, recently made a trip to Humboldt county, and at a meeting of the Dairymen's Association he was asked to make suggestions. He told the dairymen that no one from any other part of the state could suggest improvements to them, and that they ought to send men to other counties to explain their progressive methods. Mr. Greene knows the dairy industry in this state from A to Z, and he says that all other sections must take a back seat for Humboldt, where every branch of dairying is carried on at its best. He says that we should keep our eyes on Del Norte county, also, as it has wonderful natural advantages for dairying, and the farmers are just beginning to breed up their herds.

The Humboldt County Dairymen's Association, being quick to recognize a good thing, endorsed the work of the California Dairy Council, and it is expected that the entire membership will line up and support the Council.

NEW STATE JERSEY RECORD.

A new record of butterfat production for a California Jersey has been established at the University Farm, Davis, by Interested Jap's Santa, making 939.08 pounds butterfat in a year. Two years ago the record was 702 pounds, held by Pearl of Venedera owned by Guy H. Miller of Modesto. Last year this record was passed by three cows: Mermaiden's Fern 2nd, owned by the University of California, making 729.55 pounds; Fern's Silver Ray, owned by Frank Vanderpool of Imperial Valley, making 779.54 pounds; and Interested Jap's Santa, making 805 pounds. The state record cow now raises her own record 134.08 pounds. The new record, made at five years of age, beats the six-year-old record of Sophie 19th of Hood Farm by 8 pounds, and places the University cow in eleventh place among all the cows of the breed.

MILK PRODUCERS CHARGED BY GRAND JURY.

Officers and directors of the Associated Milk Producers of San Francisco, including M. T. Frietas, president, and F. H. Machado, manager, have been charged by the county grand jury with conspiracy to violate the Cartwright State anti-trust law and maintain a monopoly in milk production and distribution in San Francisco. The Assistant District Attorney claimed that the Milk Producers agreed to regulate the price at which distributors should sell milk to consumers, and to fine any distributor who bought milk from a producer not satisfactory to the Association. The grand jury held that this was a conspiracy in restraint of trade.

THE OTIS HERD

Milking Shorthorns

WILLOUGHBY, OHIO.

BEEF MILK



LADY OF THE GLEN.

Bred by us and acknowledged the best and most valuable individual of the breed.

Largest herd in America with the best connection. Many cows weighing 1,700 lbs. and above with records of over 10,000 lbs. of milk. Winners at the recent Congress sale owned by us or of our breeding. Sale cattle in carload lots or single. Calf clubs a specialty.

Write T. H. Harrison,
Santa Rosa Stock Farm, Santa Rosa, Cal.
California Representative.

The Economy of Feeding Chopped Hay---

ACME Feed Cutters

The Combined Silo Filler, Feed Cutter and Alfalfa Meal Machine.

Feed trampled under foot is **wasted.** Feed nosed out and not eaten is **wasted.**

It is the habit of stock wherever ample portions of bulk hay are fed, to pick out and eat only the finer, more palatable portions, nosing out and wasting the coarse hay. Common methods of feeding in use also entail much loss by trampling feed under foot.

These losses are **too big to be neglected.** They range from 10 per cent to 30 per cent, depending on the quality of hay and method of feeding.

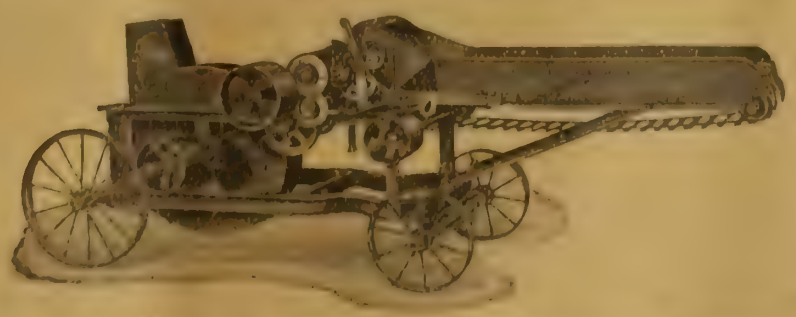
With hay worth $15.00 a ton in the field the average loss is equal to $2.25—actual loss in dollars and cents on every ton of hay you feed.

Why continue to stand this loss? Farmers everywhere are awakening to the fact that

CHOPPED HAY PREVENTS WASTE

Chopped hay is all eaten. Chopped hay, ton for ton, will feed more cows than bulk hay. Chopped hay is readily stored and protected from the weather. It takes up less barn space, eliminates waste in handling and increases dairy profits.

With a light-Running Acme Feed Cutter on your farm you can begin saving feed right away.
Cut up this year's hay crop and blow it into the barn, bins, or a silo.
Every pound of feed saved adds to your profit.



THE DURABLE STEEL FRAME ACME WILL SAVE ITS COST THE FIRST SEASON.

Nos. 11 and 13 for small acreages.—Nos. 17, 19, 20, 24 and 40 cover all feed cutting requirements.

COMPLETE ILLUSTRATED CATALOG UPON REQUEST.

DE LAVAL DAIRY SUPPLY CO.

61 Beale St., San Francisco

Rubbing Elbows with Other Breeders

(Written for Pacific Rural Press by Thos. F. McConnell.)

Doings at Durham.

The recent farm bureau picnic, held at the recreation park of the State Land Settlement at Durham, has convinced Superintendent Kreutzer that it will be policy to improve the park just as rapidly as money is available, putting up buildings and pens so that it will be possible to hold community fairs and sales of registered livestock. It is hoped to have the first fair next fall. At this fair no cash prizes will be awarded, but the animals will be judged and ribbons and cups placed to indicate winners in the various classes. At the sales only first-class stock will be offered. Mr. Kreutzer expects to have Prof. Thompson inspect all pigs offered, and no inferior animal will be allowed to get into the sales ring.

It is the intention of the breeders of livestock in the settlement to devote all their attention to three breeds of registered animals, and in this way make this a central point for the breeds raised, rather than to have a large number of breeds represented. With this idea in mind, Shorthorn beef cattle, Holstein-Friesian dairy cattle, and Duroc-Jersey hogs were selected as the breeds best adapted to the local conditions, and an organization known as "The Durham Co-operative Stock Breeders' Association" formed to further the interests of the individuals. While it is the intention to confine the breeding operations to the breeds above mentioned, new settlers who were owners of other breeds were allowed to bring them in and keep them until a change could profitably be made.

So far only registered Durocs have been purchased. In dairy cattle some grade Holsteins have been purchased, and the change to registered stock made when possible. It is the determination of the management and the settlers to have all cattle tuberculin tested before purchased, and to keep the stock absolutely healthy. In order to do this all cattle in the settlement on March 1st were tested by qualified veterinarians, and quite a percentage of reactors found. At first it was thought best to isolate the reactors on one or two farms, but finally it was decided at a meeting of the dairymen to eliminate all diseased animals, the cost of elimination to be borne equally by all dairymen in the settlement, regardless of whether they were owners of tubercular cattle or not. This was first proposed by owners of healthy cattle, which certainly speaks well for the spirit of co-operation and good fellowship existing in the colony.

It seems no easy matter to find cattle of the kind wanted that will pass the tuberculin test. Thirty-six animals were selected from two different herds, but 27 reacted, and therefore none were accepted, as it was thought the danger would be too great from such badly infected herds. A full carload of cattle, 21 in number, were purchased at the recent Napa sale at an average of slightly over $150 each. Supt. Kreutzer says they are in the market all the time for healthy Holstein cows and want at least 150 more.

It is the intention to sell as market hogs all individuals in the swine department that are not first class, and by this method create an excellent reputation for settlement hogs as breeding animals.

All land at the settlement has been sold to settlers, but there is once in a while an individual who wants to dispose of his holding. Generally, however, they are very contented, and are making good on their farms.

A Hog Haven at Humphrey's.

When you see the Berkshires at Grapewild Farm, Escalon, you don't have to ask if they are registered. You are so favorably impressed by their size, type and finish that you know they are not only registered, but rank among the best individuals of the breed.

I was impressed by one sow that is seven years old, and is now weaning nine pigs. Some constitution and prolificacy! And while on this subject of prolificacy it should be mentioned that this is Mr. Humphrey's hobby, and with the able assistance of Chas. Maurer in selecting and mating certain strains, he has increased by two the average number of pigs raised per litter in a herd of 40 brood sows. This means that by breeding sows twice a year there is an increase of 160 pigs per year. At a very conservative valuation of $50 each, this raises the annual production $8,000, which is at the rate of nearly $22 per day. Viewed from another angle, each sow's individual production is increased $400 annually. If every other breeder of registered swine had done as well in the past 25 years, the results would have been stupendous and almost beyond belief.

This is an illustration of what happens when a genuine breeder of livestock undertakes something. He has definite ideas as to what he wishes to produce, and by judicious selection, mating and feeding, together with determination and perseverance, he achieves success. Notice that the increase was in the average of pigs raised—not farrowed. This means that brains have been used, not for a day, or a year, but year in and year out, for a long period.

With the assistance of Mr. Maurer, Mr. Humphrey is certainly developing a great herd of Berkshires, having size, stretch, good bone, quality, excellent disposition, and true Berkshire type. The hogs are a uniform lot, and all are so good that it is difficult to pick out individuals for special mention. The suckling pigs, however, do show a slight difference; those sired by Escalon Superba being off the ground a little more and perhaps having a little more stretch.

Not much was seen of the Guernseys and another visit will bring a later story about them, but the young bull, Nobleman of Maplehill, recently brought out from the East, is a youngster of more than ordinary merit. His quality, constitution, and conformation are excellent, and he has been growing like the proverbial weed since arriving in California.

Borge Banks on His Boar.

A great ranch in the making is that owned by Jack Borge, and located 3 miles west of Dos Palos. When we say "in the making" we refer to the ranch only, and not to the herd of registered hogs. Mr. Borge recently came into possession of the land, but already has a Jim Dandy herd of Durocs. The problem of getting feed for such a herd while a stand of alfalfa is being established is not a small one, but with plenty of water it will soon be solved.

Those who heard Fred Devore talk about the fashionable type for Durocs should visit Mr. Borge's herd and see his yearling boar, Russell Orion Boy. They will find an individual approximating very closely such word pictures as Mr. DeVore drew. This boar is by Fruits Orion, the 1916 Oregon champion, and out of Golden Wonder. He is a boar of the large type, has good bone, stands strongly on his feet, and is a great stock getter, as is shown by the fine lot of pigs from gilts not related to him. He is at the head of a great herd of females, many sired by the 1917 California champion.

BEEF CATTLE FEEDING.

C. H. Hill, who has charge of the feeding of cattle for Wilson & Company, Los Angeles, says that the last season has been a good one. His company fed 2,000 cows and 2,000 steers at Lovelocks, Nev., on straight alfalfa, and 2,000 steers at Betteravia, Cal., on beet pulp, rolled barley and alfalfa. With straight alfalfa they figure on a gain of about 200 pounds in four or five months, using three- and four-year-olds and keeping them on feed until an average weight of 1,100 pounds is attained. With a mixed ration they get a 300-pound gain in four or five months, taking steers out of the feedlots weighing about 1,200 pounds.



Four Men Milk 219 Cows in 2½ Hours

THAT'S an average of 22 cows per man per hour. The man who can milk 10 cows per hour by hand is striking a very high average. But at the Frank H. Helm Dairy in Fresno, Cal., the four men shown above maintain a 22-cow-per-hour record, year in, year out—with the Empire Milking Machine. In other words each Empire Milker unit on the place *saves more than one man's wages, board and lodging.*

Empire Milking Machines are necessary to the economical operation of every dairy of 10 or more cows. They cut the cost of producing milk to a minimum, reduce the bacteria count, because the milk is not contaminated by contact with air and dust in the barn—a big help in getting that extra money for certified milk.

You can cut out the drudgery of hand milking, you can handle more cows with less help, you can increase the net profit from your dairy farm—and the first step is to send for our catalog No. 45 or call on our local Empire dealer for a demonstration.

EMPIRE CREAM SEPARATOR COMPANY, Bloomfield, N. J.

Also Manufacturers of Empire Cream Separators and Gasoline Engines

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EMPIRE

MILKING MACHINES

JERSEY BREEDERS

N. H. LOCKE CO.

LOCKEFORD, CAL.

Choice young bulls of King's Valet Blood, backed by Records.

Call at the ranch and make selection.

VENADERA HERD REG. JERSEYS

Herd headed by Altama Interest, Grand Champion 1918 State Fair. Awarded two other championships and 10 firsts, including Aged Herd Breeders' Young Herd, and get of sire. Young bulls for sale from dams and granddams in Register of Merit.

GUY H. MILLER, Modesto, Cal.

LEONARD FARM JERSEYS

Bulls for sale from Register of Merit Cows. Write for information.

W. J. HACKETT,

Ceres, California

T. B. PURVINE & SONS

PETALUMA, CALIFORNIA.

Breeders of

Registered JERSEYS

Young bull calves for sale. Fine individuals with Register of Merit backing.

RANCHO SANTA MARGUERITA, D. F. Conant, Prop., Modesto, Cal.

Register of **MERIT JERSEYS** A limited number of bulls for sale

FOR LARGE AND ECONOMICAL PRODUCTION

Get one of my young Jersey bulls from a high producing dam. They are rich in the blood of Gertie of Glynllyn and Lady Letty Lambert. Occasionally one old enough for service.

A. A. JENKINS, TULARE, CAL.

NEW FEDERAL OAT GRADES.

The new Federal oat grades will become effective June 16, 1919. Under this, yellow oats will be classed as white. The test weight per bushel will be required on all certificates of grade because the weights within each grade may vary considerably and thus affect the value of the oats. The Federal standard bushel of oats weighs 32 pounds, but this grain, northwestern and intermountain regions, normally weighs considerably more. The grades are based chiefly on color and weather stains. Any one wishing to have a sample graded may do so for a small fee by sending a two-quart sample to any officers licensed to inspect oats. Such officers are located in the chief cities.

Turn the Spotlight on the Brood Sow

(Written for Pacific Rural Press.)



Now is the time to determine the value of a sow as a breeder. Don't wait until after she has weaned her litter and you have forgotten all the facts. Turn the spotlight on her now while you can get visible evidence of her real worth.

Ask her these questions: How many pigs did you farrow? How many came dead? How many did you kill? How many runts? Were they big, husky and uniform, or small weak and uneven? Were you a kind, careful mother, or cross, nervous and clumsy? Did you provide them with lots of milk? Are they going to show an improvement over you?

If she can answer these questions satisfactorily, give her a place of honor and don't let any offer tempt you to sell her, unless you are overstocked. If her answers are unfavorable, put her in the fattening pen. Never mind how good she is in type or breeding—sell her for pork. That's the only way she will profit you.

BANKING MONEY FROM DITCH BANKS.

(Written for Pacific Rural Press.)

On irrigated farms of from 80 to 160 acres the ditches take up from 3 to 12 acres. This not only reduces the cultivated area, but is frequently a source of much trouble and financial loss, inasmuch as the farm ditches are likely to became a mass of weeds and the natural breeding place of injurious insects.

One man has made his ditch banks pay well. He has an 80-acre farm, through which there is a ditch 1,364 feet long and 10 feet wide. In 1917 the ditch bank and an adjoining strip of alfalfa embracing 1½ acres were fenced off and used to pasture a number of registered Hampshire ewes and lambs, the sheep being run on it on alternate two weeks. The actual pasturage of the ditch bank and alfalfa patch was 4½ acres. The result of the first year showed that this pasture would carry 129 head of sheep each alternate two weeks, or an average of 14 head pastured continuously per acre.

In August 43 lambs, weighing an average of 50.7 pounds per head, were turned on one-third acre of this ditch bank pasture which had been cut off with a temporary fence. The pasture at that time consisted of a rank growth of blue grass, white clover, willows and weeds. The 43 lambs were held on this area for 15 days and harvested the growth rather than pastured it. The result showed that the lambs gained at the rate of 264.5 pounds per acre pastured, which at 14c a pound would amount to a return of $37.05 an acre.

No more labor was required in building the temporary fence than would have been required to cut the willows and weeds. In addition to the profit returned the lambs did an excellent job in cleaning up the ditch banks.

Wisconsin had 65,418 silos on farms May 1, 1918, a gain of 13 per cent in one year, according to returns from assessors. In Ohio the number of silos reported by assessors for April 1, 1918, was 30,788, a gain of 44 per cent in one year.

Recent market values for meat animals have caused a renewal of interest in the raising of live stock on farms of all sizes. The study of raising and disposing of crops to the best advantage also suggests the more general and more careful production of live stock.

BIG BONED POLAND-CHINAS

The fashionable, prolific kind that everyone wants.

Service boars, gilts and weanling pigs sired by the 1,000 pound boar

Big Bone Bob

Don't send East when you can get better at home. Come and see them and be convinced. Stock for foundation herds or exhibition.

N. K. HORAN

Lockeford, Cal.

Ranch 2 miles east of highway.

Western Duroc Men! Attention!

F. F. DEVORE says that the Duroc could have no greater field in which to develop than the Pacific Coast states.

It is the DUROC JERSEY that will put the pure-bred swine industry to the front. It is up to the Duroc raiser to put the Duroc to the front. It is up to THE DUROC BULLETIN, and this paper stands ready to help the Duroc man "over the top." Write for FREE copy containing DeVore's article, "DUROCS OF THE GREAT WEST."

SEND $1 FOR 1 YEAR.

THE DUROC BULLETIN

CHICAGO, ILLINOIS.



UNEEDA QUEEN MODEL, Grand Champion State Fair, 1918.

UNEEDA GLENN COUNTY HERD OF

Duroc-Jersey Hogs

KEY HERD OF PACIFIC COAST

Won at Sacramento:

Grand Champion Sow, Senior Champion Sow, Junior Champion Boar, seven Firsts, 23 other prizes.

PIGS BY NOTED SIRES

High Orion, the world's record-breaking sire, Great Wonder, Grand Champion Iowa; King Orion Cherry, First Prize Indiana and Ohio, and other best boars of the breed. Get some of their pigs. Few bred sows and gilts left.

H. P. SLOCUM & SON

WILLOWS, CAL.

Lendorris Ranch Poland-Chinas



PUT PROFIT IN FARMING

Our herd is the result of careful selecting and constructive breeding, and combines size, bone, easy-feeding qualities, prolificacy—everything you want for a profit-making hog.

GREAT BATTERY OF BOARS

YOUNG JUMBO (see picture), the great son of Jumbo Bob, who is all that his name and breeding imply; also the sensational young boar, LENDORRIS LIBERTY BOND, a son of Liberty Bond, for whom $10,000 was refused. He promises to become one of the Coast's greatest sires. This is the blood you need to insure your success.

W. L. HAAG & SON

Hanford, Calif.

DUROC JERSEYS

GREENWOOD HERD OF LARGE TYPE DUROCS

The kind that have the bone, constitution and size combined with supreme quality. Our breeding stock comprises animals with blood lines that are noted for certain reproduction of the above characteristics. Ranch on state highway, 8 miles north of Marysville and 3 miles south of Live Oak.

H. C. WITHEROW, Mgr. LIVE OAK, Sutter Co., Cal.



REGISTERED DUROC-JERSEYS

We have for sale right now, big, heavy-boned, high-up, four-months-old boars. Also some A-1 weanling pigs, either sex. Also some young gilts. Our herd boar has the best blood of the breed and was a prize-winner at the State Fair last year.

Write for prices.

ROUTE 4, BOX 735 THE GARDINER RANCH, SACRAMENTO, CAL.

OAK KNOLL FARM

LAKEPORT CALIFORNIA

We have sold all our young boars and are now booking orders for toppy weanlings. Highlander, the $1,000 Grand Champion Boar, heads our herd of

CHESTER WHITES

SAN FRANCISCO OFFICE, 601 BALBOA BLDG.

AUCTION SALE OF REGISTERED

POLAND CHINA HOGS

40 Splendid Young Sows

10 Choice Bred Gilts

5 Carefully Chosen Boars

These hogs are representative selections from the best of the California breeders, including M. Bassett, W. H. Browning, W. A. Young, Hewitt & Hewitt, and such Eastern breeders as Fesenmeyer and T. F. Walker.

They carry the blood of such noted sires as President, J. O. Orange, I. B. A. Wonder and Chieftain.

To be sold without reserve Wednesday, June 4th, 1 p. m., at oil station on the Davis Highway, two miles west of Sacramento.

AMERICAN HOG CO., OWNERS

ORD L. LEACHMAN, Auctioneer, 1004 5th Street. Main 1987R.

HAUSER'S DIGESTER TANKAGE

Gives Great VALUE for LEAST MONEY. IT MAKES THEM FAT.

HAUSER PACKING CO. LOS ANGELES

TAMWORTHS

(The Bacon Hog)

Largest Herd in the State

DUROC-JERSEYS

Mature Stock and Weanlings of both sexes. Sure to please.

SWINELAND FARM

W. O. Pearson, Prop. Woodland, Cal.

ROC STEIN RANCH DUROCS

Crimson Monarch, Gold Model and Orion Cherry King breeding. Weaned pigs and bred gilts and one service boar for sale. Write and get our prices before you buy.

W. M. Way & Son

Rt. 1, Box 320, MODESTO, CAL.

DIGESTER TANKAGE

Send for Sensible Folder on Feeding Hogs

WESTERN MEAT COMPANY

Animal Food Dept. 704 Townsend St., San Francisco

Livestock and Dairy Notes

Livestock breeders all over the state are invited to send on postal cards, notes regarding their sales, State and County Fair intentions, new stock, etc.

The Dairy.

T. B. Purvine & Son, Petaluma, breeders of registered Jersey cattle, report sales of a service bull to Henry McGrew, Sebastopol, and a bull calf to Mr. Collins of Middleton.

E. F. Pomeroy, Burbank, is getting an average of 1,177 pounds milk from 33 cows—mostly Holsteins. He has just bought 34 head of young stock from Illinois; also a bull sired by Pontiac Segis Wayne and from a Silver Spring dam.

S. P. Kelley, of Clover View Jersey Farm, Ferndale, has purchased from Westview Farm, Liberty, Mo., a brother to the $60,000 bull, Financial Sensation. Mr. Kelley has 60 registered Jerseys strong in Financial King blood.

Grade dairy cows continue to command high prices. At a recent sale conducted by Col. Cy N. Clark, Modesto, for Baccala Bros., near Crows Landing, 75 head averaged $141; 25 tops averaged $178, and the best cow brought $255.

Finderne Susan Korndyke and Finderne Perfection Korndyke, two-year-old daughters of King Pontiac Segis Korndyke, recently made records of 20.03 pounds and 23.06 pounds respectively, at the Palo Alto Stock Farm, Palo Alto.

Katie Paul Burke, a Holstein cow owned by Abbott & Clark of Cortland, New York, has broken the junior four-year old record for both seven and thirty days, her production being 44.64 pounds butter in seven days and 167.95 pounds in thirty days.

The California Dairy Council has opened southern headquarters at 2311 Fairfield Ave., Hollywood, in charge of C. J. Brown. Those interested in the dairy industry in the South are rallying to the support of the movement with great enthusiasm.

Norabel Ayrshire Farms, Valley Ford, report recent sales of registered Ayrshires as follows: 1 bull to Charles Colombo, Occidental; 1 bull and 2 heifers to H. A. Turner, Sattley; 1 bull to C. A. Pellescio, Valley Ford; 1 bull to H. F. Kennard, Fallon.

As an evidence of the good care of the young stock on the ranch of C. A. Miller, near Ripon, they are raising a calf born at least 6 weeks prematurely. Contrary to the usual practice the calf was allowed to suckle its dam for two weeks before being taught to drink. When seen the calf was about six weeks old and small for its age, but bright and lively and growing rapidly.

Thos. Harrison of Santa Rosa Stock Farm, Santa Rosa, reports the following sales of Milking Shorthorns: Seven cows to Rogue River Valley Canal Company, Medford, Oregon; 1 cow to J. E. Mason, Medford, Oregon; 1 bull to Robert Riley, Cloverdale. Mr. Harrison expects to make a trip east early in June, to add to his herd. He knows Milking Shorthorns perhaps better than any other man in the United States and will bring back a choice bunch.

A. W. Morris and Frank L. Morris are both in the East attending the Cabana Holstein sale, the annual meeting of the Holstein-Friesian Association and the Moyer National Sale at Philadelphia June 5-7. They have consigned 4 head to this sale, including the young bull, Sir Aaggie Meade DeKol, whose seven nearest dams average higher in yearly test than those of any other bull in the world. The results of this initial consignment to an eastern sale will be watched with deep interest.

Beef Cattle.

J. D. Grieve of Davis has purchased 48 head of registered Shorthorn bulls from J. W. Johnson, Childers, Texas.

Dangburg Land and Livestock Company, Minden, Nev., has purchased 21 Hereford bulls and 16 heifers from W. N. Collier, Fulton, Mo. Most of the animals were sired by Mr. Collier's Perfect Donald.

Chas. Rule of Jenner recently received a wire from Mousel Bros., the noted Hereford breeders of Cambridge, Neb., asking for prices on a large number of his fine Herefords. Mr. Rule has one of the largest herds on the coast.

At the recent sale of Shorthorns held by H. C. Lookabaugh at Watonga, Oklahoma, 38 head averaged $2,943—the highest average ever made on Scotch cattel in America. Three sons of Fair Acres Sultan averaged $10,316.

J. L. Murphy, a Los Angeles attorney, recently purchased 16 registered Angus bulls through E. T. Davis, the western representative of the Angus breeders' association . These bulls will be used on Mr. Murphy's Southern California ranch.

At a recent meeting of the marketing committee of the California Cattlemen's Association, a representative of Clay, Robinson & Company, who had been inspecting beef cattle herds through the central part of the State, reported that the stock he saw which was intended for shipment to middle west markets would stack up very well with corn belt stock.

Swine and Swinemen.

Thos. Harrison, Santa Rosa, has sold a Duroc sow to J. E. Mason, Medford, Ore., and a boar to J. Gilmer, Santa Rosa.

The Western Berkshire Congress expects to accept an invitation of Lou. G. Hare, a Monterey county swine breeder, to hold a promotion sale at Salinas during the Rodeo, June 23 to 29.

Jack London Ranch, Glen Ellen, recently sold a tried Duroc sow, 3 gilts and a boar to G. H. Umbsen of San Francisco, who has a ranch in Shasta county, and is starting a herd of registered Durocs.

W. B. Hewitt, Van Nuys, has just sold a son of Great Model to Beller & Borden, Carlsbad. He is a March yearling and was pronounced by Fred Devore to be the best Duroc boar for his age in America, with only one exception.

W. M. Way & Son of Modesto report excellent results from their ad in the Rural Press. They have recently sold a Duroc service boar to the Lewis Company, Madera; 2 bred gilts to J. H. Phillips, Modesto, and a bred gilt to Walter Teller, Atwater.

Allen Thompson of Tulare says that his futurity litters of Durocs are coming along fine and that 15 herds in all have been signed up for the Duroc Futurity to be held at the Fresno fair. Mr. Thompson is breeding sows and gilts for summer sale.

Some of the bred gilts that John M. Bernstein of Hanford will have in his sale this coming fall carry some

HOLMES STOCK FARM
WATERFORD RD., MODESTO, CALIF.
Registered Holstein Friesians.
YOUNG SERVICE BULL FOR SALE
Prince Abbekerk Aralia Walker,
No. 204267—Three-quarters white.
Write for pedigree and price. Inspection invited and satisfaction guaranteed.

REGISTERED HOLSTEINS
Creamcup Herd offers service bulls and bull calves of 34-lb. breeding. Females offered for foundation stock. Tuberculin tested.
M. M. Holdridge, San Jose, Cal.
R. D. "A," Box 437.
Two miles out North First Street.

We have issued a convenient little book for the keeping of breeding dates of cattle, hoping to aid the breeder and cattle owner in maintaining accurate records. We will gladly mail you a copy free if you request it.
BREEDING DATE BOOK HERE
CALIFORNIA BREEDERS SALES AND PEDIGREE CO.
C. L. HUGHES, Sales Manager, Sacramento, Cal.


Calf Profits
Are you getting them? Calf profits mean more to you now than ever before.
Blatchford's Calf Meal
has been known since the year 1800 as the complete milk substitute. Costs less than half as much as milk — prevents scouring — promotes early maturity. Sold by dealers or direct from the makers.
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Home of Quality Holsteins

Get acquainted with **PALO ALTO STOCK FARM,** California's foremost breeding establishment. Here on 4,600 acres of rich soil, man and nature have combined to make an ideal place for the raising of purebreds. Abundant crops and luxuriant pastures provide an unequalled opportunity for developing stock. There are commodious buildings, equipped with the latest labor-having devices and sanitary provisions. An unlimited capital has brought together one of the greatest herds of Holsteins in the West.

A Record-Breaking Herd

In purchasing foundation stock the aim was to secure the best, regardless of price. And "the best" meant not only heavy producers, but animals of royal breeding, excellent type and great constitutional vigor. A wonderful lot of cows was secured, and at their head was placed the great King Pontiac Segis Korndyke. From this start a herd of over 300 head has been developed. The cows have made not only State and Coast records, but even world records, and their daughters, now freshening, promise to outstrip them.

We Can Satisfy You

We are now in a position to satisfy the demands of dairymen who want well-bred stock, backed up by high-record ancestry, good in type, yet priced at reasonable figures. We have a line-up that is sure to please, and we can suit both your purse and your purpose.

Put a Palo Alto bull at the head of your herd. He will put money-making qualities into it, and will lay the foundation for a sure fortune. His purchase will prove the best investment you ever made.

Get Started Right---It's Half the Fight

Write us your wants and let us get you started right. Better yet, visit the Farm and inspect our stock. Visitors say it is a whole dairy show in itself. We conduct everything on a systematic, scientific basis, and perhaps you will get some valuable ideas to take home with you. Glad to show our stock and explain our methods, whether you buy or not.

PALO ALTO STOCK FARM

DIRECTORS:
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M. H. TICHENOR, PRES.
Palo Alto, Cal.

of the most prepotent big-type blood to be found in seven states, such as from the Gerlaugh herd of Defender, Long Chief and Lady Wonder lines and others. "To see 'em is to want 'em" right away.

A. Buckland and Son, Fresno, who bought the top sow, Kings Wonder, at the recent Poland-China sale for $600, have sold the second choice pig for $200 at weaning time, and the third choice for $150. They expect to get many good litters from her, as she should cross well on their herd boar, California Jumbo Buster.

Business is booming with Donald Graham, the Duroc breeder of Lancaster, whose herd Fred DeVore pronounced one of the best in California. Mr. Graham had 35 gilts to offer this summer and has already sold 29, a large number of these going to E. E. Benedict, Earl McGrew, Lancaster; L. R. Hitchcock, A. V. Austin, L. Leest, D. H. Pores and R. N. Nance, Van Nuys.

Promotion sales of registered Berkshires at Santa Rosa on Saturday, the 7th, and at Salinas on Saturday, the 28th, make up the June calendar of the Western Berkshire Congress. Probably there will be no further sales until State Fair time, when a number of pigs will be sold at Sacramento. The Santa Rosa sale is in charge of J. Francis O'Connor, who says that much interest is being manifested among the ranchers and a very successful sale is expected.

Livestock Miscellaneous.

A livestock association has been formed in Yolo County with the idea of making that county the leader in the state from a livestock standpoint. The organizers represent an aggregate investment of about $3,500,000, and the committee in charge consists of such well-known men as Frank L. Morris of A. W. Morris and Sons; Wm. Bemmerley, breeder of Herefords; A. D. Eakle, breeder of swine; Ed. Bullard, breeder of Rambouillet sheep, and C. Harold Hopkins, manager of the Conaway properties.

LIVESTOCK DIRECTORY

Rate in this directory 3c. per word each issue.

SWINE.

Berkshires.

CASTLEVIEW

GIANT TYPE BERKSHIRES

We are booking orders for spring pigs from Grand Champion Sows and sired by Mayfield Rookwood, sire of Champion Barrow at 1919 Western Berkshire Congress.

CASTLEVIEW RANCH, SANTA ROSA.

A SHOW PROSPECT

FOR $75.00

A September Boar sired by Baron Duke 201st, 780 pound, $1100.00 Grand National Champion, from Rookwood Belle 7th (sired by Rivals Champion Best), a sow that won at the State Fair, Salem, Oregon, and the National Swine Show at Omaha. This boar promises to be a large, vigorous boar and is a snap at the above price. Sandercock Land Co., 23 Montgomery St., San Francisco, Calif.

ANCHORAGE FARM.

MONEY-MAKING BERKSHIRES The prolific, easy-feeding kind that make the highest priced pork from the lowest priced feed. They will increase your profits. Prices reasonable. Satisfaction guaranteed. Write for free booklet, describing our world's reserve champion STAR LEADER. We are now making a special offering of classy boar pigs. Anchorage Farm, Orland, Calif.

GRAPEWILD FARMS BERKSHIRES

A few spring boars and fall pigs by Big Leader, Grapewild Farm Leader and Majestic King.

A. B. Humphrey, Prop., Escalon, Calif.

BERKSHIRE BOAR PIGS—From large litters. Order one if you want the best. Satisfaction guaranteed. E. J. Merrill, Morgan Hill, California.

RIVER GARDEN FARM BERKSHIRES—Weanlings and gilts. They'll surely please you. E. H. Whiting, Route 2, Box 651, Ukiah, Cal.

BERKSHIRES—Sired by Star Leader, the $1500 boar. Kommas Registered Stock Farm, Modesto, Calif.

FOR REAL GOOD BERKSHIRES write Frank B. Anderson R. 7 24W., Sacramento, Cal.

CARUTHERS FARMS BERKSHIRES — Cholera immune. Live Oak, California.

REGISTERED BERKSHIRES—Write R. D. Jume, Dos Palos, California.

BERKSHIRES—Fair Oaks Ranch, Willits, California.

Poland-Chinas.

POLAND CHINAS—A few fine Fall gilts sired by Big Bone Bob; also some top Spring boar pigs sired by Long Big Bone Jr.; junior champion, and Golden State King, out of Smooth Beauty, Black Beauty 5th, grand champion and champion, Black Beauty C, Ora Price, the dam of champions and others. High-backed, good-footed, the kind that make good. Sold worth the money. W. A. Young, Lodi, Cal.

MARCH BOAR PIGS—Out of sows selected from the best herds of the corn belt. One line-bred Big Bob pig sired by Bridges' Bob Wonder, Missouri, grand champion, and out of my great sow, Bridges' Bobby. Two sired by the noted Boulder Buster and out of the splendid sow Bob's Giantess. These are real tops and guaranteed to please. H. C. Shinn, R. F. D. 1, Tulare.

EL PROFITO—Our great herd boar, will put profit-making qualities into your herd. His offspring have size, stretch, bone, good backs and feet, and easy feeding qualities. To make the right start with big-type Poland Chinas, get one of his boar pigs. Prices right. Correspondence cheerfully answered. Viola L. Renwick, Santa Barbara, California.

SOW BARGAINS—We are offering some exceptionally nice tried sows, bred and open gilts, at attractive prices. They are all sired by the undefeated and world's grand champion Superba and out of big type sows, which cost me $200 and over. Investigate before buying elsewhere. Rough's Greenfields, Arlington Station, Riverside, California.

MAKE BIG MONEY with Cloverdale Farm big-type Poland-Chinas—the prolific, fast-growing, easy-feeding, money-making kind. We purchased the famous Whitten Ranch herd including great boar Jumbo Model. High-class stock for sale—farmers' prices. Write us. Cloverdale Farm, R. F. D. 1, Escondido, Cal.

POLAND-CHINAS—Am booking orders for Spring boars sired by King's Massive. Orange and from such noted sows as Rosebud Quality 1st, sired by President and out of King's Rosebud, grand champion sow of 1917 and other big sows. H. D. McCune, Lemoore, Cal.

NOW BOOKING ORDERS for spring pigs, either sex from my prize-winning, large type Poland-Chinas hogs. Also will book a few orders for bred gilts, February and March farrow, and a few good serviceable, aged boars. Hale I. Marsh, Modesto, California.

ELDERSLY FARM—We are offering some excellent tops from our fall, and spring pigs at attractive prices, sired by one of America's best-bred boars, Big Black Bone Wonder, with grand championship breeding on both sides. He is a real 1000-lb. boar. J. H. Ware, Live Oak, California.

THE BEST IN THE WEST—California Gerstdale and President's Equal are my herd sires. Fall and spring boars now ready to move—each one a corker. Dr. J. A. Crawshaw, Hanford, California.

BRED AND OPEN JULY GILTS by King Big Bone Leader for sale. Also September gilts by California Jumbo Buster and a few toppy young boars. A. Buckland & Son, Route E, Box 126, Fresno.

BOOKING ORDERS for spring pigs sired by "Bob Big Bone" 281289, litter brother of the Junior Champion of Sacramento, 1918, P. E. Mitchell, Atwater, California.

OXBONE HERD offers March boars for sale from King's Big Bone Leader, grand champion at State Fair, 1918. Write F. E. Fay, Tipton, California.

BIG-BONED POLAND-CHINAS—From Eastern prize-winners. Sold out of boars; a few choice October gilts for sale. D. H. Forney, Route G, Fresno, California.

FALL BOARS by a son of Caldwell Big Bob at bargain prices. Also booking orders for spring pigs. Forest View Ranch, J. H. Cook, Paradise, Cal.

WAUKEEN HERD POLAND-CHINAS—Big type herd boar, the $700 Grand Champion of California. Les McCracken, Prop., Ripon, Cal.

BIG TYPE POLAND-CHINAS—Stock from the best herds of the Middle West. N. Hauck, Alton, Humboldt County, California.

LAKE SIDE STOCK FARM—Large smooth and big boned Poland-Chinas. Geo. V. Beckman & Sons, Lodi, California.

REGISTERED POLAND-CHINA SWINE—Prize winners. Finest stock in the State. M. Bassett, Hanford, California.

POLAND-CHINAS—Young stock for sale. Edward A. Hall, R. 1, Box 30, Watsonville, Calif.

POLAND-CHINA PIGS—Bernstein Trewhitt, and Rose blood. B. M. Hargis, Tulare.

POLAND-CHINAS—A few young service boars for sale. R. F. Guerin, Visalia, Calif.

REAOAKS RANCH herd of registered Poland-Chinas, W. J. Hanna, Gilroy, Calif.

BIG BONED POLAND-CHINAS—Stock for sale. E. S. Myers, Riverdale, California.

POLAND-CHINAS—Young stock for sale. M. E. McMahon, Lemoore, California.

POLAND CHINAS—Strictly large type. J. P. Lehmann, Lodi, Cal.

LARGE TYPE POLAND CHINAS. Winton Poland China Farm, Winton, Cal.

Chester Whites.

BILLIKEN CHESTER WHITES—Just a few left to offer. One 1917 fall boar and one 1918 fall boar, both choice. Also Spring Farrows are all sold except 10 choice pigs. Will have 10 more good farrow coming May, June and July and will book orders now from those coming litters. Address at weaning time. C. R. Cunningham, Mills, Calif.

Duroc-Jerseys.

HERD BOARS—[illegible] Write for full particulars. Geo. [illegible], Winton, Cal.

DUROC WEANLINGS for the farmer. Easy feeders. 200 lb. at seven months. W. W. Everett, River Bend Farm, St. Helena, Calif.

DUROC-JERSEYS AT IRELAND—Home of Cherry Volunteer II., Grand Champion Boar at Riverside. Ireland's Orion Defender and Orion's King of Ireland are excellent sires in service. Booking orders for spring delivery. Ranch at Owensmouth. City office, 1219 Brockman Bldg., Los Angeles, Calif.

WEANLINGS sired by Trailblazer, son of Pathfinder, Derryfield Col. and Derryfield Wonder Boy—King's Col. boars, ex Burke's Good Enuff, Golden Model, and Model Col. sows. Bred Gilts. Service Boars. Derryfield Farm, Capital National Bank Building, Sacramento.

SWEETWATER DUROCS—The most popular herd in the West. Our Durocs make money for us—they will do the same for you. Winsor Ranch, Bonita, San Diego Co. Address R. K. Walker.

BIG TYPE DUROCS—Herd headed by California Orion King. Am offering a few selected boar pigs. Inquiries invited. Harvey M. Berglund, Dixon, Calif.

WE WON MORE MONEY on Durocs at the State Fair than any other exhibitor. Why not buy some of this winning stock? June Acres Stock Farm, Davis, California.

REGISTERED DUROC JERSEYS — Open and bred gilts. August and November boars. Great herd headers. Weanling pigs, both sexes. Stock of the big strong type so much desired. Jack Borge, Dos Palos, Cal.

DUROC JERSEY SWINE FOR SALE—Best blood lines. Bred sows and gilts. Service boars. Jersey Queen Farm, San Jose, Calif.

DUROC JERSEYS—Fine big type gilts, tried sows and boars Eastern and California bred. H. P. Slocum & Son, Willows, Calif.

HEAVY-BONED DUROCS—A few service boars for sale. Ormondale Co., Route 1, Redwood City, California.

DUROC-JERSEYS—A few choice September gilts—Weanlings either sex. H. E. Boudier, Napa.

REGISTERED DUROCS—All from prize-winning stock. W. P. Harkey, Gridley, Calif.

REGISTERED DUROCS—Stock for sale. W. J. Fulgham & Sons, Visalia, California.

Yorkshires.

LLOYTON HERD REGISTERED YORKSHIRES—Bred gilts and pigs from eight weeks up. Lloyd & Tointon, Llano Road, Santa Rosa, California.

Hampshires.

HAMPSHIRES—Fine quality. Weaned pigs, dandy young boars. Uneeda Hampshire Swine Farm, Tom M. Bodger, Prop., Gardena, Cal.

MY HAMPSHIRES are money makers. Stock for sale. Buy now. L. W. Denker, Saugus, California.

Miscellaneous.

CROLEY'S BALANCED HOG FEED—The cheapest feed to fatten hogs. Write Geo. H. Croley Co., Inc., Livestock Supplies, 8th and Townsend Sts., San Francisco, Calif.

LARGE YORKSHIRES—The ideal hog for the progressive farmer. Young stock for sale. A. L. Tubbs Co., Calistoga, Calif.

MULE-FOOT HOGS—Large type. H. T. Bailey, P. O. Box 37, Lodi, California. "The Blue Gums."

DAIRY CATTLE.

Guernseys.

GRAPEWILD FARM GUERNSEYS.

A 21-months-old bull out of dam with record of 615 pounds in A. A. class, and a few young bulls up to 1 year of age.

A. B. Humphrey, Escalon, California.

HIDDEN VALLEY FARM offers for sale 2 young Guernsey bulls, ready for service, out of high record advanced register dams. A. J. Welch, proprietor, Redwood City, California.

EDGEMOOR FARM GUERNSEYS —First in the show ring and in official records. Few animals of either sex for sale. Edgemoor Farms, Santee, California.

PALO ALTO STOCK FARM, Palo Alto—Breeders of registered Guernseys; both sexes; prices reasonable.

Ayrshires.

ELKHORN FARM AYRSHIRES— Choice young bulls at reasonable prices. J. H. Meyer, 440 Montgomery St., San Francisco, Calif.

NORABEL FARM AYRSHIRES—Purebred young stock for sale at reasonable prices. Le Baron Estate Company, Valley Ford, Calif.

AYRSHIRES—Registered; all ages. E. B. McFarland, 412 Claus Spreckles Building, San Francisco, California.

REGISTERED BULL CALVES—Ready for service. Redwoods Ayrshire Farm, La Honda.

Jerseys.

SUNSHINE FARM JERSEYS—Tuberculin tested. Production counts. E. E. Greenough, Merced, California.

Milking Shorthorns.

BREEDERS OF REGISTERED SHORTHORNS—Milk strain; choice young stock for sale. John Lynch Ranch, Box 321, Petaluma.

INNISFAIL DAIRY SHORTHORNS—Registered young bulls for sale. Alexander & Kellogg, Suisun, California.

Holsteins.

A PRICE ON EVERY ANIMAL.

Herd free from tuberculosis. All sales subject to state's test. Sons of Lindsome Soldene Veeman, whose dam is not only a world record cow in seven-day division but has two sisters holding world's records for yearly production.

Tower Farms Association,
670 Mills Building, San Francisco.

HIGH-CLASS HOLSTEINS—Choice for sale, some cows of Sir Veeman Korndyke Pontiac from A. R. O. dams. Write for particulars or come see them. R. P. Grace, Valley, Calif.

PALO ALTO STOCK FARM, Palo Alto, breeders of registered Holsteins. Heifers and service bulls. Reasonable prices.

REGISTERED HOLSTEIN BULLS with records [illegible] Registered Stock Farm, Modesto, California.

CREAMCUP HERD—Registered Holsteins, Pontiac bull calves. M. Holdridge, Rt. A, Box 437, San Jose, California.

BREEDERS OF REGISTERED HOLSTEIN cattle and Berkshire pigs. Whittier State School, Whittier, California.

F. H. STENZEL, SAN LORENZO, CALIF.—Breeder of Registered Holsteins. High test producers.

THE VICTORY HERD—Registered Holstein cattle and Duroc Jersey swine. H. E. Spires, Hilcrest Farms, Caruthers, California.

REGISTERED HOLSTEINS—Young stock for sale from A. R. O. dams. La Driver Stock Farm, Nicolaus, Cal.

REGISTERED HOLSTEINS — Best blood lines of the breed. R. L. Holmes, Modesto, Cal.

REGISTERED HOLSTEINS—We breed for production. Leeman and Kilgore, Ripon, Cal.

REGISTERED HOLSTEINS—A. W. Morris & Sons Corp., Importers and Breeders, Woodland, California.

J. W. BENOIT, Modesto, Calif. Breeder of registered Holsteins.

GOTSHALL & MARGRUDER—Breeders of registered Holstein-Friesians, Ripon, Calif.

CHOICE HOLSTEIN bulls for sale. No females. Millbrae Dairy, Millbrae, California.

BREEDERS OF REGISTERED HOLSTEIN cattle. McAlister & Sons, Chino, California.

HOLSTEIN BULLS and bull calves from A. R. O. cows. C. A. Miller, Ripon, California.

REGISTERED HOLSTEINS and Duroc-Jerseys. Sturgeon Stock Ranch, Tulare, Calif.

REGISTERED HOLSTEIN CATTLE—E. B. Freeman, Route B, Modesto, California.

EL DORADO HERD OF HOLSTEINS—Alex. Whaley, Tulare, California.

BEEF CATTLE.

RANCHO SAN JULIAN SHORTHORNS—Purebred range bulls, unregistered, for sale. Estate Thos. B. Dibblee, Santa Barbara or Lompoc, Calif. John Troup, Supt.

ALAMO HERD REGISTERED HEREFORDS (founded by Governor Sparks). Herd and range bulls. Reasonable prices. W. D. Duke, Likely, Modoc county, California.

REGISTERED YEARLING SHORTHORN BULLS—Heavy-boned, thick-meated. Scotch and Scotch-topped breeding. Ormondale Co., Route 1, Redwood City, California.

REGISTERED MILK AND BEEF SHORTHORNS, bulls and heifers for sale; catalogue free. Thomas Harrison, Santa Rosa Stock Farm, Santa Rosa, California.

HEREFORDS—Sierra Vista Herd, Minturn, California. Over one hundred registered animals. Fairfax and Repeater bulls head the herd. On highway.

THE NEVADA HEREFORD RANCH, Jno. H. Cazier & Son Co., Props., Wells, Nevada. Registered Hereford cattle. Breeding stock for sale.

REGISTERED SHORTHORNS—A few choice young bulls, grandsons of Fair Knight. Prices reasonable. Fair Oaks Ranch, Willits, Calif.

HOPLAND STOCK FARM—Registered Shorthorns. Prices on application. Hopland, Calif.

REGISTERED HEREFORDS—H. H. Gable, Diamond G Ranch, Esparto, California.

SIMON NEWMAN CO., breeders of Registered Hereford, Newman, California.

GEORGE CALLAHAN, breeder of registered Herefords, Milton, California.

GEORGE WATTERSON—Breeder Registered Herefords, Bishop, California.

HEREFORDS—Mission Hereford Farm, Mission San Jose, California.

REGISTERED SHORTHORNS — Julien Ranch, Grenada, Siskiyou Co., California.

SHORTHORNS — Carruthers Farms. Live Oak, California.

HORSES AND MULES.

SHIRES —Broodmares— Stallions. Also stallion and filly colts $100 to $700. Jack London Ranch, Glen Ellen, Cal.

FOR SALE—A-1 Breeding Jack. Bargain. Have quit raising mules. W. P. Harkey, Gridley.

SHEEP AND GOATS.

PURE-BRED RAMBOUILLET RAMS, large smooth frames extremely heavy shearers, from the very best strains of this country and France. Immediate delivery from ranch at Ord Bend, Glenn county. P. O. address, Windell Orchards, Glenn, Calif.

F. A. MECHAM ESTATE, Petaluma, Cal.—Breeders and importers of Shropshire, Rambouillets and American Merinos, both sexes. Also Red Polled cattle. Take electric car at Petaluma or Santa Rosa for Live Oak Ranch.

ANGORA GOATS — PERSIAN SHEEP—Bucks from $25 to $50 each. Only fine stock for sale. C. P. Bixby & Sons Co., San Jose, Calif.

E. R. BLOOM, DIXON, CAL.—Breeder of Shropshire rams out of pure blood ewes and imported registered rams. Single and car load lots.

DORSETS AND ROMNEYS—Dorset ram lambs for sale. John E. Marble, South Pasadena, California.

ONE TWO-YEAR SHROPSHIRE BUCK for sale. C. J. L. Stonebraker, Route A, Chico, California.

BISHOP BROS., SAN RAMON, CALIF.—Breeders and importers of Shropshires.

KAUFKE BROS., WOODLAND, CALIF.—Breeders and importers of Hampshire sheep.

CHAS. KIMBLE, breeder and importer of Rambouillets, Hanford, California.

CALLA GROVE FARM, MANTECA, CALIF.—Breeders and importers of Hampshire sheep.

MISCELLANEOUS.

BUTTE CITY RANCH—Shorthorns, Shropshires, Berkshires and Scotland pointers. Write for prices and description before buying. Butte City Ranch, Box P, Butte City, Glenn Co., Cal. W. P. Dozier and W. S. Gulick, owners. Special Notice: Second Farm Sale, Shorthorns, Shropshires, Berkshires; Fresno, August 2, 1919.

The Trusty Pilot of the Milky Way

(Continued from first page.)

However, a cow that tests just fairly low may not prove unprofitable, and if she is a heavy and persistent milker she may produce more butterfat in a year than the cow that tests higher, but does not milk so heavily or persistently. On the other hand, a cow giving only a moderate quantity may, through persistent milking or a high test, or both, finish her year with a most satisfactory record to her credit.

Testing milk does little good unless weighing goes with it, but both together will show just about what a cow is worth, and that is what the cow-testing associations do. No longer can the camouflage of a fine appearance or an affectionate disposition protect the low-producing cow. There is no disputing the scales, tester and record book, for figures show that tests made once a month come within 2 per cent of the actual production, and that is near enough for all practical purposes.

Weed Out the Boarders.

Prof. Wilber J. Fraser, in his booklet entitled "Uncle Sam's Three Herds of Dairy Cattle," says that all the profits in dairy farming are made by one-third of the cows. He divides all of the cows in the United States into three equal groups. Those in the first do not pay for their keep; those in the second a little more than break even; those in the third make a satisfactory profit. These figures are not guesswork, but are based upon an actual census taken and accurate records kept.

Undoubtedly the proportions are no different in California alone; in fact, not a herd has been tested so far without discovering some cows that were not worth their feed. Yet probably not one in fifty of the dairymen in this state tests his milk regularly or knows which of his cows are consumers instead of producers of wealth.

An excuse often given for not joining an association is that if the poor cows were weeded out of all herds there would not be enough cows of a better grade to go around in replacing them. But it is not necessary to replace them. If the remaining cows are given better feed and care they probably will produce just as much milk in the aggregate, and at much greater profit. Chris Olson had 27 cows, from which he was getting 600 pounds of milk per day. After joining a testing association he sold off two-thirds of the cows, keeping only 9, yet as the result of individual feeding and better care he continued to get the same amount of milk. It doesn't require much of a mathematician to prove that it is better to milk 9 cows giving a good profit than to milk 27, 18 of which reduce, if they do not wipe out, the profit of the other six.

Individual Feeding Pays.

This experience emphasizes one of the valuable features of testing—the elimination of the old scoop-shovel method of feeding all cows alike. Few dairymen feed their cows in proportion to the milk and butter fat produced. It is impossible to feed them economically unless this is done, yet it cannot be done unless records are kept. By knowing from day to day what a cow is producing, the farmer can try different feeds, see which ones she likes best, and regulate the quantity according to her production. We know of one case where the production was doubled and the profit increased six times with the same cows, simply by giving them a fair chance to do their best through individual feeding and proper care.

If each milking is weighed it is very easy to know when a cow is sick or off feed. Any abnormal condition is at once noticed in her sudden shrinkage, and whatever the trouble is it can generally be remedied before much harm is done.

Tested Cows Sell Higher.

Records alone will sell cows when no other quality will; in fact, many pure-bred cows with ruined udders have been sold for high prices for breeding purposes alone. Grade cows with records or from families with high records, can be sold for from 20 to 50 per cent more than those from herds where no records have been kept. This was demonstrated just a few weeks ago at the McGillivray Holstein sale at Sacramento. It so happened that A. E. Greene of Hood, president of the Sacramento Cow Testing Association, bought Brownie Mead, a grade daughter of King Mead of Riverside, about a year ago, and he put her on test. She made nearly 600 pounds of butterfat in a year, and when it became known that several of her sisters were to be offered at the McGillivray sale the demand was keen. One of them sold for $400, and the others brought from $325 to $350—almost unheard-of prices for grade dairy animals.

Back in Wisconsin it has been found that many buyers go only to sections where testing associations are in operation and will buy only cows with records. Herd record books have been used as evidence in court, and farmers have borrowed money from their banks on them.

Proves Value of Bull.

You know about Peter Small. He didn't like his bull, so he killed him for beef. Later on four of the bull's daughters were entered in a testing association and they made the phenomenal average of 25,210 pounds of milk and 977.3 pounds of butterfat. It was a lesson in cow-testing that cost Peter at least $10,000.

Testing associations not only convince dairymen of the value of pure-bred sires, but they enable them to determine the value of each bull through the records kept of his daughters. They stamp many old bulls with merit and save them from the block for a further life of usefulness. They make it easy for farmers to co-operate in the purchase and use of bulls, and to exchange proven sires to avoid in-breeding. Also they enable a farmer to breed more intelligently, and tell which calves to save to build up his herd.

Makes Better Farmers.

The cow-testing association puts dairying on a business basis and leads to better methods. The monthly visits of the tester greatly increase the interest of the farmer. Together they plan an economical ration from the grain and roughage available, and the farmer becomes a better feeder. The interest of his sons and daughters is aroused, and if he has hired help the milk scales serve as a check on the milker, inducing him to milk his cows better. Also, if there is more than one milker, a spirit of rivalry is developed, and each one wants to make his string show up best.

This same spirit of friendly rivalry is developed in the community and each dairyman strives to have the best herd. He talks more with his neighbors, reads and studies more, and thinks and plans more. His mind broadens. The spirit of improvement spreads until it reaches every phase of his activities. He becomes a better farmer, a better husband and father, a better citizens, a better man.

How to Organize.

A group of dairy farmers in any locality who have sufficient interest can organize a cow-testing association. The ideal organization consists of 26 members, thus permitting the tester to spend one day of each month at each place without having to work Sundays. He weighs the milk of each cow, tests it for butterfat, and keeps the necessary records. In some cases he also figures the value of the product, weighs the feed consumed and determines its value, and thus is able to show the profit on each cow above her feed. This is kept up throughout an entire year and the monthly totals are summarized. The owner then deducts interest, depreciation, labor cost, and other items, and finds out just where he stands.

Of course, a dairyman, after a little practice, can do all of a tester's work himself, but experience proves that he seldom keeps it up, even if he starts out with the best of intentions. It is much better for you to buy a scale, a Babcock tester, and a record book, and

Louden Barn Equipment

The Louden line includes Stalls and Stanchions, Litter and Feed Carriers, Detachable Water Bowls for Cows, Power Hoists, Cupolas, Ventilators, etc. Write for Catalog L-1.

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Get it under cover in record time. Cut down your labor cost. Eliminate repairs.

You can do it with Louden Hay Tools. Louden equipment costs less than the loss of a ton of hay. Try it out this season. It will save you time, labor, and expense. It will help you save the crop.

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will make money on any farm. Pure bred, large and smooth, with heavy fleece of fine, long staple white wool. Yearling and older rams. Breeding ewes. Any quantity. Prices attractive.

Chas. A. Kimble, Hanford, Cal., Breeder and Importer.



Champion Ram, P. P. I. E.

SAN RAMON SHROPSHIRES

WINNINGS P. P. I. E., 1915

Aged Ram, First and Second. Yearling Ram, First. Ram Lamb, First, Second and Third. Champion Ram. Yearling Ewe, Second. Ewe Lamb, Second and Third. Get of sire, First. Pen of three Lambs, bred by Exhibitor, First and Fourth. Pen of Four Rams, bred by Exhibitor, First and Fourth. Flock, any age, Second. Flock, any age, bred by Exhibitor, Second. Flock, one year old, First. Flock one year old bred by Exhibitor, First. Flock under one year, First. Produce of Ewe, First. Second and Third. Premier Championship for Breeder. Premier Championship for Exhibitor. A total, including American Shropshire Specials, of 15 Firsts, 9 Seconds, and 6 Championships.

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Second annual **SHORTHORN** sale will be held on July 10th, at San Francisco, at which time and place 60 head of bulls and females of rare breeding will be offered.

STOCK RANGE WITH FARM LAND

Splendid opportunity for cattle or sheep. 3800 acres rolling range. 480 acres good grain land nearly level. New pump at headquarters, 180 gallons per minute. Good road five miles to railway station and three-quarters mile to State highway, located between Dunnigan, Yolo County, and Rumsey. Heirs wish to sell or lease by June 15. Wire or write for particulars.

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ORMONDALE SHORTHORNS

All are heavy boned, and of Scotch and Scotch-topped breeding. Suited for either the range grower or breeder.

EVERY ANIMAL POSITIVELY GUARANTEED.

Whether you buy or not, visit our ranch, 7 miles from Palo Alto on Woodside Road. We welcome inspection. Prices and pedigrees on application.

SHORTHORN CATTLE DUROC-JERSEY SWINE

ORMONDALE CO.

REDWOOD CITY, CAL. R. D. No. 1

BRIGHTON FARM SHORTHORNS

One three-year-old bull bred by H. R. Clay.
Two outstanding yearling bulls sired by Sir Type, a son of Cumberland Type.
A few yearling heifers of same breeding.
Also registered Berkshires of both sexes of best breeding.

H. L. & E. H. MURPHY, Perkins, Sacramento Co., Cal.

of th... to h...

...s to it on your own hook, than to do no testing at all, but if there is an association in your section, or one can be formed, you will get much more satisfactory results by joining it. Take the matter up with your Farm Advisor. He will give you all the information you need.

Cost Why, it is so insignificant as compared with the benefits derived that it is hardly worth taking into consideration. It averages from $1 to $1.50 per cow per year, and records show that the annual income is generally increased $10 or $15 per cow. ...the Walla Walla association, al...ter, ...mentioned, the average profit ...nounced ...ed cost has been increased Mr. Grah...5 to $66.86 in just a few summer ... another association the an...large num...above feed costs has been Benedict, ...51 per cow; in still an... R. Hitch...increase has amounted to D. ... As shown by our illustration, the income over cost of feed of the average dairy cow in the United States is $20, while that of all cows in testing associations is $46. Isn't it a pretty wise move to spend from $1 to $1.50 per year on a cow and get back $26 extra from her?

From every point of view the cow-testing associations have proved successful. Measured by the strict rules of the investigator they have made good; tried out in the field of practical experience they have proved true; weighed in the balance of public opinion, they have not been found wanting.

We've learned this little lesson,
It applies to men and brutes;
Don't rely on good intentions—
You must know them by their fruits.
And the little Babcock tester,
While it seems a simple toy,
Is the signboard to greater profits,
And with profits there comes joy.

Pays to Use More Range Bulls

(Written for Pacific Rural Press.)

It pays to use plenty of bulls with the range herd. Also it is of great importance to have them in the best possible condition and at an age when they are most profitable as breeders. This was the consensus of opinion expressed at a recent roundup of cattlemen back in the middle west. It was the opinion of those present that the average ranchman does not use enough bulls; also that it is a mistake to allow a bull to run with the herd an entire season. There should be enough bulls to have the entire calf crop fall within a comparatively short period in the spring, and there should never be more than 20 or 25 cows for each bull. This will mean an increase of about 3 per cent in the calf crop, which helps a great deal in cutting down operating expenses.

No bull should be turned on the range until he is 2 years old, and bulls should be retired after they are 5 years old. A yearling bull in the range herd only wears himself out, and the old bull is too slow and sluggish to be profitable.

It is highly important to have a bull in good condition at the beginning of the breeding season. He should be fed throughout the winter and allowed to put on considerable flesh. The Fort Hays Station wintered 9 bulls last winter and kept data covering the cost of feeding and the gains made. The bulls gained 103 pounds each in the 100-day feeding period from December 20 to March 29, and the cost was $24.33 per head for the 100 days. During 60 days the bulls were fed a daily ration of 16½ pounds alfalfa, 15 pounds silage and 3 pounds cottonseed cake. During the other 40 days straw was substituted for alfalfa. The cost of the alfalfa was $9.90 a head for the 60-day period, while straw for the 40-day period cost only 63 cents per head. The bulls ate 15.7 pounds of straw a day during the 40 days.

Banks Finance Purchase of Dairy Cattle

(Written for Pacific Rural Press.)

Country bankers in this state are gradually giving farmers the much-needed assistance in the way of financing them in purchasing pure-bred stock. For some time they have been aiding pig club members, and now the National Bank of Riverside and the People's Trust and Savings Bank have volunteered to finance an importation of pure-bred dairy cattle from the East. They will put up the money when the animals are purchased; then bring them into Riverside county, where each purchaser will pay a small payment down and arrange with the bank for future payments.

F. H. Scribner, assistant farm advisor of Los Angeles county, will go East to purchase the animals, nearly all of which will be bred heifers. A large pool of orders, totaling several carloads, has been made up from farm bureau members of Riverside, San Bernardino, Los Angeles, Orange and San Diego counties, and thus the buyers will gain the advantage of having the animals selected by an expert and getting them at their exact cost, plus the expenses of the trip. All cattle will be tuberculin tested and guaranteed to be breeders.

Although the first shipment will consist only of dairy cattle, it is the plan to purchase other livestock in the same way later on. It is believed that these importations will mean a decided stimulus to the pure-bred livestock game in this state. The largest order in the first pool is for 8 animals, which means that a large number of new, small herds of registered dairy cattle will be established, thus furnishing a most desirable market for pure-bred bulls for livestock breeders in California, as well as a stimulus to the dairy industry in general.

Livestock Queries

Calf Has Nasal Catarrh.

To the Editor: My calf starts to cough and pus comes from her eyes and nose. What sort of a disease is it and what is a good remedy?—W. G., Rio Grande.

(Answered by Dr. E. J. Creely, San Francisco.)

Your calf has nasal catarrh. Separate it from the others not affected and give inhalations of vapo cresoline, or lysol water steamed. Mix the following and give one teaspoon twice daily: Chlorate potash, 8 ounces; pulverized aniseed, 2 ounces; citrate iron (ammoniated), 1 ounce; pulverized gentian root, 2 ounces.

Horse Injured by Pitchfork.

To the Editor: My horse had a pitchfork run into his stifle joint, cutting it deep enough to show the leaders. I have blistered him several times, but he seems to get worse, and when I try to work him he holds up his foot and does not want to use it. T. K. P., Atwater.

(Answered by Dr. E. J. Creely, San Francisco.)

I am afraid this is a hopeless case, as a pitchfork wound is almost like a poisoned arrow. Probably the joint was indirectly punctured annd there is an ulceration there. Inject plentifully twice a day the following solution: Formalin, 2 ounces; distilled water, 1 gallon; compound tincture benzoin, ½ ounce.

Treatment for Impaction.

To the Editor: Recently one of my mares had impaction of the bowels and nearly died before I could get a veterinarian. Can you give me a sure cure for impaction?—J. G. L., Arroyo Grande.

(Answered by Dr. E. J. Creely, San Francisco.)

This trouble is hard to treat when the impaction is solidified. The following is very good and cures in most cases: Raw linseed oil, 1 quart; castor oil, one-half pint; fluid extract ginger, 4 ounces; fluid extract cannabis Indica, 22 ounces; oil peppermint, 10 drops. Mix and give a quar...

IS $29.60 ADDITIONAL PROFIT A YEAR PER COW OF INTEREST TO YOU?

IS AN ADDITIONAL DAILY GAIN OF APPROXIMATELY FIVE-TENTHS POUNDS IN FATTENING HOGS OF INTEREST TO YOU?

IS THERE A LOT OF ROUGHAGE NOW ON YOUR FARM BEING WASTED JUST BECAUSE IT IS NOT PALATABLE?

You can make this additional profit; you can get this increased pork production, and you can turn what is now waste into profit by using that great CONSERVATION FOOD, PURE HAWAIIAN CANE

MOLASSES

Write us at once and let us tell you how.

W. H. YOUNG COMPANY

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Land at $15 to $30 Per Acre —Good Grazing Land at Much Less.

Railway and Land Co's. are offering unusual inducements to homeseekers to settle in Western Canada and enjoy her prosperity. Loans made for the purchase of stock or other farming requirements can be had at low interest.

The Governments of the Dominion and Provinces of Manitoba, Saskatchewan and Alberta extend every encouragement to the farmer and ranchman.

You can obtain excellent land at low prices on easy terms, and get high prices for your grain, cattle, sheep and hogs—low taxes (none on improvements), good markets and shipping facilities, free schools, churches, splendid climate and sure crops.

For illustrated literature, maps, description of lands for sale in Manitoba, Saskatchewan and Alberta, reduced railroad rates, etc., apply to Superintendent of Immigration, Ottawa, Canada, or

GILBERT ROACHE, 3-5 First St., Sheldon Block, San Francisco

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WESTERN CANADA Farm Lands at Low Prices The Wheat Belt of America

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Heavy boned ton types, with plenty of style and action. Prize winners and descendants of prize-winners. No better in America. State certificate of soundness and life insurance furnished with every horse. If your community is in need of a high-class stallion, come to Patterson, California, and see the largest and best collection in the West.

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Visitors Welcome. Correspondence Invited.

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BOOK ON DOG DISEASES And How to Feed

Mailed free to any address by the Author

H. CLAY GLOVER CO., Inc., 118 West 31st Street, New York

Poultry and Rabbits for Profit

Conducted by R. H. Whitten.

A CRATE THAT INCREASES THE CASH.

A great many farmers send their poultry to market in a poor and unattractive condition, and thus lose several cents per pound on the transaction. Others sell to buyers who feed the birds for a few weeks and put them into condition to command the top-notch price. The farmer himself should have these extra cents per pound, for often they mean the difference between profit and loss in the poultry end of his business.

At this season of the year the surplus cockerels from the spring hatches should be fattened and marketed, for unless they have free range and their food costs practically nothing, the longer they are kept in the flock the smaller will be the net profit from them when they are finally sold. Besides, if they are disposed of now the pullets will have more room and attention and will develop into better layers.

At the close of the breeding season many poultrymen dispose of part of their hens. In some cases this a wise practice as the prices are usually higher than those received later in the season when more fowls are marketed. This surplus stock, however, is usually marketed just as it is taken from the breeding pens. The hens are thin in flesh on account of their long season of heavy laying, and are not at all attractive when dressed, the flesh appearing shrunken and hard, the bones prominent, the skin then blue, and shriveled. And when cooked, the meat of such a bird is dry and tough.

Even if a farmer does not market any hens now he generally has quite a number of old ones to sell at the end of the summer laying season, and he should figure so as to get the top cent out of them. The market is flooded at that time, and the quality is poor. Consequently, if a good price is to be secured the hens must be much above the average in quality.

To Get Premium Prices.

By crate fattening, these old hens may be turned into as juicy a morsel as the famed capon, and with almost the same flavor. This method is just as successful in finishing off fryers and roasters, but for small broilers, weighing two pounds or under, pen fattening will give better results than crate fattening. These young chicks do not stand close confinement well, but from the fryer stage on crate-fattening will reduce the labor and increase the profits, as the stock will bring much higher prices than when marketed right from the range or yard. In fact, the farmer can fatten his fowls more profitably than his city brother can fatten his, as the first requisite for success is to have healthy, vigorous birds, and those raised on farms generally have strong constitutions, while those brought up in back yards often have low vitality and weak digestion. The latter cannot stand confinement and break down after a few days' feeding, while the former make rapid gains for the feed consumed. The initial weight has been increased as much as 65 per cent in two weeks by careful feeding, and gains of 30 to 35 per cent are common. Also, these gains are secured at a lower cost than those at any other period of the fowl's growth, because everything they eat goes to flesh and none is worked off by exercise. As a rule it takes 3¼ pounds of grain to produce 1 pound of gain.

But the object of crate fattening is not to merely increase the weight of the birds and make them more pleasing to the eyes of purchasers. Too many persons think they have a nice bird for cooking when they see chunks and layers of fat in spots, but they find the flesh tough and dry. It is neither appetizing nor nourishing. This is because the bird had been making muscle, not flesh. Had it been confined in a crate the muscles would have been softened, and the fat would have been evenly distributed over the entire carcass—deposited in the fleshy tissues instead of in chunks of solid fat. When this is done the fat replaces the water in the flesh, and in cooking the fat is blended with the flesh, further softening the tissues and improving the flavor.

To Make a Crate.

Fattening birds for market does not require expert skill or extended knowledge. The requirements are few and simple—fattening food properly fed, and comparative inaction. For the latter a fattening crate is necessary, and the accompanying illustration shows a simple, home-made affair that will give satisfaction, although this could be improved by having up-and-down slats in front, about 1½ inches apart, through which the birds could feed from the trough. The ends and back can be made of either wire netting or slats; also the bottom. If the crate is to be kept out doors the roof should give protection from both rain and sun.



A cheap, practical, home-made fattening crate in which the finishing ration may be fed in troughs so that the birds can eat cafeteria fashion.

It is desirable to keep the crate inside of a barn or shed, so that the birds will be free from disturbances; also that the room can be kept rather dark except at feeding time. This will tend to make the birds more contented and they will not attempt much exercise. The coop should be open on all sides so that there will be good ventilation; otherwise the conditions would soon be unsanitary. The size of the crate should be determined by the number of birds to be fattened at at time, but if there are quite a number it should have partitions so that there will not be over six birds in each section.

Next week we shall tell you how to feed the birds to put them in the best condition for marketing in the quickest time, and at the least cost.

A series of experiments at the New York station showed that when hens were kept without a male, eggs were produced at about 30 per cent less than in exactly the same pens where males were kept.

SOUR MILK FOR BABY CHICKS.

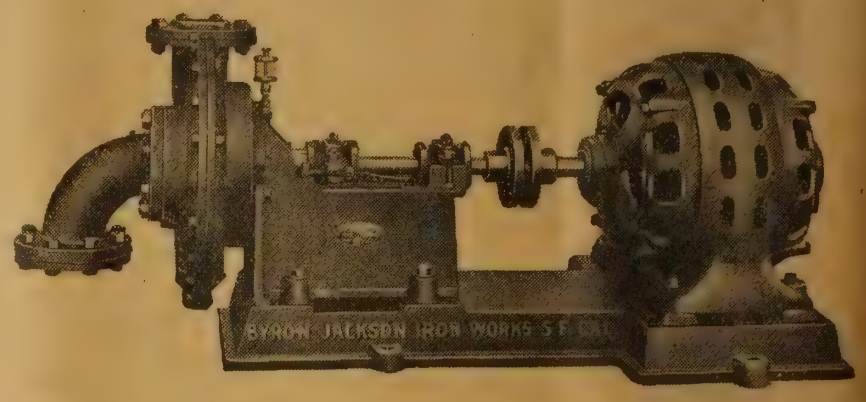
Will sour milk stop feather growth? I had no bad results from my first lot of chicks this year, but the second lot which were fed sour milk are not getting their feathers, except a few on the wings, although they are now a month old.—Mrs. L. E. R., Ukiah.

Sour milk is the best food you can give your baby chicks, as it is the best bowel regulator known, and it certainly cannot be blamed for the slow growth of feathers of one of your lots of chickens. This must be due to some other cause—either the breed, or the feeding and care. If long wing feathers are growing you had better clip them.

UNCLE SAM DEPENDS ON YOU!

Is your soil producing the maximum?

"BYRON JACKSON" PUMPS are built to meet every condition of "supply and demand" on your ranch.



Write us your conditions.
New Catalog No. 60-A for the asking.

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Boiling points are vaporizing points. The full, uniform chain of boiling points is necessary in high quality gasoline. Red Crown has them. Look for the Red Crown sign before you fill.

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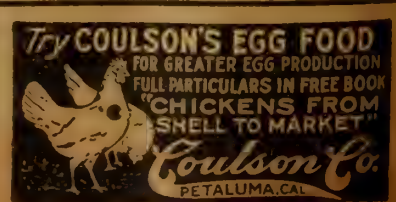
All loans made on an amortization plan whereby the borrower repays the principal gradually with each interest payment
Over three thousand satisfied borrowers in this district.
It will pay you to investigate.
For information apply to the nearest National Farm Loan Association, or write direct to

Federal Land Bank of Berkeley

Berkeley, Cal.

It is said that if you fill the incubator with cold storage eggs the chicks will hatch out with fur instead of feathers and will wear ear muffs.

We are asked how to tell a bad egg? This is a difficult question, but if we had anything to tell a bad egg we would break it gently.



PROTEIN SPELLS Poultry Profit

FOR BEST RESULTS feed high-grade Beef Scraps of Uniform Quality.

The dealer who induces poultrymen to use High Protein Beef Scraps is a benefactor to his customers. The best is always the cheapest.

GOLD BEAR BEEF SCRAPS

Backed by a guarantee which assures the poultryman, high and uniform quality.

Made in a government inspected packing house. Contains only blood and offal.

Food elements plainly marked on every sack.

Made and Guaranteed by

Western Meat Company

SAN FRANCISCO, CAL.

Write for our booklet, "PROTEIN FOR PROFIT."

CALIFORNIA EGGS FAVORED ON NEW YORK MARKET.

While walking along a street in New York City, T. F. McGrew saw in a store window an egg case marked "Fresh Petaluma Extras." He tells in the Inland Poultry Journal that he went inside and purchased a dozen for 55 cents. They were of an even, white color and nearly alike in size and shape. The shells were smooth and clean. The eggs were packed in clean fillers with a cushion of excelsior on top and bottom. The twelve eggs weighed 25 ounces, which is the weight that commands the highest price on the New York market.

Mr. McGrew says that these California eggs were fresh and of good flavor; the yolks were a light shade and stood up in round formation, with the albumen clear in color and dense of formation. This means that the eggs will poach well, with the yolk peeping out through the white. Mr. McGrew says that after eating two of the eggs for breakfast three mornings in succession, he decided that they were excellent—fully as good as the fresh laid breakfast eggs produced right in New York State.

The commission houses in New York City say that the eggs from California are coming through in splendid condition. They are well packed, and there is a minimum amount of breakage. A greater part are first class eggs. A few are of medium quality, but these are so marked and sold as such. This speaks mighty well for California eggs and implies that a good future market is assured.

USE SALT FOR SLOBBERS.

Slobbers is a disease most prevalent among young rabbits, and is simply acute indigestion. It is generally caused by the mother not providing sufficient milk for the young rabbits, often when she is allowed to raise too large a litter. Through hunger they are forced to eat the hay and grain which has been put in the hutch for the mother, and as at that age their digestive organs are not sufficiently developed to handle such foods, a disease of the salivary glands is caused.

There is a constant flow of saliva from the mouth, wetting the fur of the lower jaw, chest and forelegs, and causing a very repulsive appearance. The rabbit soon becomes thin and weak, and if the disease is not checked it dies.

The most effective remedy is a most simple one. Remove the sick animal to another hutch and keep all food and water away for twelve hours. Put a small pinch of salt in the mouth, and rub it in the wet fur about the mouth and on other parts that appear wet. Powdered alum is also recommended. Another good remedy is one teaspoon each of chlorate of potash and powdered ginger, added to one pint of water. Let stand a few hours; then give one teaspoon twice a day, shaking well before using.

After twelve hours give an entire change of feed from that perviously given. Bread and milk and crushed oats are good. Cooked food will aid digestion. Go easy on green stuff. Baby rabbits like it, but it is pretty certain to give the indigestion and slobbers.

CLUCKS AND CACKLES.

The largest shipment of eggs ever received in San Francisco arrived a few days ago from Petaluma. It consisted of 7,600 cases, 76,000 dozen, or 912,000 eggs, and was consigned to local warehouses.

Spoilage of eggs is to be eliminated this summer by the Tulare Co-operative Poultry Association. A motor truck line will operate at night when it is cool, and will collect from each farmer-member every 24 hours.

Ray Corliss of Petaluma owns and cares for 33,000 hens, with the help of only four men. All feeding is done inside, and large grain hoppers hold a week's supply. Horse and wagon go right through each house and the dropping boards are quickly cleaned. The laying is done in separate rooms, where the hens are not annoyed.

Dr. E. C. Morris of Petaluma vaccinates thousands of fowls for chicken pox. He recently established a record on the Roderick Bros. ranch when, with three helpers, he vaccinated 520 chickens in 70 minutes.

Poultry Breeders' Directory

YOU ARE NOT TOO LATE—Our early maturing, winter laying strains, June hatch, develop quickest into profitable winter layers. "My thirty pullets laid at four, sixth month (January) cleared $31," Why? Bred 20 years to lay winters, 200-290 eggs yearly. White, Brown, Buff Leghorns; Reds; Anconas; Rocks; Minorcas; clearing customers $5. Many repeat orders, monthly, yearly. Valuable circular with proof free. 70,000 egg hatcheries supplying chicks. Thousands shipped promptly, below ordinary chicks. Breeders (Pullets). Sale beginning. J. Beeson, Pasadena, Cal.

THE MISSION HATCHERY
Can supply June-July delivery.
WHITE—BROWN—BUFF
LEGHORN

Baby chicks of quality breeding; hatched right, priced right, and shipped to arrive safely.

Express or Parcel Post. Large or small lots.

Also booking orders for Barred and White Rocks, Black and White Minorcas, Anconas, R. I. Reds.

Circular and prices for the asking.

The Mission Hatchery, Box 17, Campbell, California.

WHITE LEGHORNS are the most profitable breed of poultry. If you are in the business for profit, you will eventually have them. Early broilers; early layers; early profits; we sell only **White Leghorn Baby Chix** from heavy laying **Hoganized** hens. Safe delivery of full count live chix guaranteed. Prices per 100: February $15; March, $14; April, $12.50. The Pioneer Hatchery, 408 Sixth street, Petaluma, California.

SINGLE COMB BROWN LEGHORNS—The large, modern, heavy-laying type that won high honors for us at the National Egg-Laying Contest. No better layers, none others so hardy. For 20 years our strain has won highest prizes at New York, Boston, Chicago, San Francisco, etc. Absolutely the finest Brown Leghorns in America. Eggs, $3 and $5 per $15; $15 per 100 Williams Bros., Fullerton, California.

LARM'S RHODE ISLAND REDS were never better. Rose and single comb hatching eggs from winners of the leading shows. Bred to lay. Eggs, now half price, from the best breeding lines in existence. Remember a few June and July chicks round into winners for the December and January shows. Send for circular. 3 Rose-comb cockerels. Wm. Larm, 3915 39th Ave., Fruitvale, Cal.

BARRED PLYMOUTH ROCKS—Champion prize winners and wonderful layers. Choice cockerels, hens and pullets for sale. Hatching eggs from twelve grand matings. I have made a specialty of Barred Rocks for over twenty years. That's why I win at all leading shows. "Nothing Better In Poultry" than Vodden's Barred Rocks. Catalog free. Chas. H. Vodden. Box 396, Los Gatos, California.

S. C. WHITE LEGHORN CHICKS—Any quantity from A-1 Hoganized and trapnested stock, winners of 1st, 2nd and special for pullet and 1st cockerel at Pacific Coast Land Show. Orders taken for June 7. A. O. & P. M. Forster, 2918 Otis St., Berkeley, Calif.

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BABY CHICKS—Hatching season ends June 1st., except for special orders. A few chicks still available for later part of May—leading varieties. B. M. Archibald, Soquel, Santa Cruz Co., California.

SULLIVAN'S FAMOUS Buff Orpingtons—Eggs for hatching, $3.00 for 15; $12.00 per 100. No "baby chix." Trios and pens for breeders; write for prices. Mr. and Mrs. W. S. Sullivan, Agnew, Santa Clara Co., Cal. Phone San Jose, 5205 R 5.

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RABBITS.

JOIN THE CALIFORNIA COMMERCIAL RABBIT Assn., and get real information on rabbit-raising. We issue an educational bulletin each month, which is free to members. Membership, including 16 back bulletins, $1.80. H. A. Sanderson, Secy., Eagle Rock, California.

NEW ZEALAND REDS—Pedigreed registered from prize-winning stock. Pedigreed does bred to registered buck, $5.00. Does 4 months eligible to registration, $4.00; 5 months, $5.00. Satisfaction guaranteed. E. Peppin, 86 Cambridge, San Leandro, Cal.

WILSON BROS. FEEDING BULLETIN tells how and what to feed rabbits. Price, 25c; catalog, 10c; circulars free. Wilson Bros. Flemish Rabbit Farm. Rabbits and Remedies. Highest award World's Fair, Route 4, Box 13R, Los Angeles, Calif.

NEW ZEALAND REDS—the better kind. A fine lot of them in all ages now ready for delivery at right prices. The Oakland Farm, F. Anton, Owner, 1617 San Pablo Ave., Oakland, Cal.

FLEMISH GIANTS—3 young bucks, 2 does 4 months old. Fine stock, sure to please. Only $3 each. Edw. Marston, Route 9, Box 521, Los Angeles.

FLEMISH GIANTS—2 young pedigreed, purebred bucks about 2½ months old for sale. Write for prices and particulars, Box 6, Sycamore, Cal.

NEW ZEALAND REDS—Improve your stock with a good buck. Extra fine breeding bucks at reasonable prices. Armstrong's Rabbit Farm, Petaluma, Calif.

NEW ZEALAND RED RABBITS—Young stock for sale. O. C. Thompson, St. Helena, Cal.

NEW ZEALAND REDS—First class utility does bred $5.00 each. Young does, $2.50 each. F. R. Caldwell, Broadmoor, San Leandro.

RAISE RABBITS FOR US—We supply the breeding stock. Send stamp for particulars. H. E. Gibson Co., Arcadia, Calif.

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THE HOME CIRCLE

THE BLUE AND THE GRAY.

By the flow of the inland river,
Whence the fleets of iron have fled.
Where the blades of the grave grass quiver,
Asleep are the ranks of the dead.
Under the sod and the dew,
Waiting the judgment day;
Under the one, the Blue,
Under the other, the Gray.

These in the robings of glory,
Those in the gloom of defeat;
All with the battle-blood gory,
In the dusk of eternity meet—
Under the sod and the dew,
Waiting the judgment day;
Under the laurel, the Blue,
Under the willow, the Gray.

From the silence of sorrowful hours
The desolate mourners go,
Lovingly laden with flowers,
Alike for the friend and the foe—
Under the sod and the dew,
Waiting the judgment day;
Under the roses, the Blue,
Under the willow, the Gray.

So with an equal splendor
The morning sun's rays fall,
With a touch impartially tender
On the blossoms blooming for all—
Under the sod and the dew,
Waiting the judgment day;
'Broidered with gold, the Blue,
Mellowed with gold, the Gray.

So, when the summer calleth
On forest and field of grain,
With an equal murmur falleth
The cooling drop of the rain,
Under the sod and the dew,
Waiting the judgment day—
Wet with the rain, the Blue,
Wet with the rain, the Gray.

Sadly, but not with upbraiding,
The generous deed was done,
In the storm of the years that are falling
No braver battle was won—
Under the sod and the dew,
Waiting the judgment day;
Under the blossoms, the Blue,
Under the garlands, the Gray.

No more shall the war-cry sever,
Or the winding rivers be red;
They banish our anger forever,
When they laurel the graves of our dead—
Under the sod and the dew,
Waiting the judgment day;
Love and tears for the Blue,
Tears and love for the Gray.

—Selected.

HARMONY IN HOUSE FURNISHINGS.

Have you ever stopped to consider the effect produced upon individuals by the furnishings of a room? Many homes we go into have a sense of rest and quiet, while others produce the opposite effect. We may not always be cognizant of the reasons therefor, but it is true, nevertheless, that colors, arrangement of the furniture, etc.,—in short, harmony—is often responsible for our physical and mental comfort or discomfort.

I have a friend, a most charming woman,—one who dresses in good taste, but whose house is like a crazy patchwork. In her living room the walls are a restful brown, which with proper furnishings could be made a most livable room. Instead, however, the riot of color begins with a green lounge (pretty enough in itself, but unsuited for the company it keeps); the library table has a dark red cover on it, and the drapes at the windows are a peacock blue. There is considerable red in the rug which covers the floor; the lamp shade is a nondescript thing—and altogether the effect is jangling.

Now this patchwork room with its brown walls could be made a joy forever with a soft brown rug on the floor, sunfast drapes of a gold-and-brown combination at the windows; the library table cover should be brown with dull gold embroidery, or gold threads running through it. For the lamp shade, a shirred yellow silk affair would be charming, with perhaps touches of gold embroidery, or sunflower decorations with brown centers.

It is a well-known fact among interior decorators that certain colors affect us in different ways. For instance, red is exciting; yellow is sunny and cheerful; blue is cold, and sometimes has a depressing effect, and so on. The most restful colors are the soft pastel shades—what the decorators call "tones." The too vivid shades "jump" at one, as it were. For instance, did you ever see the average Indian rug that ever seemed to blend in with the balance of the furnishings? The reason for this is, that most people in buying Indian rugs, always get a bright red one, or one in which this color predominates; they have the idea that red, in some mysterious fashion, is more suggestive of Indian life than other colors, and as a result, their rug is never satisfactory, and most people never know why. However, if the entire furnishings were of brilliant colors and Indian designs, the rug might be all that its owner anticipates when purchasing it; but not many of us furnish our homes in this barbaric fashion.

The professional decorators tell us that to properly furnish a room, the walls and floors should be the first consideration. The floor covering should be of a darker shade than that of the walls, and the walls should be darker than the ceiling—or in other words, the lighter shades should predominate in an ascending scale.

The exposure or location of a room should be a deciding factor as to its color scheme. A north or northeast room should never be furnished in blue, which lacks warmth and rather enhances the coldness of such an exposed room. In a dark room good results are obtained by having the walls a sunny or creamy yellow, with a lighter ceiling, which gives additional light equal to that of an extra window.

In general, a harmoniously furnished room should have a general color scheme—one color running all through it, with of course, other shades that blend to complete the picture. There are great possibilities in home furnishing wherein one can reflect their own individuality. These are things well worth considering. When selecting furniture, bear in mind that it must conform to the room and other furnishings of which it is to form a part.

FASHION'S FANCIES.

The June bride's attendants are affecting shades of pink and orchid this season.

A new French idea is to have a band of ribbon stand up on the brim of the hat.

The rich mocha leather handbags with tortoise shell mounts are particularly attractive just now.

The sheer dainty blouses and light dresses seem to favor Valenciennes lace for trimming this season.

The latest sports coat is made of black patent leather.

Lace hosiery is again the vogue. This style of hosiery was a great favorite a number of years ago.

Another of fashion's revivals is the high coiffure, with which a large fan of ostrich feathers is usually carried. This, of course, is for evening wear.

The newest silk petticoats are made of wash silk or satin, with perfectly flat-stitched hems.

The old-fashioned fichu worn with checked gingham frocks is most charming.

A dove gray traveling suit, trimmed with silver braid and a waist coat of violet and gray, make a beautiful going-away gown.

Heavy blouses of linen, bound around the scalloped neck and flowing sleeves with soft grosgrain ribbon, in brilliant contrasting color, are fashion's dictate for the present hour.

The new silk sweater coats are seen in blues, golds, rose and brown combinations.

There seem to be no end to the vari-colored beads of barbaric design which are seen in the shops these days.

The newer waistcoats are being shown in light shades and white materials, lace-trimmed for summer wear.

IT IS NOT ALWAYS EASY

—To apologize;
—To begin over;
—To admit error;
—To be unselfish;
—To take advice;
—To be charitable;
—To be considerate;
—To keep on trying;
—To think and then act;
—To profit by mistakes;
—To forgive and forget;
—To shoulder a deserved blame;
—BUT IT ALWAYS PAYS.—Selected.

LIGHT RATIONS.

An old Southern darkey was sent to a hospital. One of the gentle, black-robed sisters put a thermometer in his mouth to take his temperature. When the doctor made his rounds, he said:

"Well, Rastus, how are you?"

"I feel right tol'ble, boss."

"Have you had any nourishment?"

"Yes, sir; a lady done gimme a piece of glass to suck."—Exchange.

AN INCIPIENT FINANCIER.

Little Elsie, seeing her parents weighing the new baby, inquired what they were doing that for, and her father, in fun, said that Uncle Bob had taken a fancy to baby and wanted to buy him at a dollar an ounce.

"You're not going to sell him, are you, papa?" she asked.

"Of course not," he answered, proud to see that his little girl loved her brother.

"No. Keep him until he gets bigger," Elsie went on; "he'll fetch more money then."—Boston Transcript.



The farmer's wife, strong for economy, gives her spouse a powerful hint about his habit of leaving the farm machinery outside in all kinds of weather. (Copyright 1919 by Judge. Reproduced by permission.)



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AT LAST—the light of lights! A lantern that lights with common matches just like the old style oil lantern, but makes and burns its own gas from common gasoline, giving a brilliant, steady, white light of 300 candle power.

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Brighter than the brightest electric bulb. More light than 20 oil lanterns. Cheapest and best light made. Costs less than one-third of a cent per hour. Safer than the safest oil lantern. The

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THE BOY SCOUT.

No one who knows the record of the Boy Scout will doubt his obedience to that law of the Scout which says "He will not kill nor hurt any living creature needlessly, but will strive to save and protect all harmless life." A Boy Scout cruel, unkind, torturing, or needlessly killing any fellow creature would simply mean that someone left the door into the Scout order open by mistake and somebody slipped in who will have to "right about face," or else go out.

We can't very well help being kind to animals if we stop and think of what we owe them. Before man had gun or even crossbow, how could he have tracked and caught the fleet-footed creatures he sought for food had he not first won the companionship and service of the dog? How could he have herded the sheep that later he learned to tame, and so climbed up another step from the wild hunter to the shepherd, had it not been for that faithful friend and helper, the dog?

The ox, the ass, the horse—they too have served man with a fidelity that the literature of the world has enshrined in many a famous song and story. Without the horse no one can see how he ever could have struck out the great highways of the world, built his cities with their homes, their churches, their libraries, their hospitals, their schools.

Let the Boy Scout remember that every year more than 100,000,000 four-footed animals are killed for human food, nearly all of them bound to suffer through long railroad journeys and in the great and small slaughter-houses where their lives are ended, and he will feel how real our duty to treat all our domestic animals, so defenseless against man's cruelty, with justice and kindness.

The Boy Scout will "protect and save all harmless life." It takes a very wise man to know what animals are really harmful. The snakes that help the farmer many of us once thought we ought to kill. There are even insects that make bitter war against other insects that are enemies of the farmer. We must be sure first that we know the really harmful ones.

This is the ideal—Every Boy Scout a member of Nature's great protective association, daily patrolling that vast beat, bounded only by the limits of Nature herself, sure, absolutely sure, what life should be taken, and then taking it only as painlessly as possible.

FOR THE KIDDIES.

Once upon a time there was a lamb, a duck, a frog and a skunk, who started to the theatre. The price of the ticket was one dollar. The lamb could get in all right because he had four quarters (four quarters make a dollar!); the duck could also get in, for he had a bill (a one-dollar bill!); the frog could get in all right, for he had a green back! But the skunk could not get in, for all he had was a (s)cent, and that was a bad one! So they decided they would not go if their friend, the skunk, could not get in with them. They started up the street, and there they met Mr. Sardine, to whom they told their troubles; he said, "That's all right; come with me. I'll take you to the theatre, for I have a "box." (Most sardines come in a box!) So they returned in high spirits and occupied a "box" at the theatre.

EGG SANDWICHES.

Mash six hard-boiled eggs fine; add pepper, salt and a small lump of butter. Add one-half cup of nut meats or peanut butter, if desired. Pour over this one-half cup of salad dressing. Mix well and spread on thin slices of bread.

FUTURE MARKETS GOOD.

Food and Grain Corporation officials have assured President J. H. Stephens of the Association that rice prices are reasonably sure to remain high, due to the facts as stated that for two years yet it will be America's job to contribute to the feeding of 75 per cent of Europe.

TIPSY PARSON.

Fill a dish with slices of sponge cake; saturate with raspberry juice or wine. Pour over this a hot boiled custard, and serve cold.

"Give fools their gold and knaves their power;
Let fortune's bubble rise and fall;
Who sows a field, or trains a flower,
Or plants a tree, is more than all."

Know your garden and make it produce a balanced ration.

DAISY FLY KILLER



PLACED ANYWHERE ATTRACTS AND KILLS ALL FLIES. Neat, clean, ornamental, convenient, cheap. Lasts all season. Made of metal, can't spill or tip over; will not soil or injure anything. Guaranteed effective. Sold by dealers, or 5 by EXPRESS, prepaid, $1.25.

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He
hasn't forgotten-

No need to tie a string 'round *his* finger to remind him of Ghirardelli's Ground Chocolate—for that's *one* good thing he never forgets.

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Ask for Ghirardelli's *by name*—and see that you get it. In 1/2 lb., 1 lb. and 3 lb. cans—wherever you do your trading.

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25¢ AT ALL DRUGGISTS

DREADNAUGHT
Blazing Away in Cost Defense

Announcement



In reply to the question that will most naturally occur to the readers of this publication, we wish to say, that in order to correct and better perfect burner construction from a scientific standpoint, it was necessary to have absolute freedom in our efforts. Therefore, to properly carry out these ideas, we have entered the field in our own behalf.

Immediate attention was directed to correcting imperfections of the past as well as effecting a betterment that would far surpass any previous attempts in oil-gas making. We have ample proof of our success in severe tests of long duration—where the Burner has been subjected to far greater abuse than would be imposed by the average user.

Information regarding these important changes and the reason for them, will be gladly furnished upon request—just ask for factory circular—a postcard will bring it.

The Burner, together with combination Needle Valve and Drain, will be mailed anywhere—$6.00.

Designed for cookstoves or heaters and coal oil as the fuel—a clean gas maker, not oil burner.

Standard connections—Gravity or Pressure, as desired.

SCIENTIFIC SPECIALTIES CO.
310 South Hill Street
LOS ANGELES, Cal.

SAN FRANCISCO.

San Francisco, May 28, 1919.

WHEAT.

The following prices were announced by the Federal Grain Corporation last year and are still in effect. They are figured f. o. b. San Francisco, Los Angeles, Seattle, Tacoma and Portland and guarantee the grower a minimum of $2 f. o. b. shipping point:

Per bushel—
No. 1 hard $2.20
No. 2 ..... 2.17
No. 3 ..... 2.13
No. 1 soft 2.18
No. 2 ..... 2.15
No. 3 ..... 2.11
Club or Sonora, No. 1 ..... 2.16
Do, No. 2 ..... 2.13
Do, No. 3 ..... 2.09
Recleaned, per ctl.—
California ..... $4.30@4.40
Early Baart ..... None

BARLEY.

Shipments of barley to Europe are being made whenever ships are available. A new motorship, the Trolltind, built on Puget Sound, is now loading at Port Costa with 3000 tons of barley for Denmark, and expects to sail early next week. Quotations on cash barley remain the same, but December sold a cent higher at $2.51.

Feed ..... $2.57½@2.62½
Shipping ..... 2.75@2.80

OATS.

Oats are dull with no demand. With the exception of barley all the grains are quiet, and even in barley there is little local demand.

Red feed, per ctl. ..... $2.30@2.40
Red for seed ..... Nominal
Black for seed ..... Nominal
Recleaned Red or Black for seed.... Nominal

CORN.

Corn quotations are unchanged, although the increase in demand noted last week was not sustained by buyers this week, and corn was weak at the top price.

California ..... $3.30@3.50
Egyptian, choice ..... Nominal
Milo ..... Nominal

HAY.

Receipts of hay for the past week were 1292 tons compared with 1587 the previous week. This is a decrease of about 33 1-3 per cent from two weeks ago. Most of the receipts were of the medium grades of old hay, which moved very slowly as trade is light and sales effected only with difficulty. In regard to inquiries as to prices that will be offered for the new crop, everyone appears to feel that the hay market will have to adjust itself to lower figures and very little purchasing is being done. So far the only new hay arriving is the first crop alfalfa and some Volunteer. The former in good order sells from $10 to $13 and the latter in small lots is being offered at from $9 to $11.

No. 1 wheat, per ton ..... $16.00@18.00
No. 2 Wheat, per ton ..... 12.00@15.00
Choice Tame Oat, per ton ..... 17.00@19.00
Wild Oat, per ton ..... 11.00@14.00
Barley Hay, per ton ..... 11.00@14.00
Alfalfa, per ton ..... 15.00@19.00
Stock Hay, per ton ..... 11.00@13.00
Barley Straw, per bale ..... .50@ .80

FEEDSTUFFS.

There were no changes in prices of feedstuffs and the local demand continues very light.

Cracked corn ..... $68.00@70.00
Rolled barley ..... 53.00@54.00
Rolled oats ..... 52.00@53.00
Alfalfa meal ..... 33.00@34.00

POTATOES, ONIONS, ETC.

Potatoes are easy. Rivers are at about the end of their run, but northern potatoes of last season continue to find market here at unchanged quotations. Onions were somewhat stiffer during the week but settled down after a little spurt to last week's quotations. The green vegetable market is now showing variations nearly every day. String beans were higher today on smaller receipts, while peas were more plentiful. Green corn from Imperial Valley was sold at from 20 to 25 cents during the week.

String beans ..... 12@15c
Peas ..... 3@ 7c
Carrots, per sack ..... $3.00@3.50
Asparagus ..... 6@8c
Rhubarb, Strawberry, box ..... $2.00@2.50
Cucumbers, hothouse, box of 30.. $1.50@3.00
English, per dozen ..... $1.50@1.75
Eggplant, per lb. ..... None
Lettuce, per crate ..... 75c@$1.25
Celery, crate ..... Nominal
Tomatoes, Southern, per crate ..... None
do, Mexican ..... $3.00@4.00
Sprouts ..... Nominal
Summer squash ..... 90c@1.10
Green Corn, Imperial Valley ..... 20@25c
Potatoes—
Rivers ..... $2.00@2.40
Oregon ..... 2.00@2.40
Washington ..... 1.95@2.25
Idaho ..... 2.00@2.40
Garnets, new on street ..... 4½@5c
Other new on street ..... 3½@4½c
Sweets, per sack ..... None
Onions, Warehouse Stock—
Australian Browns ..... $3.75@4.00
Onions, new, red ..... $3.25@3.50
Bermudas—white ..... 3.00@3.25
do, yellow $3.00
Green Alameda ..... 2.00@2.25
Garlic ..... 15@20c

BEANS.

The bean market is weak locally.

Bayos, per ctl ..... $6.00@6.25
Blackeyes ..... $3.40@3.60
Cranberry beans ..... 5.75@6.00
Limas (south, recleaned) 8.00
Pinks ..... 5.75@5.90
Mexican Reds ..... 4.75@5.25
Tepary beans ..... 2.50@2.75
Garbanzos ..... 11.75@12.00
Large whites ..... 5.80@6.00
Small whites ..... 6.75@6.90

POULTRY.

An oversupply of broilers caused a slump in that description. The receipts were in excess of the local demand and also more than the packers could take care of. Hens are in good demand. There were no changes in their quotations. Young roosters sold at a higher price on account of the demand created by a Chinese holiday.

Turkeys, live, young spring, lb. ..... 30@38c
do, old ..... 34@36c
do, dressed ..... 42@44c
Broilers, 1½ to 2 lbs. ..... 34@36c
do, 1¼ lbs. ..... 32@34c
do, ¾ to 1¼ lbs. ..... 30@33c
Fryers ..... 45@50c
Hens, extra, per lb. colored ..... 36@38c
do, Leghorn ..... 36@38c
Smooth young roosters, per lb. (3 lbs. and over ..... 50@55c
Old roosters, colored, per lb. 22c
Geese, young, per lb. 35c
do, old, per lb. 33c
Squabs, per lb. ..... 45@50c
Ducks, young 35c
do, old 34c
Belgian hares ..... 14@15c
Jack rabbits ..... $2.50@3.50

BUTTER.

Butter fell off four cents in two days during the past week. This recession in price was brought about by heavy receipts in this market, and also in the eastern markets followed by a fall in eastern quotations. During four days of the past week the local receipts of butter in this market were 175,000 more pounds in excess of the same period the previous week. Today's prices are higher in sympathy with the higher prices quoted in all the eastern markets, but the recovery was only 1½ cents compared with the loss of four cents from the high of the week.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extra	60	60	58	56	56	57½
Prime firsts	....			Nominal		
Firsts	54½	55	55	55	55	55

EGGS.

Extra eggs were weaker throughout the week, showing a decline of three cents from the high of the week, and four cents from the high of last week. Pullets showed a like decline while the firsts were no longer quoted when extras reached 46½. The local decline was in sympathy with lower eastern prices. There was no report of carload shipments of eggs from California this week.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	49½	49	47	47	46½	46½
Firsts	46½	46½	46½	46½	..	..
Ex. pullets	47½	47	44½	44½	44	44

CHEESE.

Trading in cheese is light and California flats were shaded a half-cent during the week. Oregon Triplets are held very strongly by the association in Oregon and the price was advanced a cent. A small quantity changed hands at this figure. The demand is light for all grades of cheese in this market at present prices.

Fancy California flats, per lb. 28c
First 27c
California Y. A., fancy 30½c
Oregon Y. A. 34c
Oregon Triplets 35c
Monterey cheese ..... 22½@24c

FRESH FRUITS.

The fresh fruit market is broadening daily, and prices, except on strawberries, are adjusting themselves downward. Strawberries this week were slightly higher for the best, but it is believed that the price of these berries will not fluctuate much from present quotations. Blackberries and raspberries are coming in and the arrivals will be sufficient in another week to make their quotation more nearly normal. At present they come from the south, the former selling at from $2.50 to $3 per crate and the latter at about $3. Peaches, apricots, and cantaloupes, although still high, may not be added to the regular list, with the expectation that their quotation will be nearly normal within a week or two. Cherries are daily getting cheaper and are selling well.

California apples ..... $3.50@4.00
Northwest apples ..... 3.50@4.00
Winter pears ..... 3.00@4.00
Peaches ..... 2.00@2.15
Apricots ..... 3.00@4.00
Loquats, per lb. ..... 7@8c
Strawberries, chest ..... $10.00@13.00
Gooseberries ..... 5@8c
Cherries, purple Guigne ..... $1.25@1.75
Black, bulk ..... 10@12½c
White, bulk ..... 7@ 8c
Cantaloupe, Standards $8.00
do, Ponies $6.00

CITRUS FRUITS.

With the expansion of th e fresh fruit market the citrus fruit is not in so great a demand. Prices, however, are maintained at last week's figure and are not expected to recede much if any from these quotations, except in the case of lemons, which may go lower.

Oranges, navels ..... $3.50@5.75
Valencia ..... 4.75@5.00
Lemons, fancy ..... 4.00@4.50
do, choice ..... 3.50@4.00
do, standard ..... 3.00@3.50
Lemonettes ..... 2.00@3.00
Grapefruit ..... 2.50@4.00

DRIED FRUITS.

The market for dried fruits continues strong. The buyers are still taking practically all they can get and there is no sign of lowering prices in any variety. Apples were bid a cent higher this week, otherwise last week's figures prevailed.

Apples ..... 17@17½c
Pears 17c
Peaches ..... 14½@15c
Apricots ..... 20@26c
Prunes 12½c
Figs, Adriatic ..... 14@18c
do, Calimyrna ..... 15@20c

RICE.

There is a considerable movement of rice from this port to Cuba and Atlantic ports on the wooden steamers, via Panama canal, and increased movement is said to be in prospect. California millers are accepting the 450,000 sacks of damaged paddy rice stored in the State and are grinding it into flour for export.

HONEY.

The first samples of orange honey offered in this market were at 14 cents. This is said to have been very poor, and the dealers refused to consider it at any price although one dealer made a tentative offer of 8 cents. It is said that first-class orange honey would bring as high as 16 cents, but it would have to be up to the grade of light amber for the dealers to consider it at any price approximating that figure.

HIDES.

The hide market shows an upward trend.

Wet Salted—Native steers and cows, 50 lbs. up, 16@18c; 30 to 50 lbs. up, 16@18c; kips, 15 to 30 lbs. 21@22c; calf and veal, under 15 lbs. 31 @32c; bulls and stags, 13@14c

Horse Hides—Wet salted, large prime, each $5@$5.50; medium prime, $4@4.50; small $2.50@$3.50; dry, large, prime, $2.50@3 dry, medium, $1.50@2.50; colts and ponies 50c@$1.

LOS ANGELES.

Los Angeles, May 27, 1919.

BUTTER.

It will be noted that prices in this market are the same as quoted last week. However there was an advance over these prices up to last Saturday, when an increase of 2c was reported. Prices are firm as quoted. The demand continues good, but the supply in storage is below that of last year at this time. Receipts for the week, 379,400 lbs.

We quote:
California extra creamery 5
do, prime first 5
do, first 5

EGGS.

This market reports a drop in prices since quoted last week. The demand is holding up well, so is consumption. The market continues to weaken under a falling off in consumption in the East, which is affecting the local market as stated.

We quote:
Fresh ranch, extra 4
do, case count 4
do, pullets 3

POULTRY.

Broilers show a decline in price. Hens reported in good demand. There is little for young stock at this time. Receipts are about up to normal.

Broilers, 1 to 1¼ lbs. 2
Broilers, 1½ to 1¾ lbs. 3
Fryers, 2 to 3 lbs. 4
Roosters (soft bone), 3 lbs. and up 3
Stags and olds roosters, per lb. 1
Turkey ..... 35@4
Hens 3
Ducks ..... 34@3
Geese 2

FRUITS.

No change will be noted in prices in deciduous fruits. Loquats show a decline. Strawberries, blackberries and raspberries all advance, owing to weather conditions. Cherries are selling well and quoted at 12c and 15c pound. Demand on all staples is very good. Receipts are fair.

We quote from growers:

Apples—
Black Twigs, Northwest pack.. $3.50@3.
Baldwins, Northwest pack..... 3.
White Pearmains, 4-tier..... 3.50@3.
Yellow Newtown Pippins, 4-tier ..... 3.25@3
Winesap, loose, per lb. ..... 7½@8½
Roman Beauties, Northwestern, per peck ..... 3.50@3
Loquats, per lb. ..... 6@1
Strawberries—
30 basket crates, fancy ..... $4.00@4.
Poor to choice ..... $3.00@3
Blackberries, case 30 boxes ..... $4.00@4
Raspberries, case 30 boxes ..... $4.50@4
Cherries, lb. ..... 12c@1

VEGETABLES.

Potatoes still firm and little change in prices noted. No more celery on the local market. Garlic drops 5c a pound. Cabbage lower while summer squash advances. Peas also higher and scarce just at this time. All staples in good demand but owing to cool weather, shipments are a little light.

Kentucky Wonders ..... 11@1
String, Wax ..... 10@1
do, Green ..... 7@
Oregon Burbank, per cwt ..... $2.40@2.
Idaho, Russets, per cwt ..... $1.90@2.
New potatoes, lug box ..... $1.25@1.
Sweet potatoes, per cwt ..... $3.75@4.
Garlic, per lb. ..... 35@4

THE MARKET REPORTS

Figures Given Are Independent and Reliable.
Prices Quoted as Paid to Producers.

Special Livestock Market Report

San Francisco, May 28, 1919.

CATTLE—The local cattle market is weak and lower, and complete demoralization is only averted by heavy shipments of live cattle to Eastern markets, where cattle values have reached recently the lowest levels of the year. Since the high point was reached last month cattle values have declined $2 to $3 per hundred. Heavy bullocks seem to have suffered most in the reaction.

Steers—
No. 1, weighing 1000@1200 lbs., 11@11½c
do, weighing 1200@1400 lbs... 11@11½c
do, thin ..... 7@ 9c
Cows and heifers—
No. 1 ..... 9½c
do, second quality ..... 8@ 8½c
do, common to thin ..... 5@ 6c
Bulls and stags—
Good ..... 6½@ 7c
Fair ..... 4½@ 5½c
Thin ..... 3@ 4c
Calves—
Lightweight ..... 12½c@13c
Medium ..... 11@12c
Heavy ..... 8½@11c

SHEEP—The overrun of lambs to this market has eased up somewhat by free shipments to Eastern points. It is thought that the surplus will be overcome during the week to come. There has been a glut of choice heavy lambs in the East lately, though one offering of California spring lambs brought $17.50 to $18.50 at Chicago. Besides California, Oregon and Washington have contributed liberally to the Eastern movement. The amount of wool worn by the sheep cuts a big figure in the pricing, closely shorn lambs and sheep bringing bottom figures. The irregularity of the sheep and lamb market make it hard to quote.

Yearlings ..... 11@13½c
Milk ..... 13@13½c
Sheep, Wethers ..... 10½@11c
do, Ewes ..... 8½@ 9c

HOGS—Hogs are still arriving in plentiful supply, and there is a possibility of a decline in price next week. In the East there is a strong undertone to the hog market, for while the movement marketward has been good, the high price level has not been feazed.

Hard, grain fed, 100 to 150 ..... 18¾c
do, 150 to 250 ..... 19¼c
do, 250 to 300 ..... 18¾c
do, 300 to 400 ..... 18¼c

DRESSED MEATS.

Steers, No. 1 ..... 17@17½c
do, second quality ..... 16@16½c
Cows and Heifers ..... 14@15c
Calves as to size, etc. ..... 18@21c
Lambs, Suckling ..... 22@24c
do, Yearling 20c
Sheep, Wethers ..... 18@19c
do, Ewes ..... 15@17c
Hogs ..... 27@28c

Los Angeles, May 27, 1919.

CATTLE—Very dull. All quotations remain the same as reported last week.

Per cwt., f. o. b. Los Angeles:
Beef, steers, 1000@1100 lbs... $11.00@12.00
Prime cows and heifers ..... 9.00@10.00
Good cows and heifers ..... 8.00@ 9.00
Canners ..... 5.50@ 6.00

HOGS—Very little doing in this market. The prices are the same as quoted last week. Demand is light.

Per cwt. f. o. b. Los Angeles:
Heavy avr'ging 275@350 lbs. $16.00@17.00
Heavy, avr'ging 225@275 lbs. 17.00@18.00
Light ..... 18.00@18.50
Rough docked 20 lbs. piggy sows 40 per cent.

SHEEP—All quotations show a drop. After remaining stationary for several weeks, this market reports still lower prices today. Very dull and weak.

F. o. b. Los Angeles:
Prime wethers ..... $ 9.00@10.00
Prime ewes ..... 8.00@ 9.00
Yearlings ..... 9.00@10.00
Lambs ..... 13.00@14.00

PORTLAND LIVESTOCK.

Portland, Ore., May 27, 1919.

CATTLE—Market steady; receipts, 278. Steers, best, $12.50@13; good to choice, $10.50@11; medium to good, $9.50@10.50; fair to good, $8.75@9.75; common to fair, $7.75@8.75; good to choice cows and heifers, $10@11; medium to good, $6.50@7.50; fair to medium, $4.50@5.50; canners, $3@4; bulls, $6@8; calves, $9@13; stockers and feeders, $7@10.

HOGS—Market steady; receipts, 52. Prime mixed, $19.50@20; medium mixed, $19@19.50; rough heavies, $18@18.75; pigs, $17.75@18.25.

SHEEP—Market weak; receipts, 134. Prime lambs, $14@15; fair to medium, $12.50@13.25; yearlings, $8.50@9.50; wethers, $8@8.50; ewes, $6@8.

EASTERN LIVESTOCK MARKETS.

Chicago, May 27, 1919.

HOGS—Receipts, 35,000, mostly 20c to 25c lower than yesterday's average; top, $20.25; bulk of sales, $19.90@20.15; heavyweight, $20@20.15; medium weight, $19.95@20.25; lightweight; $19.60@20.25; light light, $18.75@19.95; heavy packing sows, smooth, $19.25@19.50; packing sows, rough, $18.75@19.25; pigs, $18@18.75.

CATTLE—Receipts, 14,000; market opening slow; early sales of beef and butcher stock steady with yesterday's low time; bulls, market lower; calves, 25c higher; stockers, market steady; beef steers, medium and heavyweight, choice and prime, $15.90@18; medium and good, $13.25@16; common, $11.50@13.50; lightweight, good and choice, $13.75@16.25; common and medium, $10.50@14; butcher cattle, heifers, $8.25@14.75; cows, $8.15@14.50; canners, and cutters, $6.50@8.15; veal calves, light and handyweight, $15@16.75; feeder steers, $10.25@14.50; stocker steers, $9.75@12.50.

SHEEP—Receipts, 14,000; market strong to 25c higher; lambs, 84 pounds down, $13.75@15.60; 85 pounds up, $13.25@15.50; culls and common, $9.50@13.25; springs, $17.50@19.50; yearling wethers, $11.40@13.50; ewes, medium, good and choice, $10@11; culls and common, $4.50@9.75.

ions—
ions, New Red, per cwt. ....$4.00@4.50
perial Valley white silver wax,
crate $4.00
perial Valley Wax—yellow $4.00
bbage, per 100 lbs. .....$1.25@1.50
ubarb, per 30-lb. box $1.25
mmer squash—
Imperial Valley, 4 basket crates..90c@1.00
paragus, per lb. .....9@14c
We quote from growers:
s, per lb. .....10@12c
tatoes—
Oregon Burbank, per cwt. ....$2.40@2.50
Idaho Russets, per cwt. .....$2.00@2.15
New potatoes, lug box .....$1.25@1.40

BEANS.

This market shows a little more activity ce reported a week ago. Limas and black s are in fair demand. On all others there very little movemnt.

mas, per cwt $7.50
rge white, per cwt..... 5.50
k, per cwt. 6.50
all white 6.00
ckeyes, per cwt. 3.25
nary, per cwt. .....$2.00@2.50

HAY.

This market has no change in prices to re- rt. Alfalfa, choice, is in fair demand. ain hay very dull.

We quote f. o. b. Los Angeles.

rley hay, per ton .....$19.00@22.00
t hay, per ton .....$21.00@23.00
alfa, northern, per ton ....$19.00@21.00
alfa, local, per ton .....$20.00@22.00
aw, per ton ..... 9@10.00

ALFALFA GROWERS OF CALIFORNIA, INC.

On account of unfavorable weather condi- ns there has been more than the usual ering of lower grades of hay. This has llowed a weakening in price of such grades hich is apparently only temporary, and our pectation is that, upon the return of more vorable curing weather, there will be less the cheaper grades on the market and this l result in a larger supply of higher grades, which the demand at this time is greater n the supply. The Association has large nage bookings for high grade hay at high- prices and the purchasers of this kind very anxious for delivery. Sales of al- fa by the Alfalfa Growers of California, , 525 Central Building, Los Angeles, for week ending May 24th, have been at the llowing prices to purchasers of carload lots, o. b. Los Angeles.

1 Dairy $26.00
ndard Dairy .....$21.00@22.00
ndard Alfalfa ..... 18.00@20.00
ck Alfalfa ..... 14.00@18.00

Market Comment

ricot Prices Breaking Records.

From Cupertino comes the report at the bulk of the local apricot op has been disposed of to various anneries at $100 per ton with special ducements such as orchard run, free xes and hauling, motor trucks to ll at the orchards in many cases the fruit.

rley Brokers Caught Napping.

In connection with the sale of the 18 barley crop the fact is disclosed at the lifting of export restrictions the Government found much of the rplus barley in the hands of the owers. This is a very unusual and ry satisfactory situation. As high $2.75 per cental has been obtained ely for barley on shipping grades the 1918 crop.

ars Will Bring High Prices.

While the California Pear Growers' sociation have not as yet set the ice for canning pears this season, owers who are well informed ex- ct record prices will be paid. Much pends upon the eastern market as stern shipping usually takes about ree-fourths of the crop, and canning e other fourth of good stock. It is ought the price for canning pears ll be around $85 per ton as against 0 paid last year. The crop prom- s to be a record breaker this season.

maged Rice Grades Advance.

A recent demand from Scandinavian untries for California rice stocks s had the effect of temporarily ad- ncing the price of damaged grades. m. C. Davis, chairman of the valua- on committee of the California Rice mmittee, says: "The contract with e United States government is still effect and will continue in effect til the 1918 crop is entirely mar- ted. This means that no paddy rice n bring more than $4.32 per hun- ed pounds and no cleaned rice more an 7½ cents per pound. On this sis, the medium grades of damaged ddy rice have been advanced."

erican Meat Production.

The American dressed-meat produc- n, including lard, amounted last ar to a trifle more than 20,000,000,- 0 pounds as against 16,000,000,000 unds and odd in 1917. About three- irths of the increase was pork. The nestic consumption of dressed meat and lard in 1918 was in excess of 17,- 000,000,000 pounds, and our export shipments over 3,000,000,000 pounds—not including shipments to American forces abroad.

Prune Prices in the Ascendant.

The highest prices ever paid for prunes in Santa Clara Valley are being paid growers at the present time. The fruit is selling for as high as 13½ cents per pound. Independent growers who contracted early in the season for 8 and 8½ cents are very much disgruntled. While this year's California prune crop will not establish a record for quantity, it is larger than average and the quality is extremely high, according to Manager Coykendall of the California Prune and Apricot Growers' Association. He estimates that the crop this year will run from 225,000,000 to 275,000,000 pounds, as compared with 217,000,000 pounds on the trees last year. However, the untimely rains of last season damaged the crop badly, leaving only about 70,000,000 pounds for the market.

Butter Market Buoyant.

While the butter markets, both here and in the East, have shown an unsettled situation latterly, it is not likely that the abnormally high price levels that have obtained for this product this year will be materially lowered. There will be slight advances and recessions from day to day or week to week, but it may take several years to bring back butter, and some other commodities, to pre-war price levels. There is an acute shortage of good dairy cattle in this country, and particularly in Enrope, where the meat famine caused by war condition forced a heavy slaughter of milch cows. The rapid movement of surplus stocks of butter into cold storage shows the confidence of well-informed operators in the maintenance of present butter price levels. According to the report of the U. S. Bureau of Markets, there had been exported to foreign countries from the port of New York alone between January 1 and May 15 of this year, 14,862,426 pounds of butter, 3,804,210 pounds of cheese, and 207,850,481 pounds of condensed and evaporated milk. Bread is "the staff of life," but bread and butter is a gold-headed cane, and the civilized world now disdains the unadorned stick.

Eggs Rank High in the H. C. L.

Eggs also are high, and for pretty much the same reasons — relative scarcity of beef, pork and mutton, coupled with the high price of feedstuffs inducing the killing off of poultry in large quantities, including the laying stock. However, the readjustment of normal supply to normal demand will be more readily and quickly accomplished than in the case of animal products. Local storage holdings of eggs are being rapidly increased, exhibiting the confidence of the storage men in the future of the market. Eggs are seasonally lower in the East, but the undertone of the market is strong. Incidentally we are told by the Government's "Report on Foreign Markets," that the demand for eggs for export from the United States to Great Britain is increasing and that large qualities have been contracted for. There is also a considerable demand for our poultry from the same source. Canada is said to have exhausted its exportable surplus of poultry, and although it has some eggs to spare, cannot get the ocean tonnage to export them in quantities. Humpty Dumpty sits on a high wall, and is in little danger of an immediate fall.

DRIED APRICOT PRICES ANNOUNCED.

Last week the California Prune and Apricot Growers, Inc., announced the opening prices of dried apricots to the trade as follows, including differentials:

Sunsweet quality: Choice, 25c; Extra Choice, 26c; Fancy, 27c; Extra Fancy, 29c; Fancy Moorparks, 29c; Extra Fancy Moorparks, 32c.

Growers' Brand Quality: Choice, 24½c; Extra Choice, 25½c; Fancy, 26½c.

First Quality: Standards, 19c. Slabs, 21c. Other grades, such as whole fruit and off quality deliveries, will be taken care of on the basis of sale largely on sample.

In commenting upon the above prices, Manager Coykendall says the Association will make delivery payments of 12c or more per pound, rather than the 8c specified in their contracts. Last year the opening market prices for apricots were from 9½ to 19c per pound.

Fresh apricots are being bought at about $120 per ton.

Following and preceding the announcement by the association of opening prices on apricots, orders have poured in. None of these have been booked, however, and will not be until about July 1, when it will be possible to estimate the quantity of apricots that will be available.

CALIFORNIA LIVE STOCK SALES ON EASTERN MARKETS.

Recent sales of California livestock on Eastern markets are as follows: Omaha, May 26—14 decks California lambs, market 25c higher. Bulk of sales $18.50 to $18.65. Top beef steers, $16.10. 3 carloads California cattle, 1125 lbs, at $13.00. Kansas City, May 27—California steers, Kansas City, Monday, ten loads, 1074 to 1196 lbs., $13.15 to $13.45. Fourteen loads, 1114 lbs., feeders, $12.80. 1500 spring lambs, 65 to 68 lbs., $17.75 to $18.50. Two doubles, 97 lbs., clipped yearlings, $11.25. Four doubles, 110 lbs., clipped ewes, $9.25. Chicago, May 26—Five doubles California spring lambs, Monday; 500 fleshy 53 lb. tops sold for $16.00 to $16.50. One double, 53 lbs., feeders, $15.00; 51 double, $14.75. Balance light culls sold from $12.00 to $13.50.

Classified Advertisements

Rate in this directory 3c. per word each issue.

MISCELLANEOUS.

GOVERNMENT BUILDINGS

REMOUNT STATION

Mile from Palo Alto

We have purchased the entire Camp—and are now offering for sale.

3 MILES OF STOCK SHEDS.
4 MILES OF FEED RACKS.
10 LARGE HAY SHEDS.
10 MILES OF FENCING.
4 LARGE WAREHOUSES.
SEVERAL BLACKSMITH SHOPS:
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All of the above built so as to be easily removed and set up.—Save Labor.—Sheds, Racks and Fences can be bought in sections, as little or as much as you wish for less than half the present cost of material.—Spur track on premises.

ROOFING ROOFING

READY TO LAY

1000 Squares, like NEW—One-third Price.

150 Power Poles—25 to 40 ft

2,500,000 feet lumber contained in these buildings—NOW WRECKING—Some of the above constructed just prior to Armistice—NUMBER ONE stock throughout and LONG lengths. This is the greatest opportunity we have had to offer.

No restrictions. No reservations. First on the ground get the pick—but plenty for all.—SALESMAN ON JOB.—Get estimate.

Our usual stock of full line Plumbing, Ranch Accessories, etc., at Bargain Prices on exhibition in our S. F. salesrooms. Satisfaction guaranteed or money refunded.

SYMON BROS., WRECKERS
Block 11th and Market Sts, S. F.
21st and San Pablo Ave. Oakland

REMANUFACTURED PIPE.

All sizes standard pipe and wrought iron screw casing. All kinds of fittings. Guaranteed good as new. Write for prices. Weissbaum Pipe Works, 100 Eleventh street, San Francisco.

FOR SALE—One 10 foot cultivator nearly new, made by Ventura Manufacturing and Implement Co. Can be bought for $60.00 less than cost. Call or write to Cox & Sager, Watsonville, Cal.

TRACTORS FOR SALE—Holt Caterpillar, 30 H. P. Samson Reive-Grip 10-20. Good condition. Call and see them. Prices very reasonable. E. A. Dumpace, Paicines, near Hollister, Cal.

FOR SALE—8 H. P. Corliss Gas Engine and three extra pulleys. In fine condition. Price, $150. J. H. M., 440 Montgomery St., San Francisco, Calif.

ALL SIZES OF PIPE and screw casing, both new and second-hand, dipped and undipped. Guaranteed. Prices right. Shecter Pipe Works, 304 Howard St., San Francisco.

MADE OF REDWOOD, Hawley's Perforated wooden well casing, the best and cheapest well screen made. Send for descriptive circular. G. M. Hawley, La Mesa, California.

CO-OPERATION (not operated for profit) reduces living expenses. Particulars and catalogue from Co-operative League, Commercial street, San Francisco.

PATENT ATTORNEYS.

WEBSTER, WEBSTER & BLEWETT, Savings and Loan Bldg., Stockton, California. Established 50 years. Send for free book on patents.

FOR SALE—One Bean Trackpull Tractor in good mechanical condition. All 1919 improvements attached. Too small for present owners use. A bargain for quick sale. Address Box No. 1530, Pacific Rural Press.

BEES FOR SALE—Golden Italians in patent hives. John G. Mee, St. Helena, Cal.

COUNTRY LANDS.

FOR SALE—57 acres 3½ miles from town of Healdsburg, Sonoma county. 32 acres young prune trees, 2 and 4 years old; 3 acres old-bearing orchard; 15 acres hay land and 7 acres woods. House, barn and other outbuildings, team and tools. Price $225 per acre. $5000 cash, balance on terms to suit. Owner: J. R. Starkey, Route 4, Sebastopol, Cal.

$35,000—85 acres, 50 yards from school; county road on two sides. 10 room house (hot and cold water), 3 wells, windmill and tank, new gas engine and pump; barn, chicken and brooder houses; 2 horses, 1 cow, 350 chickens; 300 fruit boxes, 200 trays; complete set of implements to run place, including 4 wagons, $250 power spray pump, cider press, etc.; garage and work shop. Average income $5,000 per annum. Will guarantee $7,000 crop this year. 2 miles from Windsor station between Santa Rosa and Healdsburg, Sonoma County. 30 acres prunes of which 18 acres bearing, balance 3 to 5 years; 1 acre peaches; 10 acres apples; 2 acres pears; 14 acres resistant vines; plenty of berries, beans, corn, potatoes, etc. About 30 acres of this is deep rich bottom land with plenty of water to irrigate if necessary. Mortgage, $12,000 5%, can remain. Umbsen, Kerner & Eisert, 20 Montgomery St., San Francisco.

MOUNTAIN ORCHARD—40 acres ready for immediate possession. Full-bearing orchard, consisting of peaches, apples, pears, apricots, prunes, almonds, walnuts, chestnuts, olives, grapes, strawberries, and blackberries. Full equipment, including a team of mules, 34 hogs and pigs. Four-room house, barn and outbuildings. All hog-tight fenced and cross-fenced. All under irrigation. Don't delay a moment if interested. Price, $6,000. Paradise Ranchita, Paradise, Butte County, Cal.

FOR SALE—KNOLLCREST—26¼ acres in Santa Clara Valley, mostly in apricots and prunes, part bearing, balance 4-year-old trees, one acre bearing citrus. No frost. Beautiful building site, commands best view of the valley. Best climate in the state. Price $400 per acre, or will sell separately, 12 acres prunes at $350 per acre. Apply Owner, 478 63rd St., Oakland.

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$12,000 MOUNTAIN HOG AND CATTLE Ranch. Well stocked, watered. Napa Co. T. H. Sponsler, B. 106, Vallejo, Cal.

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WANTED—Married dairyman; experienced in feeding, testing, calf raising, use of milking machines, gas engines, etc. Sunnybrook Ranch, Willits, Calif.

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Vol. XCVII—No. 23 THE PACIFIC RURAL PRESS Forty-ninth Year

SAN FRANCISCO JUNE 7, 1919 LOS ANGELES

State Fruit Interests Convene at Riverside

Written for Pacific Rural Press by John J. Fox.

THE 51ST FRUIT GROWERS' AND FARMERS' CONVENTION, held at Riverside during the week of May 26 to 31, was not only the most important that has taken place in the State, but marks an epoch in horticulture from the fact that, for the first time, all the various departments and associations met together to discuss and regulate matters that shall be for the industry as a whole. A report of the Nurserymen's Conference was published last week. There were so many matters dealt with that are vital to the industry as a whole that it will only be possible to touch on them within the scope of this article. We will therefore omit the addresses of welcome and opening ceremonies in order to present the meat of some of the subjects.

The Interstate Plant Quarantine Conference.

The object of this League of Western States, so to speak, was for the purpose of taking up and bringing about, wherever possible, some sort of uniformity of action in quarantine matters relating to plant diseases and insect pests so as to facilitate the work and render it more harmonious and efficient. Various addresses of great interest were made and discussed at the various meetings that were held. They resulted in a committee being appointed to draft a set of by-laws which should govern the joint action of the several States which will constitute an "Interstate Quarantine Board"—representatives of States included being mentioned below. There will be no attempt to interfere with the action of any State individually. The one common object of the various States is to protect themselves from a number of dangerous insect pests and plant diseases, which have been introduced into the Eastern States and are known to exist there—pests from which we are so far immune. To unite for mutual-protection is the only feasible way to make for safety.



THE MISSION INN, RIVERSIDE.
Scene of the greatest convention of fruit and vegetable growers, horticultural commissioners, and nurserymen ever held in California—May 26-30.

Outside representatives of the above Board are as follows: C. L. Marlatt, chairman, Federal Horticultural Board, Washington, who opened the ball with an illuminating address on "The Methods Now Employed by the Department in Safeguarding the Plant Industries of the United States"; Harold R. Hagan, Utah; George H. List, Colorado; H. W. Wicks, Idaho; M. L. Dean, Olympia, Wash.; Chas. M. Park, Oregon; W. H. Line (Vancouver), British Columbia, representing Canada at large; E. M. Ehrhorn, Federal Horticultural Board, Honolulu; Andrew Kimball, Arizona; A. Pellagrin, Lower California; Dr. Johnson, Pathologist, Bureau of Plant Industry; Dr. E. P. Meinecke, U. S. Forest Service; A. L. Stranz, Montana.

Home members included George H. Hecke, State Commissioner of Horticulture (who also carried the proxy of the State of New Mexico); Nevada sent "regrets" at the last moment, but is in the movement; F. W. Masker, Chief of State Quarantine Division; Geo. P. Weldon, Chief State Deputy, Horticultural Commission; A. S. Hoyt; H. S. Smith, D. B. Mackie, O. W. Newman, all of the State Commission of Horticulture, and W. W. Mackie, U. S. Department of Plant Industry.

The various pests which menace and beat methods of combating them will be taken up and determined by joint action of the new board which is now in being.

The Western League for Plant Quarantine,

As it is called, will exercise authority from Alaska to the Gulf of California. Dean Thomas F. Hunt of the University of California, said: "If this convention at Riverside had done but this one thing of warding our great industries from plant infestation and infection from the Orient, it would still stand in the Agricultural History of California as the greatest beneficial act in years."

Joint Meetings of Nurserymen and Commissioners.

Several joint meetings were arranged of the Nurserymen of California and the Horticultural Commissioners of the State, which wrought for more harmonious and uniform action. A stirring address by George C. Roeding at the last meeting in which he set forth some of the many trials and tribulations of the nurserymen, was listened to with great attention by the assembled commissioners, created a feeling of respect by its frank and outspoken relation of conditions in the nursery that are encountered year by year. Mr. Roeding made a strong plea for closer co-operation with the Commissioners and for continuous summer inspection of the nurseries on their part, and aid in reducing loss of stock and loss of time in the shipping season. F. P. Roullard responded for the commissioners in reciprocal terms and the assurance was manifest and expressed of closer co-operation between these two branches of our horticultural industry.

Fruit Standardization.

George C. Hecke, State Commissioner of Horticulture, gave an address on "Standardization of Fruit," and while the meeting was in session news came of the signing of the new Standardization Law by the Governor. Mr. Hecke showed how standardization stabilized the industry and insured a reliable quality of the highest order. It safeguarded our markets by permitting no immature or inferior fruit to go to the consumer who was willing to pay the price for a good article. Our grades of fruit under official passing are reliable. Our markets are extending and growing in volume.

The Department of Agriculture.

Mr. Hecke announced that the office of State Commissioner of Horticulture was about to become a thing of the past by reason of the establish-

(Continued on page 861.)

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EDITORIAL.

WELCOME TO NEW AMERICANS

THERE are things taking place in Oakland and Berkeley this week which may not be the first of their kind, but are nevertheless very significant and should be widely understood. They are ceremonials arranged by the public school authorities as a foundation for the instruction in Americanism which the schools will undertake. The plan is for the community to extend a welcome to citizenship to those residents who have recently been granted naturalization papers by the local courts. It is too bad that such manifestations of public interest and desire that new Americans should be trained aright were not provided for generations ago. It is no wonder that the declarant for citizenship has not adequately appreciated the boon which was given him. In times past he has often been hunted up by some one who desired to use his vote, pulled into a court room between two criminal trials, made to stand himself as though he was some sort of a criminal while the judge pronounced citizenship upon him, and then taken out and filled up with gin by his political sponsors to pledge his vote their way. All this has been a disgrace and a profanation, and it is sad that no one appeared to appreciate it. Change has come, however, for this week Oakland will give a municipal reception to new citizens; a hundred of whom will be invited to sit upon the platform while the welcoming hosts will fill the auditorium around them. Warm welcome to citizenship will be extended with thrilling patriotic exhortations to be worthy of the high trust placed in them, and grand music will impress both the welcome and the responsibilities assumed. In Berkeley there will be a pageant to symbolize the genius of America and the noble deeds of American patriots for the sake of humanity, and the seventy-five recently naturalized citizens will be the guests of honor. These public ceremonials will inaugurate special instruction at evening classes in the public schools in the privileges and duties of citizenship, and all new Americans will be invited to participate. It is good work, for it will begin to grow at the bottom and finally blossom above in a better understanding of the joys and duties of citizenship in this country. Communities large and small can take part in it, for its proper place is in the public schools, which are not only our national pride but our greatest national safeguards.

A BULLY SHOW IN NEW YORK

We are wondering if the American Jersey Cattle Club has not developed something really new in the human attitude toward the bovine race, and we are wondering also if, from the point of view of human discernment and common sense, it was really a good thing to do. The transaction to which we refer is thus described:

A two-year old Jersey bull was the center of interest at the recent Milk Show in New York, and it was decided to give a dinner in his honor at the Waldorf-Astoria. Five hundred guests assembled. It was the first time that an animal had ever been the guest of honor at the Waldorf.

The assembled banqueters all stood as the bull entered, and in a procession escorted their guest to his special table, which was fully appointed with napery, silver and glassware.

As the bull took his position as guest of honor cocktails were served, and each of the five hundred guests raised his glass. For the bull there had been provided a generous sweetened oatmeal cocktail, which was served in a silver champagne bucket. As this mammoth cocktail was raised by the two waiters the guest of honor sipped it with some deliberation, then raised his head, as if to bow an acknowledgment to his five hundred hosts. As the champagne bucket was removed one of the bull's personal attendants wiped his lips with a napkin. Following the cocktail the largest Sheffield silver platter in the Waldorf was brought in by four attendants, heaped with bran and ground oats mixed, which the bull consumed with great relish. The second course was another platter heaped high with macerated beet pulp, which also met with the approval of the bull for he ate every scrap of it.

For dessert the guest had a huge tray of timothy and clover hay chopped fine and sprinkled with green alfalfa leaves, and the bull devoured every bit of it.

While the guest of honor was proceeding with his dinner the five hundred hosts at the various tables throughout the banquet hall were following their menu cards and making speeches and complimentary allusions to their distinguished guest.

It was, of course, a great frolic, and perhaps we should not be so ill natured as to carp at it. The tired business and professional men of our modern Babylon must have some diversion, and baiting a bull at a swell banquet in such fashion as is described, must be held to be innocent sport as compared with other forms of bull-baiting. It is also more innocent and on a higher moral plane than the effort to arouse the lagging senses by clearing the center of the banquet table for sensuous displays by a premier danseuse—which they say New Yorkers have done in times past. There are, however, a few things which we would like to say about this metropolitan bull-show.

THE BULL'S PLACE IN WORSHIP

As we are not conducting a journal of antiquity (except in occasional reference to California phases of it) we must deny ourselves space to set forth in detail motives and methods of taurine honors of the remote past, in their relation to the spirit actuating the New York event. Suffice it to say, that the ancients honored selected bulls as gods—making them embodiments of higher powers which they only dimly discerned and symbols of forces which transcended humanity, and determined the outcomes of human actions and enterprises. The sacred bulls of Egypt were thus honored in life and mummified after death like their kings, who were also conceived to be gods. The Assyrians put angel's wings on their taurine effigies, and the East Indians bred bumps on the backs of their sacred bulls—hoping, perhaps, that wings would sprout from them. The ancient Irish developed a strain of bulls which have delighted the human race to the present day—but we must dam this sparkling historic stream!

All these phases of taurine exaltation which lifted the beast to godship were, to the wise, symbolic and were parts of a more rational idolatry than the common people could understand, and so they worshipped the creature rather than the creator manifested therein. But the whole ancient practice was higher in conception than the New York outbreak of idolatry which worshipped the bull, neither as a god nor as a symbol thereof, but as a man with all the frailties of a man—from cocktails to brandy and water. They also imposed upon the animal a name and imputed to him motives and purposes of a man—for the account before us says in one place:

The name of the bull is "Financial Sensation." He has a market value of $60,000 and is the highest priced bull in America.

"Aha then!" cries the carping critic, "it comes out in the end all right. The New Yorkers are worshipping the Almighty Dollar in this golden calf ceremonial. Why should not some Moses, returning from some delectable mountain, where he has had a vision in the current awakening of the nations, grind up this emblem of their dollar worship and force it down their throats in beef-tea and take from them a dollar for each drop of it!"

And to such a critic we must reply: It is not as bad as all that. It is quite possible that, though the event was camouflaged with dollar-signs, as you suggest, there was a real basis for it in an effort for the good of man, and that the inmost suggestion was not that the bull is as good as a man and worth more than most men, but that he could do more good for mankind than the whole bunch of men who clinked glasses with him at the Waldorf-Astoria. But we will not press that point. Comparisons are odious, even to a banqueting bull.

WHAT WAS THE MOTIVE?

But the reason why we suspect that there was a motive in the affair which was worthy of mankind, lies in the fact that we discover in the post-prandial utterances, these words, credited to President W. T. Munn of the American Jersey Cattle Club:

There are 2,300,000 dairy cattle in the United States, and not more than 500,000 of them are on a profitable basis. These 500,000 are pure bred cattle. The increase per person in the United States over the increase per cow has been about 20 per cent in the last eight years. These two facts show what is the cause of the increasing cost of milk and butter. This is an industry on which the welfare of the people depends. There are 6,300,000 farms in the country. There is invested in the dairy industry in the States $8,000,000,000, and the products of that industry last year were $3,000,000,000. The way the price of milk is to be brought down is by as rapidly as possible displacing the 1,800,000 cattle which do not produce enough milk, or rich enough milk, to pay for their keep, with pure bred, profitable stock. The increasing population will make this change necessary to keep the price of milk from advancing to still higher figures.

It is, of course, unfair, to deal harshly with statistics by banqueting speakers or reporters, but as the foregoing figures are being widely spread for the edification of readers of daily newspapers, we must mildly object to them. There are about ten times as many milch cows in the United States as the speaker cites, viz: 23,284,000 in 1918. Whether his figures for pure breds should also be multiplied by ten or not we cannot surely tell, but only half a million pure breds of all dairy breeds together seems to us too small. We are, however, very sure of two things: First, that the claim that only one cow in 46 is profitable to her owner is incredible; second, that all the cows which are profitable are pure bred, is far from correct. Of course snap judgments about cows and what they are doing are very deceiving—as Mr. Whitten demonstrated so graphically in our issue of last week—but the current banquet statistics are unfair to the whole bovine race, both in productivity and ancestry. Still, it is true beyond doubt, that more productive cows are indispensable to the continuance of the dairy industry on a satisfactory basis. It is also true that pure breds, though they are not all by any means individually profitable, do as a class contain not only the highest percentage of profitability, but they embody also the forces by which the offspring of common cows can be made more profitable than their dams. These are really the points which the New York bull banquet should emphasize in the public mind, and to this end its influence may be beneficial in the farther development of our dairy industry.

WAS IT JUST AND SAFE?

But while we thus approve the outcome of the sensational event in bovine and boisterous circles of New York, we must claim that there was an injustice and danger in it, the latter perhaps heightened the interest of the venturesome participants. Injustice lies in the fact that this banqueted youngster went rioting on the money of his female relatives, who were left to ruminate in the dark stalls while he hoofed it along the primrose path. It was a gamble on what he might do, not a reward for what he had accomplished, for none of his possible offspring could have made a record. The honors should have gone to the agencies which gave him life and the promise of power. This might have been impossible from the fact that the New York banqueters do not admit the other sex (except down the center of the table as has already been suggested). For this reason, perhaps, the honors fell to this lordly youngster who could neither toil at the pail nor bring forth anything, and could only transmit the qualities and powers with which he was endowed by his man-selected ancestry. To our mind it was as unjust as it would be to glorify the trolley wire for the product of the dynamo.

Again, we are not fully persuaded that the banquet to a bull is a reasonable human proceeding. It was full of risk and danger to the animal. No matter how much a bull has been handled, exhibited and paraded, no one can ever tell when he may be frightened or displeased, nor when fear or viciousness may force him to run amuck, and the traditional scene of the bull in a china shop be reenacted. In that case the animal would probably have lost his life by way of a policeman's revolver, and the owner would have paid dearly for his inhuman escapade, even if all his guests were sober enough to reach windows or balconies. It is our judgment that all such freak performances with powerful animals should be frowned upon as recrudescences of a barbaric age.

QUERIES AND REPLIES

By the Editor.

Inquirer Must Give Full Name and Address.

A Great Moral Question in Plowing.

To the Editor: On February 24 I got a job to plow an orchard at $3.25 per acre and to have the job finished on April 15th, and a contract was signed by both parties. As last spring was the wettest we have had for many years, every farmer had a long delay, and April 15 was only the beginning of the plowing rush. I started my job on April 2 and found that grass was so high and thick that every farmer was compelled to mow his grass. I began to plow and we did our best for eight days with two teams of horses, but we could only plow a single acre a day, so I had to stop working. I spoke to the man who owns the land to cut his grass out of my way, but he refused to do so and we did not finish the contract. I have two good witnesses to prove that we were ready to finish the job if the owner would cut the grass. What do you advise me to do? Can I collect the money charging the owner so much a day, or must I lose all my work?—Reader, Vacaville.

If your contract said nothing about delay by bad weather or extra pay for cutting high grass, you are probably stuck to lose for the work you did, and possibly liable for damages for not getting the work done at the contracted date. If you had an unconditional time contract you ought to have plowed the land before the time expired, even if you had to hire a steamboat to pull the plows. It would have ruined the land for all summer perhaps, but that was not your concern. If you were plowing unfit land and doing it as well as nature permitted, it would have been up to the owner to tell you to stop—thus breaking his contract and being liable to damages to you—and then you could have forced him to cut the grass (and eat it perhaps) so as to get his plowing done when the land was in good condition. As you broke the contract you are at the mercy of the other man, so far as the law of unconditional contract goes. But that may not be fair and just to you—therefore, if you cannot get the owner to submit the matter to the arbitration of three neighbors who know conditions and circumstances, this court grants you right of appeal to the league of nations, the great coming arbiter of moral issues.

Trees Refusing to Blossom.

To the Editor: Referring to your answer in your issue of May 24, I beg to state that the expression in my letter was exact. My trees "had no blossoms at all." I called on some of my neighbors, who had the same experience, and endeavored to get additional facts. One of them stated that he had some time ago conferred with you regarding his orchard. He stated that at that time he called to your attention the fact that he had lost many trees and you stated to him that it was possibly a need of moisture. Perhaps a lack of moisture last year is the cause of this year's trouble.—G. A. S.

So far as we know, trees of bearing age only refuse utterly to show flowers when they are so famished for lack of moisture in midsummer that they cannot proceed with the development of fruit buds. Such trees are in imminent danger of dying. This usually occurs on flat land, where the soil is underlaid by gravel, wholly or in spots—and trees over such spots will fail while adjacent trees with deeper, moisture-holding soil, may survive. Trees on such spots can only be kept alive by adequate and frequent application of water. There are sometimes cases of trees blooming scantily when the soil is utterly impoverished even if moisture is not so inadequate. In such cases the use of manure calculated to stimulate wood growth (the tree's way of manifesting vigor) has also induced freer blooming and fruit bearing. The use of five pounds of nitrate of soda per tree in advance of showers may produce results the same season if there is moisture enough to make it available, or winter use of stable manure will be followed by vigor enough to make fruiting possible.

Let the Hens Do It.

To the Editor: I have a few acres in potatoes. The vines are fine sturdy ones. I have had the water on them once, and as they are now beginning to bloom will turn the water on again. Is this right? Here and there in the field, something (I do not know what, as I cannot find any bugs or worms) is attacking the vines. It eats the young spuds and the roots, and the vines off up to about an inch from the surface on the ground. All around the plants the soil is thrown up, like ant hills, but I can't find any ants. Have you had any kicks like this, and if so, what should I do? My chicken run is close to this field of potatoes, and I would like to let the hens range a bit. How soon can I turn the hens into the field without harm to the spuds?—P. F. D., Los Altos.

Be careful not to give the potatoes too much water or they may all go to tops. Keep them growing slowly and showing no leaf-curl from drying out. We cannot tell what is eating the plants unless it is gophers, and you probably know gopher-mounds. It might be mole-crickets. Turn in the hens and let them find out for you. We never saw hens doing harm in a potato patch—if the patch was large enough or the hens not too many.

Peach Trouble at the South.

To the Editor: We have some diseased condition among trees of a 30-acre young peach orchard. Our local inspector tells us it is "little leaf." We would appreciate information as to cure or prevention.—J. R. H., Ontario.

The condition known as "little leaf" is not a disease. It is an indication of some defect in growing conditions which reduces the thrift and vigor of the tree and may be sufficient to kill it. Ordinarily the defect is in uncongeniality of the soil or in the irregularity of the moisture supply. Too much at one time or too little at another, (which may be due to lack of rainfall or of local drainage or of irrigation) may produce the same visible effect on the tree. In addition to such things you have in Southern California, unseasonable growth, unseasonable dormancy, which may result in little leaves with die-back, or no leaves at all. The exact cause of such behavior has not been definitely demonstrated, but is surmised to be involved in conditions which prevent normal periods of dormancy and growth.

Pruning Roses.

To the Editor: Please inform me how and when to prune our roses. They are growing very tall and shabby looking. They have been blooming well this spring, but are done now.—J. C. J., Modesto.

We stated the general practice briefly on page 722 of our issue of May 10. The heaviest pruning should be done when the bushes are nearest dormancy—usually in December and January. Pruning in the summer dormancy is however also desirable. Keep the bushes growing along for about a month with moisture enough to keep the foliage good until the new spring wood stops growing. Then let them get rather dry for a month and then prune out about half the older and weaker canes and prune back those which you keep about half their length and irrigate thoroughly and keep reasonably moist until the rains take up the job and you will have good fall roses.

Grapevine Hoplias.

To the Editor: I am enclosing a couple of bugs which I find are eating the leaves and tender shoots of my grapevines. I have never seen this pest in my vineyard before this year. They have cleaned about a dozen vines in one end of the vineyard and are rapidly spreading to others. Can you tell me what they are, and what to do to exterminate them?—W. G. B., Atwater.

The insects are "grapevine hoplias," which appear somewhere in your valley every year. They can be shaken or jarred onto catching sheets placed under the vines or into large pans of water covered with a film of kerosene—placed right to catch them as they drop and "play possum"; or they can be poisoned by spraying the foliage with lead arsenate, 6 lbs. to 100 gallons of water.

Soils for Squashes.

To the Editor: I wish to raise some Hubbard squash this year and would like to know what kind of soil is best adapted for them. I have some very heavy soil and some that is quite sandy. Which would be better for Hubbard squash?—J. G. W., Modesto.

Squashes prefer a rich retentive soil, which belongs to the heavier class, and on such a soil will largely grow themselves. They will, however, thrive on a light soil if you take care to keep it moist. They are apt to get into great distress if allowed to go at all dry.

Ants and Citrus Trees.

To the Editor: There is a small black ant which is working on the bark of my orange and lemon trees, close to the ground. Is there anything I can do to prevent this? Were ants ever known to kill trees?—I. J., San Benito.

No; colored ants hunt over the trees for the excreta of plant lice, scale insects, etc., and promote the spread of such pests. They may also find luxuries in the by-products of gum diseases. Ants have no use for a healthy and pest-free tree, except as a playground. If they become abundant it is up to the grower to find out what is the matter with the tree and treat the cause—not the ants. Termites (commonly called "white ants") do make excavations in citrus and other trees and need killing treatment—but that is another story.

Manure on Orange Grove.

To the Editor: I wish to fertilize an orange grove with stable manure. Which is the more economical way to apply it, broadcast or in a trench?—C. F. R., Santa Ana.

If it is "short" manure, that is well decomposed or corral-tramped, and you wish to make summer application, spread on the check-bottom before you turn in the water and cultivate in after irrigation. If you irrigate in furrows, spread on the middles and take the same course. If it is "long" or strawy, it is more satisfactory in every way to spread at the opening of the rainy season and plow under during the winter. There is no objection to trenching it in except the large extra labor-requirement—providing water is used soon after enclosing. Otherwise it will dry out much of the soil.

Grasshoppered Young Trees.

To the Editor: We had the misfortune to have a visit from the grasshoppers and black bugs the past two weeks and they have eaten the leaves and in some cases the bark of the young growth of the almond, pear and other fruit trees, leaving everything bare. Will this kill the trees or can I do anything to help them?—C. J. G., Woody.

Young trees in good soil conditions will usually have spunk enough to try again for leaves, which will pull them through alive, but with scant growth probably. All that you can do is to cut back the new growth to near the base—saving the base, however, to develop latent buds more easily. Be sure and whitewash the bark to prevent sunburn.

Treatment of Scaly Bark.

To the Editor: I have some scaly bark on a few of the older navels. What is the best treatment?—C. F. R., Santa Ana.

Remove entirely all infected branches which can be spared. On parts of the tree which must be retained cut away the diseased and discolored bark and some wood underneath and cover with Bordeaux paste.

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California Weather Record.

The following rainfall and temperature record is furnished the Pacific Rural Press by the United States Department of Agriculture Weather Bureau at San Francisco for the week ending June 3, 1919.

Stations—	Rainfall: Past Week	Rainfall: Seasonal To Date	Rainfall: Normal To Date	Temperature: Highest	Temperature: Lowest
Eureka	0	39.73	45.15	64	48
Red Bluff	0	26.18	24.63	98	56
Sacramento	0	17.20	19.04	96	57
San Francisco	0	25.64	22.14	88	50
San Jose	0	18.87	16.73	94	44
Fresno	06	6.88	9.67	100	56
San Luis Obispo	08	18.05	20.45	90	44
Los Angeles	01	8.57	15.57	96	58
San Diego	04	8.71	10.01	90	58

Co-operation Among Alfalfa Growers

(Abstract of Address of George I. Lytle, Director of the Alfalfa Growers of Cal., Inc., before the Fruit Growers' and Farmers' Convention, Riverside, May 29.)

A statistician recently observed that a city in the Middle West had about double the population that it had two decades ago, but that it had only about one-half the number of stores. An investigation showed that the wants of the people were better supplied with the fewer stores than they were when they had many, which were necessarily small and with incomplete stocks.

Is not this significant? Does it not suggest a better than our old competitive system of distribution? Is it a competitive and necessarily incomplete system of distribution that we wish? Or do we wish a system that will be at the same time direct and complete?

By co-operation among the producers we can eventually secure economy and efficiency in distribution.

Without co-operation among the producers the greatest men of affairs cannot give us system and economy in distribution.

After a little more than a year of co-operative marketing the Alfalfa Growers are now doing a business that in quantity will compare favorably with that of many of the older co-operative organizations of the State, and we expect to improve the quality so that you will all be clamoring for alfalfa for breakfast. We confidently expect to produce the best breakfast food on earth. It may be in the form of a crisp package food, or it may be in the form of milk and cream. But we are very confident that the very best food for the race would be a crisp alfalfa breakfast food with plenty of milk and cream over it.

The present Alfalfa Growers' Association was not without forerunners. During recent years there have been a number of local organizations of the alfalfa growers in various districts. Among these were the Hanford and the Chino Alfalfa Growers' Associations. These had the experience and history of the first co-operative efforts in nearly every line of production. By reason of lack of capital, or a loose marketing agreement, or by reason of mistakes in management they did not survive the severe test to which every co-operative marketing organization is put sooner or later. The individual growers, as a rule, expect an organization to which they have given very little capital to solve their difficulties and establish itself in the face of every handicap and obstacle. A maximum of results at a minimum of cost is the aim of every co-operative effort, but it cannot be realized at the outset. In the matter of working capital and marketing agreement some progress was made, but a larger working capital would have made the progress of the Association much more rapid. The development has been steady and the Association has taken on additional strength at every stage.

To review the steps leading up to our present organization, it is not necessary to go back more than two years. Soon after the opening of the alfalfa season two years ago I was asked by a neighbor to attend a meeting of the Alfalfa Growers of the Riverside district, I asked if they had an organization. He replied that they had not; that they were simply meeting as growers to exchange experiences and acquaint themselves with general market conditions. A short time previous to the first meeting which I attended these growers had assessed themselves a few cents per acre to raise a fund to send two of their number to the San Joaquin Valley to investigate crop conditions and marketing possibilities.

Later in the season the growers employed a secretary and began marketing as an organization, though not incorporated. The progress of the work showed that it would be necessary to incorporate in order to bond their employees, as well as for many other reasons. A canvass to interest other growers in this district was started with the result that 183 growers representing about 5000 acres united with the Association. Incorporation was effected in April 1918, only a little over a year ago and offices opened on West 9th St. in this city (Riverside). Our capital was very limited as the growers were asked to subscribe only 50c an acre and of this only 10c an acre was paid in cash. But with more confidence than capital we entered the field and during the next few months marketed about 1000 cars of alfalfa.

Shortly after our organization and incorporation the State Market Director became interested in our work and asked that representatives from the Association meet with the Growers from other districts with a view to affecting a State organization. During the summer a canvass of the growers in most of the alfalfa-growing districts of the State was made with the result that in October the State Association was incorporated with 740 members representing about 27,000 acres of alfalfa. Active marketing by the State Association was begun December 1st and in the six months that have followed the Association has sold about 1700 carloads of alfalfa. Of this amount the Association has placed about 200 cars in markets outside the state.

We now have over 1300 members, representing about 50,000 acres. From about one-half of this acreage the product is marketed and from the other half the product is fed on the ranches where produced. Of the market acreage of the State, approximately one-half is now in the Association, and additional acreage is being subscribed at the rate of about 2,000 acres a month.

We now have a Supply Department which is able to save the growers a very considerable amount each month in the purchase of supplies. Our business in this line has not as yet attained the proportions of the business of the Fruit Growers' Supply Company, but we are confident that some day it may. We are glad to have their fine record to emulate.

Our aim is to be of service to our members wherever possible and we are preparing to handle the other products of our members in those lines where there is no co-operative organization in the field to handle them.

We are devoting considerable time to finding new markets for alfalfa, especially in the form of meal. With the return of pre-war conditions in the shipping world we confidently expect to be able to place our products in many foreign markets.

The rail haul to tide water from most of the alfalfa-producing sections of the State is short. On board ship these products can be delivered in many foreign markets for less than the freight from the middle states to the Atlantic seaboard This gives us both the Atlantic coast and many foreign markets, or practically a world market for our products.

The system of individual marketing is wasteful of the time and energy of the producer and is unsatisfactory to the purchaser as he is unable to get the production in the quantity, or in the form, or at the time he desires it.

CALIFORNIA ASSOCIATION OF NURSERYMEN.

At the closing session of the Convention of California Nurserymen, which concluded perhaps the most important business meetings ever held by this body, the election of officers for the ensuing two years resulted as follows: President, William Kirkman, Vice-Presidents—M. R. Jackson, Fresno; A. L. Wisker, Grass Valley; Chas. W. Ward, Eureka; D. W. Coolidge and Edward H. Rust, South Pasadena; Secretary-Treasurer, Henry W. Kruckeberg, Los Angeles; Executive Committee—George L. Otto, San Diego; W. P. Clarke, San Jose; J. D. Meriwether, Pomona, and C. W. Gandy, Modesto.



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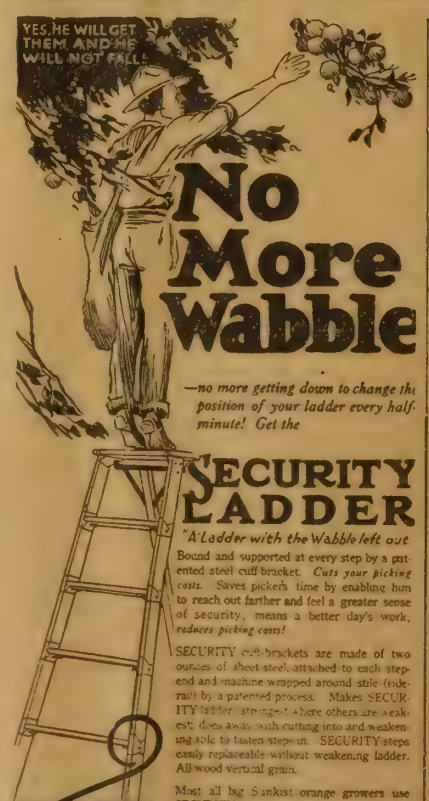
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SECURITY cuff-brackets are made of two ounces of sheet steel, attached to each step-end and machine wrapped around stile (side-rail) by a patented process. Makes SECURITY ladder stronger where others are weakest; does away with cutting into and weakening stile to fasten steps in. SECURITY steps easily replaceable without weakening ladder. All-wood vertical grain.

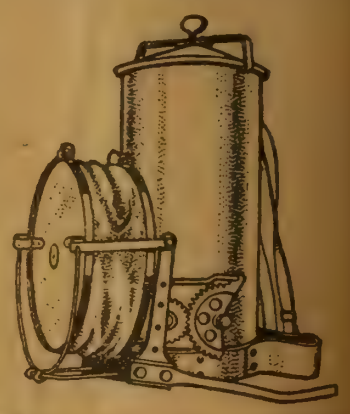
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For sale by SECURITY dealers only. Write me; I will send you name of your dealer and new booklet on the SECURITY ladder. Write NOW!



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State Fruit Interests Convene at Riverside

(Continued from first page.)

ment of the State Department of Agriculture. Beginning July 22nd, the two great branches of Agriculture and Horticulture, including Viticulture, as well as the animal industries, will be united under this Directorate under their several divisional heads. It marks the gathering up the threads of the various industries into one homogenous whole, whereby no overlapping or conflicting administration may occur under their various bureaus and commissions in being to date.

The State Association of Horticultural Commissioners passed a strong resolution endorsing the new Quarantine measure as did the Association of Nurserymen who recognize the menace to our industries if its action is not rigidly enforced. A. S. Hoyt of the State Commission read and explained so far as possible the working of the new law which will be backed by those still in force under the State Commission. Dr. D. M. Ball of the Biological Survey gave a good talk on rodent control and Theodore Urbhans on grasshopper control, both of which are too extensive to come into this sketchy report.

A special address of appreciation and gratitude was delivered by Fred C. Brosius, Horticultural Commissioner of Sacramento County, to George P. Weldon, Chief Deputy of the State Commission of Horticulture, on his retirement after many years of faithful services and to the County Commissioner. He was also presented with a handsome library chair as an expression of esteem from this body, together with the good wishes of the convention on his new duties as the head of the Experimental Station at Ontario, where he will continue to serve Hosticulture with the application of his very wide field experience.

Fumigation of Nursery Stock.

This matter was taken up in informal discussion by the Convention of Nurserymen and Commissioners and Dr. C. L. Marlatt (Washington, D. C.) explained the making of existing fumigating plants for cotton boll weevil and other pests. He made suggestions and gave tentative figures and prices for the installation of experimental plants for the fumigation of nursery stocks in vacuo in order to reduce the necessity of close inspection of nursery stock for insect pests, though he pointed out that it would be without value in plant diseases in the tissue of the plants themselves.

Vegetable Standardization.

Mr. Hecke pointed out the necessity of the extension of standardization in vegetables and pointed out that under a bill which was passed at the last legislature, onions, sweet potatoes, and potatoes must meet all the requirements that have to be met in the case of fruits. The vegetable growers themselves recognized this necessity and requested the standardization measures enacted. The importance of matters carried out by the vegetable growers will be found under a separate article.

Co-operative and Marketing Associations.

Nearly all the great co-operative and marketing associations in the State were represented at this conference by their chief officers. As this is the most important part of the growers' business—the matter of marketing their wares—and at the same time the most complex, governed as it is by the mysterious psychology of market conditions, which must be felt as well as followed, great interest was centered on the short, meaty talks of these "Generals of Division"—these men to whom is entrusted the distribution of over $200,000,000 worth of products each year. This is done at the least possible cost of overhead expense, with the least waste as at present possible in the selection of markets and established brands that already command the confidence of the world's buyers without sample.

George C. Roeding, President of the State Agricultural Society, opened the meetings of these men, and C. C. Teague, President of the California Fruit Growers' Exchange, followed. He showed that the Growers' Society—the fathers of them all in California, hauled the citrus industry out of obscurity and penury 26 years ago and had steadily grown so that it now marketed 70% of an orange crop, six times as large as it was 26 years ago, and did it at a profit to the growers instead of a loss. It also handled 85% of the lemons. Up to 1909 Sicily supplied America with 75% of her lemons—now the case was reversed and California was "it."

George W. Pierce of Davis spoke of what the Almond Growers' Exchange had done for the industry and how almond growers never really were successful until the Exchange was formed. The fruit is standardized and the grower relieved of any uneasiness at market time because he knows he will get the best price for his fruit it is possible to obtain.

Chas. Thorp of Los Angeles told of what the walnut growers had done. How their wares are all practically sold by the time the crop is harvested and their overhead the lowest it is possible to attain. As this notice is dispatched, the following men are still to speak—George C. Cutter, California Fruit Exchange, Sacramento; Wyley M. Giffen, Associated Raisin Co.; Mark Grimes' Central California Berry Growers' Association, and of the Tomato Growers' Association, California Fig Growers' Association; H. C. Dunlap, California Prune and Apricot Growers' Association; Frank T. Swett, California Pear Growers' Association; F. H. Wilson, California Peach Growers' Association; G. I. Lytle, Alfalfa Growers of California.

It is to be deplored that so many of the valuable talks here given must be omitted for lack of space. The greatest interest centered on Interstate Plant Quarantine, Vegetable Growers and Standardization, Co-operative and Marketing Associations—The Defense—Perfecting—and Disposal of our products to the best purpose.

THE CALIFORNIA FRUIT EXCHANGE.

(Written for Pacific Rural Press.)

The fruit growers of the State are getting together more and more each year. Since the world at large has learned the power of organization it is becoming general. For we have come to the point now where we believe that disruption means disaster to any industry and where to be unattached means danger. As an instance of this, we will cite the new growers' co-operative marketing associations that have affiliated with the California Fruit Exchange since last harvest: The Madera Fruit Growers' Association at Kerman, the Biola Green Fruit Exchange, the Sanger Fruit Growers' Association, the Iaty Valley Growers' Association, Fresno County; Bloomington Fruit Association, Riverside County; Lodi Fruit Growers' Association, San Joaquin County; Mecca Fruit Growers' Association, Imperial County; Kingsburg Fruit Growers' Association, Fresno County.

In every important fruit shipping section of California the growers are now "getting together" for their mutual interest and protection, if they have not already done so. Twenty years ago it was a common saying the "Farmers can never be organized to conduct their own affairs—they won't stay put." There are no more efficiently managed businesses in the State today than those co-operative organizations managed and directed by growers who are as good judges as any of department managers and foremen. Results count.

"One of the most acute problems of forest supplies is that of wood pulp," says Col. Henry S. Graves, U. S. Forester. "American capital is going to Canada to build paper and pulp mills. New mill development for news print manufacture in this country has almost wholly ceased."



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IS $29.60 ADDITIONAL PROFIT A YEAR PER COW OF INTEREST TO YOU?

IS AN ADDITIONAL DAILY GAIN OF APPROXIMATELY FIVE-TENTHS POUNDS IN FATTENING HOGS OF INTEREST TO YOU?

IS THERE A LOT OF ROUGHAGE NOW ON YOUR FARM BEING WASTED JUST BECAUSE IT IS NOT PALATABLE?

You can make this additional profit; you can get this increased pork production, and you can turn what is now waste into profit by using that great CONSERVATION FOOD, PURE HAWAIIAN CANE

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California Fruit Exchange in Retrospect

(Address made by Mr. Geo. H. Cutter, President, California Fruit Exchange, at Fruit Growers' Convention, Riverside, Calif.)

In looking back over the work of the Exchange, little did I realize, as I sat in Convention with the growers of the State at Fresno, nineteen years ago, at which time resolutions were adopted to formulate plans by which a growers' marketing organization could be created, that I would, at this distant date, be addressing a like convention and making a report of the activities of that marketing organization.

During the nineteen years I have been associated with this Exchange from an Association manager to president. One cannot be associated with such a movement without having certain basic principles inground in him; however, I am not going to touch upon the principles of co-operation—the theories are many, and one is quite as good as another, so long as it is followed consistently along business lines.

This organization has always worked along the lines of adapting itself to existing conditions, endeavoring never to disturb trade conditions and recognizing that commercial companies work for a profit, which all lines of trade enjoy and are entitled to.

With the Exchange, this so-called profit represents the earnings that accrue during the season's operations over and above the cost of marketing, and deposited in a working fund, which is automatically and eventually refunded to the grower on the basis of his shipments. We realize that there will always be two sides to the question and we must meet opposition, but we feel that as the larger we grow, the better opportunity we will have of controlling markets, stabilizing conditions, and more equitably distributing our products, until such time as the distribution of fruit is regulated by organized control.

Reporting on the year's business for the Exchange, would say that in these nineteen years, our shipments have grown from 200 cars to 4,064 cars, deliveries being made about equally between the auction and private sales markets. We are selling in eleven auction and about 167 private sales markets.

The total sales for the past year amounted to $7,234,241.00, which figures $2,750,000 over the previous year's business. The net returns exceed those of the previous year by $1,755,600. The saving, or refund to the growers, for the past season's business, amounted to $305,115, or 4.47 per cent, which reduced the cost of handling to 2.53 per cent.

The Exchange shipments, in comparison with the shipments of deciduous fruit, exclusive of wine grapes, represents about 27 per cent of the State's shipments.

Our Supply Department, purchased $610,000 worth of supplies and materials during the past year, at a big saving to the grower in the difference between wholesale and retail prices.

The Traffic Department has filed claims with the various carriers in the amount of $135,000, and up to date has collected some $80,000 of this amount, which has been paid to the members.

The growers of the State have realized the highest prices in the history of the fruit industry for their products, during the past season, while at the same time the cost of production and marketing, including an advance in freight rates, has been much greater.

The railroad service was not all that could be wished for, but it was all that could be expected under war conditions. The future of the fruit industry is bright, and with normal traffic conditions, which will enable us to deliver our fruit on schedule, thus avoiding decay and gluts in the Eastern market, and with the results of standardization, which will bring the fruit and pack nearer to 100 per cent, and the widening of our markets, much will be accomplished for the good of the grower.

In conclusion, I would say that part of our success is due to our affiliation with the California Fruit Growers' Exchange, which was our advisor and supporter in the early days of this Exchange.

APPLE CROP IN SONOMA COUNTY UNEVEN.

(Written for Pacific Rural Press.)

The apple crop in Sonoma County as in other sections will not come up to expectations. Newtons and Hoovers look good—probably a normal crop. Other varieties are spotted—Spitzenburgs are very uneven and along the ridge Gravensteins run from 40 per cent up to a crop. On one ranch we noticed a good set of Spitzenburgs on old trees and on two ranches within a mile they ran from 30 per cent up to 60 per cent. On various ranches we found the same unevenness of set. Wagners promise well from the bloom, but it was too early to judge on these (May 14). In quite a number of instances we noticed what appeared to be arsenical russeting, also burning of the leaves and buds. The weather was dull and foggy quite a lot around these hills during the first spray and this is blamed for the condition in part.

F. S. Bradley near Graton is a new man to the game from the Alberta wheatfields. He has 15 acres in apples and cherries and a few pears. He had not sprayed at all and has a light crop of both apples and cherries and a good crop of pears on his trees.

G. W. Vanbicel at Occidental has 12 acres in apples and cherries. Most of his trees are Rome Beauties with a fair crop. Spitz good and cherries fair for Royals, but Blacks poor. He is spraying the second time.

D. M. Searby's Spitzenburgs which promised exceptionally well were evidently injured in the spraying. He used 2½ gallons lime sulphur and 3 pounds of basic lead arsenate to 100 gallons water. The set apples show russeting and so does the foliage, also the buds show burning. He said it was foggy weather right along after the spraying. Three years ago these 10-year-old trees yielded eleven boxes of packed fruit to the tree. Quite a number of people used the dry lead arsenate and are wondering whether it goes on as even as the paste. We may be able to get a line on this later.

On the Forestville road the same uneven conditions were noticeable. We got out and looked into some orchards we had marked at blooming time, some of which are well laden with young fruit and others light. It is difficult to estimate a percentage under such conditions. An optimist pays no attention to barren trees but fills his eye with the well laden ones, while the pessimist can see nothing but the light trees. A spotted crop is generally lighter than the average estimate. Dried apples are selling here to the packers at 15½ cents, we understood. On the whole it promises to be a pretty good season. The ground is full of moisture and has been worked down wonderfully well considering the season.

A correspondent informs the Rural Press that prices ranging from $70 to $80 are being offered for Sutter clings. About 50 per cent of the clings are under long-term contracts for $25, and an increase of 10 per cent on these contracts has been offered by the canneries.

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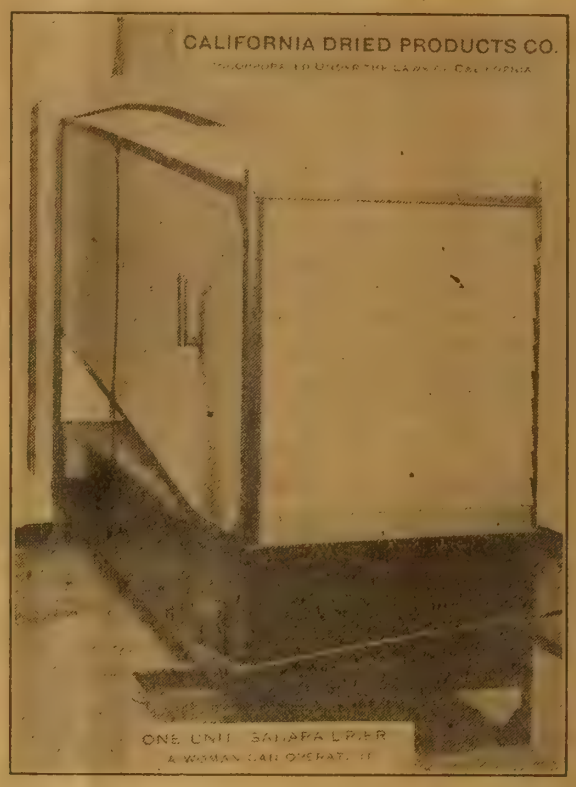
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FORTUNES THIS YEAR for the Fruit Growers. Banks thrive and grow rich by small margins of profit—why? Because they protect themselves against losses. The **Farmer** works hard all year to perfect his crops and persists in taking chances of losing their crops and entire year's work. The thrifty farmers are setting about this year to stop these losses.

SIXTY-ONE GROWERS have bought **"SAHARA DRIERS"** in the past few works. Read them over.

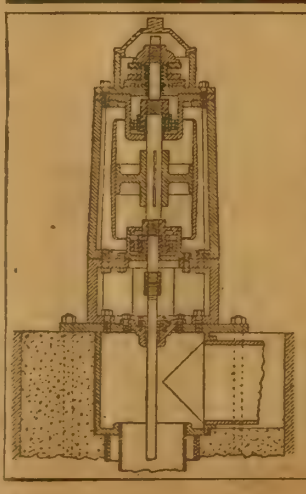
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CAMERON & MACDONALD	" (2 Driers)	Chico, Cal.
WAKEFIELD	COPRA	(Papeete)
O'CONNOR, HARRISON & CO.	COPRA	(Manila)
C. F. WYER	PRUNES	Napa, Cal.
D. B. GRAY	RAISINS	Fowler, Cal.
A. L. BOWMAN	GRAPES	Lodi, Cal.
C. F. MOON	RAISINS	Fresno, Cal.
CHELINI & REITH	APPLES	Sonoma, Cal.
E. C. HORST	APPLES	Sacramento, Cal.
GEO. W. CLEMSON	APRICOTS (6 Driers)	Los Angeles, Cal.
SANITARY FRUIT CO.	PRUNES	Red Bluff, Cal.
D. D. ERWIN	"	Chico, Cal.
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H. D. MARCH	" (3 Driers)	Chico, Cal.
GEO. W. THOMASSON	"	Chico, Cal.
G. L. BARHAM	" (2 Driers)	Chico, Cal.
ANDERSON & BARNGROVER	" (2 Driers)	San Jose, Cal.
J. C. MORSE	"	Chico, Cal.
M. A. HOLLENBECK	"	Chico, Cal.
JOHN M. MAY	"	Chico, Cal.
A. F. STOUDT	"	Chico, Cal.
M. MOLLINELLI	"	Chico, Cal.
KELLY BROS.	APRICOTS	Chico, Cal.
N. H. BRUCE	"	Chico, Cal.
JAS. H. JONES	PRUNES	Chico, Cal.
MRS. J. W. PARROTT	"	Healdsburg, Cal.

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Fertilizers and Fertilization--III

(Written for Pacific Rural Press by Dr. C. B. Lipman, Professor of Soil Chemistry and Bacteriology, University of California.)

Availability of Plant Nutrient in Soils.

Due to the summer in which soil material has been produced and deposited, it is natural to expect that all agricultural soils should contain representatives of most of the common minerals which serve as a potential supply of the potassium, calcium, magnesium, sulphur, iron and phosphorus. In point of fact, this is so, and while there is by no means any uniformity in the amounts of these minerals in different soils, there can be no question that the overwhelming majority of agricultural soils contain sufficient quantities of such minerals, and hence, of the necessary mineral elements, to render unnecessary any doubts as to the total supply of the essential mineral elements in soils in general for normal or good crop production.

The question, however, arises as to whether or not these potential supplies of plant nutrient elements become soluble to a sufficient degree to maintain at all times, and especially in period of active plant growth, an adequate supply of soluble and available mineral elements.

Why Soils Are Not Always Ready.

Arguing on purely theoretical grounds, Cameron maintained years ago that if, as above pointed out, nearly all soils contain representatives of all of the important minerals, and, hence, of all of the essential plant nutrient elements, a physical chemical system, composed of soil material plus water, plus other substances like carbon dioxide, possibly other acids and some salts, should exist in the state of equilibrium, which would insure at all times a saturated solution of the soil minerals in the soil moisture. This theoretically reasonable and attractive assumption has been proven, however, to be contrary to fact by recent investigations of Burd, Hoagland and Stewart. These investigators have shown by studies of soil extracts and by means of freezing-point determinations on the same soil that it is difficult, if not impossible, to bring the soil water system to an equilibrium which will insure a saturated solution, and perhaps, what is more important, that if an approach to such saturation is attempted, any disturbance in the equilibrium caused by a variety of factors, notable among which, under field conditions, is abstraction of the nutrients by plant roots, is not followed by an immediate replacement of the absorbed or disappearing material, but is only very slowly and very difficultly made up, as simultaneous studies on cropped and uncropped soil have demonstrated strikingly.

The next subject which deserves consideration, and a comprehension which is essential as supplementary to what has been above stated to a proper appraisal of that phase of the nutrition of plants which is here under consideration, is the subject of the "Availability of Plant Nutrients."

When Is Plant Food Available?

At the outset, it should be clearly understood that despite the general confusion on this point which exists, the terms "Availability" and "Solubility" are not synonymous. This is not, of course, apparent at first sight and the distinction requires an intimate and detailed knowledge of the ultra-modern points of view, which have been developed in soil science and in plant physiology within the last five or six years.

To be "available," a certain plant food element must conform to the following:

First—It must be soluble in the soil water.

Second—It must hold such a relation to the other constituents of the soil water in which it is found that the balance of that complex nutrient solution, as well as the total concentration of it, will permit of its absorption by the plant roots.

Third—As a minor feature of the question of availability, a substance to be "available" must not only be soluble and in proper balance with the other elements of the nutrient solution, but it must be non-toxic at ordinary concentrations.

How "Nature's Fertilizer" is Denatured.

The foregoing considerations all have an important bearing on the practical phases of the fertilizer question. For example, in the controversy which has arisen over the question of the non-issuance of a license to the Nature's Fertilizer Company, there is involved the important, and perhaps the determining, question as to the availability of potassium, or, as it is commonly referred to for fertilizer purposes, of the potash in the product known as "Nature's Fertilizer."

Excepting, of course, the highly silicious sands of some of the lands bordering the Atlantic Ocean, there are probably no agricultural soils in which the total percentage of potash is lower than one-tenth of 1 per cent. In accordance with the principle above enunciated, this potash supply does not become entirely soluble in the soil water, but it must be remembered that one-tenth of 1 per cent potash means a total supply of approximately four thousand pounds of potash per acre foot, or of twelve thousand pounds of potash per acre three-feet. While, therefore, we can not expect, except under unusual circumstances, a saturated solution of the soil when optimum moisture conditions are present, it seems perfectly reasonable to assume that no addition of potash minerals, such, for example, the micas of the feld-spars, to the extent of adding eighty thousand pounds more of potash per acre in such insoluble is likely to affect concentration and balance of the soil solution sensibly.

The Availability of Potash.

This is virtually the situation which we create by an application of one ton per acre of "Nature's Fertilizer" to what I have assumed above as a soil very poorly supplied with potash, in so far as total quantities are concerned, for, considering that only the top three feet of soil serve as the medium for root development, which is probably less than the truth, we still have a supply in the soil of twelve thousand pounds of potash, to which we are adding a meagre eighty thousand pounds, and expect that it will affect an appreciable degree the soluble and available potash supply of that soil.

Were the potash in "Nature's Fertilizer" soluble, as are the water soluble salts of potassium, which are commonly sold as potash fertilizers, the situation would be very different, for the reasons given below, but in this instance, the potash is just as

(Continued on page 871.)

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"Permit me to thank you for your prompt answer to my recent question. It gave me much valuable information. I boost for the Rural Press every chance I get."—Fred Hansen, Kenwood.

Here and There in the Fruit Business

[Written for Pacific Rural Press.]

Cross-Pollination of Cherries.

D. M. Searby of Occidental (Sonoma County) says that in his district you cannot count on Tartarians and Governor Woods aiding in the pollination of Royal Anns because they are often through blooming before the Royal has unfolded. We noticed a block of Royals he had where he had put in a few Lambert grafts and had a few Black Tartarians and one Purple Guigne with them. The crop was light though the trees were in very vigorous condition. And well they might be for they are on deep redwood soil, heavy cover crops of barley and bur clover have been turned under and five pounds of nitrate of soda given per tree as a top dressing. On one block of apples a ton and a quarter of nitrate of soda had been put in solution and sprayed on. The foliage was a splendid deep color and the leaves large and turgid, but here again the crops were light, owing partly to the poor setting weather probably.

Irrigation Project in Kern County.

Plans for the formation of an irrigation district have been discussed by the directors of the Kern County Farm Bureau, by which the waters of Kern River and other streams together with the underground water supply will irrigate 400,000 acres in Kern County, according to the statement contained in the report thereon by A. L. Fellows, government irrigation engineer. The project will entail an expense of $24,000,000. The great reservoir would be capable of impounding 1,500,000 acre feet of water. This big undertaking is just one more evidence of the universal desire on the part of farmers and fruit growers to own and control the water upon which the value of their labors and investments depends.

A Bumper Peach Crop.

The peach crop of California this season will equal if not exceed all previous records. This report comes from the Bureau of Crop Estimates and the California Peach Growers' Association. After a careful survey, the government has issued a report for the entire country. The crop of California is placed at 15,676,000 bushels, as compared with 11,662,000 bushels in 1918. Almost simultaneously the Peach Growers' Association has made an announcement that a full crop is expected for the first time in years. California's nearest competitor is Georgia, with 2,812,000 bushels. Next comes New York with 2,496,000 bushels.

"The Desert Shall Blossom as the Rose."

The Boston Land Company has planted out an entire section to vines in what was the dry area 40 miles southwest of Fresno (at Henrietta, near Huron). It is expected to set two sections (1,280 acres) to peaches and erect a cannery here. This year they have 9,000 acres in irrigated grain. A. Sorensen says that the irrigation is profitably carried out from 36 wells in different parts of the estate. These wells are from 1,600 to 2,000 feet deep, but the highest lift is not over 150 feet. There are some 16,000 acres in the estate. With plenty of water for irrigation it is expected that this section will do as well with peaches as any in the valley.

Australia Exporting Apples.

"After being closed to the world's markets for upwards of three years, the Australian apple growers are again hopeful for a European outlet for their apples," says the American Consul-General at Sydney. Most shippers have agreed to surrender 50,000 tons of refrigerating space to the orchardists, which will accommodate about 650,000 boxes of apples. Of this amount Tasmania will furnish 400,000 bushels and her growers are hopeful of regaining the South American markets which they had previous to the war—especially Brazil and Argentina.

Brown Rot in Peaches.

"If it were not for Brown Rot, Georgia and Texas would probably produce about all the peaches the country needs," said Dr. Howard, Professor of Pomology at the University Farm at Davis. The remark was apropos of the brown rot, which has been so virulent in apricots this year in California, a sample of which was on exhibition on "Picnic Day." We are trying to find out how to combat it in California anyway. It has been demonstrated more strongly than ever, in the past two years, that the strong, thrifty-growing apricot is very particular about its location and its soil to produce well and regularly.

Fruit Pests, $5,000,000 Annually.

Fruit growers of California spend $5,000,000 yearly in control measures, principally against the ravages of insects, which includes cost for insecticides, labor, machinery, etc. This estimate is based on sales of $2,500,000 worth of insecticides, and adding an equal amount to cover cost of labor and machinery depreciation.

Bee Business Booming.

Since fruit growers are recognizing what a large part bees play in the setting of their crops, the bee industry is coming rapidly into prominence. Many men and women are studying bee management so as to become expert in handling apiaries. E. R. Root, editor of Gleanings in Bee Culture, at a recent meeting said: "The bee industry will double in the next ten years, despite the fact that California now produces one-tenth of the honey produced in the United States. The bees can fly all the year round and the four varieties of honey can be produced here—sage, orange, alfalfa and eucalyptus." There are more than 200,000 colonies of bees in California, and we export to the East about 500 carloads of honey every year. The value of the State's honey crop is about $4,000,000. The value of the bee as a pollinater cannot be computed.

Overworking the Vines.

The last two or three years wine grape men have been pruning for the biggest crops of grapes they could get, and who can blame them with high prices obtaining and oblivion imminent. Some table-grape growers in all sections have been doing the same thing—not only leaving several extra spurs or another cane or two, but also leaving two or three extra buds. It is possible sometimes to bring back an orchard that has been permitted to overbear for some years, but it is pretty difficult to "buck up" a vineyard that has once been exhausted by this treatment. Perhaps the idea is, that when these vineyards begin to show decline they will be sold in their past records! Is it good policy?

The South American Trade for Fruit.

The various dried fruit Associations of the State are all reported to be going after the South American trade, and it is a very promising one. Our literature and cooking recipes will be translated into Portuguese for the Brazilian market—which has the largest promise and where Germany was so well entrenched before the war. Spanish editions will be sent to the other South American Republics. Probably some new recipes will be evolved to suit countries where the tortilla is the rule and bread the exception, and where cooking is generally done over a charcoal brazier in place of a stove. Some missionary work, this.

To Save Water-soaked Almonds.

At Lodi the San Joaquin County Almonds Growers' Exchange recently decided to invest $12,000 in machinery to save rain-soaked almonds.

Trade has been resumed with practically all countries, including Black Sea ports since the signing of the armistice, with the exception of Germany.



Built-Up *Layer-Upon-Layer*

JUST how important is the *layer-upon-layer* construction which Goodyear employs in the manufacture of tubes?

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Well, for nine years we have been building balloons and dirigibles, in the construction of which our first and most complex problem was that of inflation. For gas is volatile, much more elusive than air, harder to capture and hold.

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Once this fact was established, it seemed quite logical that the same principle should prove even more successful when applied to tubes. For a tube's sole function is to hold air.

We thus evolved the Goodyear Heavy Tourist Tube, making it of pure gum strips, building them up, *layer-upon-layer*, then curing them together, after which the valve-patch was vulcanized in.

The soundness of this method was immediately established.

The thin layers of rubber cured one upon the other enabled the elimination of all defects, such as sand holes and porousness. This construction also gave the body of the tube a criss-cross grain which prevented splitting if punctured. Finally, by vulcanizing the valve-patch securely into the tube we prevented all leaks at this source.

There is an observable tendency among motorists everywhere to use Goodyear Heavy Tourist Tubes exclusively.

They have learned that the slightly added cost of these thick, grey tubes is more than justified by their longer life and by the protection which they undeniably give to casings.

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GOODYEAR

AKRON

How Our Grain Fires Lost Their "Pep"

(Written for Pacific Rural Press by R. E. Hodges.)

In our youthful days, when the telephone was not so prompt as it is now in some places, we were told that if you want to spread news speedily don't telephone, but tell a woman! That is about what they do in Nevada county, in case of grain fires, grass fires, etc., for most of their district dispatchers are women.

Placer county had an ordinance well enforced for protection from grain fires. One provision was that every harvester should carry two fire extinguishers. Geo. L. Comstock is one who is happy about it. Four days after he installed two extinguishers, the bull wheel of his harvester picked up a flint rock, dropped it into gears which made sparks fly. These sent a scent to Mr. Comstock, who stopped to investigate. Just when he stopped, fire broke out under the rear of his harvester. He grabbed one fire extinguisher and the sack-sewer grabbed another. The fire was put out with no damage. It had started to eat up 300 acres of Bluestem wheat, and nobody knows what it would have done after getting such a tummy-full.

At Galt, Sacramento county, a trailer with fire extinguishers was installed, and two days later an alarm was turned in from a ranch several miles away. A high wind was blowing and by the time fire-fighters arrived, 250 acres of barley had burned. The fire looked 20 feet high and was just entering a wheat field, but it was out by the time five acres of the wheat had burned.

Sixteen Farm Bureau centers in Merced county last year organized fire-fighting companies to protect the grain. They lost about $8,000 worth, while two other Farm Centers in Merced county, who thought it was not worth while to organize fire protection, lost $25,000 worth of grain.

A million bushels of wheat were harvested in the Tulare Lake region last year with the loss of only 40 acres by fire.

In Contra Costa county a stubble fire three miles from Danville threatened a schoolhouse and some hay stacks in a barnyard. The Danville fire-fighting company were at the scene of the fire within ten minutes from the time the alarm was phoned in. They soon had the fire out.

When the Stockmen's Protective Association of Livermore organized thirteen years ago ,about one-half of its members' range lands were burned over each year, destroying that much grass. Last year the Association, cooperating with Alameda county, which appropriated $2,750, employed five range riders to patrol 250,000 acres of range and grain land in this county. In the whole of Alameda county only 780 acres of grass were burned, and 57 acres of grain. During the past twelve years the Association has spent $6,000 for telephones and other fire patrol equipment, and its patrol men have extinguished at least 500 fires before they did great damage. The patrol men are employed only four or five months, during the grass season.

In Stanislaus county 26 fires were extinguished between June 4 and July 8, saving what was estimated $70,000 worth of grain.

Tehama county organized fire-fighting companies, but got their equipment rather late, consequently 1130 acres of grain and 4400 acres of stubble and range were burned, besides stacked hay, stacked barley, and some farm improvements. Their loss was estimated at $69,810.

These instances are as reported by State Forester G. M. Homans. Mr. Homans figures that in 1918 there were 1546 forest, brush, grass, and grain fires in California, which burned over 333,000 acres, and destroyed timber, food, feeds, and improvements valued at $1,593,758. Of this 6513 acres of grain and 28,326 acres of grass were burned, with a loss estimated at $268,322. Data obtained from twelve insurance companies of this state show for the period of 1915 to 1917 inclusive, a total of 260 fires in grain and hay in thirty counties, making an average annual loss per county of $4,376.

Protection "Cheap at Half the Price."

None of the counties has ever appropriated that much for rural fire fighting. Most of the appropriations last year were under $2,500, and the equipment then bought will be available for several seasons to come. Kings county bought and equipped eight trailers for about $2,400. Each one had eight chemical fire extinguishers, five ten-gallon milk cans, two buckets, three canteens, three sharp-pointed shovels, two square shovels, a pick, an ax, a pair of wire-cutters, a box of sacks, a backfire torch, and 20 recharges for the extinguishers.

Saved Food to Win War.

Early last season California Food Administrator Ralph P. Merritt wrote a letter to the State Board of Forestry asking them to use their facilities in protecting from fire our food and feed products and timber from which food containers are made from fire. The Forest Industries Committee of California, of which the State Forester is chairman, and which includes representatives of the U. S. Forest Service, the University of California, and lumber industries, agreed to use their efforts in awakening the various counties to the gravity of permitting any loss of these products by fire during the war. Meetings were held in almost all of the counties, and the Boards of Supervisors were asked to appropriate not to exceed two cents per $100 assessed valuation, for the prevention and suppression of rural and forest fires. This they were already authorized to do by the State law. Quite a number of counties responded with appropriations, and a greater number responded with some sort of fire-fighting organization with equipment suitable for long distance runs. According to Prof. Woodbridge Metcalf, 412 rural fire-fighting companies were organized, and the size of the average fire in grain fields was cut from an average for the three previous years of 111.5 acres to 31.6 acres in 1918. Due to incendiarism and the remarkable dryness of 1918 and 1917, there were a great many more fines than usual; and had it not been for the extra precautions, the damage in our year of greatest need would have far exceeded that of previous years.

If in the year of war, when every agency was being strained to protect our food and feed crops, losses occurred such as have been menttioned, the lesson will either have sunk deeply into the minds of California farmers, or there will be a general slackening of protective measures this season with, consequent loss, such as was illustrated by the two Merced County farm bureau units last season. Then it was not a question of getting insurance on the grain, but it was a question of actually saving the grain, in order to win the war and save Europe from starvation.

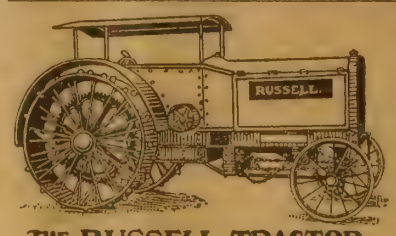
In normal times it will be more a matter of collecting insurance on burned grain. However, last year's experience showed that it is far cheaper to have organized fire protection than it is to pay insurance premiums and stand the losses, which would inevitably be greatly multiplied if prompt control measures were not taken. The season for such fires is on now, and the Pacific Rural Press believes that instead of slackening the usual fire-fighting precautions, there ought to be a great strengthening such as the State Forester urges in meetings already being held.

With regard to those districts which were not organized, last year especially, and also with regard to those which were organized, a sketch of the way various counties and towns handled their work, may improve all systems this year.

Various Plans Tried Last Year.

California was fortunate in having before it the example of Solano county, which organized rural fire fighting in 1917 and gained experience which was valuable in the state-wide campaign of 1918. This county in 1917 had appropriated enough to build and equip 13 trailers, which were kept handy at various parts of the county for quick access to grain fires, carrying water, fire extinguishers, sacks, and shovels. Their fire companies had been organized largely through the influence of the farm advisers. In 1918 these were continued, and the up-keep expenses were borne by the farmers.

Yolo county, which in 1917 had received great benefit from the fire truck at Woodland, found that the distance to be traveled was too great to be satisfactorily effective. Last year the county organized twelve com-



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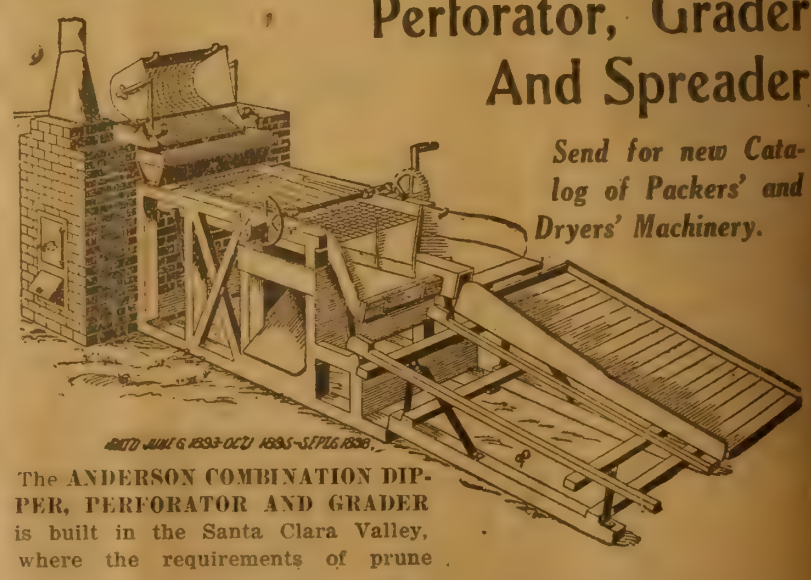
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panies under the farm adviser. Seven of these had well-equipped trailers of their own, ready to hitch onto any passing automobile, while the others had the equipment without trailers, but with arrangements for hauling it to the fire.

Stanislaus county organized 27 fire companies, and appropriated $2,000 for chemical extinguishers. Motor reserve corps were organized in several towns by the Stanislaus Auto Trade Association. The Modesto corps had 32 automobiles enrolled. Whenever an alarm was turned in from the surrounding country, the fire whistle announced it, the fire chief dispatched the machines with fire-fighting equipment in squads of four until the fire was reported controlled. All speed laws were suspended for these machines, and it was made a misdemeanor to hinder their progress in any way. Although there were an extreme number of fires last season, the total area burned in Stanislaus county is reported to have been only 193 acres of grass and 354 acres of grain. In one town of Stanislaus county the merchants loaned fire extinguishers, and a garage man loaned a fire truck for the purpose. The Newman outfit was a four-wheeled trailer, with a 110-gallon water tank on the front, and a compartment on the rear to contain chemical extinguishers and milk cans full of water and chemical recharges. The water tank was equipped with a force pump and thirty feet of hose, terminating in a four-foot gas pipe with a nozzle at the end.

The Napa County Council of Defense in co-operation with the Farm Adviser, appointed the Chief of the Napa City fire department as the county fire warden. The county was divided into twenty-three districts, each headed by a captain and an assistant captain. These men were appointed fire wardens by the State Forester, with authority to impress citizens into the service to fight any fire, under a penalty of imprisonment for failure to respond. The county sheriff appointed the same men as deputy sheriffs. They organized rural fire fighting companies in their respective districts, each consisting of ten men who agreed to respond to all fire calls in their general vicinity. Each company had a well-equipped trailer or light spring wagon. A county ordinance was passed requiring furrows to be plowed around grain fields and fire extinguishers and spark arresters to be installed on gas engines used for harvesting grain.

In Amador county a list of public-spirited men were recommended as fire wardens, and the county agreed to pay their incidental expenses while on this duty. Hunting licenses were issued only on condition that matches and tobacco be left at home, and a notice to this effect was inserted in the county papers.

The Imperial county supervisors authorized $250 with which to buy a trailer and equipment for each farm bureau center which might organize a fire-fighting company, but none were organized and no losses were reported, probably due to the irrigation system there.

In San Luis Obispo county the Supervisors appointed themselves as fire chiefs in their own districts and each road overseer was appointed captain in his district to organize fire-fighting companies there. The State Forester was asked to appoint these men as fire wardens with authority to draft fighters.

Santa Clara stockmen posted notices forbidding hunting during the dry season and this seemed to result in a decrease of fire losses.

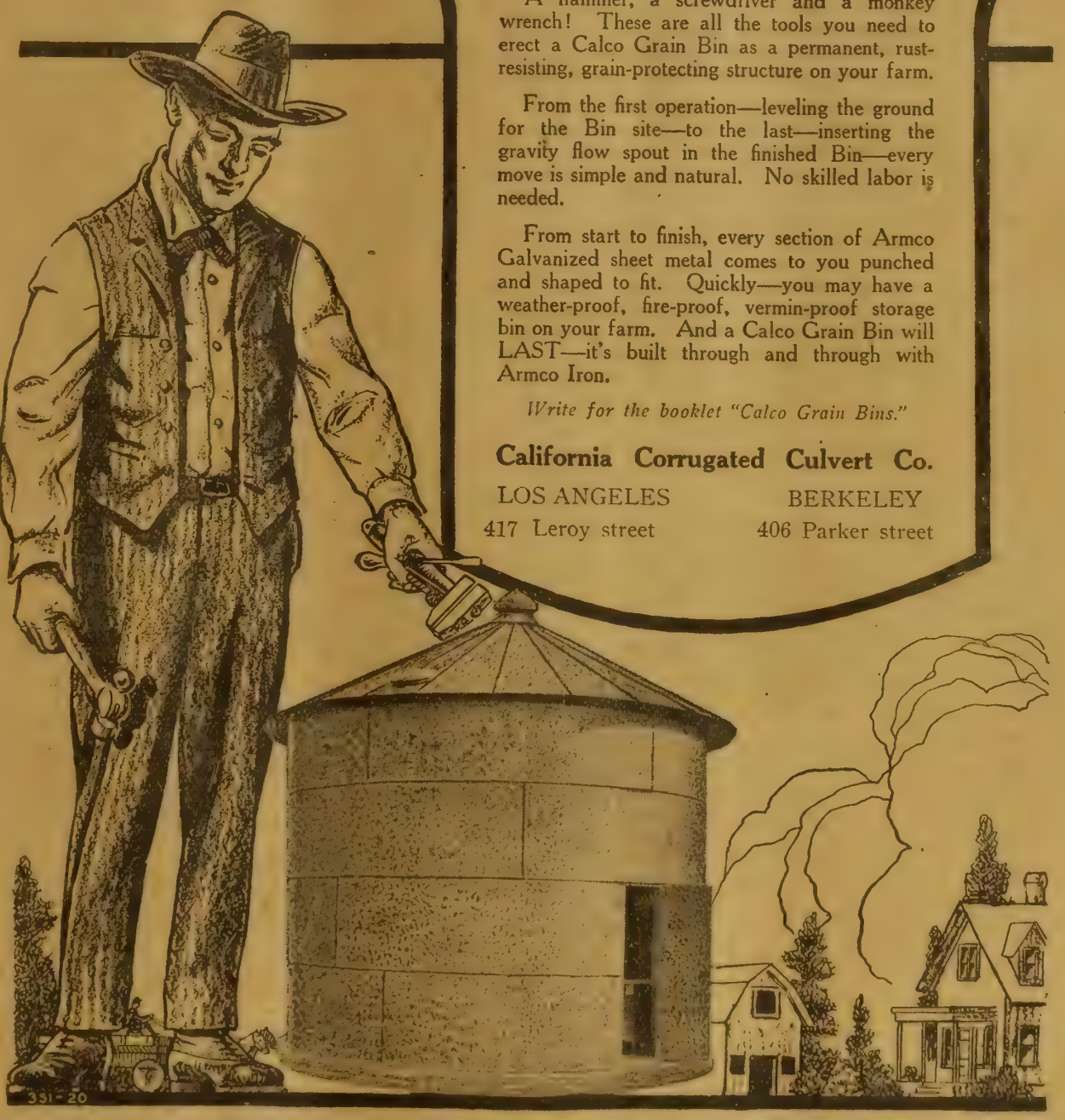
Tulare county, with 21 companies and eleven trailers, added to their equipment some "mops" to hold wet sacks while in use.

County jail prisoners turned out to fight several fires around Merced. Dustine farmers and town people bought a trailer and equipment late in the season, formed a motor reserve corps, and did good work on several fires.

Colusa county made no appropriation and lost over 4,000 acres of grass. At Arbuckle a chemical engine was purchased by popular subscription. When a grain fire was reported, the fire chief went out in advance to plan the attack. Three men with the engine followed him, and behind the engine were two trailers, each carrying two 50-gallon barrels of water. At Williams, a lot of fire extinguishers were collected at the "fire house."

A large tomato crop is looked for this year. Already the tomato seed beds are in fine shape and they will probably be set out by June 10.

This is all you need



A hammer, a screwdriver and a monkey wrench! These are all the tools you need to erect a Calco Grain Bin as a permanent, rust-resisting, grain-protecting structure on your farm.

From the first operation—leveling the ground for the Bin site—to the last—inserting the gravity flow spout in the finished Bin—every move is simple and natural. No skilled labor is needed.

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PELTON

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Field and Garden Suggestions.

Irrigators Divide Daily Run.

A co-operative division of the stream which runs through Hot Spring Canyon near San Juan Capistrano, enables the irrigators to use water in their turns without wasting any of it. There are eighteen water users, and each person is supposed to get his turn once each eighteen days, for as many hours as he holds acre shares. When one's turn comes, he is supposed to take the whole capacity of the stream. This is sometimes too much for one to handle, so the neighbors who co-operate, pair off and each pair divides the stream between them for the whole period, to which both are entitled. This irrigation last year cost $2.00 per acre, which was for maintenance. Walnuts are the chief crop.

Experiment Station Rice Varieties.

Five varieties of rice, exceptionally heavy yielders of good quality and early maturity, having all the desirable qualities of a desirable type for California, are planted this year at the U. S. Rice Experiment Station at Biggs. If they turn out as well this season as they have in the past few years, a considerable quantity of the seed will be put into private acreages next season. One or two of these varieties have given almost certain promise of being notably better than any now grown commercially. All of them are the product of continuous selection from the offspring of five heads of different strains of Wataribune, planted five or six years ago by E. L. Adams, who until about a year ago had charge of the Station.

Tomato Blight and Beetles.

Answering an inquiry as to the best protection of tomato plants from blight and beetles, S. W. Foster of the General Chemical Co. recommends that when the first signs of injury begin to show, spray the plants thoroughly with the following:

Bordeaux mixture paste, 16 pounds,
Arsenate of lead paste, 5 pounds,
Water to make 100 gallons,

repeating this application in 10 days to 2 weeks. If beetles are persistent, it may be necessary to make even a third or fourth application. In the tomato fields of Virginia, New Jersey, and some other Eastern States, it is often necessary to spray regularly every ten days from the time the plants are set in the field until the first fruit begins to ripen. The number of applications necessary will of course depend upon the degree of infestation. In case the correspondent prefers to make his own Bordeaux mixture, it should be the regular 5-5-50 formula and arsenate of lead added as directed. The paste Bordeaux referred to in this letter is our own product, containing 15.3 per cent copper hydroxide.

Produce Inspection Service.

If you ship fruit or vegetables to eastern, midwestern or southern markets and any shipment is rejected, you may call on the Government inspector at the nearest big city to that market by wire to make an impartial investigation and give you a certificate as to condition of the produce. This certificate will be prima facie evidence in any court if you have to resort to law to get a settlement. A charge of $1.50 will be made for less than half carload shipments, or $2.50 per carload. The same service is open to any parties financially interested in the deal. Addresses of inspection offices are as follows for the markets named and all small towns nearby:

Boston, 148 State St.; New York, 204 Franklin St.; Philadelphia, 308 Bourse Bldg.; Baltimore, 411 Custom House; Washington, D. C., U. S. Bureau of Markets; Pittsburgh, 303 Kellerman Bldg.; Cleveland, 503 Erie Bldg.; Buffalo, 232 P. O. Bldg.; Cincinnati, 209 Johnston Bldg.; Columbus, 303 Martlin Bldg.; Detroit, 314 Hammond Bldg.; Indianapolis, 1102 City Trust Bldg.; St. Louis, 413 Old Custom House; Chicago, 139 No. Clarke St.; Minneapolis, 302 Market State Bank Bldg.; Des Moines, 215 U. S. Court House; Joplin, Mo.; Kansas City, 212 Railway Exchange Bldg.; Milwaukee, Wis.; Omaha, 436 Keeline Bldg.; Denver, 308 Custom House; Fort Worth, 505 Moore Bldg.; Houston, Southern Pacific Bldg.; Memphis, 404 Exchange Bldg.; New Orleans, 314 Metropolitan Bank Bldg.; Atlanta, 405 Connally Bldg.; Jacksonville, 911 Bisbee Bldg.

Grain Instead of Foxtail in Alfalfa.

From a recent hay report of the U. S. Bureau of Markets we extract the significant sentence, "Considerable first cutting alfalfa, containing a large amount of foxtail has been offered; but as this commodity is extremely hard to dispose of unless the prices are made attractive, dealers hesitate to buy." A highly satisfactory substitute for foxtail in such a case would be grain, disked or harrowed into the alfalfa in the fall and cut when the alfalfa is right regardless of maturity of the grain. One grower recently objected to grain in alfalfa because it would compel him to hold off the first cutting until it was too mature in order to let the grain get right for hay!

Natomas Crops Increasing.

It is expected that the Natomas Lands will yield about $4,000,000 worth of food products this year. This is a remarkable increase to the production when it is taken into consideration that in May, 1914, one of the river steamers pulled the dredger "Vulcan" for fourteen miles over these lands. The productivity of these lands has been made possible by the expenditure of about $7,000,000 in the reclamation, drainage and irrigation. It is producing wheat, barley, spinach, peas, and peas for seed, both of which are followed by crops of beans. In 1917-1918 about 10,000 acres were planted to beans of various kinds.

Agricultural Notes

Large quantities of peas went to waste for want of pickers to harvest the crop in Alameda county this year.

Over 1500 acres of cotton, mostly long-staple, are being raised in the Corcoran district in lots of 20 to 700 acres.

Fires started by sparks from an engine, destroyed 2000 acres of wheat, valued at $120,000, on the Stanford ranch near Chico.

"My Baart wheat is way ahead of Sonora planted under the same conditions. I believe it is the coming wheat for this section," writes Carol M. Bertch of Tulare.

California has latterly been shipping more beans than any other producing section in the country. For the past few weeks shipments have averaged over 10 cars a day.

Recent word from Geo. F. Maddock stated that 200,000 bags of the surplus of the 1918 bean crop in California had been sold in New York to the Federal Export Co. at a figure above ruling prices.

Moreing Brothers, who are farming 22,000 acres of the Natomas Lands to wheat, state that they expect the greatest crop they have had in the four years that these lands have been farmed.

The Department of Agriculture has estimated that the yield of winter wheat will exceed 900,000,000 bushels. A fair estimate of the yield of spring wheat approximates 300,000,000 bushels. The total yield of wheat this year will in all probability exceed the total of last year by from three to four hundred millions of bushels.

Major J. C. Geiger, head of the United States Public Health Service Research Party, following a preliminary survey of several rice-growing districts in California, says it can easily be said that rice culture is not on a permanent basis in California and that if California is to become the greatest rice State in America it must attend to its methods of drainage at once.

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WILL WORK WONDERS ON YOUR FARM



Moving immense amounts of dirt daily, and working on ground too tough for horses and Fresnos to tackle, SCHMEISER POWER LAND LEVELERS are now being used with utmost success by a great many ranchers, large and small—also by contractors—saving their owners' time, labor and money.

So extremely simple, a child could operate one, as a simple twist of the wrist raises and lowers the bucket or holds it stationary, as the case may require.

A GREAT ROAD MACHINE

Every road district should own one of these machines for constructing roads. They will cut down the high places and make fills quicker and cheaper than by any other known method.

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BEETS PULLED AND TOPPED IN ONE OPERATION

HE Liberty beet topper answers a long-felt demand.
It is simple to operate.
By test it tops better than hand topping.
Is efficient under all conditions of weather and soil.
Accurately tops high and low beets as well as large and small ones without clogging.
Attached to any riding beet digger or lifter, requires no extra horsepower.
Can also be attached to riding cultivator and one, two, three, or four rows topped at one time.
In saving more than a ton of beets per acre over hand topping, the Liberty Beet Topper pays for itself from approximately the first ten acres of topping.
Built of best materials; is durable; guaranteed against defect.
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Why break your back sawing wood by hand, when the powerful little Wade Portable Gasoline Drag Saw will *outsaw 10 men at one-tenth the cost!* Light, simple, economical. Cuts wood of any size. Averages 8 cords to a gallon of gasoline. Thousands of Wades now in use. When not sawing wood, the 4 h. p. engine will operate other light machinery.

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THERE comes a time in the life of every motor truck, no matter how good it is, when some part requires replacement or adjustment. When that time comes, the necessary part must be at hand — the right part and without loss of time. Or the man to make the adjustment must be immediately available. The International organization is unrivaled in this respect.

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International Motor Trucks

are built with *service* as the foundation. These trucks will serve you well because they are "factory built" all the way through — not assembled—and because the Company that makes them has at stake an enviable reputation for building high-grade machinery—a reputation which has endured for nearly a century and which is bound to be maintained.

"Built — not assembled." That statement carries weight with men who have had experience with motor trucks. It means that every part of the power plant is designed and built to work smoothly and efficiently with every other part. In the International, it means a simple, powerful, heavy-duty engine and a transmission and internal gear rear axle that converts the power of the engine into mileage without waste of fuel and without unnecessary strain and friction losses. These are the units on our truck that you will want to become familiar with and compare with the same units on other trucks, because they are responsible for its performance.

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Riverside Vegetable Growers' Conference

(Written for Pacific Rural Press.)

This important conference of Vegetable Growers of California, held at Riverside with the State Fruit Growers, was attended by representatives from nine Western States, Honolulu and New Zealand, and by C. L. Marlatt, chairman of the Federal Horticultural Board. One of its greatest results was the establishment of a committee to consider and formulate uniform regulations for all the signatory Western States for potato seed certification. Long hours of deliberation and hard work on the part of these experts from the various States and from our own State of California, resulted in a report embodying the above preamble and resolutions.

George P. Weldon, Deputy State Commissioner of Horticulture, presided at the meeting, and Dr. E. P. Taylor, Director of Extension and Acting Dean of the University of Arizona, outlined the necessity for Uniformity of Rules and Regulations of Potato Seed Certification. He pointed out that the more definite these standards are made, the quicker they are attained. That Irish potatoes have a tendency to degenerate unless great care is taken with the seed stock. Also a number of diseases are carried forward on or in the seed. Dr. Taylor then gave a brief resume of how the matters of inspection had been brought about in other localities, instancing Idaho, whose growers of seed stock averaged $1.45 per cwt. above the State average for table stock, the first year when 9,600 sacks were certified.

Potato Seed Improvement.

Has for its ultimate object the raising of the standard of shipments of the commercial table stock of potatoes, says Dr. Taylor. California is a great potato-producing State—ten to twelve thousand carloads being produced here last year. The recent passing of the new seed certification bill in this State made it desirable that growers and officials charged with the administration of the new certification law discuss together the details which must govern its successful operation.

Where Certified Seed May Be Grown.

Dr. Taylor then went on to outline the best sections for growing high-class seed and only these should be encouraged for the certified article. The most satisfactory seed being grown at high altitudes or northern latitudes, or in coast valleys influenced by ocean breezes at low altitudes. This would include the hill country of Placer and Eldorado counties and the Humboldt Bay region.

Seed Growing a Specialized Industry.

E. R. Bennett, Field Horticulturist of Boise, Idaho, said truly that seed-growing is a specialized industry. He gave interesting examples of the growing of melons and onions under varying conditions and crosses, and of the selection and improvement of types. He also showed the effect that climate had on certain seeds and instanced a consignment of cauliflower seed which "broke up" in one locality and came true in another. He said that seed should be selected on the basis of the plant rather than from the fruit. Aggeler and Musser, seedsmen from Los Angeles, who were both present, recommend the practise of trying out all new or imported seeds by seedsmen for one year before they are placed in the catalogue. Then it is possible to be reasonably sure of the quality and character of the plants. Los Angeles, which district grows such large quantities of lettuce, depends on the reliability of the seed supplied because the source is known and tried.

The Value of "Truck."

F. B. Reynard, Manager of the Vegetable Growers' Association of Los Angeles, talked of new grades and standardization in vegetables under the new law, and how they would affect the industry to its benefit. Already the value of California Vegetables shipped amounts to from 20 to 25 millions of dollars a year—25,000 to 40,000 carloads a year are shipped. He also spoke of the standard containers that had been adopted to suit the grades and the cars the commodities were shipped in—to avoid waste of space or loose pack. There had been a joint conference of truck growers and railroad officials in this matter where a decision on specifications had been reached—a great step.

Inspection Work Beneficial.

Hugh Knight, in charge of the Experiment Station, spoke of the onion growers' experience in Coachella Valley. An inspection system had been instituted and the consequence was that growers whose stock bore the inspection tag made $1 per crate this year above that received for non-inspected stock. It was marketed through the California Vegetable Growers' Association.

Fred C. Brosius, Horticultural Commissioner of Sacramento county, spoke of the tomato inspection work and inspection of the pack, showing illuminating colored diagrams of a good pack and a poor one. Also, how uniformity of size and maturity of fruit has been improved and the elimination of wormy and otherwise defective fruit has been brought about. Why ship stuff that has to be thrown out The standard pack contains a facing layer of 30 tomatoes. Under the old system, the top layer contained 20 and the lower from 40 to 60 fruits. He had some packs photographed from the bottom and from the top. The high standard must be maintained.

The Vegetable Growers of California, at their conference at the 51st Horticultural Convention State Horticultural Commission at Riverside, Cal., May 26-31, adopted the following preamble and resolutions:

The committee appointed by you for the formulation of a system of uniform rules and regulations, governing the official certification of seed potatoes in the Western States, hereby submits the following report for your consideration:

WHEREAS, The Irish potato is one of the great food crops of the country; and,

WHEREAS, The yields per acre are materially reduced by the use of poor seed stock; and,

WHEREAS, The work of improvement of seed stock through official certification in the different Western States has been carried on without attempt at co-operation between the certifying authorities of the several Western States; and,

WHEREAS, The market and demand for certified seed potatoes extend over this entire territory, we, the committee, believe that the potato seed industry and the potato industry, as a whole, will be greatly improved by the adoption of an acceptable uniform system of certification of seed potatoes in the Western States.

Moline System of Power Farming



MOLINE UNIVERSAL TRACTOR

By using the Moline-Universal Tractor and Moline Tractor implements, you can farm more land, better, easier and at less expense than you ever did before. Farmers in all parts of the country are now making more money through the use of the Moline-Universal Tractor and Moline Tractor Implements. Unsolicited testimony from owners is the best proof of satisfactory performance. Read the following expressions from Moline owners:

"The Moline-Universal has done for me what two men and twelve horses would have done at less expense than one man and six horses." Jesse L. Bonsall, Scotia, Nebr.

"It saved me the price of seven horses. It has created a greater desire for farming." Arthur Weis, Reddick, Ill.

"I have been able to dispense with two men and some hired help in the house because of the Moline-Universal Tractor." Wm. P. Johnson, Lovington, Ill.

"It has saved me hiring one man and keeping five extra horses." Henry Hilbert, Charlotte, Ia.

"Earned me $1,700 in 60 days and established me in a good paying business." C. J. Hawley, Seargent Bluff, Ia.

"I accomplished about three times as much as I would had I not had the Moline-Universal. For me to go back to horse power would be the same as doing without my automobile." F. N. Miller, Marysville, Mo.

"It has spoiled me because I do not care about driving horses any more." S. R. Moben, Westphalia, Kans.

"A big time saver and makes hard work a pleasure." Millard Belt, Rockville, Md.

"It has accomplished just 100 per cent more than I expected it. As a hill climber there is no equal." O. H. Barkledge, Washington, Mo.

"I can't work horses any more as I do my work so much easier with the Moline-Universal." Henry Shatz, Sheridan, Ore.

"During my ownership of the Moline-Universal Tractor my farm work has been made more pleasant and profitable." S. M. Pinckney, College Farm, Orangeburg, S. C.

"My wife and I have farmed this year by ourselves—something we never did before." H. E. Hartzell, New Weston, Ohio.

"It has saved me $600 in labor this season." Ira Brinkman, Shades, Ind.

If space would permit we could fill up this entire paper with letters from satisfied owners of Moline-Universal Tractors. Write for full information and large list of farmers who are making more money with less hard work by farming the Moline way.

Moline Plow Co., Moline, Ill.

"Moline Service Satisfies"

FERTILIZERS AND FERTILIZATION—III.

(Continued from page 863.)

insoluble, or nearly so, as the potash in the minerals already contained in the soil, hence, there is no reason to expect any change, from a chemical standpoint, in the composition of the soil solution, which is the nutrient medium for plants in a soil to which a ton per acre of "Nature's Fertilizer" is applied, when the potassium alone is considered. When other constiuents of the soil besides potassium are considered, there is even less reason to expect any effect from "Nature's Fertilizer," because, with the possible exception of a small quantity of sulphur which the rock contains, they are so resistant to change by the solvent properties of soil water and air, that they cannot be considered as anything but extremely weak chemical agents.

Why Soluble Potash Is Essential.

The reasons to which I have above referred for the great difference in the effects of eighty thousand pounds per acre of water-soluble potash and eighty thousand pounds per acre of almost completely insoluble potash are as follows:

First—The amounts per acre foot or per acre three-foot or six-foot of a given essential plant food element in a soil that are actually dissolved in the soil water are very small, so small indeed that eighty thousand pounds per acre of water-soluble potash, or for that matter of any other constituent, when added to a soil, constitutes a very large part of the total water-soluble, and, hence, in one sense, available potassium supply. If, therefore, the refractory nature of the soil minerals in the hypothetical soil has made impossible the saturation of the soil water with respect to them, an application of eighty thousand pounds of soluble potash per acre on which a crop is to be grown must exert a marked effect on the growth of that crop. The difference between the soluble and insoluble potash, from this point of view, is therefore very clear.

Second—Important as the foreging is, however, it is by no means the only reason why soluble as against insoluble potash in similar quantity, when applied to a soil whose solution is deficient in available potassium for crop growth, is effective while the insoluble form is not. One of the other important reasons is as follows:

Phenomena of Soil Solution.

When a soil is dissolved in water, it dissociates into its electrically active components, each of which exerts a considerable effect on the composition, equilibrium and many other features of the solution into which it is introduced, if that solution should contain more than one soil.

Thus, we may in this instance assume that we are introducing sul-

phate of potash in material which, prior to the war, was one of our high-grade potash fertilizers. The potassium sulphate, which is in the soil in question, dissociates into its electrically positive element—potassium—and its electrically negative element—the sulphate iron, as so called. This occurs only, of course, in the presence of water, which itself dissociates into hydrogen and hydroxol, or H and OH. The H combines with the sulphate iron, making a weak solution of sulphate acid. The OH combines with the K. or potassium, to make a weak base. Both the sulphuric acid and potassium hydrate thus produced are very much more active solvents than pure water or than soil water containing carbonic acid gas and salts in considerable quantity, as it does. The application of potassium and sulphate, therefore, to a field soil containing moisture, results not only in the large acreage in the soil water there of soluble potassium, but in the introduction of much more active solvents than the soil water already contains to dissolve not only more potassium from the insoluble soil minerals, but more of all the other essential elements, including phosphorus, calcium and magnesium. This, therefore, constitutes another very important reason why insoluble potash may make a big difference in crop growth on a given soil, whereas the insolvent form would make no difference whatever.

Third—The change in the balance of a soil solution, which is produced by the introduction of a soluble salt like potassium, sulphate, or potassium chloride, may render certain elements available which would not otherwise be available in accordance with the principles which I have tried to explain above. This constitutes a third reason, therefore, why soluble potash may be of striking effect when the insoluble is without effect, even though the two are applied in similar quantity.

Other reasons of a minor nature might be added, but they are probably not needed here.

Why a Ground Rock May Be Useless.

From all of the considerations above and on the purely field experimental basis, regarding which we have had accounts in the statements made at the hearing on "Nature's Fertilizer," I can see no positive reason for attributing to the "Nature's Fertilizer" any value whatever in crop production. It does not add appreciably to the total supply of the essential elements in soils. It does not affect the supply of soluble materials in soils. It does not, in any sense, affect the availability of essential materials in soils. It does not, as a final proof in experiments carried on by those who know something about the method of experiments, produce any visible effects on the crop. On all grounds, therefore, theoretical and practical claims which have been made for the ground rock in question are absolutely without basis, and should not receive consideration.

AS OTHERS SEE US.

The Livermore Herald of May 17 has the following anent the Pacific Rural Press: "Frank Honeywell, publisher of the Pacific Rural Press, was in the valley Wednesday on his annual tour of the state. Mr. Honeywell desires absolute accuracy in his paper's statements on any subject and to insure this he makes the survey in person. It has aided in building up an enviable reputation for that sterling agricultural paper, which is now regarded as real authority on all things agricultural."

High north winds are responsible for a very heavy loss in almonds and apricots in the vicinity of Woodland.

The erection of a big fruit-drying plant at Ukiah will be begun at once. Pears will be the principal fruit handled this year and it is expected that from 500 to 600 tons of fruit will be dried.

J. J. Harrison of San Juan Capistrano has four soft shell walnut trees which netted him $25 each last year. His orchard of 1000 bearing trees averaged 56 pounds to the tree and netted him clear 25 cents a pound. The trees are 20 years old.



Your Boy

can run the

Fuller & Johnson

FARM Pump Engine

without any trouble and without any danger to himself. It is so simple that it is easily understood and so well protected that there is no chance to get hurt. It will make him more interested and contented in his work on the farm, and at the same time give him some valuable education. It will also relieve you of all worry about water for your stock.



The Fuller & Johnson Farm Pump Engine will pump from 270 to 2400 gallons of water per hour. Needs no belts, braces or special platform. No extras to buy—comes ready to set up to your pump and start going. It will also operate other machines. *Write for Catalog No. 17 and read all about this remarkable engine and the remarkably low price at which it is sold.*

Write for free descriptive booklet and name of nearest dealer. Address the distributor.

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LEADER WATER SYSTEMS

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Cletrac

TANK-TYPE TRACTOR

The logical successor to the horse and mule

MR. F. H. JOHNSON of New Augusta, Ind., reports that last July he used the Cletrac in loading hay and got in the crop from 140 acres at the rate of about 35 tons a day. "Besides getting the hay into the barn in such good time," says Mr. Johnson, "I made a substantial saving by not having to work my draft stock on this hot, horse-killing job."

Just another example of Cletrac adaptability and efficiency—just another case of doing *more* work *more* days in the year with the Cletrac.

The Cletrac tank-type tractor is versatile and extremely rugged.

It is small enough to be used economically on light jobs, yet powerful enough to handle the majority of the so-called *heavy* work about the farm.

It plows, harrows, plants, reaps, binds, threshes, hauls, cuts ensilage, fills silos, saws wood, and does practically all the work done by animal and stationary engine power.

It is the logical successor to the horse and mule. It is more efficient and does not only *more* work but *better* and *cheaper* work.

The tank-type construction of the Cletrac enables it to operate over soft ground where other machines would wallow and "dig themselves in"—an invaluable asset in the preparation of the seed bed.

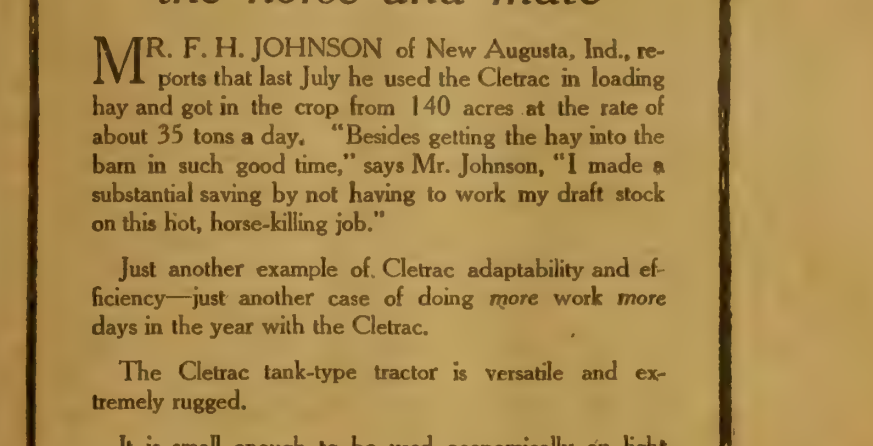
It will go practically anywhere—*and does not pack down the soil.*

Orders are being filled in the sequence in which they are received. Place your order now—in time for Summer work. Write today for catalog and name of nearest Cletrac dealer.

The Cleveland Tractor Co.

19079 Euclid Avenue Cleveland, Ohio

Largest producer of tank-type tractors in the world



Mr. C. F. Balnam, Manager of the Copa De Oro Groves, Exeter, Calif., writes under date of May 24, 1919:

"We use our Cleveland Tractor principally for cultivation and furrowing out in our orange groves at Naranjo, and find it specially handy where we have short turns to make, or complicated vineyard rows to handle. This is certainly an ideal machine for the forty-acre man to have, as he can do all his work with this machine, without the need of any team on the ranch."

See Nearest "Cletrac" Tank Type Tractor Dealer. Name on request.

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Mechanical Power on the Farm

Users of tractors, engines, pumping plants, motor trucks, automobiles, electric motors, and other mechanical farm power are invited to make this department an exchange of their experiences and troubles.

TRACTOR DEMONSTRATION POSTSCRIPTS.

Attachments for Fords Absent.

Noticeable by their total absence from the Sacramento Tractor and Implement Demonstration were all the forms of tractor attachments for Ford cars which have generally failed miserably at previous demonstrations. The writer saw one of these hybrids at work in a vineyard shortly before the demonstration. One man was trying to keep his seat and steer the tortured brute while another man made a bum job of steering a single walking plow that was being pulled by it. If a tractor means anything it means faster work or less man labor for the same work or better work. In all three of these phases, the outfit mentioned was making a conspicuous negative success. It was an extreme example of what may be expected in a lesser degree by anyone who attempts it on most kinds of farm work. And if the machine is any good for the roads it certainly will not be so much good for that purpose after being abused as a hybrid.

Most Complete Tractor Information.

The most complete and up-to-date reference book on specifications of all tractors in the United States is that just issued by the Farm Implement News of Chicago. It contains a table of specifications for 214 different models of the currently made tractors followed by nearly 100 pages of further information about each one along with a picture of each. It contains the first complete tabulated specifications of threshers ever compiled, specifications of moldboard and disk tractor plows, silage cutters, hay balers, large feed grinders, corn huskers, corn shellers. A number of articles on plow hitches and adjustment of plows, setting up threshers, binder and mower troubles, ignition, bearings, belts, etc., add greatly to its value. There are 208 pages in the booklet which sells for 25 cents.

States to Get Government Trucks.

State Highway Departments are to receive new and used motor trucks from the Federal Government free of cost except for loading and freight charges. Over half of these 20,000 motor vehicles, valued at more than $45,000,000, have never been used. They will be apportioned to the various States for use solely on roads constructed wholly or in part by Federal aid, for which $200,000,000—additional to former appropriations—was given by the Post Office appropriation bill which provides for the distribution of the trucks.

Tire Fillers for the Unwary.

The writer bought a "puncture-proof" inner tire on the showing made by a friend that it healed punctures made by a nail, due to some sort of liquid filler which it contained. This filler was claimed to prevent all air seepage so the tire would never become soft. Our tires proved to need pumping about as frequently as any of the others. It soon became necessary to disassemble our pressure gauge and wash it with gasoline because the "filler" stuck it so it wouldn't work with safety. Then one day we had a blowout and what a mess! The casing was plastered inside with slop. We got it all over our clothes and over all the clothes we had about the machine. We had to wait for it to dry off before putting another tube into the casing. We tried to patch the blow-out but the patch wouldn't stick. We had it vulcanized and then the critter blew to smithereens without injuring the outer casing at all. The friend from whom we bought it offered to repay the cost, but meanwhile he had been unable to even trade his filled tubes for unfilled ones made by the same parties.

Addresses of International Users Posted.

A striking testimony to the confidence the International Harvester Co. has in its tractors was the big signboard posted beside their Sacramento Tractor Demonstration headquarters, showing the names and addresses of 400 users of International tractors located in Northern California and Western Nevada. This gave opportunity for everybody to answer the question which everybody wants answered before investing in a tractor, "What do people say about this machine after using it on their own ranches?"

PLANT AND CULTIVATE 12 ROWS AT ONCE.

Wholesale planting and cultivating of beans and beets are now practiced in Ventura county with Yuba tractors, over 100 of which are in this sort of work. With horses planting four rows at a time, there is always some variation in the width of the space between each set of four rows, due to the horses weaving back and forth. But with a 12-20 tractor pulling three four-row planters at once, it is not difficult to sight to a stake at the other side of the field and run truly straight rows. Then twelve rows are cultivated at each trip without cutting out any more plants than the writer used to in the cornfields cultivating one row at a time with two horses.

ADDITIONAL ELECTRIC CHARGES.

A 10 per cent surcharge to its electric power bills has been granted to the Northern California Power Co. for the districts in the Sacramento Valley in which it operates except in those parts of Butte and Colusa Counties where it competes with the Pacific Gas & Electric Company. It is figured by the Railroad Commission that with the 10 per cent increase in its revenue this company will make 7.02 per cent dividend payable on its capital as figured on the average for the past three years. On the basis of its estimated revenue for 1918 the surcharge will permit a return of 6.63 per cent on the present capital of $8,116,007.

POWER NOTES.

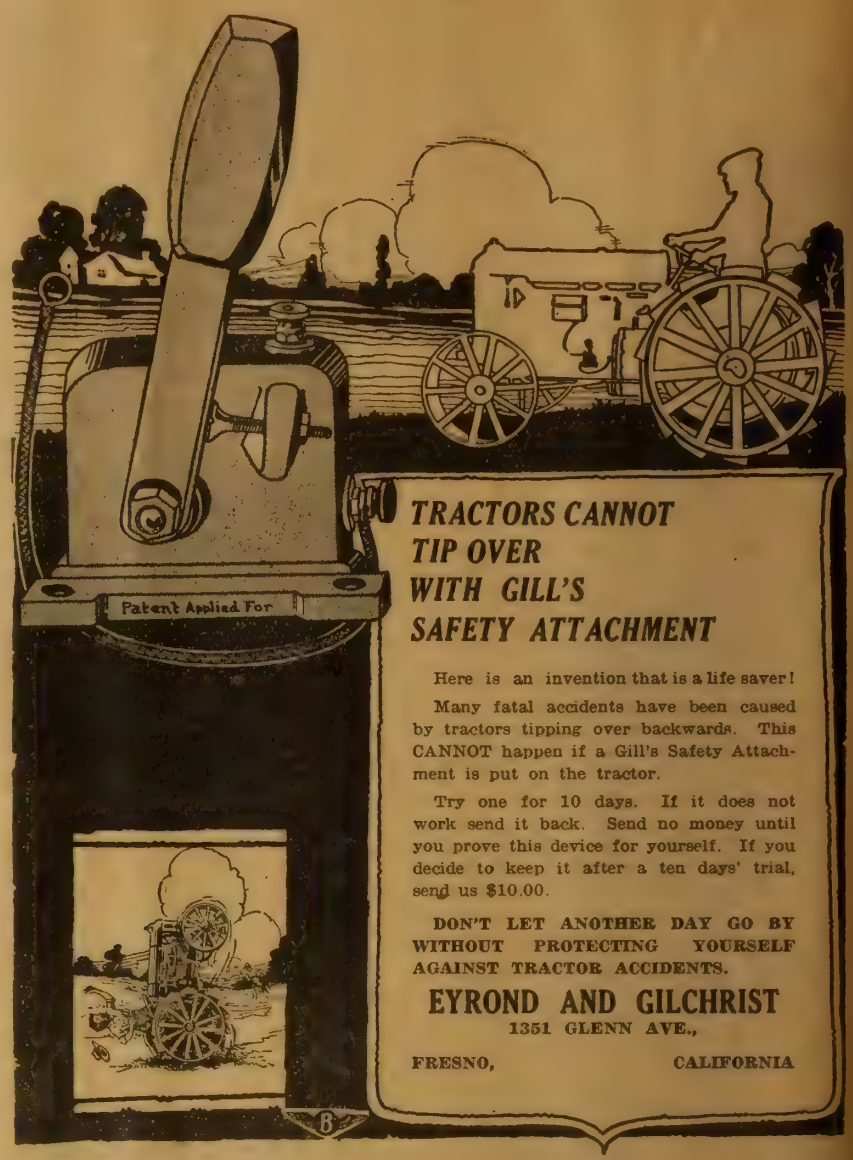
About 20,000 motor trucks were registered by the California State Motor Vehicle Department in 1918.

Hession tractors are to be distributed in Imperial and San Diego counties by J. R. N. Levens, who has for a number of years been identified with the automobile business in San Diego.

"The Story of the Cleveland Tractor" is a booklet advertised by Smith Bros. of Los Angeles in one March issue to be sent free to all who might ask. Requests exhausted not only their own stock of booklets but also that of the Cleveland District agent, and additional requests were made of many local agents. It pays to advertise.

"Through your enterprise we learned of Harding grass, and through the kindness of Prof. Kennedy, we already have made a start with this wonderful plant," writes Claude D. Smith, proprietor of Edgewater Farm, Myrtle Creek, Ore. "While we try to appreciate the magnitude of this favor, it is not our only reason for renewing. Complete market reports, up-to-the-minute information on growing crops, authoritative answers to questions, as well as timely articles on all branches of farming—all help in the pursuit of agriculture. Then, too, it is a stimulus to keep in touch with the minds on your staff. We have eight farm papers coming here, but yours fills a niche of its own." Thanks, friend Smith. It is a pleasure to have such appreciative readers as you.

"We subscribed for the Rural Press about a month after we became farmers, and believe me, it's some paper."—Mrs. G. V. Storms, Winchester.



TRACTORS CANNOT TIP OVER WITH GILL'S SAFETY ATTACHMENT

Here is an invention that is a life saver!

Many fatal accidents have been caused by tractors tipping over backwards. This CANNOT happen if a Gill's Safety Attachment is put on the tractor.

Try one for 10 days. If it does not work send it back. Send no money until you prove this device for yourself. If you decide to keep it after a ten days' trial, send us $10.00.

DON'T LET ANOTHER DAY GO BY WITHOUT PROTECTING YOURSELF AGAINST TRACTOR ACCIDENTS.

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McQUAY-NORRIS LEAK-PROOF PISTON RINGS

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The rings with a record of eight years successful performance behind them. Power producers because they create uniform pressure all around the cylinder wall, leaving no place for the power to slip past.

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McQUAY-NORRIS Superoyl RINGS
A special ring for engines that pump oil.
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Kills the Weeds and Cultivates the Soil
Greatest weed killer on the market. Cuts them off clean, under the surface, close down to the roots. Besides, it breaks up the ground so thoroughly that one user says he saved $200 in a single season because after cutting the weeds he did not have to plow. Cuts seven feet or less. Weighs but 230 pounds. Cut adjustable to any depth. Constructed of steel throughout. No other implement like it.
WRITE FOR CIRCULAR which illustrates and describes the Sigurd Weed Cutter and contains letters from many users.
C. G. SIGURD, Manufacturer
Capital Ave. and McKee Road, San Jose, Cal

PUMPING FOR RICE PAYS.

(Written for Pacific Rural Press.)

It is not so long ago that we were told by a good authority that rice irrigation from pumps would not pay. That is true where water must be lifted from excessive depths, but by proper management, it pays big, as experienced by many extensive ranchers. It was several years ago that we visited L. H. Twede's ranch in Glenn county and found him putting down a well for rice irrigation. He was also wise enough to put a reservoir by it. We called on Mr. Twede last month and asked him how pump irrigation works. We found that he had put down several additional wells and enlarged his rice acreage to 300 under the pumps and 214 under the canal.

"But," said he, "with well water you must have a reservoir so it will warm up before turning it onto the rice. More than that, my first reservoir was six feet deep and my last one is only two feet deep. Water does not warm up fast enough in the deeper reservoirs, and the first few checks that receive water from them are held back and kept green too long.

Cost of Pumping for Rice.

His neighbors, Christensen & Burmester, are irrigating 500 acres by pumps, with a 28-foot lift to the surface at a cost of $6 per acre for electricity. This involves the use of about 450 gallons per minute for each 40 acres throughout the growing season while the crop is flooded. Ranches with level fields and hardpan near the surface sometimes require less.

The Minor ranch, which is headquarters for Christensen & Burmester, lies on a ridge extending north and south almost the full length of Glenn county and sloping gradually downward, both toward the river and toward the western hills. It is a mixture of 20 to 45 per cent sediment and underlaid by clay at varying depths. Such a description applies in a general way to a large part of the rice land in Glenn and Colusa counties, but not to all.

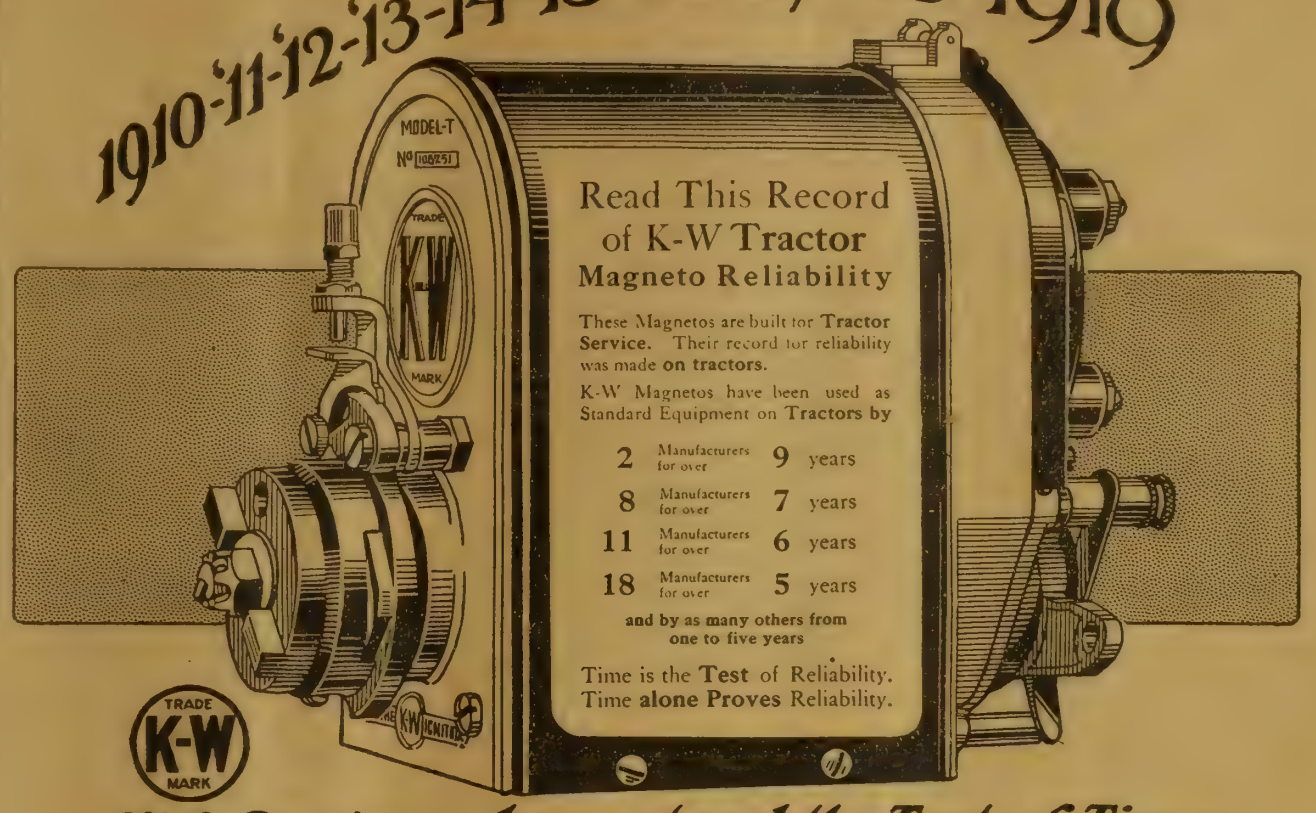
The water lift varies greatly, being 40 feet on the Central Forest ranch, including 300 acres of rice also being grown by these partners not far away. On another ranch which they hoped to use for rice in northern Colusa county, they put down two wells, 422 and 522 feet respectively, without striking any water, though 1½ miles west of that place there are good wells 70 feet deep. Thus, the only way to figure the cost of pumping for rice is to find out how much water will be needed for the particular soil conditions, and how great a lift will be required as well as the depth required to bore for an adequate supply.

A PRUNE MAN'S PESSIMISM AND PUGNACITY.

(Written for Pacific Rural Press.)

The writer was talking with a man over in the River last week who had sent off for a dollar's worth of Elephant grass. The little sets were planted and each plant was carefully protected against chickens with fruit boxes. Our friend explained that each plant would reproduce 1500 plantlings and that by selling them out at a dollar a dozen—but we interrupted him and said, "You haven't been overflowed this year; you used to live in dread of those floods." "True," he said, "but my ranch has never been washed away yet and now I am getting to an age when I am beginning to experience a dread of 'fire' "—and we were led reflectively down to estimate the prune crop where we rely on our judgment to win us a new hat each year. We looked over the crop and suggested that he would be riding in a new "Pierce-Arrow" next fall. "Nothing like that," he said, "though I may be riding in a hearse!" Now what can you do with a man like that? To get even, we cheered him up by pointing out that though he had a good set of fruit—enough to keep the wolf from the door for another year, yet many of his trees were badly chewed by thrips larvae—to such an extent that it would affect next year's crop. That will keep him busy for a week. We left him as happy as a lark. He had something to fight.

1910-'11-'12-'13-'14-'15-'16-'17-'18-1919



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High Tension MAGNETOS —*have stood the Test of Time on TRACTORS*

Back in the early days when big tractors pulling large gangs of plows first broke prairie soil and the tractor manufacturers yearly took part in competitive plowing contests, two tractor manufacturers adopted K-W Magnetos as standard equipment. Then year after year other manufacturers, recognizing the importance of "Reliable" ignition came to K-W for Magnetos.

These K-W Magnetos have stood the gaff of tractor service in every state in the union and in fifty-seven foreign countries. They have done their work year after year in all climates from torrid Africa to frigid Russia. They have worked in rain storms, snow storms and sand storms. They have made good in every drawbar and belt service under every conceivable working condition. Because they have stood the test of time they are recognized today as the standard magneto for tractors the world over.

The K-W Magneto has been developed by keeping in close touch with tractor development and an accurate knowledge of the conditions under which a tractor must operate. It owes its reliability to the patented K-W construction and the fact that K-W Magnetos have always been made up to a quality and never down to a price.

K-W "Inductor" design eliminates all internal sparking and trouble due to sliding contacts and poor connections, because in K-W construction all internal connections are **permanent.** There are no moving wires, revolving windings, troublesome commutators and brushes, current collector rings, etc.

And K-W Magnetos are just as efficient as they are reliable—they cut fuel bills to the bone. Make sure the tractor you buy is K-W equipped. Look for the K-W trade mark—the symbol of Reliability. Write for a list of K-W equipped tractors.

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Built Especially for California Conditions



Past the Experimental Stage
Eleven different models, with or without Engine, mounted complete
Ranging in Price from $190. to $2175.
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And the Greatest of These Is Marketing

(Written for Pacific Rural Press by E. H. Whitten.)

A mother was putting her child to bed. "If you will be real quiet," she said, "I will tell you the story about the prince who killed a dragon and rescued a beautiful princess."

"Oh, mother," protested the child, "that story is out of date. Tell me the story of the hero who killed the profiteer and saved the producer."

How we wish that we could tell such a story! How we wish that it was within our power to outline a plan which would solve the problem of marketing livestock! It has been predicted that California will become a beef cattle paradise during the next decade, but wha-da-ya mean by paradise, anyway? Our friend Noah Webster defines it as "a place of bliss." We admit that California is a place of bliss for cattle, but it is more of a place of blister for the owner of those cattle, and it will not become a paradise for all concerned until the market is stabilized and reasonable profits are assured the cattlemen.

Conditions governing the marketing of livestock in this state are so generally unsatisfactory that it is high time for practical and efficient action by producers and others vitally interested, to alleviate the existing state of affairs and put the industry on a stable basis.

Before attempting to prescribe a remedy it is always wise to diagnose the case, so let us see what the causes are that contribute to the instability of the livestock market. We have not heard anyone put the matter in better form than Owen B. Duffy, of the Napa State Hospital. Mr. Duffy is a member of the marketing committee of the California Cattlemen's Association, and has made a thorough study of the situation. He finds eight contributing causes, as follows:

Control of Markets by Large Operators.

The recent Federal Trade Commission's investigation of the meat-packing industry has brought forth data tending to prove that a combination of the larger packers exists; and that by a system of exchanging confidential information, non-competitive purchases of livestock, and a general understanding among themselves regarding the more intricate phases of the packing business, they so regulate the industry that the consumer must pay an unreasonable price for dressed beef, while the livestock producer is allowed just enough to keep him in the business. It is apparent that if a combination should exist among the interests purchasing as much as 75 per cent of all livestock offered in any certain market, the non-competitive buying would automatically eliminate competition in the sale of dressed beef. When a number of buyers are purchasing under an agreement to take only a certain percentage of the day's offerings, the lowest price soon becomes the prevailing one, instead of prices being controlled by the laws of supply and demand, as would be the case if numbers of buyers were trading on the merits of the stock offered.

Ownership or control of stockyards would give a combination of buyers an unfair advantage over shippers who reshipped to other markets, by giving the yard owners access to records of destination of reshipped stock for purposes of wiring information to the agents of the combination at the new destination, with data on previous offerings, etc.

Poor Stock Offered.

Poor grades of stock offered by many producers contribute to the unstability of the general markets. Half-fat steers, grass cattle and cows, dumped indiscriminately on a market, will threaten its equilibrium and require many shipments of good or prime cattle to absorb the poor stuff.

Graded stock shipped to markets when that particular grade is in demand, will repay the trouble and care required in grading many times over, both in increased returns and in general satisfaction to the shipper.

Too Narrow Margin between Cows and Steers.

The margin between offerings for live steers and cows is the cause of great variations of opinion among stockmen, but a study of live prices and a comparison of the percentage of edible meat from steer and cow carcasses, the great superiority of steers to cows when dressed, and the difference in wholesale dressed meat prices of steer and cow carcasses, will show that steers are quoted too low when compared with unspayed cows. These differences, however, have largely disappeared by the time the carcasses have passed over the block of the retail butcher.



LAURAMEKA,
The queen of the Holstein herd at Palo Alto Stock Farm, Palo Alto. As a 4-year-old she established a State record of 33.91 lbs. butter in 7 days, 140.13 lbs. in 30 days, and 275 lbs. from 6,400 lbs. milk in 60 days. She now completes a year's test with 1,326.58 lbs. butter and 29,899 lbs. milk to her credit, being the 28th cow of the breed to produce over 1,000 lbs. fat in a year. For combined milk and butter production she is exceeded by very few cows in the United States.

Dearth of Market Information.

With few exceptions, shippers have little or no reliable market information when consigning stock to distant markets or selling locally to buyers. An agency furnishing full data as to grade, demand, and probable prices at different points, would eliminate much uncertainty and disappointment.

Unreliability of Information.

Such marketing information as is available is unsatisfactory and often misleading, on account of lack of information or experience on the part of those putting it out, or because market publications are controlled or subsidized by interests having control of prices in view. Quotations in the daily press are worse than useless, as a rule, being very often absolutely misleading, due to one or more of the above reasons as well as others of a less pernicious type.

Prices Not According to Merits.

The inability of producers to sell their offerings on their merits causes more dissatisfaction than all other marketing problems combined. Grades of cattle for which there is a brisk demand at certain seasons may prove a drug on the market at other times. Prime light steers offered on a market buying for hotel or steamship trade will oftimes encounter discrimination in favor of rougher cattle more nearly approaching the weights demanded; while at another time 1500 to 1600 pound steers arriving on a market purchasing stock for export, with a foreign demand for 550 pound carcasses, will find slow sale unless very desirable. In either of the cases cited the shipments would not be sold on their merits, but would be victims of temporary market demands.

This form of mild discrimination is disappointing enough, but the many known instances of combinations of heavy buyers "making the market," causing shipments to sell one to two cents below the price merited by the grade and finish of the stock, are the real causes of producers lacking confidence in distant markets.

Reluctance of Bankers.

Difficulties in financing livestock operations are met by cattlemen who find it necessary to borrow money in order to continue breeding operations, as bankers will not advance money for a period sufficiently long to allow a grower to raise his own eattle, but will readily advance funds to feeders for the short time required to turn stock to market from the feed lot.

While tight money is primarily a production problem, the results are reflected at the marketing end in various ways, very often being the cause of many poor grades of cattle reaching the market at a time when very little such stock will cause a break.

Absence of Marketing Facilities.

Difficulties encountered by buyers and shippers in getting in touch with each other is a constant source of inconvenience, as well as a large item of expense, that should be eliminated as far as possible in cattle deals. If, when a buyer is in the market for a certain number of head of a particular grade of stock, he could have an idea of where to locate them, he would be saved much time and money.

Dearth of stockyards wherein shipments can be gathered and cared for tends to make cattle buying and shipping a haphazard operation.

Improvements in care and transportation services are badly needed. Poor cars, improperly sanded, unsanitary pens and troughs at unloading points, difficulty of approach to loading pens, rough handling of cars in transit, delays and poor routing of shipments—all these are sources of worry and expense to shippers, and they should receive serious consideration.

What Is the Remedy?

Shivering shades of polecats—some diagnosis! Strong statements, but straight facts. Daisy reasons, and they put a fellow in a daze. They almost make him feel that the beef cattle industry is headed for destruction on the high-speed clutch. But that's a pessimistic way of looking at the situation. As Mrs. Wiggs of the Cabbage Patch says, "There ain't no hole so deep that somebody can't pull you out," and we believe that there is no problem connected with the marketing situation that cannot be satisfactorily solved.

What's the solution? Frankly, we don't know right now. Even if the situation is simply awful, the solution is not so awfully simple. Perhaps no one man can solve the entire problem. But a suggestion from one person may fit in with an idea from someone else, and these may dovetail right in with a plan from a third person. So we want to hear from all of our readers who are interested. Besides diagnosing the situation, Mr. Duffy has suggested remedies. We shall publish his ideas next week, and we want to follow them with suggestions from others.

SAN FRANCISCO LIVE STOCK SHOW.

That a great live stock show may be held at San Francisco this fall now seems in the way of fulfillment. Under the leadership of President W. T. Sesnon, a number of public-spirited business men as well as cattle breeders, have been busy for several months planning out the work and raising a guarantee fund in excess of $50,000.00. Dates claimed for the show are from November 1 to 8, a good location has practically been secured, and the manager will soon be announced. Eastern breed associations have already agreed to offer liberal cash premiums in addition to the local list of prizes offered. All kinds of live stock will be taken care of in the premium list.

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REDWOOD FOR DURABILITY
REMCO FOR MECHANICAL PERFECTION

Redwood Manufacturers Company
1608 Hobart Bldg. San Francisco

Rubbing Elbows with Other Breeders

(Written for Pacific Rural Press by Thos. F. McConnell.)

McCune Adds a Giant Buster.

H. D. McCune of Lemoore recently received an October boar of the Giant Buster strain from the L. H. Glover herd at Grand View, Mo. He promises to create a sensation here on the coast, and Mr. McCune expects to get some great pigs by crossing him on Kings Massive Orange gilts.

Mr. McCune's son also received a fine eastern gilt of the Giant Buster blood lines, bred to Surprise Prospect, the sire of Col. Jack. She certainly ought to farrow a great litter. Mr. McCune's daughter, who is a member of the Lemoore High School Pig Club, has 2 gilts that she has been feeding for the competition, and from all appearances they will be very near the top. Thus all the McCune family are pulling together in making a success of the breeding of topnotch Poland-Chinas, and it is a mighty good plan. One in a family alone may succeed, but when all work hand-in-hand to reach the same goal they are pretty certain to get there.

Orphan Pigs Successfully Raised.

Mrs. E. S. Myers of Riverdale thinks she has discovered the secret of raising orphan pigs. One of their registered Poland-China sows died when her litter of eight pigs was two days old. Mrs. Myers was told by a prominent breeder that she would not be able to raise the little fellows. She first tried to feed them with a nursing bottle, but with no success. Then she made a mixture of 2 tablespoons of new milk, 1 tablespoon of warm water, and ¼ teaspoon of sugar, placing it in a teacup and teaching the pigs to drink without trouble. The above amount was fed to each pig every two hours, day and night, for the first week; after this every three hours, day and night, for two weeks longer; then night feeding was discontinued. At the end of the three weeks the sugar was omitted and the mixture was gradually made richer in milk, and finally discontinued altogether.

In the beginning the pigs were kept in a pen and at feeding time each one was taken out and fed individually. After three weeks all were fed together, and had the run of a little alfalfa patch, and rolled barley placed where they could get it when wanted. While the amount of the mixture apportioned each pig at the start was more than they should receive, allowance had to be made for waste in various ways. No pigs were lost, and at weaning time, in growth and general appearance, they were the equal of those raised on the sows. No trouble was experienced in teaching the little fellows to drink, but Mrs. Myers thinks they were ravenously hungry when she started feeding them.

Mr. and Mrs. Myers have an excellent herd of Poland-Chinas started and are taking first-class care of them. Their new herd sire, President Jr., was thought good enough by that great breeder of Poland-Chinas, John M. Bernstein, to name him after the young fellow's sire, President—the only one ever so named. Their herd is very uniform and of the big-bone type.

High-Record Holsteins at Higdon's.

"Ends the quest for the best," is the slogan used to advertise a popular brand of California butter. W. J. Higdon, proprietor of the Tulare Holstein Farm, ended his quest for the best breed of dairy cattle about four years ago, when after ten years of experimenting with different breeds, he decided upon Holsteins and sold off all cows of other breeds. He made his decision because he found the breed the most popular and the by-products more valuable; also because the calves were more hardy and less subject to disease.

He made the right start. He sold off all grades and decided to keep purebreds exclusively. Also he decided upon the Walker strain and purchased for a herd bull Prince Riverside Walker, a son of Prince Gelsche Walker and Aaggie Acme of Riverside. Then, when it was time to buy another bull to use on the daughters of this sire he made a master stroke in buying for $6,500, King Korndyke Pontiac 20th, by King Korndyke Pontiac and out of Miss Valley Mead De Kol Walker. Such scientific line-breeding is practically a guarantee of success, so far as the quality of the offspring is concerned.

Mr. Higdon began official testing soon after changing over to registered Holsteins, and many excellent records have been made by H. L. Redd, the expert herdsman. Among the record cows now in the herd are Coloma Beauty Butter Maid, 34.77 lbs. butter from 576.3 lbs. milk as a junior 4-year-old, a record just recently completed, and probably a state record; Leda Hengerveld De Kol Korndyke, 30.87 lbs. butter and 648.8 lbs. milk in 7 days; Hertinga Willis, 1,039 lbs. butter, 23,960 lbs. milk in 365 days; Madrigal Mooike 2nd, 755.95 lbs. butter, and 20,160.5 lbs. milk in one year as a junior two-year old; Lady Pontiac Holingen Jewel, 21.90 lbs. butter from 493.8 lbs. milk as a junior two-year-old; Wayne of Rock, 802 lbs. butter, 17,770 lbs. milk in 10 months; Wayne of Rock Martha, 18.96 lbs. butter, 46 lbs. milk in 7 days and 78.67 lbs. butter, 1,896 lbs. milk in 30 days as a two-year-old; and Paula of Segis, 30.49 lbs. butter, 636 lbs. milk in 7 days.

At the State Fair last year Mr. Higdon made his first appearance as an exhibitor and captured a good share of the prizes, including first prize breeder's young herd. Also his cows won first and second in the butterfat contest at the same fair.

The care given the calves deserves particular mention. Mr. Redd teaches them to drink and then they are taken in charge by Miss Alice Wright, a sister of Mrs. Higdon, who looks after their feeding until the critical age is passed. Miss Wright has been very successful in this work, having had practically no losses.

Whole milk is fed until the calves are about one month old; then the substitution of skimmilk commences, with the gradual addition of a calf meal, until finally the calves are getting only skimmilk and the proper grain ration. In many cases the feeding of skimmilk continues until the calves are yearlings. Nothing is overlooked to promote the best possible growth of the young stock.

The manufacture of the by-products into registered Duroc-Jersey swine, instead of ordinary market hogs, is another intensive method practiced on this ranch. The brood sows are strong in Critic and Defender blood and the herd boar is a son of the grand champion Duroc-Jersey boar at the Panama-Pacific Exposition. In the swine department, as with the dairy, Mr. Higdon does not overlook any good bets, as is evidenced by the quality of the individuals, as well as their breeding.

Leeman & Kilgore Like Purebreds.

That pure-bred Holsteins will produce twice as much milk as grades, under the same conditions, has been proved to the complete satisfaction of Leeman & Kilgore, Ripon. Mr. Kilgore expresses himself as greatly pleased with his experience with purebreds.

Some good records are being made in this herd, recent ones being 20.2 lbs. butter from 498 lbs. milk in seven days by Alpha DeKol of Linwood, after dropping dead twin calves; and 15,767 lbs. fat from 498.4 lbs. milk in 7 days and 64.94 lbs. fat from 2100.1 lbs. milk in 30 days by Pasco Wayne Korndyke, as a junior 2-year-old.

The herd sire is Sir Aaggie Korndyke Alcartra, who is a grandson of Tilly Alcartra. The two nearest dams of this bull have an average of 1,092 lbs. of butter and 27,300 lbs. milk in 365 days. These records were made as 3-year-olds. Mr. Kilgore is a great believer in the use of alfalfa hay and Indian corn silage as an every-day ration for cows.

Wyman Lovejoy of Roscoe, Ill., has been secured to judge Berkshires at the State Fair.

WHEN YOU BUILD A SILO—

The walls must be airtight.
The walls must be smooth inside.
The roof should be waterproof.
The materials should be strong enough to withstand great pressure.
The height should be at least twice the diameter. This gives greater pressure on the silage, excludes the air more thoroughly, and produces better silage.

Don't have the diameter over 20 feet, as you will not be able to throw the silage more than that distance conveniently. If you want greater capacity, add to the height, or build two smaller ones.

Place the silo as near as possible to the place where the silage is to be fed. To save time in feeding is to make the silo more profitable.

Cleanliness in the dairy comes first.

Money Maker Cutters
Run True to Name





These cutters are strong, reliable, light running and absolutely safe—can't get your hands in the knives.

Own Your Own Cutter

and save your crops against frost, drought, and seasonable losses. Don't wait on your neighbor's cutter and lose your feed.

MONEY MAKER Safe Silage Cutters

have patented safety yoke control, shock-proof cushion drive, force feed, angle steel frame, plate steel housing, and new auxiliary roll for feeding uncut bundles. Fills the highest silo. Cuts dry feed. Makes your crops more profitable.

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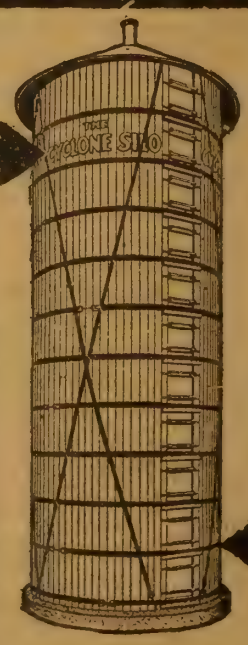
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No other Silo has 'em!

Famous Trussed Steel Bracing



The Cyclone Silo is unequalled for strength and durability. Can't twist, lean or blow down. The strongest silo made. Wind proof, storm proof, twist proof.

The Cyclone Silo Trussed Steel Bracing is fastened to the top of the silo and firmly anchored in the concrete foundation. Each stave is not only stapled to each hoop but also to the bracing. Every staple fits into notches pressed in each edge of the steel, so there can be no slipping, no twisting or sagging. Every stave must stand upright regardless of shrinkage or expansion. This is the silo for you. Write for details of our Free Book on Silos and Feeding. A postal will do.

Cyclone Hoops Need no Tightening

National Tank & Pipe Co.
275 D OAK ST., PORTLAND, OREGON.

"Cyclone" Silo

THE OTIS HERD

Milking Shorthorns

WILLOUGHBY, OHIO.

BEEF MILK



LADY OF THE GLEN.

Bred by us and acknowledged the best and most valuable individual of the breed.

Largest herd in America with the best connection. Many cows weighing 1,700 lbs. and above with records of over 10,000 lbs. of milk. Winners at the recent Congress sale owned by us or of our breeding. Sale cattle in carload lots or single. Calf clubs a specialty.

Write T. H. Harrison,
Santa Rosa Stock Farm, Santa Rosa, Cal.
California Representative.



SELDOM SEE

a big knee like this, but your horse may have a bunch or bruise on his ankle, hock, stifle, knee or throat.

ABSORBINE

TRADE MARK REG. U. S. PAT. OFF.

will clean it off without laying up the horse. No blister, no hair gone. Concentrated—only a few drops required at an application. $2.50 per bottle delivered. Describe your case for special instructions, and Book 8 R free. ABSORBINE, JR., the antiseptic liniment for mankind, reduces Painful Swellings, Enlarged Glands, Wens, Bruises, Varicose Veins; allays Pain and inflammation. Price $1.25 a bottle at druggists or delivered. Liberal trial bottle postpaid for 10c.

W. F. YOUNG, Inc., 86 Temple St., Springfield, Mass.

HOLMES STOCK FARM

WATERFORD RD., MODESTO, CALIF.
Registered Holstein Friesians.

YOUNG SERVICE BULL FOR SALE

Prince Abbekerk Aralia Walker,
No. 204267—Three-quarters white.

Write for pedigree and price. Inspection invited and satisfaction guaranteed.

REGISTERED HOLSTEINS

Creamcup Herd offers service bulls and bull calves of 34-lb. breeding. Females offered for foundation stock. Tuberculin tested.

M. M. Holdridge, San Jose, Cal.
R. D. "A," Box 437.
Two miles out North First Street.

CALVES



The ONLY Calf Meal using pure dry milk solids as a base; feed

Red Horn Calf Meal

Wean calves from milk in four weeks. Send for free literature.

GLOBE MILLS, Los Angeles



Calf Profits

Are you getting them? Calf profits mean more to you now than ever before.

Blatchford's Calf Meal

has been known since the year 1890 as the complete milk substitute. Costs less than half as much as milk—prevents scouring—promotes early maturity. Sold by dealers or direct from the makers.

Write for New Data See actual figures showing you how to increase your calf profits

COULSON CO. - - - Petaluma, Cal.

RHOADES & RHOADES

EXPERT LIVESTOCK AUCTIONEERS

Purebred Stock Sales a Specialty

Sales Conducted in All Parts of California.

BEN A. RHOADES, Auctioneer

501-3-5 So. Main St., Los Angeles, Cal.

DAIRY COUNCIL PLANNING BIG CAMPAIGN.

It was announced in the newspapers a few days ago that the National Coffee Roasters' Association has launched an advertising campaign to offset the representations concerning coffee which have been made by manufacturers of coffee substitutes.

But what have the butter people done to hold their own against the extensive advertising that has been done by the manufacturers of butter substitutes? Up to now they have done very little, but through the California Dairy Council a campaign will soon be started to educate the people to the value of butter, milk cheese, ice cream and other dairy products, to increase their consumption and to put the industry on a more stable basis.

Definite plans have been formulated, and all that is needed to put them into operation is the support of dairymen and other vitally interested in the industry—the very ones who will be helped. Every dairyman in the State should join, and at once. Write to the California Dairy Council, 268 Market Street, San Francisco, for a copy of its new prospectus, and ask the genial manager, Sam H. Greene, to tell you just how you will be benefited. You will be surprised when you understand what a great power for good this council is bound to become, and you will see its vital connection with your own welfare.

CARRUTHERS BRINGS EASTERN SHORTHORNS.

Blue ribbon stock is the proper term to use in commenting on the carload of Shorthorns that W. M. Carruthers of Live Oak has brought back from the Middle West. They are a very fine bunch of excellent individuality and royal Scotch ancestry, picked from the leading herds of Iowa, Kansas and Missouri. A fine young white bull was purchased from Dean C. F. Curtis of Ames, Iowa, and he probably will be used as a herd sire to take the place of Count Glory.

Mr. Carruthers says that he may include part of his recent purchases in his sale at Sacramento, July 10, when 45 head will be offered, including 11 cows with calves at foot, 12 2-year-old heifers, 12 1-year-old heifers, 5 heifer calves, 2 bred cows and 3 bulls. All but two are of pure Scotch breeding, and these have 5 top crosses of Scotch, making it a sale of practically pure Scotch breeding.

LIVESTOCK SHOW FOR TULARE.

Tulare county, which has developed in the last few years into one of the most extensive stock breeding sections of the State, will hold a big show at Tulare October 6 to 11, featuring livestock and allied industries. It will be under the auspices of the Tulare Board of Trade, with which will cooperate the County Livestock Association, Duroc-Jersey Breeders' Association, Poland-China Association and Co-operative Poultry Association.

Already $6,500 has been put into the Fair site, with buildings nearly completed for accommodating 120 cattle and 150 hogs, and estimates are now being made for additional buildings to house more extensive exhibits, with $2,000 pledged for this purpose. Preparations are under way to make this first annual show a notable event in livestock circles.



Monro Perfect Silo

Ends your silo troubles. Stays round. Stays tight—wet or dry. Easy to build. Absolutely smooth inside. No hoops or bolts to need adjusting or rust away. No upkeep cost. Easy to take apart and remove. Quickly and cheaply enlarged or reduced.

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THE LEWIS CO.

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LIVE DEALERS WANTED.

Now is the best time to buy a DE LAVAL CREAM SEPARATOR



THESE are the days when the farmer is getting the most milk, and with butterfat at its present high price he should be sure to get all the cream.

Many "claims" are made for various cream separators, but the most convincing proof that the De Laval is the cleanest skimming machine is the fact that 98 per cent of the large creameries the world over use the De Laval.

Even if you do not separate as much cream as the large creameryman, you can no more afford to waste cream than he can.

DE LAVAL DAIRY SUPPLY CO.

THE LARGEST DAIRY SUPPLY HOUSE ON THE PACIFIC COAST

61 BEALE STREET SAN FRANCISCO

Livestock and Dairy Notes

Livestock breeders all over the state are invited to send on postal cards, notes regarding their sales, State and County Fair intentions, new stock, etc.

The Dairy.

Alexander & Kellogg of Inisfail Farm, Suisun, were the successful bidders on six head of Milking Shorthorns at the McMartin & Sons sale held at Claremont, Minn., May 27.

The Holstein cow, Pontiac Irene, owned by Pontiac State Hospital, Pontiac, Mich., has broken the world's record in the senior 2-year-old class with 1,102.68 pounds butter from 25,324.6 pounds milk in one year.

Mrs. H. J. Reamer of Castro Valley, Hayward, has sold her herd bull, Sir Johanna Fayne 7th, and two of his sons to J. Stuart Moore of Lathrop. The young bulls are direct descendants of the famous Johanna Colantha Lad.

A great mass meeting will be held in Fresno June 16 by the 11,000 members of the San Joaquin Milk Producers' Association, to complete the $1,000,000 creamery merger and plan for the construction of a $150,000 milk products plant at Tulare.

Tillie Alcartra and Raphaella Johanna Aaggie 2nd have been sent to Seattle to be bred to the $106,000 bull, Carnation King Sylvia. The former cow is owned by A. W. Morris & Sons, Woodland, and the latter by Napa State Hospital, and both are world record cows in their classes.

The Associated Dairymen of California, the parent organization of the various units throughout the State, is floating a bond issue to finance extensive plans, including the construction of a number of manufacturing plants. The bonds will be secured by a first mortgage on the properties and will be offered for public sale.

Alexander & Kellogg, Suisun, plan on making an extensive showing of their Dairy Shorthorns this year under the direction of Verne Heath, who is now in charge of the herd. Besides taking in the western circuit and making an extensive display at the State Fair, several eastern shows will be included.

The long-drawn-out case of J. J. Olivera against the Milk Producers' Association of Central California for cancellation of a $250 note and contract, has at last been decided in favor of the association. Superior Judge Needham held that no false representation was shown and that Olivera failed to rescind the note promptly and return the contract.

Holstein sales records were again smashed at Buffalo last week at the Cabana dispersal sale when Rag Apple the Great, a 2-year-old son of Rag Apple Korndyke 8th, sold for $125,000, going to Robert E. Pointer of Detroit, Mich. His sire sold for $60,000; the great cow, Segis Hengerveld Fayne Johanna, brought $40,000, and her yearling daughter, $22,000. During the first three days 160 head averaged $4,135.

Chas. MacDonald of Toyon Farms, Los Altos, has left for Minnesota to bring back 43 head of registered Holsteins, recently purchased by Horace G. Hill Jr., for the Toyon herd. Mr. Hill also secured a son of the great Schroeder bull, Sir Pietertje Ormsby Mercedes, for a herd sire. The Schroeder bull is considered one of the greatest sires of show ring winners and yearly producers, and the dam of the Toyon bull made over 1,250 pounds butter in a year as a 4-year-old.

At the dispersal sale of the Clifford F. Reid herd of Jerseys held at Sacramento last week, 41 head averaged $391. Dr. H. W. Hand of Orland paid the top price of $1,700 for the cow, Goldie's Nehalem Beauty, twice a world's record holder for the breed with 904.91 pounds butterfat as a senior 4-year-old. J. E. Thorpe of Lockeford paid $1,200 for Eminent's Wandress, and Dr. L. J. Belknap of San Jose was a heavy buyer.

At Toyon Farms, Los Altos, some excellent records are being made. Korndyke Model Hartog 3rd made 23.50 pounds butter as a junior 2-year-old. She is being continued for 30 days and promises to go over 90 pounds. She probably will be carried through the year on semi-official test. Princess John Buckeye, one of the cows brought from Washington, has made 30.70 pounds butter from 694 pounds milk for 7 days and 118 pounds butter in 30 days. Another Washington cow, Cascade Fleeta Johanna, made 30.50 pounds butter in 7 days. Ormsby Segis Marie, the world record 3-year-old, is completing her eighth month on test, making about 23 pounds of butter per week and probably will round out the year with 1,200 pounds butter and 30,000 pounds milk.

Beef Cattle.

Aberdeen-Angus records were smashed at Holbrook, Ia., May 22, by P. J. Donohoe & Sons, who sold 47 head for an average of $2,583. The top was a cow which brought $7,200.

Dr. H. M. Elberg of Roselawn Stock Farm, Woodlawn, will hold a public sale of Shorthorns October 16 to close a partnership arrangement between the Gibson Estate and himself. A choice lot of females bred to Crescent Dale will be offered, and this bull will be included in the sale.

Easton & Ward of Blackhawk Stock Farm, Diablo, have brought out three carloads of Scotch bred Shorthorn cattle from the Middle West as a foundation herd. The shipment includes 10 granddaughters of Villager with calves at their sides, and the cows are bred to Roan Radium, who has been purchased as a herd sire. It is expected to show some of the stock at the State Fair.

Another record-breaking Hereford sale has been recorded, this time by Warren T. McCray of Orchard Lake Farm, Kentland, Ind., who sold 120 head May 21 and 22 for an average of $3,635. Twenty sons of Perfection Fairfax averaged $7,955 and 100 females averaged $2,272. The top bull sold for $24,000; another bull for $23,000, and the top cow brought $10,500. This constitutes a world record sale.

Swine and Swinemen.

W. W. Everett of River Bend has sold his entire herd of Durocs to D. P. Doak of Oakville and F. L. Gordon of Suisun.

W. M. Carruthers of Live Oak has sold the prize-winning sow, Mayfield Laurel, to W. F. Sandercock, owner of the Natamario Rancho near Sacramento.

Geo. L. Horine of Winton says that the last $10 spent on Rural Press ads brought him about $1,000 worth of business. He is shipping high-class Durocs every week and last week's shipment included a boar pig to Mrs. B. D. Redaker, Napa; a bred gilt to A. H. Lacy, Oroville, and a bred gilt to John Yost, Winton.

D. H. Riker, fugitive president of the defunct Associated Swine Breeders of San Francisco, was captured in Kansas City and is being brought back here for trial. It is reported that several other hog unit concerns with which he is said to have been connected are now under investigation by the Federal Grand Jury.

Prof. J. I. Thompson has been promoted from assistant professor to associate professor of animal husbandry of the University of California. The promotion carries an increase in salary which Prof. Thompson certainly deserves, as he is one of the leading swine authorities in the United States, and we can afford to pay him almost any price to keep him here.

H. C. Witherow of Live Oak has recently sold two Greenwood Duroc sow pigs to W. F. Bandy of Biggs, who sometime ago bought a boar pig and was so well pleased that he came back for more stock. They have also sold a boar pig by Johnson's Defender, Jr., to M. J. Newkom, Yuba City. Business has been brisk with them and they have sold all the sow pigs of the spring crop that they can spare as weanlings.

A. Buckland & Son, Fresno, have sold a Poland-China boar to J. C. Roduner, Chowchilla; service boar to W. Brainer, Chowchilla, gilt to M. P. Holland, Fresno; boar to W. M. Thomas, Fairmead; boar to W. A. Snelson, Chowchilla; service boar to Kirby Smith, Clovis; boar to Geo. Byerkan, Madera; 2 gilts to M. Martinizzi, Fairmead, and a boar to Bissel Bros., Fresno.

Jack London Ranch, Glen Ellen, has recently sold seven bred Duroc gilts and a young boar to W. H. Dutton, Marin Meadows Ranch, Ignacio; a boar and a bred sow to G. H. Umbsen, San Francisco, for his Shasta County Ranch; a service boar to N. G. Engledow, Rio Linda; a boar to Mrs. Clede W. Bliss, Pozo; a bred sow to Thos. Harrison, Santa Rosa; a gilt and boar to S. B. Onyette, Palermo; 4 gilts to F. A. Rawles, Booneville; 3 gilts to F. A. McConnell, Livingston; 2 gilts to F. S. Hiel, Modesto.

Sheep.

J. F. Wilson, sheep expert of the Department of Agriculture, has been engaged to take the place of Prof. R. F. Miller at the University Farm, the latter having gone to Texas.

On the E. C. Spear ranch at St. Helena, yearling Rambouillet ewes are shearing an average of 13 pounds and 14 ounces per head for an eight months' fleece. With wool at 50 cents per pound or better, this makes sheep raising most profitable.

R. W. Jickling, Elmira, is changing from hogs to sheep, as he considers his locality better fitted for sheep raising. He has recently purchased a bunch of Rambouillet ewes and will mate them with two splendid Ram-



Feeding Qualities

The Holstein-Friesian breed requires an ample supply of food, but it is by no means choice as to the quality of the food. They freely consume roughage and transmute it into valuable products—milk, butter, veal, beef.

HOLSTEIN CATTLE

Send for our booklets—they contain much valuable information.

The Holstein-Friesian Assn. of America
Box 141 BRATTLEBORO, VT.

Chopped Hay Prevents Waste

Bulk feeding of hay is extravagant—wasteful.

Cattle invariably pick out the leaves and fine hay, nosing out and wasting the coarse parts. Hay trampled under foot is also the source of serious waste in feeding bulk hay.

THIS WASTE IS TOO BIG TO BE NEGLECTED

It amounts to an average loss of 15% of every ton of hay you feed.

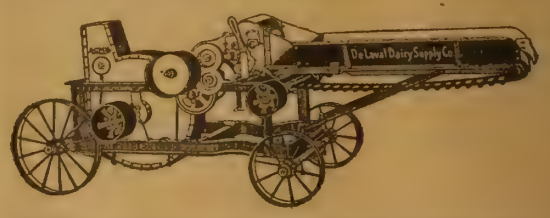
Stop it by chopping your hay this year. Blow it into the barn, bins or a silo.

You will find you can feed more cows ton for ton. Chopped hay is eaten up clean by the stock—no waste. It takes up less space, is easily handled, and is one sure way of increasing your profits.

ACME Feed Cutters

The Combined Silo Filler, Feed Cutter and Alfalfa Meal Machine

THIS MACHINE—THE ACME FEED CUTTER—
will pay for itself in one season on dry feed cutting alone, besides placing at your disposal a superior Silo Filler and Alfalfa Meal Machine.



THE LIGHT RUNNING STEEL FRAME ACME

Nos. 11 and 13 for small acreages—Nos. 17, 19, 20, 24 and 40 cover all Feed Cutting Requirements.

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FLY-MOTH BAIT

CATCHES FLIES and MOTHS BY THE MANY THOUSANDS
PRICE $2.00 PER GALLON

FLY-MOTH TRAP

Galvanized Iron—Collapsible—19½ in. x 10½ in.—Sanitary—Sure
PRICE, $2.00 EACH

TRAP and BAIT—Shipped in One Package—Wgt. 17 lbs.—Charges Collect

FLY-MOTH BAIT & TRAP COMPANY

221 Broadway, Oakland, California

bouillet rams secured from Bullard Bros., Woodland.

E. C. Barnhart, Shropshire breeder of Suisun, recently sold 2,000 lambs at $9 per head. Quite different from conditions in 1893 when the same grade of lambs sold for 75 cents per head. Mr. Barnhart reports a very good lambing season, with an average of 125% from the Shropshire ewes and 115% from the Merino grades.

Livestock Miscellaneous.

The annual Southern California Fair will be held at Riverside, October 7 to 11. Secretary W. W. Van Pelt is geting out the premium list, which is larger than formerly to correspond with the increasing interest in better livestock in the southern part of the state. Liberal premiums will be offered.

The San Luis Obispo County Live Stock Association will hold an annual livestock show on the grounds of the Polytechnic School at San Luis Obispo, June 26-27. The association has been formed to bring to the attention of the farmers the advantages of pure breds, and interesting exhibits are promised.

The short courses which will be offered at the University Farm, Davis, from September to December to enable persons, especially those of mature years and ranch experience, to acquire a knowledge of the fundamental principles of agriculture and livestock, will include courses in animal husbandry, poultry husbandry and dairy manufactures. There will also be a course in milking machine operation. A bulletin describing the courses may be had free of charge by applying to the Dean of the College of Agriculture, Berkeley.

LIVESTOCK DIRECTORY

Rate in this directory 3c. per word each issue.

SWINE.

Berkshires.

CASTLEVIEW

GIANT TYPE BERKSHIRES

We are booking orders for spring pigs from Grand Champion Sows and sired by Mayfield Rockwood, sire of Champion Barrow at 1919 Western Berkshire Congress.

CASTLEVIEW RANCH, SANTA ROSA.

ANCHORAGE FARM.

MONEY-MAKING BERKSHIRES—The prolific, easy-feeding kind that make the highest priced pork from the lowest priced feed. They will increase your profits. Prices reasonable; satisfaction guaranteed. Write for free booklet, describing our world's reserve champion STAR LEADER. We are now making a special offering of classy boar pigs.

Anchorage Farm, Orland, Calif.

GRAPEWILD FARMS BERKSHIRES
A few spring boars and fall pigs by Big Leader, Grapewild Farm Leader and Majestic King
A. B. Humphrey, Prop., Escalon, Calif.

BERKSHIRE BOAR PIGS—From large litters. Order one if you want the best. Satisfaction guaranteed. R. J. Merrill, Morgan Hill, California

RIVER GARDEN FARM BERKSHIRES—Weanlings and gilts. They'll surely please you. E. H. Whiting, Route 2, Box 631, Walnut, Cal.

BERKSHIRES—Sired by Star Leader, the 1500 boar. Kounias Registered Stock Farm, Modesto, Calif

FOR REAL GOOD BERKSHIRES write Frank B. Anderson, R. 724W., Sacramento, Cal.

CARUTHERS FARMS BERKSHIRES — Cholera immune. Live Oak, California

REGISTERED BERKSHIRES—Write R. D. Hume, Dos Palos, California.

BERKSHIRES—Fair Oaks Ranch, Willits, California.

Poland-Chinas.

POLAND CHINAS—A few fine Fall gilts bred by Big Bone Bob; also some top Spring boar pigs sired by Long Big Bone Jr.; junior champion, and Golden State King, out of Smooth Beauty, Black Beauty 5th, grand champion and champion, Black Beauty C. Price, the dam of champions and others. High-backed, good-footed, the kind that make good. Sold worth the money. W. A. Young, Lodi, Cal.

MARCH BOAR PIGS—Out of sows selected from the best herds of the corn belt. One registered Big Bob pig sired by Bridges' Bob Sunder, Missouri, grand champion, and out of my great sow, Bridges' Bobby. Two sired by the noted Boulder Buster and out of the splendid sow Bob's Giantess. These are real type and guaranteed to please. H. C. Shinn, R. F. D. 1, Tulare.

EL PROFITO—Our great herd boar, will put profit-making qualities into your herd. His offspring have size, stretch, bone, good backs and feet, and easy feeding qualities. To make the right start with big-type Poland Chinas, get one of his boar pigs. Prices right. Correspondence cheerfully answered Viola L. Renwick, Santa Barbara, California.

SOW BARGAINS—We are offering some exceptionally nice tried sows, bred and open gilts, at attractive prices. They are all sired by the undefeated and world's grand champion Superba and out of big type sows, which cost me $200 and over. Investigate before buying elsewhere. Rough's Greenfields, Arlington Station, Riverside, California.

MAKE BIG MONEY with Cloverdale Farm big-type Poland-Chinas—the prolific, fast-growing, easy-feeding, money-making kind. We purchased the famous Whitten Ranch herd including great boar Jumbo Model. High-class stock for sale—farmers' prices. Write us. Cloverdale Farm, R. F. D. 1, Escondido, Cal.

POLAND-CHINAS—Am booking orders for Spring boars sired by King's Massive. Orange and from such noted sows as Rosebud Quality 1st, sired by President and out of King's Rosebud, grand champion sow of 1917 and other big sows. H. D. McCune, Lemoore, Cal.

NOW BOOKING ORDERS for spring pigs, either sex from my prize-winning, large type Poland-Chinas hogs. Also will book a few orders for bred gilts, February and March farrow, and a few good serviceable, aged boars. Hale I. Marsh, Modesto, California.

ELDERSLY FARM—We are offering some excellent tops from our fall, and spring pigs at attractive prices, sired by one of America's best-bred boars, Big Black Bone Wonder, with grand championship breeding on both sides. He is a real 1000-lb. boar. J. H. Ware, Live Oak, California.

CORKING GOOD FALL BOAR for sale, sired by Kansas King and out of one of the best big-type sows. He is cholera immune and will please you. McCarty & Starkweather, P. O. Box 2250, San Francisco. Ranch, Paradise Road, Modesto.

BRED AND OPEN JULY GILTS by King Big Bone Leader for sale. Also September gilts by California Jumbo Buster and a few toppy young boars. A. Buckland & Son, Route E, Box 126, Fresno.

HARTSOOK BIG TYPE POLANDS—A fine lot of young boars. Both bred and open gilts for sale. Toggenburg goats and Holstein bulls ready for service. Fred Hartsook, Lankershim, California.

BOOKING ORDERS for spring pigs sired by "Bob Big Bone" 281289, litter brother of the Junior Champion of Sacramento, 1918, P. E. Mitchell, Atwater, California.

OXBONE HERD offers March boars for sale from King's Big Bone Leader, grand champion at State Fair, 1918. Write F. E. Fay, Tipton, California.

BIG-BONED POLAND-CHINAS—From Eastern prize-winners. Sold out of boars; a few choice October gilts for sale. D. H. Forney, Route G, Fresno, California.

FALL BOARS by a son of Caldwell Big Bob at bargain prices. Also booking orders for spring pigs. Forest View Ranch, J. H. Cook, Paradise, Cal.

WAUKEEN HERD POLAND-CHINAS—Big type herd boar, the $700 Grand Champion of California. Les McCracken, Prop., Ripon, Cal.

BIG TYPE POLAND-CHINAS—Stock from the best herds of the Middle West. N. Hauck, Alton, Humboldt County, California.

LAKE SIDE STOCK FARM—Large smooth and big boned Poland-Chinas. Geo. V. Beckman & Sons, Lodi, California.

REGISTERED POLAND-CHINA SWINE—Prize winners. Finest stock in the State. M. Bassett, Hanford, California.

POLAND-CHINAS—Young stock for sale. Edward A. Hall, R. 1, Box 39, Watsonville, Calif

POLAND-CHINA PIGS—Bernstein Trewhitt, and Ross blood. B. M. Hargis, Tulare.

POLAND-CHINAS—A few young service boars for sale. R. F. Guerin, Visalia, Calif.

REAOAKS RANCH herd of registered Poland-Chinas, W. J. Hanna, Gilroy, Calif.

BIG BONED POLAND-CHINAS—Stock for sale. E. S. Myers, Riverdale, California

POLAND-CHINAS—Young stock for sale H. E. McMahan, Lemoore, California.

POLAND CHINAS—Strictly large type. J. F. Lehman, Lodi, Cal.

LARGE TYPE POLAND-CHINAS. Winton Poland-China Farm, Winton, Cal

Chester Whites.

BILLIKEN CHESTER WHITES—Just a few left to offer. One 1917 fall boar and one 1918 fall boar; both cholera immune. Spring farrows are all sold except 10 boar pigs. Will have 10 more sows farrow during May, June and July and will book orders now from these coming litters, delivery at weaning time. C. B. Cunningham, Mills, Calif

DANDY REGISTERED CHESTER WHITE weanlings. Reasonable prices. E. Wellman, Los Altos, Cal.

Duroc-Jerseys.

HERD BOARS—Do you want a boar that will put stretch height and size in your herd. I am booking orders for a few weaned pigs that will make giant herd boars. Their sire, himself 500 lbs. at 14 months, is from a real 1000-lb. grand champion boar. The dam promises to reach her mother's class—700 lbs. Write for full particulars. Geo. L. Horine, Winton, Cal.

DUROC-JERSEYS AT IRELAND—Home of Cherry Volunteer II., Grand Champion Boar at Riverside. Ireland's Orion Defender and Orion's King of Ireland are excellent sires in service. Booking orders for spring delivery. Ranch at Owensmouth. City office, 1210 Brockman Bldg. Los Angeles, Calif.

WEANLINGS sired by Trailblazer, son of Pathfinder, Derryfield Col. and Derryfield Wonder Boy—King's Col. boars ex Burke's Good Stuff, Golden Model, and Model Col. sows. Reg. Gilts. Service Boars. Derryfield Farm, Capital National Bank Building, Sacramento.

SWEETWATER DUROCS—The most popular herd in the West. Our Durocs make money for us—they will do the same for you. Winsor Ranch, Bonita, San Diego Co. Address R. K. Walker.

BIG TYPE DUROCS—Herd headed by California Orion King. Am offering a few selected boar pigs. Inquiries invited. Harvey M. Berglund, Dixon, Calif.

WE WON MORE MONEY on Durocs at the State Fair than any other exhibitor. Why not buy some of this winning stock? June Acres Stock Farm, Davis, California.

REGISTERED DUROC JERSEYS — Open and bred gilts. August and November boars. Great herd headers. Weanling pigs, both sexes. Stock of the big strong type so much desired. Jack Borge, Dos Palos, Cal.

REGISTERED DUROC-JERSEYS — Weanlings. Both sexes—extra fine prize-winning stock. Pearl Hoagland, Route A, Box 286, Ceres, Cal.

DUROC JERSEY SWINE FOR SALE—Best blood lines. Bred sows and gilts. Service boars. Jersey Queen Farm, San Jose, Calif.

DUROC JERSEYS—Fine big type gilts, tried sows and boars Eastern and California bred. H. P. Slocum & Son, Willows, Calif.

HEAVY-BONED DUROCS—A few service boars for sale. Ormondale Co., Route 1, Redwood City, California.

DUROC-JERSEY BOAR PIG, two months old; grandson of Kings Colonel. Price, $25. N. E. Mulick, Willows, Calif.

DUROC-JERSEYS—A few choice September gilts—Weanlings either sex. H. E. Boudier, Napa.

REGISTERED DUROCS—All from prize-winning stock. W. P. Harkey, Gridley, Calif

REGISTERED DUROCS—Stock for sale. W. J. Fulgham & Sons, Visalia, California.

Yorkshires.

LLOYTON HERD REGISTERED YORKSHIRES—Bred gilts and pigs from eight weeks up. Lloyd & Tointon, Llano Road, Santa Rosa California.

Hampshires.

HAMPSHIRES—Fine quality. Weaned pigs, dandy young boars. Uneeda Hampshire Swine Farm, Tom M. Bodger, Prop., Gardena, Cal.

MY HAMPSHIRES are money makers. Stock for sale. Buy now. L. W. Denker, Saugus, California.

Miscellaneous.

CROLEY'S BALANCED HOG FEED—The cheapest feed to fatten hogs. Write Geo. H. Croley Co., Inc., Livestock Supplies, 8th and Townsend Sts., San Francisco, Calif.

LARGE YORKSHIRES—The ideal hog for the progressive farmer. Young stock for sale. A. L. Tubbs Co., Calistoga, Calif.

MULE-FOOT HOGS—Large type. H. T. Bailey, P. O. Box 37, Lodi, California. "The Blue Gums."

DAIRY CATTLE.

Guernseys.

GRAPEWILD FARM GUERNSEYS.
A 21-months-old bull out of dam with record of 615 pounds in A. A. class, and a few young bulls up to 1 year of age.
A. B. Humphrey, Escalon, California.

HIDDEN VALLEY FARM offers for sale 2 young Guernsey bulls, ready for service, out of high record advanced register dams. A. J. Welch, proprietor, Redwood City, California.

EDGEMOOR FARM GUERNSEYS —First in the show ring and in official records. Few animals of either sex for sale. Edgemoor Farms, Santee, California.

PALO ALTO STOCK FARM, Palo Alto—Breeders of registered Guernseys; both sexes; prices reasonable.

Ayrshires.

ELKHORN FARM AYRSHIRES— Choice young bulls at reasonable prices. J. H. Meyer, 440 Montgomery St., San Francisco, Calif.

NORABEL FARM AYRSHIRES—Purebred young stock for sale at reasonable prices. Le Baron Estate Company, Valley Ford, Calif

AYRSHIRES—Registered; all ages. E. B. McFarland, 412 Claus Spreckles Building, San Francisco, California.

REGISTERED BULL CALVES—Ready for service. Redwoods Ayrshire Farm, La Honda.

Jerseys.

SUNSHINE FARM JERSEYS—Tuberculin tested. Production counts. E. E. Greenough, Merced, California.

Milking Shorthorns.

BREEDERS OF REGISTERED SHORTHORNS—Milk strain; choice young stock for sale. John Lynch Ranch, Box 321, Petaluma.

INNISFAIL DAIRY SHORTHORNS—Registered young bulls for sale. Alexander & Kellogg, Suisun, California.

Holsteins.

A PRICE ON EVERY ANIMAL.
Herd free from tuberculosis. All sales subject to sixty days' retest. Sons of Finderne Soldene Valdesa, whose dam is not only a world record cow in seven-day division, but has two sisters holding world's records for yearly production.
Toyon Farms Association
670 Mills Building San Francisco

HIGH-CLASS HOLSTEINS—I have for sale some sons of Sir Veeman Korndyke Pontiac from A. R. O. dams. Write for particulars or come see them. R. F. Guerin, Visalia, Calif

BEAUTIFUL GRADE HOLSTEIN HEIFER four weeks old, great granddaughter of Tilly Alcartra. Price $60.00. N. E. Mulick, Willows, Calif

PALO ALTO STOCK FARM, Palo Alto, breeders of registered Holsteins. Heifers and service bulls. Reasonable prices.

REGISTERED HOLSTEIN BULLS with world's record backing. Kounias' Registered Stock Farm, Modesto, California.

REGISTERED HOLSTEIN CATTLE—E. B. Freeman, Route B, Modesto, California.

EL DORADO HERD OF HOLSTEINS—Alex. Whaley, Tulare, California.

BREEDERS OF REGISTERED HOLSTEIN cattle and Berkshire pigs. Whittier State School, Whittier, California.

CREAMCUP HERD—Registered Holsteins, Pontiac bull calves. M. Holdridge, Rt. A, Box 437, San Jose, California.

F. H. STENZEL, SAN LORENZO, CALIF.—Breeder of Registered Holsteins. High test producers.

THE VICTORY HERD—Registered Holstein cattle and Duroc Jersey swine. H. E. Spires, Hilcrest Farms, Caruthers, California.

REGISTERED HOLSTEINS—Young stock for sale from A. R. O. dams. La Driver Stock Farm, Nicolaus, Cal.

REGISTERED HOLSTEINS — Best blood lines of the breed. R. L. Holmes, Modesto, Cal.

REGISTERED HOLSTEINS—We breed for production. Leeman and Kilgore, Ripon, Cal.

REGISTERED HOLSTEINS—A. W. Morris & Sons Corp., Importers and Breeders, Woodland, California.

J. W. BENOIT, Modesto, Calif. Breeder of registered Holsteins.

GOTSHALL & MARGRUDER—Breeders of registered Holstein-Friesians. Ripon, Calif.

CHOICE HOLSTEIN bulls for sale. No females. Millbrae Dairy, Millbrae, California.

HOLSTEIN BULLS and bull calves from A. R. O. cows. C. A. Miller, Ripon, California.

REGISTERED HOLSTEINS and Duroc-Jerseys. Sturgeon Stock Ranch, Tulare, Calif.

BEEF CATTLE.

RANCHO SAN JULIAN SHORTHORNS—Purebred range bulls, unregistered, for sale. Estate Thos. B. Dibblee, Santa Barbara or Lompoc, Calif. John Troup, Supt.

ALAMO HERD REGISTERED HEREFORDS (founded by Governor Sparks). Herd and range bulls. Reasonable prices. W. D. Duke, Likely, Modoc county, California.

REGISTERED YEARLING SHORTHORN BULLS—Heavy-boned, thick-meated. Scotch and Scotch-topped breeding. Ormondale Co., Route 1, Redwood City, California.

REGISTERED MILK AND BEEF SHORTHORNS, bulls and heifers for sale; catalogue free. Thomas Harrison, Santa Rosa Stock Farm, Santa Rosa, California.

HEREFORDS—Sierra Vista Herd, Minturn, California. Over one hundred registered animals. Fairfax and Repeater bulls head the herd. On highway.

THE NEVADA HEREFORD RANCH, Jno. H. Cazier & Son Co., Props., Wells, Nevada. Registered Hereford cattle. Breeding stock for sale.

REGISTERED SHORTHORNS—A few choice young bulls, grandsons of Fair Knight. Prices reasonable. Fair Oaks Ranch, Willits, Calif.

HOPLAND STOCK FARM—Registered Shorthorns. Prices on application. Hopland, Calif.

REGISTERED HEREFORDS—H. H. Gable, Diamond G Ranch, Esparto, California.

SIMON NEWMAN CO., breeders of Registered Hereford, Newman, California.

GEORGE CALLAHAN, breeder of registered Herefords, Milton, California.

GEORGE WATTERSON—Breeder Registered Herefords, Bishop, California.

HEREFORDS—Mission Hereford Farm, Mission San Jose, California.

REGISTERED SHORTHORNS — Julien Ranch, Grenada, Siskiyou Co., California.

SHORTHORNS — Carruthers Farms, Live Oak, California.

HORSES AND MULES.

SHIRES —Broodmares— Stallions. Also stallion and filly colts $100 to $700. Jack London Ranch, Glen Ellen, Cal.

FOR SALE—A-1 Breeding Jack. Bargain. Have quit raising mules. W. P. Harkey, Gridley.

SHEEP AND GOATS.

PURE-BRED RAMBOUILLET RAMS, large smooth frames, extremely heavy shearers, from the very best strains of this country and France. Immediate delivery from ranch at Ord Bend, Glenn county. P. O. address, Windell Orchards, Glenn, Calif.

F. A. MECHAM ESTATE, Petaluma, Cal.—Breeders and importers of Shropshire, Rambouillets and American Merinos, both sexes. Also Red Polled cattle. Take electric car at Petaluma or Santa Rosa for Live Oak Ranch.

HAVE FOR SALE fifty head of fine yearling Shropshire rams. Also 75 head of high-grade Rambouillet rams. These are big fine wooled rams. E. D. Dudley, Dixon, Calif.

ANGORA GOATS — PERSIAN SHEEP—Bucks from $25 to $50 each. Only fine stock for sale. C. P. Bailey & Sons Co., San Jose, Calif.

J. R. BLOOM, DIXON, CAL.—Breeder of Shropshire rams out of pure blood ewes and imported registered rams. Single and car load lots.

DORSETS AND ROMNEYS—Dorset ram lambs for sale. John E. Marble, South Pasadena, California.

ONE TWO-YEAR SHROPSHIRE BUCK for sale. C. J. L. Stonebraker, Route A, Chico, California.

BISHOP BROS., SAN RAMON CALIF.—Breeders and importers of Shropshires.

KAUPKE BROS., WOODLAND, CALIF.—Breeders and importers of Hampshire sheep.

CHAS. KIMBLE—Breeder and importer of Rambouillets. Hanford, California.

CALLA GROVE FARM, MANTECA, CALIF.—Breeders and importers of Hampshire sheep.

MISCELLANEOUS.

BUTTE CITY RANCH—Shorthorns, Shropshires, Berkshires and Shetland ponies. Write for prices and descriptions before buying. Butte City Ranch, Box P, Butte City, Glenn county, Cal. W. P. Dwyer and W. S. Guilford, owners. **Special Notice:** Second Farm Sale Shorthorns; Shropshires; Berkshires; Ponies. August 2, 1919.

Soy Beans and Cow Peas for Hogs

(Written for Pacific Rural Press.)

Several weeks ago an article appeared in an eastern agricultural magazine of national circulation stating that soy beans should be more generally raised by swine breeders, as they can be made to take the place of high-priced tankage.

Many of the suggestions contained in eastern books and magazines are not applicable to coast conditions, so we took the matter up with Prof. F. W. Woll of the University Farm, Davis, who said that soy beans would serve as a substitute for tankage, but that there was a question about their being grown satisfactorily in this state.

Prof. Woll referred us to Prof. Geo. W. Hendry, assistant Professor of Agronomy, who says that a great many different varieties of soy beans have been grown at Davis. They made good growth and produced a fair amount of seed and forage, but much better results were obtained with cow peas.

Certain varieties of cow peas, such as the New Era, Red Ripper, Whippoorwill, Miller, Brown Crowder and Brabham, have produced from 12 to 15 tons of green fodder per acre without irrigation, which is considerably in excess of any yield recorded for any variety of soy beans. The latter seem well adapted to the more humid climate of the eastern states, and they also do well in the coast counties of central and southern California. But in the interior valley, the aridity of the climate is not to their liking and during a season of drought, especially when the land is not irrigated, they do not do as well as cow peas. Also, jackrabbits are very fond of soy beans, and at the University Farm a large percentage of the crop was lost from jackrabbit attacks just as the crop came out of the ground. The jackrabbits would pass over almost all other crops, including cow peas, and would feed on soy beans as long as they lasted.

Cow pea hay is comparatively rich in protein and compares favorably with alfalfa. Henry in his "Feeds and Feeding," says that cow peas are of great importance in economical pork production and that the seed may be used as a supplement to such grains as corn or barley, or the pigs may be turned in a field to harvest a crop when the pods are well matured.

Experiments have shown that a mixture of cow peas and some carbonaceous feed, such as barley or corn, produces much more satisfactory gains than when either is fed alone. A good ration would be about one-third cow peas and two-thirds barley. The Department of Agriculture found in feeding experiments that with barley or corn fed in equal proportions with cow peas, the latter were worth $1.83 per hundred when barley was worth $1.45 per hundred.

WHEY PROVES VALUABLE FOR HOGS.

Recently a subscriber asked us the relative value of whey and skimmilk for hogs and we quoted from Henry's "Feeds and Feeding," showing that whey contains only 0.8 per cent protein, while skimmilk contains 3.8 per cent protein. We also gave Prof. Henry's statement that whey is worth just about half as much as skimmilk for hogs.

However, since then we have received the report of a feeding experiment carried on at the Wisconsin Experiment Station, showing remarkable gains made by hogs receiving barley and whey. These hogs did much better than others fed on corn and tankage.

It is apparent that whey is valuable not so much on account of the amount of protein, as its quality. We are beginning to find out that not all proteins are capable of producing good growth, and the Wisconsin experiment seems to prove that even though whey is comparatively low in protein, this protein is of a quality which makes it most valuable for producing growth, and farmers who take their milk to the cheese factory can hardly do better than to take whey home with them. Or wherever it can be purchased, it will be found about the most economical food that can be used for hogs—that is, used in the proper proportion with barley or milo.

FRESNO POLAND-CHINA BREEDERS ORGANIZE.

Forty-five enthusiastic Poland-China breeders of Fresno county met last week and organized the Fresno County Poland-China Breeders' Association. Wm. Bernstein of Hanford told of the success of the Kings county organization; Assistant Farm Advisor R. E. Burton spoke on Pig Club Work; R. N. Davis of the Farm Bureau told about the auction sales of fat stock; and Fred Gatewood spoke on "The Show Ring."

The officers elected were Alfred Buckland, president; A. J. Van Cleef, vice-president; Walter C. Ficklin, secretary- treasurer; Fred Gatewood and E. R. Eichner, directors. Others active in the organization were H. Barkema, D. H. Forney, E. S. Myers, and Joseph E. and Thomas Caesar. Special memberships with low dues will be provided for pig club boys to encourage them to join. The association starts out in the right hands, and the officers intend to put Fresno county on the map as the home of the best in Poland-Chinas.

BRIDGFORD HEIFER BREAKS WORLD RECORD.

Nattaline Walker, the phenomenal Holstein heifer in the Bridgford Company's herd at Knightsen, has made records of 34.316 lbs. butter from 818.2 lbs. milk in 7 days and 134.76 lbs. butter from 3,313.9 lbs. milk in 30 days, at the age of 3 years and 4 months. Her 7 and 30 day milk production is a world's record for a junior 3-year-old, and her 30-day butter production is a State record.

Fairmont Pauline DeKol 2nd has just made 30.307 lbs. butter from 643.9 lbs. milk in 7 days at the age of 3 years and 2 months. This gives the Bridgford Company 8 records for the season from 30 to 41 lbs. butter in 7 days. Going some!

Western Duroc Men! Attention!

F. F. DEVORE says that the Duroc could have no greater field in which to develop than the Pacific Coast states.

It is the DUROC JERSEY that will put the pure-bred swine industry to the front. It is up to the Duroc raiser to put the Duroc to the front. It is up to THE DUROC BULLETIN, and this paper stands ready to help the Duroc man "over the top." Write for FREE copy containing DeVore's article, "DUROCS OF THE GREAT WEST."

SEND $1 FOR 1 YEAR.

THE DUROC BULLETIN

CHICAGO, ILLINOIS.

BIG BONED POLAND-CHINAS

The fashionable, prolific kind that everyone wants.

Service boars, gilts and weanling pigs sired by the 1,000 pound boar

Big Bone Bob

Don't send East when you can get better at home. Come and see them and be convinced. Stock for foundation herds or exhibition.

N. K. HORAN

Lockeford, Cal.

Ranch 2 miles east of highway.

TAMWORTHS

(The Bacon Hog)

Largest Herd in the State

DUROC-JERSEYS

Mature Stock and Weanlings of both sexes. Sure to please.

SWINELAND FARM

W. O. Pearson, Prop. Woodland, Cal.

ROC STEIN RANCH DUROCS

Crimson Monarch, Gold Model and Orion Cherry King breeding. Weaned pigs and bred gilts and one service boar for sale. Write and get our prices before you buy.

W. M. Way & Son

Rt. 1, Box 330. MODESTO, CAL.

Buy Berkshire Boars

Money invested in a young boar increases faster than in any other way. You can get more for your money, and your money will earn more for you. Buy a young boar and grow him out yourself.

ANCHORAGE BERKSHIRES

If he is an Anchorage Farm Berkshire of Star Leader blood you can bank on him, for our customers are unanimous in the statement that they can make more money with Star Leader Berkshires than with any other strain or breed.

Here you find the kind of stock you have been looking for—toppy youngsters with good bone, strong backs, lots of stretch, well-sprung ribs and heavy hams.

The pigs are all ready to go ahead and make money for you. They will produce the stock that will fill the pork barrel and swell your pocket-book.

ORDER NOW. AVOID DISAPPOINTMENT.

Now is the time to buy. A grand lot to select from. Also 50 classy gilts for Fall sale. They will put the profit in farming. For full descriptions and prices write your wants, and ask for free illustrated booklet.

ANCHORAGE FARM

P. O. Box 163A ORLAND, CAL.

Grand Champion Herd of Hampshires

FOR SALE.

Brood Sows, litters at foot. Sows bred for fall litters. Young Boars and Gilts

Best families.

Finest individuality and clean-cut markings.

Call or write



Address F. V. GORDON or F. A. LANGDON, Llano Vista Ranch, Perris, Cal.



REGISTERED DUROC-JERSEYS

We have for sale right now, big, heavy-boned, high-up, four-months-old boars. Also some A-1 weanling pigs, either sex. Also some young gilts. Our herd boar has the best blood of the breed and was a prize-winner at the State Fair last year.

Write for prices.

ROUTE 4, BOX 735 THE GARDINER RANCH, SACRAMENTO, CAL.

4 Good Young Boars—Excellent Prospects.

—from California's leading herd of Duroc-Jerseys. They are sired by ORION'S GOLDEN COL. and UNEEDA WESTERN HERO. Priced reasonable but they have the quality. Write for full particulars.

SOME CORKING GOOD WEANLING BOARS.

ALLEN THOMPSON, Tulare, Cal.



OAK KNOLL FARM

LAKEPORT CALIFORNIA

We have sold all our young boars and are now booking orders for toppy weanlings. Highlander, the $1,000 Grand Champion Boar, heads our herd of

CHESTER WHITES

SAN FRANCISCO OFFICE, 601 BALBOA BLDG.

THE JOHNSON HERD OF DUROCS

We have for sale only a few yearling sows and tried sows bred for fall litters, bred fall gilts, two yearling boars and weanling pigs from

PRIZE WINNING SOWS

F. M. JOHNSON, Napa, Calif.

DIGESTER TANKAGE

Send for Sensible Folder on Feeding Hogs

WESTERN MEAT COMPANY

Animal Food Dept. 704 Townsend St., San Francisco

Livestock Queries

Horses Have Depraved Appetite.

To the Editor: What can I do for my horses that are fairly eating up one corner of their corral? There is no grass there, just plain dirt. It is not salt that is lacking, as they have it in their mangers at all times.—J. G. G., Geyserville.

(Answered by Dr. E. J. Creely, San Francisco.)

The condition of your horses is brought about by stomach disturbances. Put a lump of lime in the drinking trough, and put salt directly into the food, as lump salt will be licked by only a few of the horses. Also give a teaspoon of the following once a day in the feed: Pulverized red pepper, 1 ounce; pulverized foenugreek seed, ¼ pound; carbonate soda, 1 pound; pulverized aniseed, 2 ounces; pulverized sulphate iron, 6 ounces.

Cow's Breathing Obstructed.

To the Editor: One of my cows is troubled with obstructed breathing. It seems to be in her throat and is most pronounced while feeding. She breathes like a horse with the heaves. It has been troubling her for two years and gets neither better nor worse. What is the trouble and can it be cured?—B. M., Ferndale.

(Answered by Dr. E. J. Creely, San Francisco.)

First of all, you should have your cow tested by the intradermal test, to determine whether or not she has tuberculosis. If she does not react, then in all probability she has a tumor along the respiratory tract, but it will require a very careful examination by a qualified veterinarian to determine this as well to give the necessary treatment.

Green Alfalfa Vs. Cured.

To the Editor: What is the relative feeding value of the green alfalfa now being cut compared with last year's baled alfalfa?—E. O. R., Morgan Hill.

(Answered by the Live Stock Editor.)

Green alfalfa contains 3.3 per cent crude protein, 10.4 per cent carbohydrates and 0.4 per cent fat. Cured alfalfa contains 10.6 crude protein, 39.0 per cent carbohydrates and 0.9 per cent fat. Thus you will see that green alfalfa contains only 14.6 pounds of digestible nutrients to every 100 pounds, while alfalfa hay contains 51.6 pounds.

How Cow's Value Fluctuates.

To the Editor: I can buy heifer calves for $10. What can I figure on such animals being worth when mature?—L. V. G., Escalon.

(Answered by the Live Stock Editor.)

This is a pretty hard question to answer, as the value will be determined largely by breeding, feeding and care. However, statistics furnished by the Department of Agriculture show that if a grade Holstein cow is worth $100 at three years of age, she would be worth at different ages, as follows: Birth, $11; 6 months, $26; 1 year, $44; 2 years, $72; 3 years, $100; 4 years, $112; 5 years, $120; 6 years, $122; 7 years, $116; 8 years, $107; 9 years, $95; 10 years, $83; 11 years, $72; 12 years, $62; 13 years, $57; 14 years, $48. For a pure-bred Holstein cow worth $300 at three years of age the estimate of value at different periods in her life is: Birth, $92; 6 months, $128; 1 year, $168; 2 years, $231; 3 years, $300; 4 years, $331; 5 years, $348; 6 years, $350; 7 years, $226; 11 years, $129; 12 years, $159; 13 years, $124; 14 years, $94. From these figures it is possible to make estimates of depreciation. This, of course, will vary with different cows, with different herds, and with different breeds.

TO MAKE A SOW BREED.

We are receiving numerous letters from readers stating that they are unable to get their sows to breed for fall litters. Some complain that the sows will not come in heat; others state that the sows come in heat all right, but will not settle with pig.

To get the best results, sows should be prepared for breeding by flushing them. As a rule they are rather thin after weaning their spring litters and they should be fed an increased amount of protein so as to have them improving in condition at the time they are bred. Experience has taught that when tankage, meat meal, skimmilk, or some high protein stimulating feeds are used during the breeding season, sows will require less services and will farrow more pigs than if scant rations are used. Flushing should commence about two weeks before the breeding season opens.

If a sow does not come in heat give her one-twelfth grain Yohimbin three times a day for one week. If she does not then come in heat skip a week and repeat. This Yohimbin can be purchased in tablet form at druggists.

If you cannot get a sow settled with pig, before deciding to sell her to the butcher try giving her a quarter of a pint of hemp seed twice a day in her slop. You can get the seed at any drug or general store, and a dollar's worth will generally be sufficient. This is a practical remedy that has been used for years by many corn-belt breeders with unvarying success.



Why Ajax Tires Are Farmers' Choice

There's one big outstanding reason—greater mileage.

The man who farms is much more vitally concerned with tire service than his in-town brother. He requires topmost tire strength, for the roads his car must travel are not always sleek and smooth.

And so, sooner or later, he chooses Ajax Tires—the only tires possessing Shoulders of Strength.

Ajax Road King

Ajax Shoulders of Strength are buttresses of rubber that brace both sides of the tread. Note the picture of the Ajax Road King. See how that burly tread is buttressed. It has more rubber where it should be—more tread on the road. Shoulders of Strength are chiefly responsible for the surprising mileage records established by the Ajax Road King.

Your nearest Ajax dealer carries a complete supply of Ajax Road King tires—also Ajax Inner Tubes, and Ajax H. Q. Tire Accessories.

Ajax Tires Are Guaranteed In Writing 5000 Miles

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AJAX TIRES

Superb Shorthorns

On Thursday, July 10, Carruthers Farms, owned by W. M. Carruthers, Live Oak, California, will sell at public auction, to the highest bidder, without reserve or limit,

45 Scotch Shorthorn Cows, Heifers, and Bulls

including about a dozen great matrons with calves at foot. This is universally conceded to be the greatest offering of Scotch cattle ever made on the Pacific Coast.

CARRUTHERS FARMS

W. M. CARRUTHERS, PROP., LIVE OAK, CAL.

The sale will be held on California State Fair Gounds, Sacramento, where part of the cattle may now be seen. After June 7 nearly all of the cattle will be on the sale grounds and visitors are cordially invited to call and inspect them.

AUCTIONEERS: REPPERT & MILNE
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ORMONDALE SHORTHORNS

All are heavy boned, and of Scotch and Scotch-topped breeding.
Suited for either the range grower or breeder.
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One three-year-old bull bred by H. R. Clay.
Two outstanding yearling bulls sired by Sir Type, a son of Cumberland Type.
A few yearling heifers of same breeding.
Also registered Berkshires of both sexes of best breeding.

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Gives Great VALUE for LEAST MONEY. IT MAKES THEM FAT.

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Poultry and Rabbits for Profit

Conducted by R. H. Whitten.

FATTENING MARKET POULTRY.

Last week we planned a simple, inexpensive, home-made fattening crate, so now let us consider the best ways of fattening fowls after we get them in the crate.

There is no one best fattening ration. The feeding should be done at the greatest possible profit, so the ration should be varied according to the price and availability of different feeds. The feed should be entirely of a soft mash; the grains should be very finely ground and free from mold and mustiness; and the mixture may be made of a combination of corn meal, middlings, barley meal and ground oats. If possible, it should be mixed with sour skimmilk or buttermilk, as these foods aid digestion and keep the system from getting feverish. Many poultrymen consider skimmilk or buttermilk absolutely indispensable.

A simple ration of 6 pounds corn meal, 4 pounds middlings and 1 pound fine beefscraps has given excellent results. When middlings are not available, equal parts of corn meal, ground barley and ground oats, with 10 per cent beef scraps, may be used. The ration is an excellent one even if the ground oats are left out, although they are fine for fattening and should be included when they can be obtained at a reasonable price.

With any of these combinations enough sour skimmilk or buttermilk should be used to make a porridge thick enough to drop, but not run, from the end of a spoon. Beef scraps may be left out when milk or buttermilk is used, but they are necessary when water is substituted. In the latter case use enough water to make a crumbly, moist mixture. Water may also be given the fowls for drinking purposes, but when milk is used it is not advisable to supply any water, except during the first two or three days.

A little molasses or sugar will improve the mash; also a dash of salt and a little fine charcoal. Potatoes and vegetables of any kind may be cooked and mixed with the mash, and the last week a little tallow or grease will help.

How to Feed.

When the birds are first confined they should be starved for from 12 to 24 hours; then fed lightly for two or three days, never allowing them quite all they will eat. This will prevent digestive troubles which might be caused by change of diet. Better feed them three times a day the first week, and after two or three days give all they will clean up in 15 or 20 minutes. If any feed is left in the trough, be sure to remove it. Feed rather lightly at noon, and make the night meal the heaviest.

After one week feed only twice a day, and feed at the same time each day. It may be necessary to vary the ration a little to keep up keen appetites. The feeding should be kept up just as long as the birds continue to gain, which generally is from ten days to two weeks. Some may require three weeks, but it seldom pays to feed longer. Just as soon as their combs begin to lose color, their eyes become a little dull, and their appetites fall off, they are fattened sufficiently and should be marketed at once. If continued longer they will go off feed, and this will result in loss instead of gain.

Keep the crate clean and free from parasites. Spray it often, and dust the birds with a good insect powder. Feed regularly and give the fowls proper attention, and at the end of the fattening period you will have a shipment of birds that will top the market and pay you well for their feed and care.

If it is desired to substitute cottonseed meal for beef scraps in the dry mash for hens, be careful not to replace more than half the beef scrap with this substitute, as the result in egg production and in the quality of the eggs will be unsatisfactory.

RULES FOR RAISING RABBITS.

The war gave rabbit culture a new significance. People took up the breeding of rabbits as a means of reducing the cost of living or adding to the family income. They succeeded in doing both, and were so well satisfied that they decided to continue keeping rabbits.

Why shouldn't they? It is claimed that rabbits can be fed more cheaply than any other animal on the farm. They consume more bulk than hens, but not so costly a ration. Gains in weight are made for about six cents per pound, while rabbit meat sells for an average of about six times this amount.

Also rabbit fur finds a ready market at good prices. That of Flemish Giants is being used for door mats; that of New Zealand Reds for imitation red fox fur, and that of Polish and Checkered Giants for ermine.

In point of rapid development and increase rabbits exceed all other meat animals. They breed when only 7 or 8 months old; the gestation period is only one month; they raise as many as 8 to a litter, and the nursing period is only 6 or 7 weeks.

Make the right start—it's half your success. Buy good stock from a responsible breeder. Study up in books and magazines on color, shape, size, defects, etc., so you will know how to buy; also on habits, foods, diseases, etc., so you will know how to care for the rabbits.

For best results do not breed a doe until she is 8 months old. About three days before it is time for her to kindle, provide a clean hutch box, lined with straw. She will soon close up the opening to the box, which should not be disturbed for about three days, and then only to count the rabbits in the litter and see if there are any dead ones in the nest. If there are more than 8 live ones, remove all in excess of 8, taking the smallest, and give them to a nurse doe or kill them. Leave it to the mother to take care of the feeding of the remaining ones as nature intended.

In a short time you will find good healthy baby rabbits coming out of the nest box. They can be weaned in 6 or 7 weeks and placed in separate hutches, and the sexes should be separated at 4 months of age.

Do not be in a hurry to breed the doe again until she is in condition. A doe will breed and produce as many as 12 young to the litter every 30 to 35 days if the buck is left with her. She will repeat this four or five times until she becomes exhausted and dies. The young will grow round and plump and to all appearances will be healthy and vigorous until 2½ to 3 months old, when they will die off without any visible cause. This is what is known as infantile mortality. It is caused by too frequent breeding and not giving the doe time to regain her vitality between litters.

A doe should not be allowed to breed oftener than once in three months. Consequently, if the young are weaned at six weeks of age she can rest for two weeks before she is bred again. During this time she should be well fed, and should be kept quiet and free from excitement.

"Thank you for your helpful letter concerning the fattening of turkeys. It certainly pays to pen them up for three weeks before selling them. Have just received a classy tom turkey from Mr. Hart. I mentioned the Press when ordering him. We enjoy your paper very much."—Mrs. Andrew McKay, Morgan Hill.

If your hens don't lay well, try feeding them on layer cake. It is great—for the hens.



Most troubles are best eliminated at the SOURCE. Bad roads are the SOURCE of much UNNECESSARY tire expense. ARE YOU BOOSTING GOOD ROADS?



Well Paid Mohawk Builders Make Longer Lived Tires

Mohawk tire builders—the men who make the Mohawk tire *by hand*—are expert workmen and draw expert workmen's pay.

They are well paid because Mohawk standards demand the *best* workmanship and we are willing to pay for men whose trade is not a "work" but a profession.

They are paid well enough to insure their continued, undivided interest and best efforts.

When you realize that Mohawk tires contain only the purest materials and more generous quantities of these — you can readily understand why Mohawk builders must be leaders. Their efficient work is requisite to the satisfactory completion of a correctly started product.

Pure materials. More of them—an extra ply of standard weight fabric, for example. Hand made. Veteran expert builders. Those are the reasons for Mohawk tire quality.

They are not the reasons you hear offered by most tire makers. No secret processes, for example—no mysterious methods.

We much prefer, knowing that secrets in tire building do not exist today, to supplant mysteries with facts, leaving the results of our arguments to the good judgment of the buyer.

Mohawk tires are handled by good dealers everywhere—in ribbed and non-skid treads—Cord and Fabric—and also in extra ply, hand made, Ford size.

MOHAWK RUBBER COMPANY
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PROTEIN SPELLS Poultry Profit

FOR BEST RESULTS feed high-grade Beef Scraps of Uniform Quality.

The dealer who induces poultrymen to use High Protein Beef Scraps is a benefactor to his customers. The best is always the cheapest.

GOLD BEAR BEEF SCRAPS

Backed by a guarantee which assures the poultryman, high and uniform quality.

Made in a government inspected packing house. Contains only blood and offal.

Food elements plainly marked on every sack.

Made and Guaranteed by

Western Meat Company

SAN FRANCISCO, CAL.

Write for our booklet, "PROTEIN FOR PROFIT."

TO STOP FEATHER PULLING.

The habit of feather pulling is usually the fault of the owner of the flock, for when birds are not overcrowded in large flocks, and are forced to work all day for the feed they get, it is seldom that the habit appears.

Insects and vermin may start the habit. The fowls peck themselves and in doing so pull out their feathers, often swallowing them. In a few days the pinfeathers begin to grow and the feather-pluckers, observing them and the moisture, which consists principally of glutinous matter, peck them out. In this way they keep the fowls quite bare of feathers.

Sometimes a lack of animal food or green stuff causes the trouble, but generally it will be found that the habit grows out of confinement and idleness.

It is important to stop the habit as quickly as possible after it is noticed. Any fowls that show signs of having had feathers plucked should be caught and the surfaces of exposed quills greased with lard mixed with extract of aloes in the proportion of one teaspoon of extract of aloes to a cup of lard. Birds picking at surfaces thus treated do not find the taste to their liking and rarely try it more than once.

Another remedy is to dissolve powdered aloes in water and wash the plumage of the birds with it. Some breeders claim that confining feather eaters in a coop for two weeks will often break the habit.

If none of these remedies do the trick and the bird is a valuable one, cut away or file the edges of both parts of the beak so that they meet for only a little more than an eighth of an inch. In this way the bird can eat readily, yet not hold a feather.

There are on the market "poultry bits" that will keep birds from eating feathers. In such a device a small piece of leather fits in the bird's mouth, preventing her from closing her beak on a feather, but not preventing her from eating. The bit is held in place by a fine steel wire passed through the nostril.

Of course, these latter treatments are for birds that are valuable for breeding or exhibition purposes. As a rule a feather-eating bird is a poor egg producer, and the quicker you can rid your flock of such a pest the better. One feather eater in a flock will cause no end of trouble and in a few weeks will make all the birds show unsightly bare necks. To kill the guilty one serves an economic purpose in the family living and removes a menace from the poultry yard.

CHICKEN FAT IN COOKERY.

"Use chicken fat, the most delicious of all cooking fats." Beneath this placard at a recent food exhibit was a roasted chicken, delicious looking and browned to a tempting turn, and beside it a glass full of clarified fat—the excess fat of the chicken.

"Well, I had abominable luck substituting chicken fat for butter in my recipes," said one spectator. "My cake fell and my pie crust was a sight." "That was because the mixture was too rich, I think," said the woman in charge of the booth. "Think of the butter you used to make which had some water in it, and to which you usually added salt. Now, chicken fat has no water in its content; it is a 100 per cent fat. Butter contains practically 85 per cent fat. Chicken fat also lacks the salt and the small amount of curd present in fresh butter. Use about four-fifths as much fat as the recipe with butter calls for and add extra salt."

Chicken fat has a different flavor from butter and when it is not clarified it is well to use it only in cakes and cookies, which have quite definite flavors of their own. However, it may be used in any cake recipe after rendering it and nothing objectionable will be noticed in the flavor. The way to render chicken fat is to heat it slowly in a double boiler with whole milk—preferably sour. Use half cup of milk to each pound of fat. Strain the rendered fat through a cloth, and when it is set lift fat from the milk which remains.

In most cases it is not necessary to render the fat. It may be used for frying purposes just as it is. When it is used as shortening for muffins, spiced cookies or chocolate cake, where its characteristic flavor will not be noticed as it might in white cake or pastry, it can be melted slowly and measured without clarifying. Keep in mind that it is 100 per cent fat. Try a little experimenting and see if you do not find that you prefer it to any other shortening.

The returns from poultry on the farm from capital investment are probably larger than the returns from any other farm enterprise.

Poultry Breeders' Directory

YOU ARE NOT TOO LATE—Our early maturing, winter laying strains, June hatch, develop quickest into profitable winter layers. "My thirty pullets laid at four, sixth month (January) cleared $31." Why? Bred 20 years to lay winters, 200-290 eggs yearly. White, Brown, Buff Leghorns; Reds; Anconas; Rocks; Minorcas; clearing customers $5. Many repeat orders, monthly, yearly. Valuable circular with proof free. 70,000 egg hatcheries supplying chicks. Thousands shipped promptly, below ordinary chicks. Breeders (Pullets). Sale beginning. J. Beeson, Pasadena, Cal.

WHITE LEGHORNS are the most profitable breed of poultry. If you are in the business for profit, you will eventually have them. Early broilers; early layers; early profits; we sell only White Leghorn Baby Chix from heavy laying Hoganized hens. Safe delivery of full count live chix guaranteed. Prices per 100: February $15; March, $14; April, $12.50. The Pioneer Hatchery, 408 Sixth street, Petaluma, California.

SINGLE COMB BROWN LEGHORNS—The large, modern, heavy-laying type that won high honors for us at the National Egg-Laying Contest. No better layers, none others so hardy. For 20 years our strain has won highest prizes at New York, Boston, Chicago, San Francisco, etc. Absolutely the finest Brown Leghorns in America. Eggs, $3 and $5 per $15; $15 per 100 Williams Bros., Fullerton, California.

LARM'S RHODE ISLAND REDS were never better. Rose and single comb hatching eggs from winners of the leading shows. Bred to lay. Eggs, now half price, from the best breeding lines in existence. Remember a few June and July chicks round into winners for the December and January shows. Send for circular. 3 Rose-comb cockerels. Wm. Larm, 3915 39th Ave., Fruitvale, Cal.

BARRED PLYMOUTH ROCKS—Champion prize winners and wonderful layers. Choice cockerels, hens and pullets for sale. Hatching eggs from twelve grand matings. I have made a specialty of Barred Rocks for over twenty years. That's why I win at all leading shows. "Nothing Better In Poultry" than Vodden's Barred Rocks. Catalog free. Chas. H. Vodden Box 396, Los Gatos, California.

PEERLES WHITE WYANDOTTES—Our 200-egg strain, bred for years for show qualities and high egg production. 50 cockerels, 100 pullets for sale. Trios and mated yards. Eggs for hatching. Catalogue free. J. W. Atkinson, Box 8, 130 Willard St., San Jose, California.

BABY CHICKS—Barred Plymouth Rock, R. I. Reds, Buff Orpingtons, Black Minorcas, Brown, White and Buff Leghorns from Hoganized stock, bred to lay. Tobener Poultry Ranch, Washington Ave., San Jose, Cal.

SULLIVAN'S FAMOUS Buff Orpingtons—Eggs for hatching, $3.00 for 15; $12.00 per 100. No "baby chix." Trios and pens for breeders; write for prices. Mr. and Mrs. W. S. Sullivan, Agnew, Santa Clara Co., Cal. Phone San Jose, 5205 R 5.

CROLEY'S RED STAR CHICK FEED—California's standard Baby Chick Feed for twenty-five years. Manufactured by Geo. H. Croley Company, Inc., 8th and Townsend Sts., San Francisco, Calif.

S. C. WHITE LEGHORN CHICKS—Any quantity from A-1 Hoganized and trapnested stock, winners of 1st, 2nd and special for pullet and 1st cockerel at Pacific Coast Land Show. Orders taken for June 7. A. O. & P. M. Forster, 2918 Otis St., Berkeley, Calif.

WHITE LEGHORN BABY CHICKS—Every week, good strong youngsters from fine layers. Also other varieties. Write for circular. Stubbe Poultry Ranch and Hatchery, Palo Alto.

SANTA CLARA VALLEY HATCHERY has the chicks for you from six different standard breeds, all bred for egg yielders. Can furnish references from my old customers if desired. Lincoln Ave., San Jose, California.

MODEL POULTRY FARM—White Leghorn specialists. Our fifteenth year. Baby chix and hatching eggs for sale. Our prices are right. W. C. Smith, Prop. Corning, Calif.

EGG BRED—Buff Brown, White Leghorns, Golden Campines, Dark Cornish. Winners wherever shown. Send for circular. Percy Ward, 3142 Ward St., Fruitvale, California.

GOLDCROFT BUFF ORPINGTONS—Winners San Jose show. Eggs, $5.00 and $3.00 setting. Heavy laying. Choice breeders for sale. Samuel Abrams, Los Altos, Cal.

BABY CHICKS—We have the large heavy-laying S. C. White Leghorns, severely culled last year. Send for prices. Tupman Poultry Farm, Ceres, California.

BABY CHICKS—Booking orders for spring deliveries. White and Brown Leghorns, Rhode Island Reds, Barred Rocks. E. W. Ohlen, Campbell, California

EASTMAN'S BRED TO LAY Hoganized and trapnested Barred Plymouth Rocks. September chicks. Fairmead Poultry Farm, Fairmead, Calif.

CHICKENS, DUCKS, GEESE, GUINEAS, Pea Fowl, Pigeons. Wm. A. French, 545 W. Park St., Stockton, California. Stamps.

BUFF ORPINGTONS, BUFF DUCKS, BOURBON RED TURKEYS—The Ferris Ranch. Rt. 2, Box 144D. Pomona, California.

BRONZE TURKEY EGGS—No more eggs till further notice. Albert M. Hart, Clements, California.

RABBITS.

NEW ZEALAND REDS—Pedigreed registered from prize-winning stock. Pedigreed does bred to registered buck, $5.00. Does 4 months eligible to registration, $4.00; 5 months, $5.00. Satisfaction guaranteed. E. Peppin, 86 Cambridge, San Leandro, Cal.

WILSON BROS. FEEDING BULLETIN tells how and what to feed rabbits. Price, 25c; catalog, 10c; circulars free. Wilson Bros. Flemish Rabbit Farm. Rabbits and Remedies. Highest award World's Fair, Route 4. Box 13R, Los Angeles, Calif

RAISE RABBITS—Most profitable and popular small animal in America. Big demand. Clean, fascinating work. Send 10c for copy of leading rabbit magazine and our Rabbit Book, P N 5. Gilmore's Rabbit Farm, Santa Barbara, Calif.

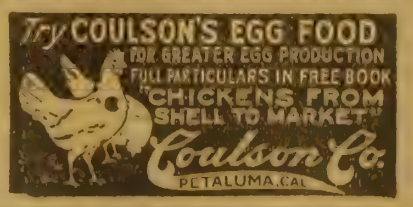
NEW ZEALAND REDS—the better kind. A fine lot of them in all ages now ready for delivery at right prices. The Oakland Farm, F. Anton, Owner, 1617 San Pablo Ave., Oakland, Cal.

PEDIGREED FLEMISH GIANTS; also utility stock. Prices low. Laura Beeching, 1578 W. 46th St., Los Angeles, Calif.

NEW ZEALAND RED RABBITS—Young stock for sale. O. C. Thompson, St. Helena, Cal.

NEW ZEALAND REDS—First class utility does bred $5.00 each. Young does, $2.50 each. F. R. Caldwell, Broadmoor, San Leandro.

RAISE RABBITS FOR US—We supply the breeding stock. Send stamp for particulars. H. E. Gibson Co., Arcadia, Calif.



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—because Zerolene meets with scientific accuracy the lubrication needs of the car. It is refined from selected California crude oil. Deposits least carbon. Get a Correct Lubrication Chart for your car.

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THE HOME CIRCLE

I SHALL NOT PASS THIS WAY AGAIN.

"The bread that bringeth strength I want to give,
The water pure that bids the thirsty live;
I want to help the fainting day by day;
I'm sure I shall not pass again this way.

"I want to give the oil of joy for tears,
The faith to conquer crowding doubts and fears,
Beauty for ashes may I give alway;
I'm sure I shall not pass again this way.

"I want to give good measure running o'er,
And into angry hearts I want to pour
The answer soft that turneth wrath away!
I'm sure I shall not pass again this way.

"I want to give to others hope and faith,
I want to do all that the Master saith;
I want to live aright from day to day;
I'm sure I shall not pass again this way."

JUNE BRIDES AND GRADUATES.

June, the month of roses, of happy brides and youthful graduates! It is the very essence of the first days of summer—of a maturer life. The bud has blossomed into a rose; the bride is now a young matron; and the graduate is departing from the springtime of youth into greater activity and the realities of life. Books have been laid aside, and the erstwhile student is revolving in his mind the vocation he intends taking up as his life work.

Change is in the air—the transition from springtime to summer days; the days of ripening fruit, the full-blown flower, the full harvest. These are symbolic of the fuller life, with its duties and responsibilities, which come to all of us, whether we will or no. They come unbidden, like an unwelcome guest at the feast.

How full of interest is the threshold upon which stands the bride, as well as the young graduate, as each peers into the future roseate with promise. They are thinking only of the days of sunshine, of joy and happiness ahead—the froth, the bubble, which when grasped, crumples and melts into nothingness and disappears. They are unmindful that sunshine alternates with shadow, joy with sorrow, and that bubbles at the height of their greatest beauty, expand to their own destruction. But with the eagerness born of youth to learn what lies just around the corner, or following the beckoning bend in the road, would a single one of these young hearts choose to turn back? Nay, but rather would they court the unknown, wherein lies the charm of mystery. And when the unknown becomes the known with its shadows, sorrows and evaporated bubbles, then the youth and maiden are just beginning to live, for this is life—disillusionment, reality. It is a testing time—of wits, of hope, endurance, of manhood and womanhood—yea, of the very soul itself. The weaker may succumb against the buffetings of fate, but the stronger, with each ill wind that blows, gathers strength, and thus is able to brace himself to meet the onrush of cruel winds that cut and bite and sting. By these things we grow. Are we happy? No, but it is life. And life is the one great desire of all, regardless of its preponderance of sunshine or shadow.

For all these grim realities, stripped of their garlands which exuberant youth wove back in the days when first they stood upon the threshold of commencement day, or as a blushing bride, there are compensations. Life is richer and fuller for having climbed, even though with bleeding footsteps, the steep paths up rocky hillsides, as well as for the sojourn through the pleasant green valleys. There is a joy in the consciousness of duty well done—the knowledge that we never shirked, and that we hesitated not at the steep places—and above all, that one can stand with bared soul and be not ashamed.—Z. D. H.

BEAUTY OF ROCK GARDENS.

Why is it we see so few rock gardens in California? We have the rocks a-plenty, as well as the semi-arid plants; the combination of the two, with perhaps a few hardy flowers for a border, makes a thing of beauty. Our hillsides adapt themselves wonderfully to all sorts of landscape gardening, and particularly to rock gardens, which display themselves more advantageously in terraces such as are possible on the steep slopes here in California.

All varieties of cacti, the Spanish dagger (or yucca), century plant, and those little green rosettes commonly known as "hen and chickens," grow wonderfully in this climate without water, care or attention whatever.

For color, there are many flowers which are most adaptive for a rock garden, such as petunias, poppies, portulaca (or moss rose), and other varieties of moss, as the lipia, etc.

A rustic arbor or summer house is an artistic addition and blends in well with rocks. Such an arbor could be made of the usual rough branches of trees. Cobblestones could be used most effectively in the columns supporting the structure. Another arbor idea is to have one of those Japanese affairs, made either of bamboo or long slats wired into an umbrella shape, about the size of the huge umbrellas one so often sees planted in the sands at the beaches. This garden variety of umbrella affords little shade, it is true, but it is long on artistic effect, and that is what we are striving for in a rock garden.

A sun-dial is an almost necessary adjunct to such a garden scene, and affords another opportunity for using cobblestones to good effect, in the base or pedestal supporting the dial.

An artificial pond or lake, surrounded by upright, jagged-edged stones, with perhaps a small waterfall or cascade purling its way a-down the small boulders a few feet higher up on the hillside, has a charm all its own. Some gold fish or just plain tadpoles, disporting themselves beneath sheltering leaves of water lilies and fern, add the bit of oasis in this otherwise arid scene.

Aside from the actual beauty of a rock garden, there are many waste places on rocky, unproductive soils where such a garden becomes almost a necessity to obliterate the unsightly aspects of such waste—where the desert land can be made to "blossom as the rose." There are many possibilities in rock gardening, and one can elaborate as much as the individual taste or fancy suggests, or as the garden space will permit.—Z. D. H.

FASHION'S FANCIES.

For children from two to eight years of age a simple white net frock, with a flesh-colored silk underslip, is quite au fait. Ribbon trimming in contrasting shade is used.

The coat frock of tricolette, poplin, moire or linen, is quite the rage just now.

Gaily colored garden smocks, with decorations of bright yarns and appliqued designs, are quite the thing for sport wear. They are worn with hats to match.

Evening gowns have a huge butterfly of tulle perched upon the left shoulder.

Fashion decrees that milady "do" her hair very, very high, suggestive of the historic days.

Vests of embroidered linen, edged with filet, are a novelty.

Tassels of all sizes are used as a finish to sleeves, tunics and vests.

A new feature is the white linen waistcoat embroidered in colors.

Skirts are so extremely narrow at the bottom that they suggest the pantalettes of olden time, underneath a knee-long skirt or one of hip length.

Handkerchiefs with colored borders are worn with tailored suits.

RENOVATING THE REFRIGERATOR

A good many people who thoroughly believe in the sanitary qualities of paint never think of giving the interior of their refrigerators a coat, notwithstanding paint dealers sell an enamel specially intended for refrigerators. One of the features of this special enamel is that it will not contaminate the food. This is by no means true of all enamels.

It is difficult to think of anything which it is more important to keep thoroughly clean and sanitary than a refrigerator. Ptomaine poisoning and other serious diseases may result from neglect to do this.

Of course, this advice to paint applies particularly to refrigerators having galvanized iron linings; those having porcelain or enameled linings require only frequent washing with soap and water to keep them clean and sanitary.

GREEK MEETS GREEK.

"What's coming off out in front there?" asked the proprietor of the Tote Fair store in Tumlinville, Ark.

"A couple of fellers from Straddle Ridge 'swapped' mules," replied the clerk, "and now each is accusing the the other of skinning him."

"Well, then, why don't they trade back?"

"I reckon they are both afraid of getting skinned again."

GIFTS FOR GRADUATES.

Among the less expensive gifts for graduates are: Boxes of stationery, boudoir caps, fountain pens, lingerie, clasps, silk hosiery, shoe buckles, embroidered handkerchiefs, pyraline toilet articles, small pieces of jade jewelry, beads, vestees, and any number of other pretty things to be seen in the shops now.

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MINIMIZING KITCHEN WORK.

First of all, rid yourself of the idea that you must have a large kitchen, which so often is the meeing place of the entire family while they are waiting for dinner to be ready. A large kitchen means more steps and more work, and inversely, a small kitchen reduces the number of steps and likewise the amount of work. A successful plan is to have the stove near enough to the work table or sink so that by merely taking a step or two, you can reach one or the other. For instance, in preparing vegetables or washing dishes, the housewife can, by a slight turn reach the stove and stir anything which may require attention.

Then again that bugaboo of most cooks—dish washing—loses its horrors if one knows how to go about it in the right way. First, in clearing off the dishes from the dinner table, scrape all food from off the plates and pile them together; do the same with the saucers or smaller dishes. Put all left-over food in clean dishes, and set it away before starting to wash the dishes. Place all the soiled dishes on the right hand side of the sink, and in washing them, lay them on the left side of the sink to drain. The cupboard for kitchen dishes should also be on the left hand side to facilitate the putting of them away.

In hotels and large institutions the practice is to have a wire-drying rack for dishes and when all are washed in hot suds, pour very hot or boiling water over them and leave them to dry without wiping. This is really more sanitary than using a cloth which often streaks or leaves lint on the dishes.

One of the greatest comforts to have in the kitchen is a high stool to sit on while preparing vegetables, berries, etc. These can be purchased in any of the furniture stores for about a dollar each. When once used, a housekeeper will never be without one again. And above all, have the space under the sink open (not boarded up for a closet), so that the worker while occupying the high stool, will be able to get her feet and knees under the sink. Where this is not possible, trying to sit on the stool in a sidewise position is more tiresome than standing. A comfortable rocking chair often determines whether one's day shall be "tiresome and gray, or joyous and gay," for while the cook can snatch only two or three minutes at a time to enjoy its comfortable embrace, yet the good results are felt at the end of the day's work.

After all, system in the kitchen is as essential as in an office or shop; and the woman who wisely plans her work ahead, uses her brain, and steers away from the hit-or-miss methods, is the one who has time for a good book occasionally, more time with her family and friends. In short, time for self-development and improvement.—Z. D. H.

MIGHT BE TOO MUCH FOR HIM.

Southern Parson to Convert: "Does yo' think yo' kin keep in de straight and narrer path now, Sam?"

Sam: "I reckon I kin, parson, ef dey aint's too many watahmellion patches erlong de road."

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See and know only the good in those nearest to you, to begin with. In every detail of your daily life know only the good, which in very truth is the only real.

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STANDARD OIL COMPANY (California)

MICA AXLE GREASE



Market Comment

Honey Price Set.

The Tulare County Bee Keepers' Association has set 20c per pound as the price for 1919 orange honey as against 20 5-6c last season.

Strawberry Prices Sag.

There is a feeling on the street that when the second crop of strawberries come in prices will drop below the $10 mark, which seems to have established itself as a minimum so far this season. (A S. F. boycott is now on.)

Clings Are Climbing.

It has been announced that cling peaches are under contract to bring as high as $45 a ton. Twenty-two dollars was originally the contract price. Independent growers believe the price will go still higher.

Lake County Bartletts Advance.

As high as $85 a ton, orchard run, has been paid for the Bartlett pears of Lake county. Two months ago the contracting started at $60, and gradually increased. Forty-three dollars was the top price last year.

Cost of Producing Cotton Rises.

Studies of the cotton situation emphasize the amount and hours of farm labor involved in producing the crop, the amounts of seed and fertilizer used, as well as the cash costs, such as ginning, and the relation of cotton growing to other farm enterprises.

Grape Growers Face Roseate Future.

Grape growers are reported to be receiving higher prices than were ever before offered for grapes. The independent raisin men are offering $40 per ton. Buyers are offering 9¾c for Muscats, 10 cents for Thompsons and 8 cents for the dried wine grapes.

Sutter Prune Contracts Overbid.

C. E. Sullivan, farm adviser of Sutter county, reports a voluntary increase in the prune prices to be paid by the packing companies over that for which growers signed contracts last year. As high as 13c a pound is believed to be the price that will be paid.

Flour Prices Relaxed.

In spite of the large contributions of wheat and wheat flour to our Allies' needs, there is being reserved at home a sufficient supply of wheat and wheat flour for all our domestic needs. The excitement and advance in flour prices caused by the circulation of erroneous statements was at no time warranted.

Barley Market Strengthening.

New crop barley has been offered for June delivery at $2.42½ per cental. It is an opening price much higher than was expected the first of the year, when the California warehouses were bulging with the huge surplus from the 1918 crop. The old crop of barley is almost cleaned up and on a steadily advancing market.

Raised Rates on Citrus Fruits Protested.

Southern California citrus fruit growers have protested before the Interstate Commerce Commission against increased freight rate, averaging 25 per cent, ordered June 25, 1918, by William G. McAdoo, then Director-General of Railroads. Representatives of the railroad lines denied the charge that the rates are excessive, saying the increases are necessary because of greater cost of operating of the railroads.

Beef Prices Due to Drop.

A decrease in the price of beef is "immediately at hand," according to a statement just issued by the Bureau of Public Relations at Chicago. The reasons given are that cheaper grass-fed cattle are now moving to market; exports of beef have practically ceased, and the Government has stopped buying. The local market is weak, and although cattle values have declined $2 to $3 per hundred during the last month, packers claim that they cannot make a profit on steers bought at the present prices of 11 and 11½ cents, and state that there will be a further reduction in the near future.

THE MARKET REPORTS

Figures Given Are Independent and Reliable. Prices Quoted as Paid to Producers.

SAN FRANCISCO.

San Francisco, June 3, 1919.

WHEAT.

The following prices were announced by the Federal Grain Corporation last year and are still in effect. They are figured f. o. b. San Francisco, Los Angeles, Seattle, Tacoma and Portland and guarantee the grower a minimum of $2 f. o. b. shipping point:

Per bushel—	
No. 1 hard	$2.20
No. 2	2.17
No. 3	2.13
No. 1 soft	2.18
No. 2	2.15
No. 3	2.11
Club or Sonora, No. 1	2.16
Do, No. 2	2.13
Do, No. 3	2.09
Recleaned, per ctl.—	
California	$4.30@4.40
Early Baart	None

BARLEY.

Barley continues to show strength and to advance gradually in price. This increase is entirely due to export demand as very little is changing hands locally.

Feed	$2.60@2.65
Shipping	2.75@2.80

OATS.

Oats continue inactive at unchanged quotations. Offers to sell or buy in a considerable amount would have a marked effect on present nominal quotations.

Red feed, per ctl.	$2.30@2.40
Red for seed	Nominal
Black for seed	Nominal
Recleaned Red or Black for seed	Nominal

CORN.

While there is no individually large demand for corn, there is a fair demand for hundred-pound lots and last week's prices were fairly well sustained.

California	$3.30@3.50
Egyptian, choice	Nominal
Milo	Nominal

HAY.

The closing of the hay market during Friday and Saturday of last week affected the receipts for that period, although arrivals have been proportionately heavy since that time. The arrivals have been moving slowly and quotations have been shaded in many cases to place the hay without sending it to the warehouse. In the quiet market, however, prices are nominally unchanged.

No. 1 wheat, per ton	$16.00@18.00
No. 2 Wheat, per ton	12.00@15.00
Choice Tame Oat, per ton	17.00@19.00
Wild Oat, per ton	11.00@14.00
Barley Hay, per ton	11.00@14.00
Alfalfa, per ton	15.00@19.00
Stock Hay, per ton	11.00@13.00
Barley Straw, per bale	.50@ .80

FEEDSTUFFS.

Like the hay market the holidays caused the demand for feedstuffs to be reduced to a minimum. In the main the market is weak, with the exception of cracked corn, which was advanced to $72 and $73.

Cracked corn	$72.00@73.00
Rolled barley	53.00@54.00
Rolled oats	52.00@53.00
Alfalfa meal	33.00@34.00

POTATOES, ONIONS, ETC.

Practically no more of the old stock of Rivers are arriving, while new Rivers are coming in in quantities. Listed under the general head of "Other New Potatoes," they sell on the street from $3.25 to $4.25. Washingtons are no longer being shipped here and the old Oregons and Idahos will soon be off the market. The warehouse stock of onions has about been sold and quotations on this description are nominal. New red onions are stronger while Bermudas sell at last week's figures. New green onions from the Bay district are plentiful and sell lower than last week. Eggplant is arriving in quantity now and the southern tomatoes are again quoted. As the market becomes better supplied with a variety of vegetables, prices are apt to show material daily fluctuations.

String beans	12@15c
Peas	3@ 7c
Carrots, per sack	$2.50@3.00
Asparagus	6@8c
Rhubarb, Strawberry, box	$2.00@2.50
Cucumbers, hothouse box of 30	$1.50@2.50
Los Angeles	$1.25@1.50
Eggplant per lb.	10@15c
Lettuce, per crate	75c@$1.25
Celery, crate	Nominal
Tomatoes, Southern, per crate	$1.75@2.50
do, Mexican	$3.00@3.50
Sprouts	Nominal
Summer squash	90c@1.10
Green Corn, Imperial Valley	40@50c
Potatoes—	
Rivers	None
Oregon	2.00@2.40
Washington	None
Idaho	2.00@2.25
Garnets, new on street	$4.00@4.25
Other new on street	$3.25@4.25
Sweets, per sack	None
Onions, Warehouse Stock—	
Australian Browns	Nominal
Onions, new, red	$3.50@4.00
Bermudas—white	3.00@3.25
do, yellow	$3.00
Green Alameda	$1.75@2.00
Garlic	15@20c

BEANS.

The statement made last Thursday that 200,000 bags of the surplus bean crop of California had been sold in New York to the Federal Export Co., interested the local bean dealers, but they declare as far as they know, no such sale has been made. A slight demand for blackeyes developed during the week and the price immediately responded. In the case of Limas, the market is pretty well cleaned of this variety. The rest of the market is undeniably dull.

Bayos, per ctl.	$6.00@6.25
Blackeyes	$3.50@3.70
Cranberry beans	5.75@6.00
Limas (south, recleaned)	$8.50
Pinks	5.75@5.90
Mexican Reds	4.75@5.25
Tepary beans	2.50@2.75
Garbanzos	11.75@12.00
Large whites	5.80@6.00
Small whites	6.75@6.90

POULTRY.

The arrival of broilers still continues in excess of the demands of consumption or the ability of the feeders to care for them before killing for storage. Otherwise there are no changes in quotations or conditions. Turkeys are in such small demand and so few are arriving that there is no market quotation.

Turkeys, live, young spring, lb.	Nominal
do, old	Nominal
do, dressed	Nominal
Broilers, 1½ to 2 lbs.	30@35c
do, 1¼ lbs.	30@32c
do, ¾ to 1¼ lbs.	28@30c
Fryers	45@50c
Hens, extra, per lb. colored	36@38c
do, Leghorn	36@38c
Smooth young roosters, per lb. (3 lbs. and over	50@55c
Old roosters, colored, per lb.	22c
Geese, young, per lb.	35c
do, old, per lb.	33c
Squabs, per lb.	45@50c
Ducks, young	35c
do, old	34c
Belgian hares	14@15c
Jack rabbits	$2.50@3.50

BUTTER.

The local exchange as well as Eastern exchanges closed on Friday and Saturday of last week, and on re-opening Monday of this week it was found that demoralized conditions existed in the East and these were at once reflected on the local market. On Monday extra butter sold 2½ cents below the price of last Thursday, and today, Wednesday, it sold three cents lower still. New York dispatches describe the market in that city by the word "demoralized," but give no hint of what brought the condition about. It is surmised that factors in the condition are the extremely warm weather, which increases the expense of carrying butter and also the opening up of other shipping points to Europe, notably from Argentine and Australia. Locally the situation prevents the shipping of California butter East, and some of the surplus will doubtless go into storage. At present there is only a little more than a million pounds in local storage, a much smaller amount than at the same time last year, but dealers are always fearful of storing on a falling market, and many prefer to take a loss to the risk of storing.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extra	57	..	..	54½	53½	51½
Prime firsts	..	..	..	Nominal		
Firsts	55	..	..	52	..	..

EGGS.

While neither the local nor the Eastern market for eggs is as demoralized as the butter market, eggs have followed the lead of butter and made material reductions in prices this week. A much further reduction in price will find a flood of eggs going into storage as the amount on hand at present is a long ways from the normal storage at this season of the year.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	47	..	..	46	45	44
Firsts	46½	46½	46½	46½	..	..
Ex. pullets	44	..	..	42½	42	40

CHEESE.

Trading in cheese was not very lively this week, but the trend was downward in sympathy with butter. The Oregon cheese showed great resistance to lower prices, but California dropped off three cents.

Fancy California flats, per lb.	25c
California Y. A., fancy	27½
Oregon Y. A.	33
Oregon Triplets	34
Monterey cheese	22½@24

FRESH FRUITS.

The fresh fruit market finds daily additions to the varieties offered. Raspberries and loganberries are now coming in regularly, and will soon reach their normal summer prices. Blackberries are occasionally on the market and will unndoubtedly put in a regular appearance in a few days. Currants have already nearly reached their summer quotations. Cantaloupes are becoming more numerous and are rapidly dropping in price.

California apples	$3.50@4.00
Northwest apples	3.50@4.00
Winter pears	3.00@4.00
Peaches	$1.50@1.75
Apricots	$2.00@2.25
Loquats; per lb.	7@8
Strawberries, chest	$10.00@12.00
Raspberries	$16.00@18.00
Loganberries	$12.00@15.00
Currants, box	$1.00@1.25
Gooseberries	5@8
Cherries—	
Royal Anne	10@14
Black, bulk	10@12½
White, bulk	7@ 8c
Cantaloupe, Standards	$5.00@6.50
do, Ponies	$4.5
do, Slats	$2.25@2.5

CITRUS FRUITS.

Lemons took an upward turn this week and are quoted 75 cents higher on fancy and choice and 50 cents higher on standard. Grapefruit also advanced in price and Valencia oranges came in to sell at a much wider range. Navels are now a thing of the past.

Oranges, Valencia	$4.00@5.00
Lemons, fancy	$4.50@5.00
do, choice	4.00@4.50
do, standard	3.00@4.00
Lemonettes	2.00@3.00
Grapefruit	3.50@4.00

DRIED FRUITS.

There was something of a lull in the active buying of dried fruits this week. This is regarded wholly as temporary and is in no way regarded as a weakening of the market. Prices are maintained at last week's standards.

Apples	17@17½
Pears	17c
Peaches	14½@15c
Apricots	20@26c
Prunes	12½
Figs, Adriatic	14@18c
do, Calimyrna	15@20c

Special Deciduous Market Report

By J. L. Nagle.

The deciduous season is now fairly under way and practically 70 per cent of the cherry crop is sold and in transit. The crop of cherries in Placer county was not in excess of 25 per cent of normal, and about 50 per cent in the Sacramento Valley, Suisun and Cordelia districts, and Santa Clara Valley. The quality this season, however, has been excellent and fruit running to large sizes, due to the shortness of the crop. All markets have responded liberally to the high prices and fruit arriving in good condition has met with a ready demand.

Apricots are now moving and the hot weather during the last few days has forced the crop. Little damage has been done on account of the heat, though some sections may run to small sizes.

Early Mayflower peaches have put in an appearance. Plantings of this variety are not sufficient to enable us to get any particular line on the market but indications are that the peach crop can be handled to good advantage if disposed of in markets not affected by Eastern competition.

Early plums are light; in fact, this may be said of all varieties in some districts. Very few shipments have moved to date, but next week the movemnt will be fairly heavy.

Bartlett Pears this season will be of exceptional quality; fruit will be clean and well shaped. The crop in Placer county is not in excess of 60 per cent. It is spotted on the Sacramento River some orchards running to full crops and others hardly 60 percent. In the Suisun and Santa Clara Valley districts, the pear crop is reported, despite the heavy drop, as being nearly normal. With favorable growing weather, Bartletts should be moving in three weeks.

Present indications are for a good crop of Tokays and Malagas. Vines are growing rapidly and the berries setting well.

The demand from nearly all sections of the country, and especially from the Middlewest, in the wheat-producing districts, is unusually active and despite the attractive offers being made by the dried fruit packers and canners for peaches and pears, indications are that the shipment of green fruit will be heavy. Averages for the week:

NEW YORK — Tartarian Cherries, $3.21; Tartarian, lugs, $4.83; Rockports, $3.04; Chapmans, $3.42; Royal Annes, $3.82; Burbank, $2.30; Oxheart, $2.00; Bing Cherries, $4.39; Spanish, $3.75; Oregon, $3.95; Mayflower Peaches, $3.40; Newcastle Apricots, $4.10; Moxelle, $3.85; Seedling, $2.35.

BOSTON—Tartarian Cherries, $3.55; Tartarian, lugs, $4.50; Royal Annes, $2.90; Chapman, $3.55; Rockport, $3.45.

CHICAGO—Tartarian Cherries, $2.63; Tartarian Lugs, $5.22; Royal Annes, $2.58; Oxheart, $2.28; Bing Cherries, $3.50; Rockport, $2.75; Chapman, $2.85.

NEW PEAR PRICES FOR 1919 ARE ANNOUNCED.

The Board of Directors of the California Pear Growers' Association, at their meeting on June 2nd, established a price of $85 per ton f. o. b. point of shipment for No. 1 Bartlett Pears for canning and $50 per ton for No. 2 pears for canning.

Owing to the remarkable demand for dried pears, it is probable that at least 20,000 tons of fresh Bartlett Pears will be dried this year, thus utilizing about one-fifth of the entire crop of California. The demand for Eastern shipment of fresh pears is unusually large this year, and buyers are freely offering $2.25 to $2.30 per box f. o. b. After deducting the cost of boxes and packing, this will net the grower $87.50 per ton. Probably about 6,000 carloads will be shipped East this season as against 5,000 cars last year.

At these prices pears are cheaper than cherries which are bringing $200.00 per ton; cling peaches at $100.00 per ton, or apricots at $100.00 per ton.

RICE.

The mills have completed the season's milling with the exception of a few lots of damaged rice yet to be allocated. They have all sold their rice during the past season faster than they have been able to mill, and consequently, when the last lots of paddy arrived at the mills they had no more rice to offer. Immediately this condition was realized there was a wild scramble to replenish stock throughout the country. The Japanese dealers seemed to realize the necessity of carrying large stocks to take care of their trade, and they now have practically all the good rice available in California. This they have been selling from $7.85 to $10.00, and the latter price may be taken as the quotation on good Fancy Japan today.

HONEY.

No changes developed in the honey situation during the week, and apparently but little of the orange honey will find sale in this market.

HIDES.

Napa prices are: No. 1 native steers, 50 lbs. and up, 24c; do. cows, 60 lbs. and up, 22c; No. 1 extremes, 30 to 45 lbs., 26c; No. 1 muffs, 45 lbs. and up, 24c; No. 1 native bulls, 18c; No. 1 center branded hides, in all grades, 2c less than base price and No. 2 center brand, 3c less.

Wet salted horse hides—No. 1 large, skinned or hoof, $6@8.75; do. medium, $4@5; do. small, $1@3.50; No. 1 colts, 50c@$1.

LOS ANGELES.

Los Angeles, June 3, 1919.

BUTTER

Butter prices are still declining, showing a drop of 2c since last week's report. The demand, however, is keeping up well and good sales are reported. Receipts for the week, 398,000 lbs.

We quote:

California extra creamery	57c
do. prime first	55c
do. first	54c

EGGS

The egg market shows a decline. Receipts also have dropped off since the report of a week ago. The demand is only fair. Receipts for the week, 1,726 cases.

We quote:

We quote:

Fresh ranch, extra	46c
do. case count	45c
do pullets	43c

POULTRY.

Broilers show the only change in price to report in this market, and the demand is very good for this grade of stock. On all else it is slow sale with little demand.

Broilers, 1 to 1¼ lbs.	27c
Broilers, 1½ to 1¾ lbs.	28c
Fryers, 2 to 3 lbs.	40c
Roosters (soft bone), 3 lbs. and up	35c
Stags and olds roosters, per lb.	14c
Turkey	35@40c
Hens	36c
Ducks	34@35c
Geese	28c

FRUITS

Apples are scarce. Quotations off the market. The only supply now is strictly cold storage. Demand for berries is dull owing to high prices, caused by unfavorable weather conditions. Shipments show some improvement since warmer weather. Cherries high but good sale. We quote from growers.

We quote from growers:

Apples—	
Black Twigs, Northwest pack	$3.50@3.75
Baldwins, Northwest pack	3.25
White Pearmains, 4-tier	3.50@3.75
Yellow Newtown Pippins, 4-tier	3.25@3.75
Winesap, loose, per lb.	7½@8½c
Roman Beauties, Northwestern, per peck	3.50@3.75
Blackberries, case 30 boxes	$4.00@4.50
Raspberries, case 30 boxes	$3.75@4.00
Cherries, lb.	10@15c
Gooseberries, lb.	11@12c
Apricots, lb.	7@ 9c
Peaches, per lb.	6@10c
Strawberries—	
30 basket crates, fancy	$5.00@5.50
Poor to choice	$3.50@4.50
Blackberries, case 30 boxes	$4.00@4.50
Raspberries, case 30 boxes	$4.50@4.75
Cherries, lb.	12c@15c

VEGETABLES.

Potato prices hold firm. Cabbage shows slight drop. String beans also reported lower. Sweet potatoes are off the market. Asparagus also lower. Tomatoes, cucumbers and lima beans now coming in from Imperial Valley. Imperial Valley melons arriving and the demand is reported good for them. All staples doing well.

Potatoes—	
Oregon Burbank, per cwt	$2.40@2.50
Idaho, Russets, per cwt	$1.90@2.00
New potatoes, lug box	$1.00@1.25
Sweet potatoes, per cwt	$3.75@4.00
Okra, per lb.	35@40c
Onions—	
Onions, New Red, per cwt.	$4.00@4.50
Imperial Valley white silver wax, crate	$4.00
Imperial Valley Wax—yellow	$4.00
Cabbage, per 100 lbs.	$1.25@1.50
Rhubarb, per 30-lb. box	$1.25
Summer squash—	
Imperial Valley, 4 basket crates	.90c@1.00
Bananas, per lb.	9@12c
We quote from growers:	
Peas, per lb.	8@10c
Kentucky Wonders	9@10c
String, Wax	7@9c
do. Green	7@8c
Potatoes, Imperial Valley 4 basket crate	$2.25@2.50
Cucumbers, lug box	$2.25@3.50
do, flats	90c@$1.00
Lima Beans, Imperial Valley lb.	15c
Cantaloupes, Standard and Pony crates	$5.00
Watermelons, 100 lbs.	$5.00
Cabbage, per 100 lbs.	$1.00@1.20

BEANS

A better price is quoted in this market and the demand is increasing. The market was more active during the past week.

Limas, per cwt.	$8.00
Large white, per cwt.	6.25
Pink, per cwt.	6.50
Small white	6.25
Blackeyes, per cwt.	3.25
Tepary, per cwt.	$2.00@2.50

HAY.

Grain hay is very dull and quoted lower this week. Choice alfalfa in fair demand with prices steady. We quote prices f. o. b.

We quote f. o. b. Los Angeles.

Barley hay, per ton	$18.00@21.00
Oat hay, per ton	$20.00@22.00
Alfalfa, northern, per ton	$19.00@21.00
Alfalfa, local, per ton	$20.00@22.00
Straw, per ton	9@10.00

ALFALFA GROWERS OF CALIFORNIA, INC.

The market is quite strong for first class alfalfa. The Association has large tonnage bookings for high class hay at highest market prices and the purchasers of this kind of hay are anxious for delivery. Sales of alfalfa by the Alfalfa Growers of California, Inc., for the week ending June 3rd at the following prices.

f. o. b. Los Angeles.

No. 1 Dairy	$26.00
Standard Dairy	$21.00@22.00
Standard Alfalfa	18@20.00
Stock Alfalfa	14.00@18.00

Special Livestock Market Report

San Francisco, June 4, 1919.

CATTLE—The badly demoralized cattle market in the East has had little appreciable effect on local quotations, though its influence is felt in a marked weakening of the local situation. Cattle are coming in freely, and another drop in prices is imminent.

Steers—	
No. 1, weighing 1000@1200 lbs.	11@11½c
do, weighing 1200@1400 lbs.	11@11½c
do, thin	7@ 9c
Cows and heifers—	
No. 1	9@ 9½c
do, second quality	8@ 8½c
do, common to thin	5@ 6c
Bulls and stags—	
Good	6½@ 7c
Fair	4½@ 5½c
Thin	3@ 4c
Calves—	
Lightweight	12½c@13c
Medium	11@12c
Heavy	8½@10c

SHEEP—The sheep and lamb market is somewhat easier, though prices paid by butchers and packers have not nominally sagged. The recent slump in mutton animals in the East has been checked. California springers have been selling there up to $17.50@18.50. Anything wearing wool commands a premium.

Yearlings	11@13½c
Milk	13@13½c
Sheep, Wethers	10½@11c
do, Ewes	8½@ 9c

HOGS—There is a heavy movement of hogs to this market at the present time and prices have slumped a fraction of a cent. A large proportion of unfinished stuff also is arriving, and buyers are shy of such offerings.

Hogs—	
Hard, grain fed, 100 to 150	18¼c
do, 150 to 250	18¾c
do, 250 to 300	18¼c
do, 300 to 400	17¾c

DRESSED MEATS.

Steers, No. 1	17@17½c
do, second quality	16@16½c
Cows and Heifers	14@15c
Calves as to size, etc.	18@21c
Lambs, Suckling	22@24c
do, Yearling	20c
Sheep, Wethers	18@19c
do, Ewes	15@17c
Hogs	27@28c

Los Angeles, June 3, 1919.

CATTLE—This market remains unchanged and is reported dull.

Per cwt., f. o. b. Los Angeles:

Beef, steers, 1000@1100 lbs.	$11.00@12.00
Prime cows and heifers	9.00@10.00
Good cows and heifers	8.00@ 9.00
Canners	5.50@ 6.00

HOGS—All prices in this market show a drop since last week's report. A slow sale with only fair receipts.

Per cwt. f. o. b. Los Angeles:

Heavy avr'ging 275@350 lbs.	$15.50@16.50
Heavy, avr'ging 225@275 lbs.	16.50@17.50
Light	17.50@18.00

Rough docked 20 lbs. piggy sows 40 per cent.

SHEEP—No change noted in prices in this market. Demand is fair and quotations are steady.

Prime wethers	$ 9.00@10.00
Prime ewes	8.00@ 9.00
Yearlings	9.00@10.00
Lambs	13.00@14.00

PORTLAND LIVE STOCK.

Portland, Ore., June 2, 1919.

CATTLE—Steady to lower; receipts, 1823. Steers, best, $11@$12.50; good to choice, $10.50@11; medium to good, $9.50@10.50; fair to good, $8.75@9.75; common to fair, $7.75@8.75; good to choice cows and heifers, $10@10.25; medium to good, $6.50@7.50; fair to medium, $4.50@5.50; canners, $3@4; bulls, $6@8.50; calves, $9@$13; stockers and feeders $7@10.

HOGS—Lower; receipts, 1810. Prime mixed, $19.25@19.50; medium mixed, $18.50@19; rough heavies, $18@18.75; pigs, $17.75@18.25.

SHEEP—Steady; receipts, 3082. Prime lambs, $14@15; fair to medium, $12.50@13.25; yearlings, $9@9.50; wethers, $8@8.50; ewes, $6@8.

FIRST GOVERNMENT REPORT ON WOOL

The Bureau of Markets has just issued its first wool market report. Prices, based on actual sales at Philadelphia and Boston, are quoted on grease wool, showing the range and estimated shrinkage. Quotations on California wools are as follows:

	Grease price	Estimated shrink
Choice, 12 months	49-54c	58-63 Per cent
12 months	46-48c	62-64 Per cent
8 months	47-51c	58-62 Per cent

Auction sales have been well attended. Interest has centered on five wools, but medium and low wools have received more attention than formerly. Consumption is increasing rapidly and an optimistic view is held by the trade regarding future prospects.

Classified Advertisements

Rate in this directory 3c. per word each issue.

MISCELLANEOUS.

CORN HARVESTER—One man, one horse, one row, self-gathering. Equal to a corn-binder. Sold to farmers for twenty three years. Only $25, with fodder binder. Free catalogue showing pictures of harvester. PROCESS CORN HARVESTER CO., Salina, Kans.

REMANUFACTURED PIPE.
All sizes standard pipe and wrought iron screw casing. All kinds of fittings. Guaranteed good as new. Write for prices. Weisbaum Pipe Works, 160 Eleventh street, San Francisco.

FOR SALE—One 10-foot cultivator nearly new, made by Ventura Manufacturing and Implement Co. Can be bought for $60.00 less than cost. Call or write to Cox & Sager, Watsonville, Cal.

TRACTORS FOR SALE—Holt Caterpillar, 30 H. P. Samson Seive-Grip 10-25. Good condition. Call and see them. Prices very reasonable. E. A. Dunipace, Paicines, near Hollister, Cal.

ALL SIZES OF PIPE and screw casing, both new and second hand, dipped and undipped. Guaranteed. Prices right. Sheeter Pipe Works, 304 Howard St., San Francisco.

WANTED—Work for Samson tractor, clearing land, wood contracts, road work, plowing. First class work guaranteed. Box 1550 Pacific Rural Press.

AGENTS—Mason sold 18 sprayers and Autowashers one Saturday. Profits $7.50 each. Sample deal. Performance FREE. RUSLER COMPANY, JOHNSTOWN, Ohio.

MADE OF REDWOOD, Hawley's Perforated wooden well casing, the best and cheapest well screen made. Send for descriptive circular. G. M. Hawley, La Mesa, California.

BEAN TRACKPULL TRACTOR—perfect condition, 60 days old—for small farm or orchard. Box 1550 Pacific Rural Press.

BATES STEEL MULE TRACTOR, like new, $1200. Box 1540, Pacific Rural Press.

CO-OPERATION (not operated for profit) reduces living expenses. Particulars and catalogue from Co-operative League, Commercial street, San Francisco.

PATENT ATTORNEYS.

WEBSTER, WEBSTER & BLEWETT, Savings and Loan Bldg., Stockton, California. Established 50 years. Send for free book on patents.

BEES FOR SALE—Golden Italians in patent hives. John G. Mee, St. Helena, Cal.

COUNTRY LANDS.

$35,000—85 acres, 50 yards from school; county road on two sides. 10 room house (hot and cold water), 3 wells, windmill and tank, new gas engine and pump; barn, chicken and brooder houses; 2 horses, 1 cow, 350 chickens; 300 fruit boxes, 200 trays; complete set of implements to run place, including 4 wagons, $250 power spray pump, cider press, etc.; garage and work shop. Average income $5,000 per annum. Will guarantee $7,000 crop this year. 2 miles from Windsor station between Santa Rosa and Healdsburg, Sonoma County. 30 acres prunes of which 18 acres bearing, balance 3 to 5 years; 1 acre peaches; 10 acres apples, 2 acres pears; 14 acres resistant vines; plenty of berries, beans, corn, potatoes etc. About 30 acres of this is deep rich bottom land with plenty of water to irrigate if necessary. Mortgage, $12,000 5%, can remain. Umbsen, Kerner & Risert, 20 Montgomery St., San Francisco.

I WANT A RANCH and will give my San Francisco apartment hotel leased for $1800 per year and stores not leased. Rancher, check quick if you want this. Address 130 Powell St., San Francisco.

880 ACRES—Mountain stock ranch well watered and partially fenced—government land adjoining, which can be homesteaded. C. P. Gould, Pacific Grove, Cal.

$12,000 MOUNTAIN HOG AND CATTLE Ranch. Well stocked, watered. Napa Co. T. H. Sponsler, R. 106, Vallejo, Cal.

FOR SALE—40-acre Ranch in Northern San Diego county. Fine loam soil, bearing fruit trees, plenty of timber, natural spring, with water piped from this source to house; barn and reservoir. Nearly all under cultivation. Big barn. Ranch house. All live stock, wagons, buggies and implements included. Can deliver good title. Must be sold at once. Bargain. Price $5000. Owner, Box 343, Oceanside, Cal.

FOR SALE—In Klamath County, Oregon, 600 acres good level land, unimproved, good for alfalfa, grain or stock. Price, $10.00 per acre. Easy terms. For particulars, address Mrs. Mary Johnson, 414 Wilson Ave., Vallejo.

SEEDS AND PLANTS.

FLORIDA SOUR AND CALIF. SWEET ORANGE seed-bed stock. The time to plant is propitious; order now. Southland Nurseries, 1941 E. Colo. St., Pasadena, Calif.

FOR SALE—Capri Figs for distribution at proper time. Large ones containing many wasps. C. E. Christley, Orland, Cal.

WANTED.

WANTED—Married dairyman; experienced in feeding, testing, calf raising, use of milking machines, gas engines, etc. Sunnybrook Ranch, Willits, Calif.

MAN WITH MANY YEARS successful experience wants to handle registered or high grade dairy herd, either on share or salary basis. Box 1570, Pacific Rural Press.

SALT FOR COWS THEY MUST HAVE IT

Experiments Prove That Without It Their Vitality Suffers and Their Milk Runs Low.

Simplest Method of Supplying Needed Amount Is to Salt Hay While Stacking or Baling.

Salt is such a common thing that the very important part it plays in the health and milk yield of the dairy herd is perhaps not realized by many farmers.

Experiments conducted at the Wisconsin State Experiment Station prove conclusively that salt should be supplied to dairy cows unless the ration furnishes a sufficiency thereof. It is calculated that the minimum quantity in the food to keep a cow of 1000 lbs. live weight in flourishing health is that which is equivalent to ¾ oz. of salt per day, and that a cow in milk needs as much more as will restore the proportion removed in the milk, namely, a little over ½ oz. of salt for every 20 lbs. of milk.

The conclusions from these experiments are briefly as follows:

"In every case the cows exhibited an abnormal appetite for salt after having been deprived of it for two or three weeks, but in no case did the health of the animal, as shown by the general appearance, the live weight, or the yield of milk, appear to be affected until a much longer time had elapsed. This period of immunity varied with individual cows from less than a month to more than a year. There was finally reached a condition of low vitality in which a sudden and complete breakdown occurred. This stage was marked by loss of appetite, a generally haggard appearance, lusterless eyes, a rough coat, and a very rapid decline in both live weight and yield of milk. If salt was supplied at this period recovery was rapid. In one case potassium chlorid was given instead of common salt (sodium chlorid). Considerable of the potassium salt was eaten, though cows ordinarily refuse to touch it, and recovery followed as quickly as when common salt was supplied—evidence that not the lack of the sodium but the lack of chlorin was responsible for the troubles. The breakdown due to the lack of salt usually occurred after calving, when the milk flow was heavy, and generally the cows giving the largest amount of milk were the first to show distress."

Farmers who salt their hay when stacking or baling have found the plan an excellent and profitable one. The salt more than pays for itself in the increased weight of the hay, and besides improving the feed, it removes the danger of molding by checking the growth of molds when the moisture content of the hay is high. This is particularly true of alfalfa hay.

Twenty pounds of salt to each ton of hay should be used, which should be sprinkled on by hand as each three feet of the hay is stacked.



-and such Biscuits!

BISCUITS so light and crisp and flaky that they'll gladden the hearts of your men-folk!

Want to know the secret? It's tucked away in just four words: Sperry Drifted Snow Flour.

You know what to expect of Sperry Drifted Snow Flour: it eliminates guess-work; it's always uniform—always dependable; and its quality never varies. Whether it be biscuits or bread—muffins or doughnuts—cake or pie—or the hundred and one other things that flour is used for—you are always sure of uniform baking results when you use Sperry Drifted Snow Flour.

The ideal back of Sperry Drifted Snow Flour is to produce a flour of proven purity—of proven uniformity; and every sack measures up to this standard every time.

Ask for Sperry Drifted Snow Flour at the store where you do your trading—and see that you get it!

SPERRY FLOUR CO.

U. S. A.

Ten mills and forty-one distributing points on the Pacific Coast

Note—All measurements are level. A standard half-pint measuring cup is used. Flour is sifted once before measuring.

BAKING POWDER BISCUITS

2 cups Sperry Drifted Snow Flour; 1 teaspoon salt; 4 teaspoons baking powder; 2 tablespoons shortening; ¾ cup milk or equal parts of milk and water.

Mix and sift dry ingredients; work in shortening with knife or finger tips. Gradually add the liquid, mixing with a knife to a soft dough. Toss on a floured board, pat or roll lightly to one-half inch in thickness, cut with biscuit cutter, place in pan, brush over the top with either melted shortening or milk. Bake in a hot oven 12 to 15 minutes.

MAPLE NUT BISCUITS

Follow baking powder biscuit foundation. Roll dough to one-half inch in thickness, brush over with melted shortening, butter preferred, cover with finely shaved maple sugar and one-third cup of chopped walnuts. Roll as for jelly roll, cut in pieces three-quarters inch thick and place upright in a well greased pan. Bake in a hot oven 15 to 20 minutes.

SPERRY DRIFTED SNOW FLOUR

"A Sperry Product"

P. R.

JUN 18 1919

Vol. XCVII—No. 24 Forty-ninth Year

THE PACIFIC RURAL PRESS

SAN FRANCISCO JUNE 14, 1919 LOS ANGELES

Greatest Grain District in California

Written for Pacific Rural Press by R. E. Hodges.

A JACKRABBIT seemed to be running in front of our machine at twenty miles per hour. We got curious and opened up to twenty-seven. The rabbit became alarmed then, for he really started to run and left us behind. Conversation in the Tulare lake region of Kings county ambles along peacefully without a ripple when you talk about fifteen or twenty sacks of wheat per acre on the local ranches. But just mention such a yield in any other county and those Tulare lakers begin to show their speed at thirty to forty sacks of wheat and more of barley per acre. If the conversation drifts to how much land is planted, however, these grain growers forget all about such little units as acres, and their common parlance is so many sections (square miles) that any particular outfit has planted. When they get up speed, their conversation revolves around townships of grain. The man who has a section or a half-section in this great country is hardly to be mention in casting up the area sown. No such wonderful sight of its kind can be seen elsewhere in California, and we doubt if its equal exists in the world, for the fields of brown-red-gold heavy-headed grain reach to the horizon in three directions and to the western mountains in the fourth direction, as we saw it south of the lake. It looks solid enough to walk on and level enough play billiards on. Its smoothness and color suggest the best hotcake you have ever eaten, but bigger than anything you have ever seen because you cannot see the edges of it.

Over a Million Bushels Per Year.

More than once over a million bushels of grain have been harvested from this area, and we were told by Kings County Farm Adviser Sullivan that about 110,000 acres of wheat and 40,000 acres of barley grew there this year. The writer is ready to stake his reputation on the estimate that section after section of this will yield twenty sacks of wheat per acre, where it was irrigated from the lake. The harvest began this year about June 4 on the barley. A little Early Baart and Galgalos came next and the rest is Sonora. Generally the wheat has grown about waist high, each plant multiplied by stooling with enormous heads, many of which have five well-developed kernels per mesh.

Irrigated grain is the sort we illustrate and the sort which generated our enthusiasm. Rain did not make this grain, for a very considerable acreage in various localities around the lake was not irrigated for various reasons and is only a little better than wheat generally seen in the Sacramento Valley. It is, however, better than the average grain to be seen this season in the San Joaquin Valley.

Distinctive Conditions on Tulare Lake.

Grain irrigation and fabulous yields in the Tulare lake area are due to peculiar and distinctive conditions, which are the result of the lay of the land. We were fortunate in having access to many records collected by Irrigation Engineer Max W. Enderlein of Hanford. From these records we have taken most of the figures given below. The lake in 1862 and in 1867 was estimated to have covered 820 square miles, with a maximum depth of 37 feet (except for a prehistoric narrow river channel, which still runs northward across its bed). It has been dry several times, one of which was in 1905. Grain was planted on a large scale that fall. On March 15, 1906, the first water reached the lake bed at the mouth of Kings river and began spreading over a large area of wheat almost matured. On August 4, it had covered 300 square miles to a maximum depth of 12.7 feet. The extreme bottom of the lake is so flat that with a maximum depth of 12 inches, the water covers about 55 square miles. In the middle of last April the lake was entirely dry. When the writer looked over the inmost levee on the north side, June 3, about fifteen square miles had been submerged, due to melting snow in the eastern mountains.

(Continued on page 903)



A hundred and fifty thousand acres of grain grew on the Tulare lake bottom this year. The picture shows something of its enormous yield where irrigated. Water can be supplied dependably and the flood hazard can be controlled. Soil is rich sediment of unknown depth, and climate is ideal for grain growing. The seeding season extends from October to June, and harvesters are kept busy for a corresponding period. Courtesy Kings County Chamber of Commerce

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EDITORIAL.

FILL RANKS: ADVANCE TOGETHER!

WE hope no one will think we are trying to give a military command. A top-sergeant would probably prefer to be shot than to yell out those words, and no bunch of veterans would know what to do if they heard them. We are indulging in a military metaphor, which perhaps from a military point of view is broadly mixed—for it involves all movements from the organization of an army to the fixing of a bayonet: a policy, a course of action, and a step-off in the carrying out of it. And we choose a metaphor of such breadth because it seems to vividly present the one only great thing that can now be done to ensure farmers and farming a fair show in this country and in the world.

We are prominently presenting this week a sketch of a transaction in California which embodied the military metaphor aforesaid in its relation to the advancement of agriculture. Mr. Hodges, with his characteristic grasp of essentials and skill in selecting details which fasten their significance upon the reader's attention, presents on another page a picture of the assembly at Modesto, and we ourselves attended the meeting at San Jose, which was rather a remote echo of the achievement at Modesto. It was an echo because the same speakers made their appeals—but remote because the Santa Clara farmers did not have the significant occasion sufficiently impressed upon them and passed it up with but scant attendance. The Modesto meeting stands, therefore, as the expression of California farmers upon the matters presented to them, as the nation's exhortation to "Fill ranks: Advance together!"

THE WISE MEN FROM THE EAST.

In our issue of May 24 and 31 the coming of these men was foretold and their standing in affairs of farmers and the general public was defined. In this issue Mr. Hodges outlines their several messages. It merely remains for us to attempt to concentrate a conception of the undertaking into a paragraph and these are the chief features of it:

First, farmers must organize or they will not only get left in human progress, but they will have to swallow all the dust which rises from the onrush of all other human vocations.

Second, farmers must organize by filling the ranks of all co-operative associations which serve their several lines of production, or which uphold the various types of social and economic endeavor which they approve. Every farmer should belong to something, the principles and practices of which he can earnestly and enthusiastically promote. He must touch elbows with others of his own sympathies and interests in life. He will get nothing but more side-ache by digging his crazy-bone into his own ribs—as he has done hitherto!

Third, the ultimate and effective manifestation of the farmers' will and purpose must be attained by the affiliation of all farmers' associations into a central, federated organization, which shall be respected at the national and all State capitals as representative and powerful in enforcing recognition of the fundamental conditions and relations of successful agriculture upon all constituted authorities and upon the general electorate which constitutes them.

These three planks constitute the platform which all the wise men from the East pranced upon at the Modesto and San Jose assemblies. They urged no particular farm organization; they approved all organizations of farmers which strive for sound agricultural wisdom, true patriotism and reasonable economics. They, in their personal capacities, differed in their political affiliations, but they all agreed that agriculture, to enforce its rights and will, must dominate all politics to the extent of committing all parties to securing economic justice and fair play to farming. They deplored domination of politics by federated financial, commercial and labor interests, but held that farmers had only themselves to blame for it because of their rural simplicity and reticence. If the greatest industry of the country is to be saved from submergence to a depth below that of its present sinking, farmers must "Fill ranks: Advance together!"

THE TEMPLE OF AGRICULTURE.

We have had more or less to say in the past about this castle, which is now in Spain! But let no one think that it will always remain in the domain of romance. It is essential to have a great uplift in the horizon when you start out to cross a dreary plain and toward which you can confidently press forward. That is about the present state of the Temple of Agriculture in Washington, and its present service is that of standing as a concrete thing to attain. We do not count it significant that at the California meetings there was not money enough subscribed to build a hall-bedroom on the tenth floor of such a building as is properly projected. We presume the Eastern agricultural orators did not expect to get much gold out of the gravel they scratched over in this initial trip; they were, perhaps, merely trying to burn off the snow and ice to get down to the auriferous gravel later—as they do in Alaska—or they were merely ice-breakers trying to open a channel to the gold in the farmers' hearts and lives. In their undertaking, from this point of view, they did well—being particularly valiant at San Jose where the ice was thick, beyond all records for the month of June! It is altogether probable that these argonauts of agriculture never expected to fleece popular assemblies out of the gold their project requires. National structures do not arise by the route along which back-woods churches are sometimes created—by camp-meeting collections. Even Mr. Barrett must have laughed at himself while he was invoking that process. But this line of attack was a wise part of the game. It was an indirect suggestion of the very important fact that if farmers, as an industrial class, ever get anything, they must work for it and they must also pay for it. The temple will rise at Washington all right when the farmers of America are adequately organized, and the funds will come in abundance when these organizations really undertake affiliation and federation. It is only the foundation, both of the building itself and of the federation, which is now being striven for at popular farmers' assemblies. It is the publicity and the general understanding following these sporadic efforts which will build the temple and attain all that it will stand for. It will come just as surely as the Labor Temple now stands in Washington as the creation of Federated Labor for its own purposes. And it will be several stories higher, or the people of this country will wake up some morning very hungry. You just watch!

LAND-SETTLEMENT ISSUE.

On another page of this issue Dr. Elwood Mead gives a very clear statement of the policy and practice of the California Land Settlement Board to meet the conception of its operations, which Mr. Polsley described in our issue of May 31. There is quite a definite difference between the two schools of patriotic land-settlers who honestly desire to establish willing people on farms in this State to the end that they may win prosperity for themselves and development of the State. In this purpose both agree. In ways which are sane and safe to do it, both for the good of the settlers themselves and of the State, there are conflicting opinions. It is very important that the matter should be carefully considered by our self-made farmers, whose interests may be more or less affected by multiplication of endowed farmers, and by other taxpayers whose money will be indirectly involved in the pursuit of both policies. The general public, which is great in heart and small on the assessor's rolls, will naturally follow its heart and loudly applaud the endowment of farmers without pledges that they will pay for the mistakes they may make in believing that they wish to be farmers. In this attitude the general public will be approved by the host of promoters and real estate dealers who earnestly desire to have something doing in lands, and to take their chances on being able to turn it their way. In our issue of May 31 we dissented at some length and we still adhere to the conviction that Mr. Polsley is wrong—though we desire to apologize for the editorial stupidity which misrepresented his proper name in that writing. Dr. Mead avoids controversy and states clearly and concretely what the view and method of the Land Settlement Board are in the work they have done, and which the State has ordered to be considerably extended. We consider it a very important contribution to the literature of the subject.

COMMUNITY HELP FOR FARMERS.

The colonization of the empty-handed on farming lands appears at a new angle in a press dispatch from Sacramento, under date of May 7, which we condense as follows:

"Organization of community land settlements, whereby discharged service men may become owners of small farms without paying a cent until they have had an opportunity to farm the land for three to five years, will be attempted by the State Committee on Readjustment, Adjutant General J. J. Borree, chairman of the committee, announces.

"General Borree said that the scheme to be tried out will be along the lines of the Stanislaus county community credit plan that worked so successfully during the war. Under this plan credit was extended to dependable farmers who had no banking securities in order to permit them to increase their crop production to aid the government and the allies. According to General Borree, $60,000 was loaned to needy farmers and not a cent was lost by those who backed it.

"I believe the problem can be solved through the community land settlement scheme. Under this scheme citizens of a community could band together and through their credit secure money with which to purchase, say a 1,000-acre tract. This tract could be divided into small farms and sold to service men or dependable citizens under an agreement that the first payment would not be exacted until the land had been worked from three to five years. If the man couldn't make the farm pay in three years he never would succeed as a farmer."

We will not argue the last point because there are so many standards of judging what "pay" means in farming, and so many rates of speed at which each of the different farm items, under favoring conditions, may cover its cost, its share of the living expenses of the owner, and the interest on his obligations, and finally a profit. A hen may do it in a month, a garden crop in three months, a grain crop or a hog in six months, a cow in a year, a steer in two years, a fruit tree in five to ten years, etc. We do not say they will do it: they may do it. Some hens, hogs, cows, steers, and fruit trees will never pay—and it may be the fault of either of them or of the owner of all of them, and it is up to the owner to find out which. Therefore, it seems to us unreasonable to say that if a man cannot make a business, which he has all to learn, pay his living expenses, cost of production, taxes and accrued interest, and a profit in three years, he will never be a successful farmer. It is more important to know what progress he has made toward doing these things with no capital of his own and—will he stick to it? Probably, if he has nothing of his own at stake, he will not. He has then lost his time, which might be worth $10 a day as a plumber, or $5 as a carpenter, or $3 as a counter-jumper, or $2 as an agricultural editor, etc. His endowing agency, whether it be the State or a bunch of industrial philanthropists, must write off its losses and pay the cost of painting the kitchen floor for a new trial trip. And the liberated one who has served his three years' sen-

tence to farming shoulders his kit-bag and turns into the highway townwards, when he hears the murmur of the auctioneer, as the hammer strikes the last of his farming effects—

"For we brought nothing into this world."
And it is certain we can carry nothing out."

GOLDEN EGGS UNSCRAMBLED.

General Borree was probably too busy with war-work to take note at the time that the "Stanislaus plan," which he invokes to finance free farms to those who wish them, never worked at all in the way it was planned to work. The plan was to ladle out money beneficently to all good men who had no bank credit and, if we remember correctly, a Modesto banker was constituted the chief ladler, It was, of course, unreasonable to expect that a man who had full bankers' training in lending other people's money would reserve or discard everything he had learned to consider safe and sane. And so it was just the usual article of bankers' bounty which the Stanislaus plan finally dished out. The "Stanislaus plan" was, in fact, merely a camouflage to cover the collapse of a plan for San Francisco patriots to furnish easy money for farming, and which the patriots aforesaid decided to re-nig when the details were dealt out to them—as they surely had a right to do. Suppose the community did underwrite sixty thousand dollars for loans to farmers, what does it amount to? It was dispensed in the bankers' accepted ways of lending, and it was not a marker to the money which the local banks loaned in the same way. But the Stanislaus plan was to lend money to actual farmers of good repute, who had crops in sight to bring through, and this is a very different proposition from lending money to untried farmers on projected farms, with no assurance that they would ever get a crop in, and still less that they would ever get anything out again. Besides, sixty thousand dollars, while it might help to get off a good many acres in grain and out again, would not be even a nickel-ante in the game of subdividing a thousand acres into small farms, giving people places to live and things to work with! Suppose the Stanislaus plan was 100 per cent effective in all that it proposed to do, the invocation of it as an agency in developing raw lands into workable farm-sites is like starting to bore an oil-well with a gimlet. There is not idle money enough in any community for altruistic development, where every man is striving to save enough to dynamite the stumps on his own waste land or to put a plate glass front on his barber-shop so that he can scrape off a little more earnings for his own comfort and contentment. And it is this effort which makes a community rich and prosperous. It is the work of people who know what they want, when they want it, and proceed forthwith to get it for themselves.

QUERIES AND REPLIES

By the Editor.

Inquirer Must Give Full Name and Address.

Prune Parting from Apricot.

To the Editor: I send the trunk of a six-year-old prune tree to show how it has broken off the stump of the root of the apricot seedling into which it was budded. I have many such trees. What can I do to keep them from breaking off?—J. S., Los Gatos.

To the Editor: Last season I planted 700 French prune trees on apricot root, and this year I have broken off several at the union of the two woods. They are so delicate that the least touch from the harness or cultivator handle is sufficient to break the tree. Will this union become stronger as the tree grows older, or would it pay better to dig them out now and plant other trees? I am satisfied that unless there is a great improvement in the strength of the tree, they will not hold up a crop of fruit when they come into bearing.—Subscriber, Kingsburg.

This is an old trouble and though prune or apricot root will many times hold on well, there is always danger that what you are experiencing will occur. In the specimen sent by our first querist the base of the "prune wood" is about four inches in diameter and has slightly over-grown the apricot root. The fracture shows almost total absence of longitudinal fibers, such as manifest themselves by "splintering" when a tree trunk is broken by wind or gravity. The prune wood seems to have rested on the apricot much as an apple would lie in the palm of your hand, and separates from it nearly as cleanly. Young grafts are believed to be assisted in overcoming a bad union by cutting deeply lengthwise through the union with a knife to encourage extensions of connective tissue, but there is no hope of helping a hard old stem in that way. We know of nothing to do to old trees except perhaps to guy or prop them so that the top shall not be forced from its center of gravity and that would cost more in time and supplies than such trees are worth. In some cases old trees found to be thus insecure on their roots are either cleared away entirely, or roped and pulled to remove the weak ones, or allowed to proceed until the wind makes its selection. In the first case a total replanting is made which is perhaps the most rational proceeding. In the other case, new trees are planted as old ones are broken off. As there will probably be much difference in the strength of the different trees, there is of course much temptation to "let nature take its course." The defective union manifests itself chiefly in the lack of strength in the attachment, for sap movement is not seriously interfered with and the growth and fruiting may be fairly satisfactory though less than when the French prune is on the myrobalan, peach or almond roots—all of which it evidently prefers to the apricot root.

To our Kingsburg correspondent we would say: Keep on hitting them and get assurance that the orchard should be replanted next winter.

Re-Plants in Old Peach Orchard.

To the Editor: I have rented an orchard of peaches which has a goodly number of trees missing and the owner wants us to re-plant yith young trees. I told him I thought it could not be done, but I would write the Rural Press and see what you thought about it. The old trees are at least eleven years old now. Five years ago these vacancies were re-planted and the little trees are no bigger now than when planted. Hardpan is about five to six feet deep and the soil is rather sandy. Can this be done successfully and could we expect the new trees to pay for the work of growing them?—M. S. H., Denair.

The chance of profit in such re-plants would be very small and the cost and trouble to get even that chance for them would be considerable. Very wide holes should be dug to get out intruding roots of the old trees to give the new trees any show at all to get possession. The new trees would also need to be helped by more frequent irrigation and hand-hoeing and by stimulating fertilizers. If the old trees have tried to possess all the sky-space they must be cut back to give plenty of light to the youngsters. Unless you are ready to do all these things the re-plants have practically no chance at all. And if you do get this chance for them and they catch on fairly, their product would perhaps not be greater than the fruit you lost by cutting back the old trees. And when you succeeded you would still have an orchard full of gaps because the old trees would be going out as fast as the new trees were coming in. Our notion would be (without seeing the place) that the best policy will be to treat the old trees "handsome," get all you can from them and then start all over again with whatever at the time seems best for the land and the owner.

Grafting Walnuts.

To the Editor: I have about 9 acres of California black walnuts planted, which are in their third season, and I intend grafting them about the end of August (the end of our winter), cutting them down to within a couple of inches of the surface for that purpose; and then budding the shoots of those that do not take the graft later on in the spring and summer. Is this correct? Would it be possible to bud almonds onto California black walnut stock?—T. H., Normurkah, Australia.

Do not graft the walnuts near the ground. Keep the black walnut trunk which you have grown by grafting high up—either by amputating at three or four feet or by grafting in the several branches just above the natural forking at about that height. In this way you get a black walnut trunk, which is better than an English walnut trunk, and you escape the greater danger of breaking out of soft growth of grafts starting near the ground. It is not easy to bud into young suckers as you propose. You can bud into more mature bark with much better chance of success as was described in detail in the Rural Press of May 18, 1918. The walnut is not an acceptable stock to the almond, which is budded on the almond or peach seedlings.

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Polycaons Blowing In.

To the Editor: I am sending a small brown beetle which a recent heavy wind seems to have blown into our orchard from neighboring oak trees. They are boring into the twigs, going downward from a bud and seem harder on prune trees than others.—M. M. P., Willits.

The beetle is Polycaon confertus—the turg borer. concerning which we answered inquiries in our issue of May 31. It is their flying time and the wind doubtless helped them in your direction as you suggest. They do not breed in living fruit trees, but having been displaced from their habitat in the forest, where they breed freely in dead wood. they take to breeding in dead vine stumps, etc., on cultivated areas. The adults seem to like to lunch on living wood of prune, olive, etc., but presumably do not multiply in living wood. No successful way of preventing them boring into twigs and causing them to break off in the wind, has yet been demonstrated.

Gumming at Wounds.

To the Editor: I have a three-year-old apricot orchard, and while whitewashing the trees I observed on the cuts which I made last spring in pruning the trees some stuff coming out like pitch and of a yellow color. The same stuff is coming out on places injured by the plow or harrow.—W. T. R., Esparto.

It is a natural gumming—exuding sap set free by wounded tissue being evaporated to the consistency you observe. It is not significant like the free gumming at places where no wound has been inflicted may be. Remove the gum and hit the spot a lick with the whitewash brush.

Creolin and Green Corn.

To the Editor: Is it safe to use creolin on the silk of the ears if the corn is to be eaten green? It is mentioned in your "Second Thousand Questions" as a repellant for corn ear worm.—G. L., Auburn.

Perfectly safe so far as conveying poison to the ears is concerned. Besides, creolin is such a good self-advertiser and de-naturer of any esculent to which it attains that there is no danger of any one eating it.

Prevalence of Sour Sap.

To the Editor: Was "sour sap" more prevalent this year than usual?—A. S. W., Windsor.

Our judgment is that as a whole we heard fewer complaints of it than usual. Theoretically, and we have an impression that it is true actually, most complaints of sour sap come to us in a year of very heavy rainfall when standing water occurs in many soils, which are usually not filled up that way.

Danger in Teosinte?

To the Editor: Does teosinte (Reana luxurians) develop, under certain conditions, a poison as sorghum, milo, etc., may do?—G. L., Auburn.

We have no record of such danger and we apprehend there is none. Teosinte is related more closely to maize than to sorghum and we should expect no more poison in it than in green corn fodder.

California Weather Record.

The following rainfall and temperature record is furnished the Pacific Rural Press by the United States Department of Agriculture Weather Bureau at San Francisco for the week ending June 11, 1919.

Stations—	Rainfall: Past Week	Rainfall: Seasonal To Date	Rainfall: Normal To Date	Temperature: Highest	Temperature: Lowest
Eureka	0	30.66	45.18	66	47
Red Bluff	0	20.19	34.79	100	
Sacramento	0	17.20	20.05	90	
San Francisco	0	25.64	22.51	68	52
San Jose	0	18.87	10.77	80	4
Fresno	0	6.90	9.05	100	
San Luis Obispo	0	18.09	20.51	74	
Los Angeles	0	8.58	15.01	80	
San Diego	0	8.71	10.01	76	
Winnemucca	0	7.83	8.09	84	
Reno	0	9.67	10.28	86	48
Tonopah	0	7.91	9.86	80	44

The Shortage of Farm Labor

(Written for Pacific Rural Press.)

We have found complaints of labor shortage up and down the State with few exceptions by large employers and occasional employes, even at plow time. It continues. William T. Kirkman, the well-known nurseryman and President of the California Nurserymen's Association, in his address to that body, said recently that labor was their chief problem now in economic production — not only the amount, but the quality of labor obtainable. When is it going to reappear? During the budding season the work was behind last year. Finally he got two high school boys and set them to work. They did twice the amount in a day that the Japs did.

Farm Work is Skilled Labor.

Our responsible white help is needed again. It makes one tired to hear of workers on the land described as "unskilled labor." How long does it take to train a good teamster, pruner, nurseryman, or tiller of the soil, dairyman, or stockman? A great deal longer than it does to train him how to wrap up a neat package of sugar or take a business course. Yet we have to do with a great deal of surly, unskilled, be-whiskered road-runners, who are half the time looking where the sun is, because we are still shy on our own good country-bred lads who are skilled in their work, regard it in the same light as any other business man does and attend to it. Our own lads take a pride in their work, both in amount and quality. They take a pride in the stock they handle as showing their proficiency. Their wages (everything found and no expense) have a greater purchasing value than many a bank clerk's, and their active life and good victuals keep them "fit" all the time.

Help in the Harvest.

F. B. McKevitt of the California Fruit Distributors, mentioned the loss of men to the country who had been killed, disabled, or rendered unfit in the European war. He said we were short of labor before we entered the war. That it is estimated that 1,300,000 aliens of the laboring classes had returned to their native lands since then, never to return. That reconstructive efforts had called many men to the shops to manufacture for export and home rehabilitation. That we are called upon for greater efforts in production than ever before. Then why find work on roads when the men are needed on the land?

Mr. McKevitt said that he was surprised to find how few farmers realized the situation yet. Here we have perhaps hundreds of millions of dollars' worth of fruit and other commodities to harvest this season and no particular action is being taken to provide the hands to gather it. If the women were organized to assist last year for patriotic reasons, we want them still more this year for those same reasons. The women and girls—we must call on them again; they did good work and we need their aid. Mr. McKevitt is one of the best-posted men in California, both as a fruit-grower and a marketer—as president of one of the largest fruit-marketing agencies in the world. The above remarks will therefore carry weight.

Cotton Men Are Contracting Pickers Already.

Many of the cotton planters in Imperial and the Arizona cotton growers have already made arrangements with the pickers they will have to ship in next fall for the cotton harvest. The Salt River Valley alone will need 5,000 pickers from the outside. As Texas will, it is expected, need her own help, not so much labor is expected from there and contracts are reported for gangs of Mexicans.

What are we doing in the San Joaquin and Sacramento valleys and in other sections? Are the farmers waiting for somebody else to make provision for them or are they going to "take a chance" and pay through the nose on a short labor market at harvest time? September will be one busy little month in California.

FIGS INTERPLANTED WITH ALMONDS.

F. H. Chamberlain of Merced has planted 22 acres with White Adriatic figs, intersetting with almonds as a nurse crop. The almonds should come into bearing at four years and care for the cultivation until the figs are in full bearing. He figures the almonds can remain in situ for twelve years without interfering with the figs. A pumping plant will supply all the irrigation that is necessary—probably two irrigations a year. The winter rainfall in this locality is said to average about ten inches. Mr. Chamberlain intends to put in quite a large acreage and is a firm believer in thorough cultivation to produce results. His figs should bear in commercial quantities at eight years old. Though trees come through with proper care without irrigation in this strong land, much better results are obtained by the use of water. His orchard is now being fenced rabbit-proof, but he will also protect the individual trees from these destructive creatures by the use of the blood treatment. On this place, five miles southeast of town, water is easily available.

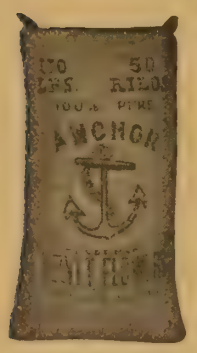
OLIVE CONDITIONS IN BUTTE COUNTY.

"I have been out today through the olive groves of this section and made a survey of the crop situation," said Earle Mills, Horticultural Commissioner of Butte county on June 2. "In a few localities there is going to be a normal crop, but in other orchards the crop is going to be very light. I think as a whole we will have about 60 per cent of a normal production."

We have noticed this unevenness of setting of olives throughout the state more or less even so far South as Ventura county. Where neither frost or rain had been present at the blooming period the setting is generally good.

In view of the probable large output of Washington navels, the orange growers of the Porterville district fear a shortage of labor and already are engaged through the Chamber of Commerce and Federal Employment Bureaus in listing their employes for the coming fall.

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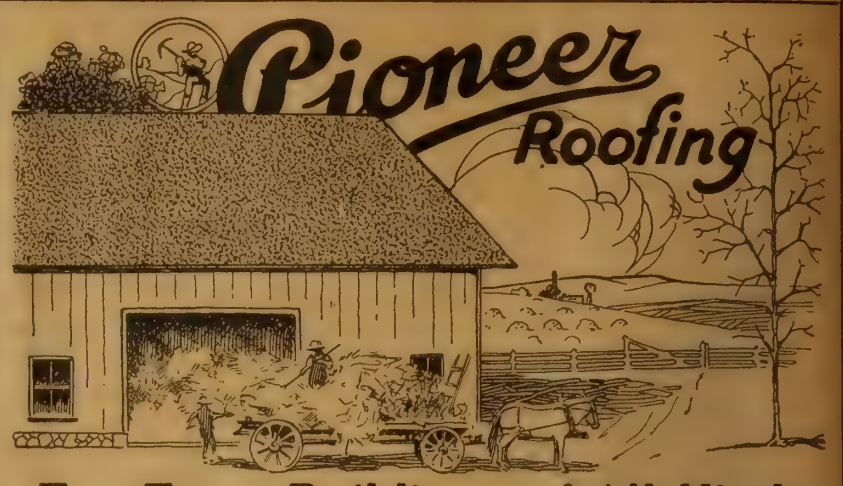
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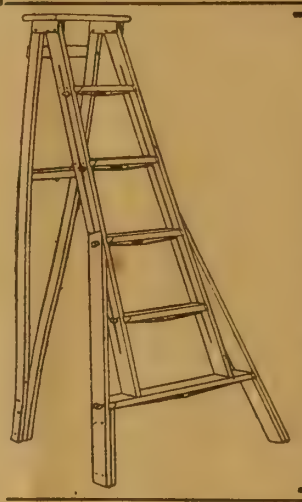
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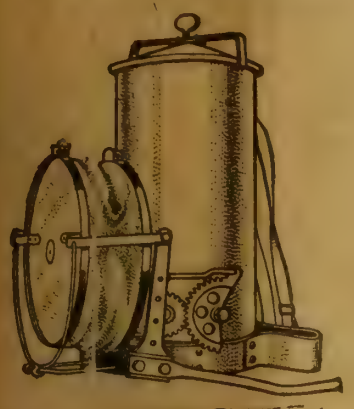
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HORTICULTURAL JOTTINGS.

Tariff duties of one-half of one cent a pound levied on imported citrus fruit would be doubled by Representative Randall in a bill recently introduced.

A large fruit-drying plant is to be erected in Ukiah. Pears will be the principal fruit handled this year, and it is expected that from 500 to 600 tons of fruit will be dried.

The United States Railroad Administration says there will be little difficulty in handling the estimated crop of table grapes which the growers put at 5,000 cars on a basis of 75 cars a day for 60 days.

The Quarantine Bill (No. 37) governing the importation of nursery stock and other seeds and plants into the United States is sustained. Secretary Houston says, "Its enforcement will make for the safety of the plant, fruit and forest interests of the country with as little injury to private agencies and individuals as possible."

Grasshoppers are destroying the almonds on the McPherrin orchard near Yuba City, it is reported by Harry Stabler, Sutter County Horticultural Commissioner. The grasshoppers bore a hole in the almond and devour the kernel, which is now in the jelly state. In some cases the entire crop of the trees has been destroyed.

According to the premium list, which is in course of preparation, deciduous fruits will figure heavily at the State Fair this year. The horticultural section will be under the direction of President George C. Roeding of the State Board of Agriculture. The premiums have been increased and the classifications enlarged.

Fruit prospects in Butte county for 1919 are good, according to the crop report of Earle Mills, county horticultural commissioner. He estimates: Almonds, 60 per cent of normal; apples, 100; figs, 100; grapes, 100; olives, 100; oranges, 100; peaches, 100; pears, 25; plums, 100; prunes, 90.

The California Fruit Growers' Exchange, which includes nearly 75 per cent of the citrus orchard owners of the State, have secured the services of A. E. Holmes, former manager of a grape juice company, to conduct a series of sales tests in eastern cities to determine the relative popularity of various formulae for beverages made from citrus fruits.

The Citrus Growers of California, who are plaintiffs in an action before the Interstate Commerce Commission asking for a reduction in freight rates on citrus fruits, have finished their case before Examiner M. A. Pattison. The action is directed against Director-General of Railroads Hines and transcontinental railroads, which increased rates on citrus fruits 25 per cent on orders of former Director McAdoo on June 25, 1918.

C. M. Builand, Deputy County Horticultural Commissioner, who has been in the western part of Placer county during May poisoning squirrels, reports that in a big area of the plains country, grass hoppers are appearing by millions and are working in a southeasterly direction toward the orchard and vineyard sections.

It is reported that 365,000 pounds of apricots, filling twelve box cars and composing the largest individual shipment of this fruit from Yolo county, the eighth apricot producing county in the State, left Winters last week destined for the Eastern distributing centers. Each car carried 1,000 crates each weighting about thirty pounds, of the estimated value to the producer of $2.

SUMMER PRUNING OF YOUNG TREES.

Now is the time to go around and take the suckers or undesirable young growth out of young almonds, peaches, and other deciduous fruit trees. Some of these suckers may be kept and just pinched back at the tip to form some fruiting wood and shade at the base of the trees and in the lower branches. If this is done now some fruiting wood will result. If the suckers are left till next winter and cut back when mature, they will throw some more long strong shoots which may not be wanted



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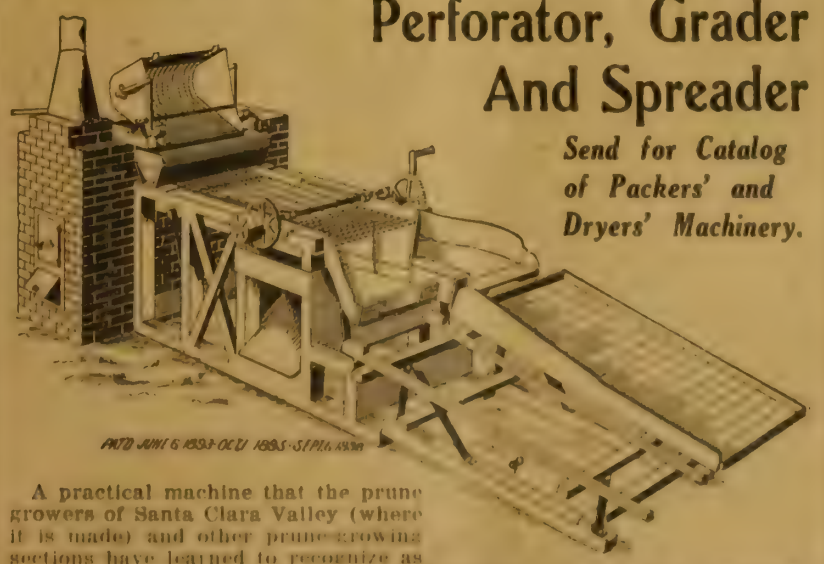
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What is Required of Settlers and Why

(Written for Pacific Rural Press by Dr. Elwood Mead, Chairman of California Land Settlement Board.)

The discussion of what the Government can wisely and safely do in helping men become owners of the land they cultivate, which has been going on in the Press now for a number of weeks, deals with a question of constantly increasing importance. Until about the end of the last century this country did not have to consider questions of land tenure, or whether we had a really social land policy. So long as there was free public land, or cheap privately-owned land, the road to agricultural independence was open, but with the disappearance of fertile public land and the rising price of privately-owned land, this question became as important in America as it has been in Europe for many years. When the legislature of California passed the Land Settlement Act it was the only legislation of the kind proposed in the United States. Nowhere else was the need for a social land settlement policy recognized. But this year, with the first California settlement only a year old, more than twenty states have enacted state land settlement laws and the appropriations in some run into millions. Even far-off Massachusetts has appropriated $500,000 for what, to that conservative state, is more of an experiment than was the act of the California legislature when it appropriated half that sum.



Development of First Settler, Carl Neilsen, on Allotment No. 10, Durham State Land Settlement, Durham, Calif.

What the State Does for the Settler.

Mr. Polsley's article in the Pacific Rural Press of May 31 shows that he does not understand the working of the State law. He states that practically all that the act does is to give men an opportunity to buy land on long-time payments at a low rate of interest. It does that, but it does other things even more important. It is the aid and direction given to settlers after the land is subdivided and sold that makes the law so valuable. These services to the settler include the creation of a community life, helping settlers, brought together from widely different sections, to know each other, to work together, to buy and sell co-operatively, and to give them at the outset the benefit of the expert knowledge of the University staff and other State agencies and of the sound business sense of the superintendent.

All of the land at Durham has been brought into cultivation within a year from the date of opening to settlers. That could not have been done if the board had not bought a 75 H. P. tractor to help plow the land and make it ready for crops, yet it is that promptness in getting land into crop that enables the settler to meet his bills. The work done by the superintendent and the buying committee in the buying of dairy herds for the individual members has saved money and time and starts them off with far better herds than the individual settlers could have if they were acting alone. In other words, this act provides for team work rather than for leaving each settler to shift for himself.

The requirement of the board that the settler who is sold a farm shall have a certain amount of money is made to protect the settler who might be oversanguine and inexperienced, as much as it is to protect the board. That requirement is based on the experience of many countries extending over many years. The Government settlements of Europe have been carried on long enough to work out certain definite plans which all successful settlements now follow, and one of these is that the settler must have some capital, and I know of none that are successful where the settler is permitted to begin who has less than one-tenth of the cost of the improved farm. The reason for the board fixing $1500 as the amount of money that a settler ought to have was to make the buying of a farm a safe venture, **but the board does not, as Mr. Polsley believes, require that money as a first payment from the settler.** It is surprising to find that misconception existing.

A Concrete Instance.

Let us take a case of a settler buying a 30-acre farm at $200 an acre. The act requires the settler to pay 5 per cent of the cost of the land. Five per cent of $6,000 is $300, which is the initial payment, and that is all the board requires the settler to pay. If the settler is prepared to take the land in its unimproved condition, live on it, cultivate it, and meet his payments, that is all the act or the board would require, but 30 acres of unimproved land is something entirely different from a habitable and productive farm. If it is irrigable land it must be prepared for the distribution of water. If the settler is to live on it there must be some kind of a house and barn and there must be some livestock and implements. All these things cost money and that money must be spent before anything can be earned.

Up to the passage of the California Act the need for this heavy outlay at the outset has been overlooked or ignored. The truth is that land settlement had not been thought out as an economic problem. Under the old order of things the settler who did not have this money had to go and borrow it from the bank as a personal favor because he could not give adequate security. Over and over again the statement has been made by country bankers in California that in making loans to settlers they could not act like a banker but had to act like a pawnbroker, that is, they had to charge high rates of interest, make short-time loans and seize the property if the law was not promptly met, or, where they did not do this, they took personal risks, which good banking does not warrant.

The State Land Settlement Act recognizes this need for money to improve and equip farms. The board can furnish up to $3,000 and it lends that money on better terms than have ever before been furnished in this State, so our settler who has paid $300 on his land out of his $1,500 capital has $1,200 left, and he has the opportunity to secure loans aggregating $3,000 from the State. The first thing



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to be done if the land is irrigable is to level it. That is not an agricultural operation, but an engineering one, and a large equipment, handled by men who have experience and skill, can do the work far better and far cheaper than the inexperienced settler working alone. The board therefore does far more than give the settler an opportunity to borrow money under good conditions; it gives him service in helping him to level his land, build his house and buy his livestock.

Let us assume that it costs $40 an acre to build the ditches, level the land, put up the borders, and prepare the land for crops. To do that on 30-acres will cost $1,200 Out of that the board will furnish $720 and the settler must put up 40 per cent, or $480. Then the board in the same way will assist in building a house and barn. Let us suppose that the buildings cost $1,200. Again, $480 out of the settler's $1,500 will be needed for his share, while the board furnishes $720. If livestock and equipment cost $1,000, the board will furnish $600 to the settler's $400.

Now let us summarize these and see what the settler has secured for $1,500 and how much money the State has put into the enterprise:

		State	Settler
Land	$6000	$5700	$300
Preparing land for irrigation	1200	720	480
Buildings	1200	720	480
Livestock and implements	1000	600	400

It will be seen that here the $1,500 is not enough, yet the State has furnished nearly $5 to the settler's $1 and the settler gets these large loans for improvements at the same low rate of interest that he pays on his land purchase and he gets 20 years' time in which to repay the loans on improvements and 5 years' time in which to repay the loans on livestock.

Doing the work in a large way, buying at wholesale for cash, the settler gets the benefits of economies wholly unrealized under any unorganized plan of settlement. Selling a settler a piece of land without providing money for improvement and equipment is not likely to have much value unless the settler has money enough to make that improvement, and if he has, he will have far more than $1,500.

The Durham Settlement contains, however, 26 families who were not required to have any capital, and two or three others that took 10-acre blocks who were not required to have $1,500 capital. These are the settlers who have taken farm laborers' allotments. The prosperity of the farm workers, who, lacking capital, took 2-acre blocks has been so great that it shows this is the safe road to land ownership by men without money and this will continue to be the case so long as wages continue at anything near the present level. Some of the owners of 2-acre blocks at Durham have earned $100 a month continuously since they came there, and some will save $1,000 the first year.

HORTICULTURAL JOTTINGS.

The failure of the late berry crop has been reported due to the unseasonable rain of two weeks ago. The commercial growers state there will be no further local supplies of either loganberries or strawberries.

A $20,000 appropriation for the Government to conduct experiments to discover new commercial uses for wine grapes is sought in the agricultural appropriation bill in the Senate.

It is rumored that there is a possibility that storage apples on the Pacific Coast may have to meet with apples imported from New Zealand. The season in New Zealand is opposite to that of the Pacific Coast.

The 1919 crop of dried peaches will equal, if it will not exceed, all former records for California, according to estimates made by J. F. Niswander, manager of the California Peach Growers' Association.

It is rumored that the California Prune and Apricot Growers' Association, with headquarters at San Jose, controlling about 75 per cent of the prune output of this State and a large percentage of the apricots, contemplates moving onto Oregon and Washington with a view to consolidating the prune growers of the Pacific Coast into a single organization.

Bean values were generally well sustained the past week, and the dullness which has prevailed so long is replaced by good demand in some markets. Eastern choice hand-picked sacked white stock was firm at $7.75 @$8.25 per cwt. in consuming markets. Southern California sacked small whites strengthened to $6.30@ $6.45 to growers in producing sections and were steady in terminal markets at $7.50@$8.00. California limas still ruled $8.00 f. o. b. shipping points and tended to strengthen further in jobbing markets, ranging $8.50@$9.25. Colorado Pintos still ruled $4.50@$4.75 per cwt. in bulk, cash to growers while consuming markets quoted steady values.

TRACTOR ASSOCIATION STATE FAIR EXHIBIT.

The California Tractor and Implement Association voted at its meeting June 7 to hold another comprehensive exhibit at the State Fair next fall, probably similar to the one held last year.

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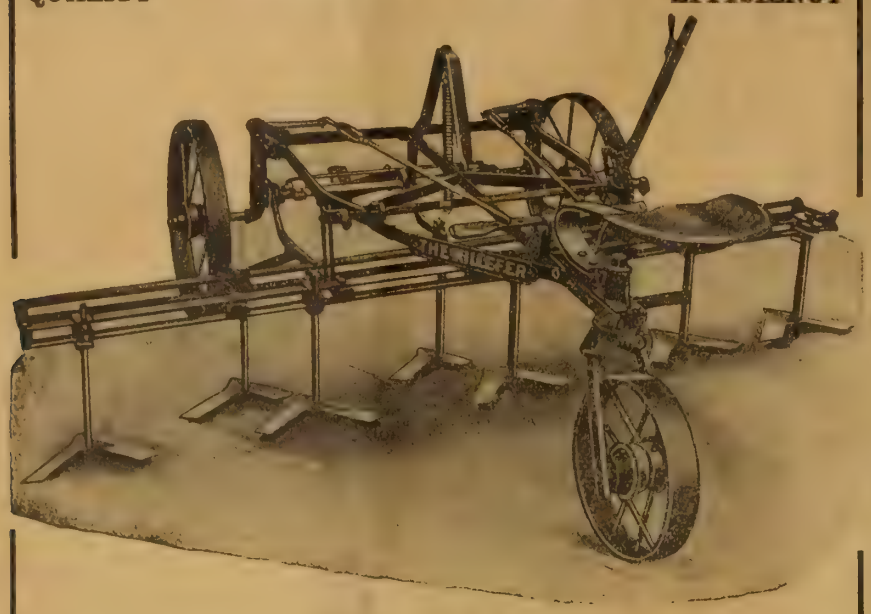
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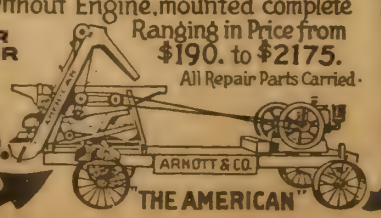
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Here and There in the Fruit Business

[Written for Pacific Rural Press.]

Prices on Tragedy Prunes.

Plums and Tragedy Prunes are a little uneven in crop in the South, though not light. F. B. Cunningham of Exeter sold his Tragedy plums to the canners for $60 a ton flat. Santa Rosas are heavy in some orchards and very light in others.

Budding Young Walnuts.

Leonard Coates of Morgan Hill Nurseries budded some young three-year-old black walnut seedlings in orchard form on May 10, with Mautner Franquette and Paine's Seedling buds. On May 24 young leaves and shoots had put forth and were growing vigorously. The buds were cut from grafting wood that was cut last winter and kept in damp sawdust.

Apricot Yield a Corker.

C. S. Danell, who has just brought 10 acres of that silty land on Kings river (east of Selma), for $7,000, has one acre of it in apricots seven years old that has fully twelve tons to the acre on (he talks of fifteen), and he has sold them for $60 a ton, orchard run, to the cannery. With almost any other kind of fruit the trees would be on the ground with such a load, and these will need some handling. The rest of his ranch comprises four acres of Muir peaches, 2 acres Thompsons Seedless and 3 acres of alfalfa.

Rehabilitation of Citrus with Cover Crops.

J. R. Arthur of the Kaweah Lemon Co. at Lemon Cove, Tulare county, believes in the use of alfalfa in citrus orchards. A rundown orchard was bought adjoining their orchards, and made into a paying proposition by orchard management. Last year the overhead expenses in this orchard, inclusive of cultivation, picking, packing, shook and labor, was $237 per acre, and about the same amount was netted after all expenses had been paid. The Kaweah Lemon Company put in 4,800 feet of redwood tiling this year.

The Setting of Olives.

Though it is a little early to estimate the olive setting, the trees have almost everywhere shown an unusually heavy bloom. In certain orchards in the San Joaquin we noticed quite a heavy drop of blossom buds (May 23 and 24). In the Perkins orchard at Madera, which frequently averages 5 tons a year to the acre, so Horticultural Commissioner Marchbanks says, an examination showed a lot of this dropping without many sets. This well-known orchard has Missions and Manzanillos, as a main crop. Nearer the foothills the blossoms seemed sound and the set normal.

Difficult to Get Help.

We heard the complaint all through the San Joaquin Valley on our recent trip of insufficient or incompetent help. This was given as the reason in many cases why peaches and apricots remained unthinned. At the Sturtevant ranch, 16 Chinamen had just started thinning peaches—May 23. In this fine orchard there are 40 acres of Lovells and 120 acres of Cling peaches, with 40 acres of vines—a lot of stuff to keep irrigated, cultivated and thinned at the same time. The woman's land army is just as necessary this year as last, if not more so as an emergency measure.

False Chinch-bugs Injure Vines.

An Armenian farmer named Karahadian at Borden (Madera county) has been damaged this spring by the false chinch-bug on his vines. He has 40 acres of old vineyard which was untouched because it was worked early, but the young vineyard adjoining had many patches of the foliage badly burnt—some entirely black. The little creatures were present on the ground in myriads. Commissioner Marchbank told us that it was difficult to get the water when it was wanted, and when the weeds dried up the insects left them for the tender green foliage of the vines. The injury was the worst on sandy acres.

Tulare County's Peaches.

The Tulare County Canning Peach Association, with over 80 members, expects to dispose of 6,000 tons of canning peaches this year. Sealed bids have been received from buyers and the price is said to have reached as high as $80 a ton or $15 a ton more than last year.

Cantaloupes from Imperial County.

Imperial county forwarded express shipments of cantaloupes since May 10, and the first two carloads went forward on May 26. There are 15,000 acres in cantaloupes in Imperial county, according to Horticultural Commissioner Waite, which will produce in the neighborhood of 7,000 carloads.

Fruit Conditions in Yolo County.

"I have raised my estimate on almonds in Yolo county to 80 per cent," said Horticultural Commissioner William Gould at the convention. There will be about 75 per cent of a crop of prunes and 100 per cent of apricots, while plums will pan out about 90 per cent if all goes well. There is a good crop of grain, thanks to the rain. Wheat will yield 75 per cent of a crop, of which there are 70,000 acres. Thirty thousand acres have been planted to rice.

A Big Citrus Crop.

It is expected that the season's crop of citrus, when all shipped, will total nearly 53,000 carloads, according to the California Fruit Growers' Exchange—the second largest in the history of the industry. Last year the total shipments were 25,329 cars. The navel season is about over with 80 per cent of a normal crop, while Valencias will reach 110 per cent of normal and lemons 125 per cent. A steady demand continues for Valencias with lemons still a little slow. The warm weather will correct this.

Raisin Grape Conditions.

Throughout the San Joaquin Valley raisin districts the promise for a good crop of Muscats is bright. Though there is a little shattering in some vineyards, the crop promises as well as last year, and in some vineyards more. In the section around Fresno, Fowler, Selma, Kingsburg, Reedley, etc., we found all vineyards in excellent condition and many men sulphuring in the bloom or the set. Seedless grapes promise about an even crop with last year, as some men claim they have more showing and some less than in 1918. A large area of new acreage is coming into bearing this year.

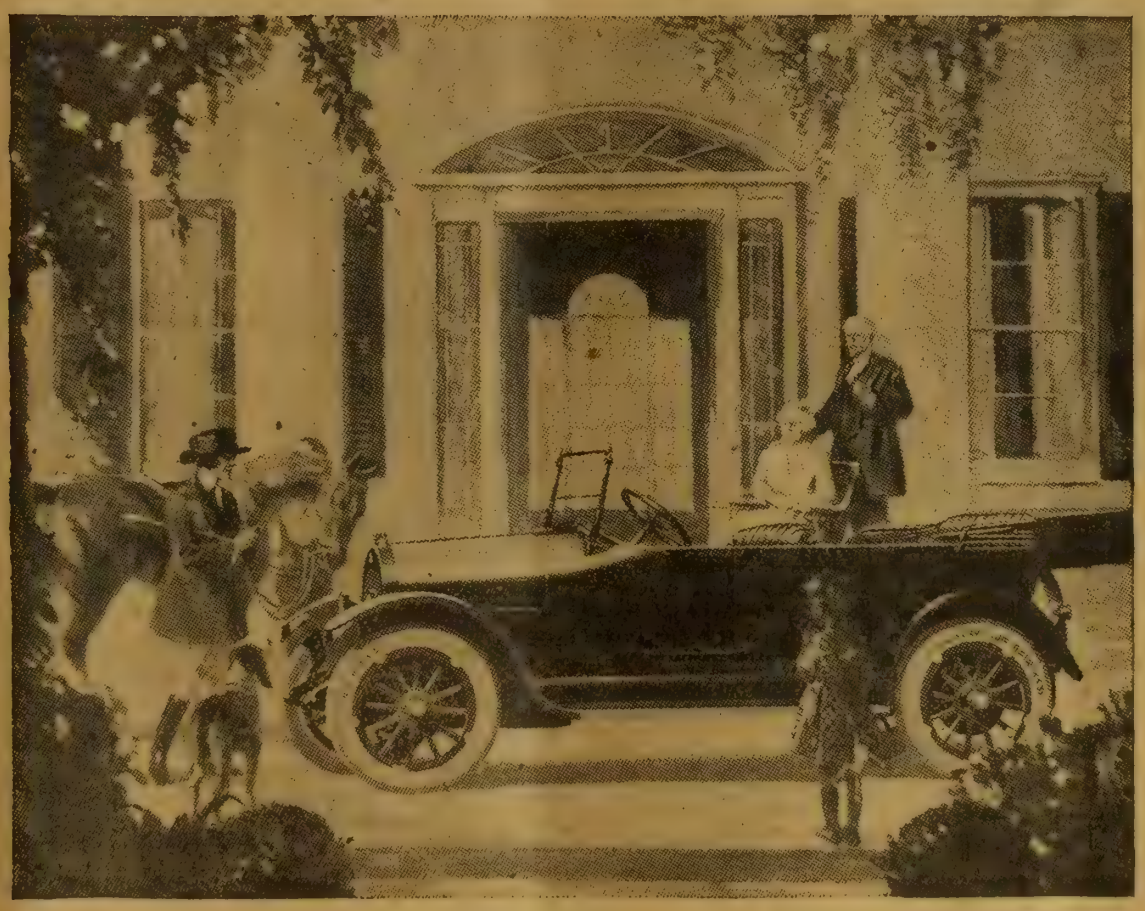
Citrus Conditions in Tulare County.

The promise for the new crop of citrus in Tulare county is excellent, according to Horticultural Inspector F. R. Brann of Lindsay. He says that the high humidity and low temperature have held the young set better than any time for some years. If the June drop comes, and if it is not more than normal, there will still be a very large crop. We dodged into quite a few orchards and it really seems like a splendid year. Olives seem to be setting well here, too. By the middle of the month we should be able to get a good line on both, also on figs. Mr. Brann says there will be more fumigation for citricola scale this year—probably 3,000 acres should be treated.

Citrus Thrips in Tulare County.

We ask Mr. Brann how bad the orange thrips infestation was this year. He said, "Not more than 75 per cent of last year's, when it was very heavy. A smaller percentage of the total crops will show thrips scarring than last year. We use a 2 per cent solution of lime sulphur in spraying for thrips—three applications, two weeks apart. The first spraying is done when about 50 per cent of the petals have fallen." The young fruit in orchards clean from scale, and that is wherever fumigation has been practised, show a deep nitrogenous live green on the young fruits that are going to stay.

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Dry-Farmed Grain Sorghums--A Warning

(Written for Pacific Rural Press by R. E. Hodges.)

This summer, when you drive down the beautiful interior valleys of California, a depressing element will force itself to your attention frequently in the dry-farmed sections. It will be the ever-repeated sign that people have looked upon milo, kaffir, gyp, feterita, etc., as a sort of spineless cactus, guaranteed to make a crop from the moisture and plant food that aren't there, and regardless of alkali. It will be the ever-repeated sign that people who planted thus looked upon their labor as its own reward, because that is about all the reward they will ever get from it. It will be the sign that they got all they wanted of such reward, just a little short of enough to insure a real crop reward.

Grain Sorghums Drouth Resistant.

The grain sorghums are drouth resistant to a degree. They have dense root systems reaching all parts of the soil, except deep parts, and able to use a larger percentage of the moisture that may be there than many other crops. They like a hot, dry atmosphere if the roots have as much or more moisture than is represented by ten inches of rain properly preserved. They revive after long periods of drouth and they usually make heads of some sort if given half a chance.

Grain Sorghums Repay Generosity.

On the other hand, when you drive past the great irrigated fields of grain sorghums, you realize that this drouth-resistant plant responds to generous treatment in the way of proper cultivation and more moisture. Where you see sections of fields which have received barnyard manure or other nitrogen fertilizers, or where green crops have been plowed under, you realize that the grain sorghums respond to fertile soil.

Why Do Plants Need Water?

The only way plants can grow or even live is by use of water containing plant food dissolved like sugar, and so thin that it will penetrate the walls of root hairs (roots have no open holes). Such thinly dissolved plant food passes up the microscopic pores of root and plant to the leaves where a great deal of the water evaporates and the plant food combines chemically with carbonic acid from the air by action of sunlight on the leaves. This combination flows back to build up the various parts of the plants, including their farthermost roots.

No food is useful to plant or animal until it is digested. In plants, the leaves are the digestive organs. But in their process of digestion, a tremendous quantity of water is evaporated into the atmosphere through the leaves. This is called "transpiration."

Water Required Per Pound of Grain.

Ten acre-inches of water weigh about 1130 tons. This is enough, if it were all used by the plants and if none of it evaporated or drained off, to produce not over one and one-fifth tons of sorghum grain per acre, making as close an estimate as possible from rather incomplete data available.

The actual water passing through the plant per pound of grain produced varies with nature of soil, nature of cultivation, and amount of fertility. The experiments show that less water is needed per pound of grain when that water is able to load itself to the highest degree with dissolved plant food. This it can only do when the soluble plant food is there. Sandy loam seemed to give lowest water requirements per pound of grain of all the soils tried. Better cultivation, as shown by the experiments, actually reduces the amount of water required per pound of grain.

Part of Water Evaporates.

But everybody knows that a great deal of soil moisture is lost by evaporation from the soil surface. This is less with a crop which shades the ground than it is from bare ground. It is distinctly greater from uncultivated ground; and far greater from clay soil than from sandy loam.

Lack of Water Limits Crops.

It is not hard to see that lack of water is the limiting factor in producing dry-farmed sorghum grains. It is easy to see why half a ton per acre is a big yield where not over ten inches of rain have fallen, because, after part of it is evaporated, only a certain amount is left for use

The problems, assuming that the question of soil and fertility are fixed, are, how to save a maximum of the rainfall from soil evaporation, and how to secure the best stand of plants to utilize all that is left.

Fortunately, the solutions to both problems involve several of the same practices, and the solution of each problem aids the other.

Better Stand, Less Evaporation.

The better stand we get, the less moisture will be lost by evaporation from the soil, because the ground is better shaded and does not get so hot. The best stand, however, is not a thick one where water is scarce. It is a stand where plants are spaced regularly at a distance that will accommodate just the number that can mature good heads by using all the moisture available. Better too thin than too thick, for if too thick a greater proportion of water will be used in carrying materials to build up useless stalks with smaller heads, or none at all. If too thin, greater growth and bigger heads will be made by each plant. But missing spots are an expensive dead loss, for they require almost as much work as the areas with good stands.

Good Seed-Bed, Good Stand, Save Moisture.

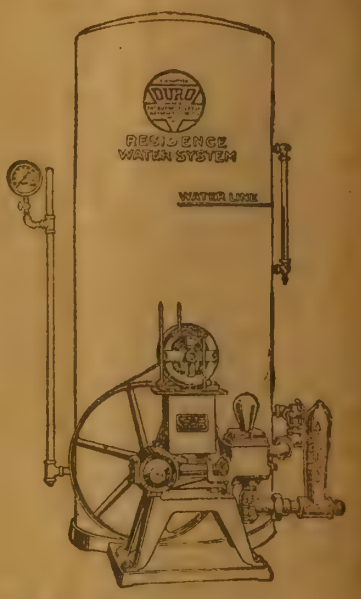
The chief element in getting a good stand is fine seed-bed preparation, so the grain may be planted evenly in moist ground, which will not dry out into clods and rob the young plants as well as weight down their shoots. The fine preparation also saves moisture by preventing excessive evaporation.

Plenty of implements are on the market with which to work down any soil to a fine seed-bed, if used at the proper times. The best implement improperly used is love's labor lost. We have repeatedly noticed springtooth harrows being used as clod crushers. They are not built that way. We have seen them used to provide a dust mulch, when their chief effect was to dig up and expose moist dirt that should have been left under the mulch and would have been useful there. We have seen millions of good clods pushed but not crushed down into an outraged seed-bed by running solid rollers over them. We have seen one of the most useful implements, the double disk, used to slice a few of the clods. Slicing a few clods does not add enough to their moisture-retaining ability to repay the cost of slicing. Plowing clods under simply increases the rapidity with which it dries out. Disk before plowing, not only to help avoid plowing clods under, but also to save whatever moisture there may be in the lower soil until plowing can be done.

If land is to be used for a crop, and if labor is to be bestowed upon it as we see done every summer, apparently for the joy of labor, enough brains should be added to swing the enterprise across to the right side of the line of profitableness. This means close observation of the soil to see what effect results from various implements used under the various soil conditions. And certainly it means that the grower will not become weary in well doing when the sun is hot and the plants need such attention most.

Using a Lister—Will It Pay?

With a seed-bed deeply and finely prepared to save moisture and to permit an even stand, the method of planting needs a little brains too. One's own observation will tell whether a lister should be used in planting. Does the soil blow in the wind? Is it dried out so deep that it must be planted deeper than it could come up if covered level? Is the advantage of deeply-placed roots going to repay the cost? Will greater ease of cultivation help repay the cost of listing? If a thick mulch is to be maintained on account of the nature of the soil or the implements used, or because of the fierceness of the summer sun, will deep placement of roots from the start keep them cooler in moister ground and out of danger from cultivators?



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LIMA BEANS IN VENTURA COUNTY.

(Written for Pacific Rural Press.)

There are about 70 carloads of Lima beans in the hands of the Association (first week in June) and probably about the same amount still held by outside growers or less. These will probably be all cleaned up by the first week in July. The amount planted this year is about that of a ten-year average, according to the Lima Bean Growers' Association officials.

The stand of beans is really better than the average and it remains to be seen how they will set. In the irrigated sections the delicate tendrils now showing will soon cover the ground with foliage, but much depends on the weather between now and harvest. Foggy, damp weather in July will help the set. In spite of the dry year and shyness of deep moisture (for one can find dry dirt at 18 inches deep) the outlook is reasonably good. The market, too, is now far more confident on Limas, and the confidence grows the further we get away from the quicksands of war conditions and feel the familiar footing of normal business supply and demand untrammelled by emergency action. 559 carloads were sold since April by the Association.

Beans look good all the way up from Saugus through Ventura and Santa Barbara counties. The Lima Bean Growers' Association guaranteed their beans not over 2½ per cent of rain damaged or wormy beans, and not over 2½ per cent splits. The hand-picking cost an average of 30 cents a sack.

THE SUGAR BEET CROP IN THE SOUTH.

There are 4,000 acres in sugar beets in San Fernando valley (Los Angeles county), 800 acres at Saugus, and 7,200 acres in Ventura county, according to Professor G. E. Bensel, Agriculturist for the Oxnard Sugar Company. There is a good average crop on the better land, but it runs rather light on alkali and thin soils. The beets were a good color and thrifty. We saw some curly leaf in one or two fields at Saugus though there is very little leaf spot. This curly leaf condition is due to the dry weather, Professor Bensel says. Good quality beets are expected with a good sugar percentage. On a basis of 15 per cent sugar the price will be probably $10 a ton, with $1.50 per ton more for every one per cent of sugar. Harvest will commence about the middle of August and then the Oxnard Mills will be crushing about 3,000 tons a day. So far the supply of Mexican labor seems to meet the demand and contractors and growers are keeping well up with their work in the field.

Our observations in the Corcoran district indicate about one month's run, the crop having turned out almost a failure due to curl leaf. The factory will probably start about June 20. The Visalia factory is being moved to Utah and all beets grown in that district will be worked up at Corcoran.

MANY DIFFERENT TRACTORS FROM WHICH TO SELECT.

Fifty-three different models and 33 different makes of tractors were shown in the first "general plowing demonstration," May 7, at the Sacramento Tractor and Implement Demonstration instead of "23 different models" as the typesetter made us say in our report May 17. These general demonstrations were held daily, and the number of tractors participating increased to 60 models of 38 different makes on May 10. There were still several models on the grounds which did not take part in the general plowing demonstrations. All of these are available for selection by California farmers.

WHEAT CROP 12,000,000 BUSHELS.

The 1919 wheat crop of California will be not over 12,000,000 bushels, as estimated by G. R. McLeod of the Sperry Flour Co. after a 2,500 mile trip. Last year the crop was about 7,000,000 bushels. Westside wheat is of extra high quality and good yield where well summer-fallowed. The unirrigated central plains will have a very low yield in the San Joaquin, but considerably better in the Sacramento valley. Along the Sierra foothills greater rainfall made the crop much better. An inch of rain came south of Tehachapi in time to save the crop there from utter loss. The central coast counties have one of the best fallow crops of recent years. Unirrigated winter-sown grain is a failure practically everywhere.

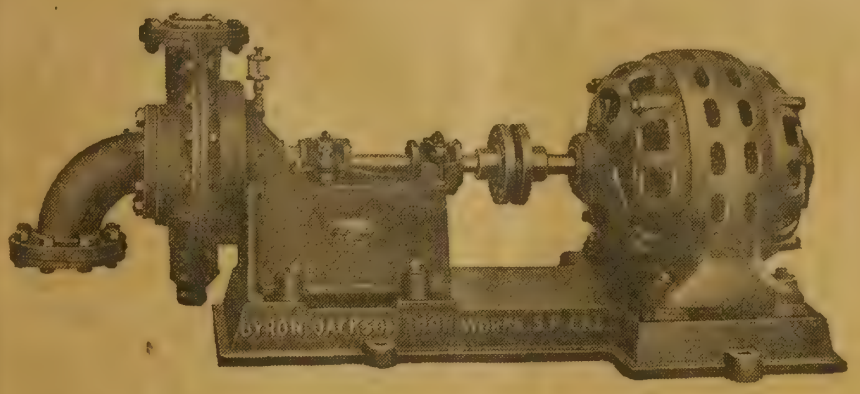
DEMONSTRATION MANAGER HIGHLY COMPLIMENTED.

A check for $300 in addition to his salary as manager of the Sacramento Tractor and Implement Association was given to R. M. O'Neill by the California Tractor and Implement Association at its meeting June 7 as a substantial recognition of his devotion to duty and his hard work in making the Demonstration the best of its kind ever held in the State. With the check Mr. O'Neill was given a letter approving his work. This is ample answer to the two papers which recently slurred the management of the Sacramento event.

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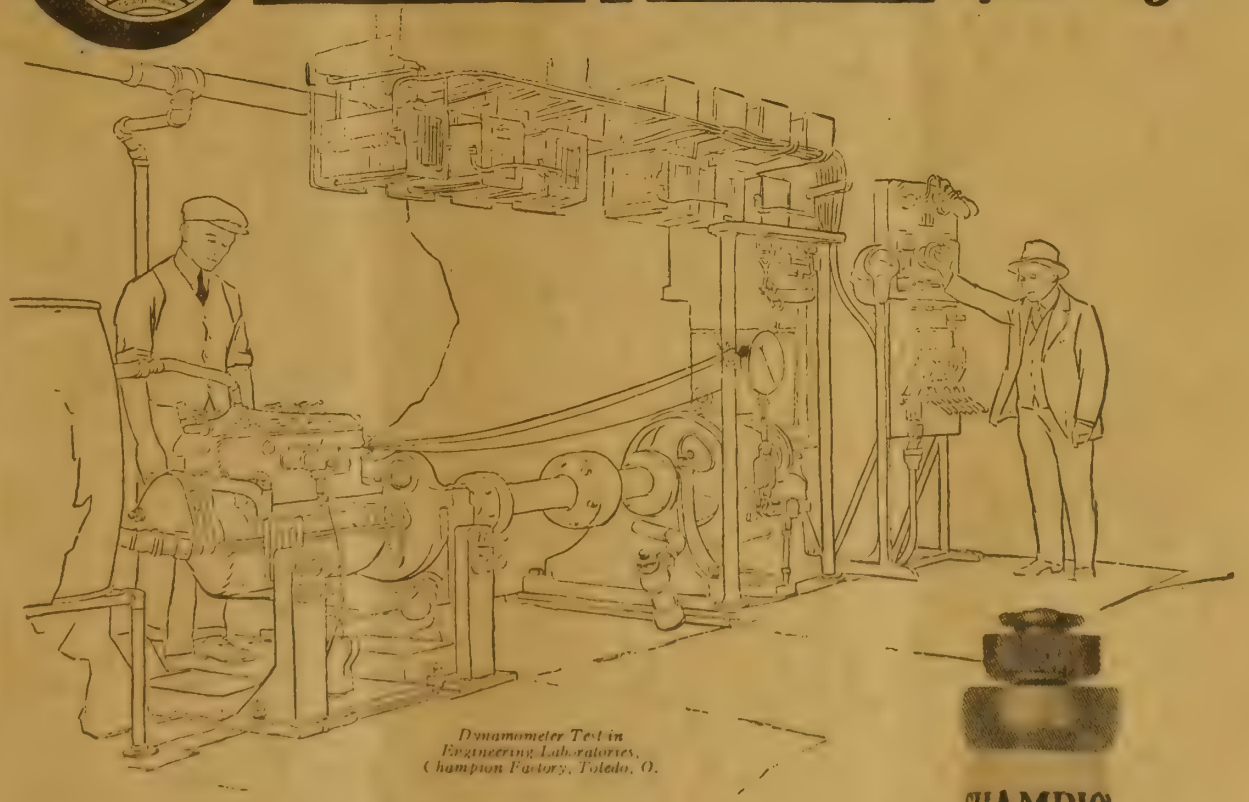


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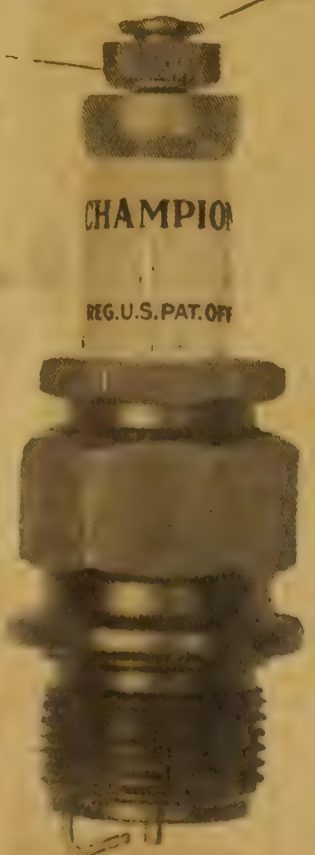
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Organized Farmers Make Nations Listen

(Written for Pacific Rural Press by R. E. Hodges.)

The greatest aggregation of nationally known leaders of real farmers that has visited California in recent years addressed large and appreciative audiences in Modesto, June 6, and San Jose, June 7, in all-day conventions. Over 1,200 people attended the first morning session at Modesto and about 50 per cent more attended the afternoon session. Farm work made the evening session smaller in this dairy district. The article on this page is a summary of the leading thoughts expressed at the meeting at Modesto.

The object of the convention was to secure closer affiliation of existing farm organizations of the U. S. for the purpose of speaking with authority and power on all questions of legislation, price fixing, marketing, etc., which affect farmers. The need for such a federation was forcefully shown, and the need for a headquarters building in Washington appealed to the audience to the extent of liberal contributions and pledges. A resolution was passed asking the U. S. Senate to insert into the Constitution of the proposed League of Nations a provision for an International Institute of Agriculture.

The speakers, who came at the invitation of the California Farmers' Union, included President C. S. Barrett of the National Farmers' Union, President Milo D. Campbell of the Milk Producers' Federation of the U. S., Senator Thos. P. Gore, chairman of the U. S. Senate Agricultural Committee, John A. McSparran, Master of the Pennsylvania State Grange, Dr. W. J. Spillman, formerly Chief of the U. S. Bureau of Farm Management, and President A. A. Elmore of the Washington State Farmers' Union.

Organized laborers are but 15 per cent of all laborers, yet they dictate largely the conditions and wages for the other 85 per cent. When the great nations of the world listen to the voice of "labor" and give "labor" a place in their international and national councils, that voice comes from representatives of but 15 per cent of all laborers. Yet we have seen their power in getting what they speak for.

Organized farmers comprise about 12 per cent of all farmers in U. S.—almost the same proportion that has given labor so much power in its own behalf. Yet organized farmers and the rest are still complaining that they are not getting a square deal. It is their own fault. There are just two fundamental deficiencies which prevent the present mumber of organized farmers from obtaining what they ask for in behalf of themselves and of the 88 per cent for whom they are holding the umbrella.

Pulling in All Directions.

One deficiency has been the weakness of their federation of organizations. It has been the condition which Ben Franklin sought to remedy under peril of British armies when he said, "We must all hang together or we will hang separately" Farmers' organizations have been pulling more different directions than a big bunch of mules we recently saw a beastly man trying to hitch up. They got the lines and harness all tangled and cross-hitched so that pretty soon they were milling around disastrously and getting nowhere. If they had all been pulling in the same direction, they could have pulled a combined harvester. Farmers' organizations have exhibited not much greater tendency to all pull in the same direction until recently. Heretofore, when governmental agencies have seemed to wish to consult farmers on questions involving farm interests, the farmers were nowhere to be found who could speak with authority for all farmers as the head of the Federation of Labor speaks for laboring men.

Last July 20 saw the birth of "The National Board of Farm Organizations" with headquarters in Washington, D. C., where organized labor also has its headquarters.

It now includes most of the national farm organizations and many which are not yet so widespread. Its representative, President C. S. Barrett of the National Farmers' Union, was the only accredited farmer at the Peace Conference in Paris. He was granted prompt audiences by the heads of all the leading nations to present the resolutions adopted by the Board he represented, while royalty waited for weeks to get audiences. That was because he was the representative of the American farmer and he had something to say.

What a Federation Might Do.

The problems of the war were stupendous and they required action regardless of cost. The cost has yet to be paid. The method of collecting payment and the persons who will make the payment are still unanswered questions. After the Civil War, the soldiers, most of whom were not rich men, went back home after doing the fighting, and were compelled to pay much of the cost of the war in the forms of internal revenue taxes and higher prices due to the tariff.

The question now is whether the greatest war debt ever contracted is to be paid by those least able or by those who already have the money. Two new forms of taxation have gained popular approval within recent years, because they place the burden on people who have the money to pay with before they are taxed, viz., income taxes and excess profits taxes, with some additional from a third form, inheritance taxes. Which form of taxation is to pay the cost of the war is soon to be decided, and the farmers can decide it if their representatives are well enough backed. This is only one of a great many questions to be answered with authority through the National Board of Farm Organizations.

Big Business is already on the job through its well-perfected United States Chamber of Commerce. This is a federation of local Boards of Trade and similar organizations throughout the country. Its officers learn how to act on specific questions in two major ways, by the resolutions of business men's conventions and by taking nation-wide mail votes. Big Business is going to take care of itself and let farming care for itself, as witness a resolution passed unanimously at a recent convention of 5,000 of the biggest business men in the country. That resolution asked that all government interference and all embargoes be removed from all industries and commodities in this country except food and fuel!

The need for someone to speak with authority and power for farmers has long been felt. The machinery is already in existence and needing only co-ordination and ample financing. As one of the speakers said in addressing the audience, "If you don't dig up a liberty bond to support this cause, that bond will be taken away from you within ten years directly or indirectly by legislation over which you will have no control."

What Is the Cost of Production?

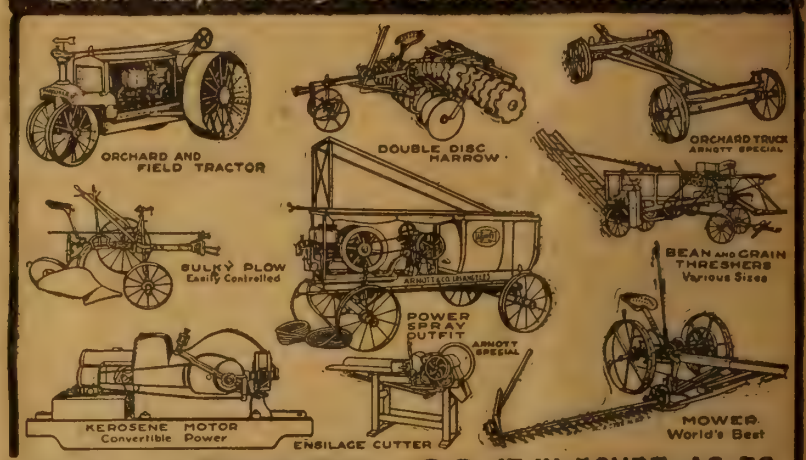
Artificial price-fixing has been tried since the days of ancient governments, always with unfair and often with disastrous results. Prices must be fixed in one of three strata: either at the line which they would have kept due to current business conditions, or above or below that line.

If at that line, the price fixers have their labor for their pains. If above the line, injustice is done to consumers. If below that line, production will normally fall off and consumers, as well as producers will be hurt. The day that the wheat price was fixed at $2.26 per bushed, its market value was $3.40. Production was increased, due to patriotism. But the increase could not be continued with sound financial results. The price of $2.26 was determined, not by figuring on the cost of production plus a fixed percentage of profit, as was the case with most manufactured articles, but by the desire of the administration to provide a five-cents-per-pound loaf of bread for consumers. Starting at the rear end, and figuring a profit for everybody from consumer to producer, indicated that the price of wheat should be $2.26!

"Ascertaining the cost of production on the farm is the foundation which must be laid before even a strong federation of farmers' organizations can build a structure of economic justice to farmers," said one speaker. "When we can show impartial figures on the cost of production, nobody will be foolish enough to ask us to produce for less." Economic justice entitles farmers to salaries which will enable them to support their families on the American standard of living. It entitles them to five per cent interest on the capital they have invested. Most farmers either operate on borrowed capital or as tenants. In either case they are entitled to enough additional to pay the rent or the interest on borrowed capital. Farmers are entitled to another five per cent as savings with which ultimately to buy a home. But with our present knowledge nobody seems able to prove whether farmers are getting that much or nothing at all for their labor.

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FARM OWNERS' AND OPERATORS' ASSOCIATION

National Organization Needed.

Stockton, June 9: The Farm Owners' and Operators' (National) Association had stenographers at the convention of farm organizations held in Modesto last Friday, in order to secure a full and accurate report of the addresses made by the distinguished leaders. The reports are being put in form for study, to the end that there may be gained a clear understanding of the main principles and purposes enunciated by the speakers.

Although the culminative purpose appeared to be to raise funds for the proposed Temple of Agriculture in Washington, the general sentiment on the subject of organization was of interest. Some of the speakers were content to urge the farmer to align with some one—any organization—but the majority went further and insisted that the time was at hand when to be effective agriculture must present a united front. No plan was presented further than that the Temple should house the representatives of all farmers' organizations under one roof.

The Farm Owners' and Operators' Association is now pointing out to the leaders that its plan meets every proposal made at the convention, and goes further. Inasmuch as membership is based solely in citizenship and property, it is pointed out that there is provided a basis of union whereon all interests may unite to gain strength and support. That all classes of agriculture, massed in one organization, can get results that are not obtainable by purely local organizations, is strongly urged on the attention of the leaders. To house the national officers of different organizations under one roof is an excellent project, but to mass the property and citizenship of all in one compact clearinghouse is suggested as a further advance in the practical side of the object. It is pointed out that the simplicity of the basis of organization of the Farm Owners' and Operators' Association and the strength which may be developed out of it, makes strong appeal to those who would see Agriculture gain the influence that has been achieved by business and craft organizations.

Labor Bureau Success.

Reports received at State headquarters from San Jose state that the Labor Bureau established by the Santa Clara unit is already in full swing, and getting results. Under Chairman McDonald a campaign of publicity was begun, and the need of labor in the orchards was spread broadcast. Special appeal was made in the large cities, with a view of securing women and children to aid in handling the fruit. Everything now indicates that the prompt action of the unit will bring ample labor into the field. Provision has been made to care for the workers and to handle the crop harvest on a carefully worked out system.

$5,000,000 in One Unit.

A computation of the probable value of land represented by the acreage in the San Joaquin county unit, places it in excess of $5,000,000. The landed holdings of the members run as small as a single acre and as large as thousands in one tract. There was recently occasion to make a request which was directed to a body used to dealing with organizations and industries. "This unit of the Association represents $5,000,000 worth of agriculture property," was the statement made. It is set down as the first instance where the farmer ceased to be an humble petitioner and spoke in the language used by business organizations.

KEEPING RABBITS FROM YOUNG TREES.

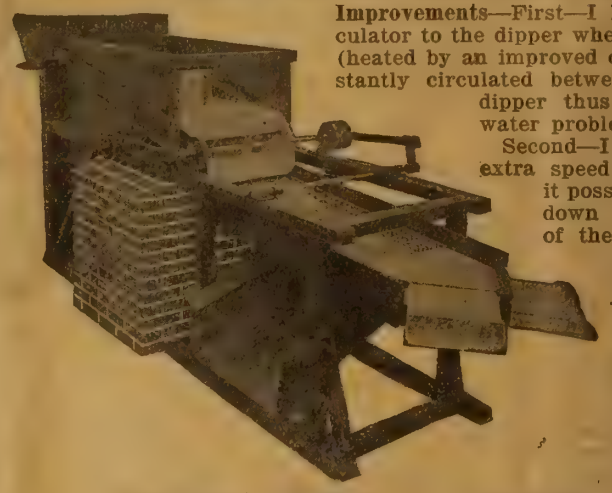
To the Editor: I have a small prune ranch in the Napa County hills, surrounded on three sides by original forest growth. The trees were planted last winter and came out beautifully this spring. Rabbits also came out, and the trees have no leaves. Will they live through, and how can I prevent further trouble from rabbits?

If you have good moisture conditions, the trees will very likely put out leaves again and grow through the summer, if the rabbits are kept away. We have for years joined the farmers of California in attempting to find a cheap remedy for rabbits. Several schemes have been tried with more or less success, but none of them is so satisfactory as good rabbit fence surrounding the place. Poisoning the rabbits is a tremendous job where the hills are so full of them. Some of our subscribers have recommended swabbing the trees with blood, or with rancid grease. The odor of this is supposed to keep rabbits away, but it has to be renewed every once in a while. A suggestion has been made of surrounding the trees with chicken wire. This involves a great deal of labor, and the wire would have to be stayed at the top to prevent rabbits pushing against the shoots they want to eat. Several subscribers have reported satisfaction from planting three or four rows of sudan grass around their young orchards; rabbits prefer the sudan grass and may be periodically hunted and killed off. We have inquired from the U. S. Steel Products Company of San Francisco in regard to the cost of rabbit fencing. They report having recently sold 2000 rods of their poultry and rabbit fence to a Kings county ranch where rabbits had been destroying alfalfa. This wire is 24 inches high and strong enough to turn pigs. It costs 57 cents a rod when bought by the mile. This company also puts out a hexagonal woven fence 30 inches high, and requiring a rail along the top to keep it from sagging. This retails at about 45 cents per rod. Their Ideal poultry and rabbit fence is probably equally good for rabbits, being of the same height, but lighter weight. It costs 40 cents a rod. These fences need posts two rods apart. In sections where rabbits are likely to burrow under, the practice is to plow a furrow along the line of the fence and set it into the furrow, covering deep enough to keep the rabbits off. Such a fence will last about three seasons, by which time the trees, of course, will be beyond the likelihood of damage.

Reports from various parts of the country indicate that there will be no dearth of cantaloupes in the United States this year. The largest acreage ever planted in this country will be harvested this summer. The Turlock district reports an excess over the acreage of last year as do the Imperial Valley and Rocky Ford sections.

San Francisco has received first samples of the new barley crop, which are now on display in the local markets. The samples are from the west side of the San Joaquin Valley.

PERFECTION PRUNE DIPPER AND GRADER



Improvements—First—I have added a circulator to the dipper whereby boiling water (heated by an improved oil burner) is constantly circulated between circulator and dipper thus solving the hot-water problem.

Second—I have installed an extra speed attachment, making it possible to speed up or down as the condition of the prunes demands.

Hard prunes require more scalding and must remain in the hot water longer than soft ones.

A call and inspection will convince you that this dipper and grader is second to none on the market.

PIONEER FOUNDRY & MACHINE WORKS
F. J. Yandle, Prop. 303 Third St., Santa Rosa, Cal.



This cross section of a Ford engine shows where sediment in the oil gathers

Showing sediment formed after 500 miles of running

This cross section of a Ford engine shows how Veedol reduces sediment

Is sediment shortening the life of your engine?

19 places where sediment damages important parts

HOW long will your engines stand up? Will your automobile engine be in good condition after 50,000 miles of hard driving over rough, muddy and sandy roads, or badly worn out after 10,000 miles? Or will your tractor engine be worn out after one thousand hours of work?

Machines that must be laid up frequently for engine repairs are sure to be short lived. They continually need to have carbon removed, valves ground, bearings and piston rings renewed. The best insurance against such troubles is proper lubrication.

Some cars run for 15,000 miles without need for such overhauling. These are the cars which will still be on the road after 50,000 miles of running. Invariably such cars are perfectly lubricated.

Why ordinary oil fails to protect you

Ordinary oil breaks down under the terrific heat of the engine—200° to 1000° F. Large quantities of black sediment which has *no lubricating value* is formed. This black sediment crowds out the good oil from the pistons and other fast moving parts permitting rapid wear. The parts it damages are listed in the center of the page.

Where sediment damages engines

1. Cylinder walls; 2. pistons; 3. piston rings; 4. wristpins; 5. wristpin bearings; 6. crankshaft main bearings; 7. crankshaft; 8. connecting-rod bearings; 9. connecting rods; 10. valves; 11. valve seats; 12; valve cams; 12. cam shaft bearings. 14. cam shaft; 15. timing gears; 16. ignition drive shaft bearings; 17. generator shaft bearings; 18. oil circulating pump; 19. spark plugs.

Solving the sediment problem

After years of experiments Veedol engineers evolved a new method of refining by which a lubricant is produced which resists heat. This, the famous Faulkner process, is used exclusively for the production of Veedol, the scientific lubricant.

The superiority of Veedol oil is shown by the Sediment Test at the top of the page.

Veedol not only resists destruction by heat and minimizes the consequent formation of sediment, but also reduces loss by evaporation in your engine, to a negligible quantity. You will get 25% to 50% more mileage per gallon with Veedol for this reason.

Clean out the old oil in your crankcase and put in Veedol. Follow the directions given under the pictures below.

Buy Veedol today

Leading dealers have Veedol in stock. The new 100-page Veedol book will save you many dollars and help you to keep your car running at minimum cost. Send 10c for a copy.

TIDE WATER OIL COMPANY
Veedol Department
1562 Bowling Green Building, New York
Branches or distributors in all principal cities of the United States and Canada



1. Remove used oil from the crankcase
2. Fill the crankcase with kerosene
3. Run engine very slowly on its own power for 30 seconds
4. Drain kerosene. Put in one quart Veedol; turn the engine over ten times and drain again.
5. Refill to proper level with correct grade of Veedol

GREATEST GRAIN DISTRICT IN CALIFORNIA.

(Continued from first page.)

Planting as Water Recedes.

The general system of planting the belt around the lake is to irrigate in winter, and then sow all that can be so irrigated. As the lake recedes in winter and spring, grain is drilled generally with mud-drills in belts parallel to the water's edge.

Early in June we drove through fields where the harvesters were running. As we approached the lake from the south we passed fields greener and less mature in succession until the latest-planted grain stood not over three inches high among the finely broken silt clods. Then we entered the belt where milo was being planted with mud drills and with regular planters where the surface was dry enough. This belt extended two or three miles inward, at which point the mud was too soft to work. As the surface dries off it cracks in areas about six inches between cracks, and drainage to the lake follows the cracks. We kicked away an inch or two of fine clods at the outermost edge of the milo planting and found good moist black earth. We were told that standing water might be found two feet down. None of this land is ever plowed, but is prepared by weed-cutters, harrows, or disks, and immediately planted. It is free from weeds, and is of untold depth.

Irrigation and Flood Control.

To avoid damage from floods of melted snow, which descend to the lake through five or six rivers from the north, south, and east, several levees encircle the lake more or less completely, each protecting a zone outward if the floods come not too high. Cross levees subdivide the zones for protection in case of a break such as flooded 101,920 acres of reclaimed land in 1916. The levees have been built by local unco-ordinated reclamation projects, each shutting water from its portion of the lake bed. This has reduced the open area under a contour line 190 feet above sea level from 232.83 square miles to 167.63 square miles, and has reduced the storage capacity of the lake up to that contour line from 873,000 acre feet to 744,500 acre feet.

Canals have been constructed spoke-wise from the lowest part of the lake-bed to lead all the water toward its outer edges for the irrigation which is frequently practiced before grain gets into the boot. But this year, the lake was dry at the critical time and upper fields which were not irrigated last winter are notably inferior in every way to the others. The winter irrigations are made directly from great canals, which fill by gravity from the lake. The water is pumped over the levees by great centrifugal pumps and paddle wheels.

To control the floods and to be safe in depending on irrigation water, it is necessary to reservoir the waters of Kings river and to divert floods from Kern river around the western edge of the Tulare lake bowl for grain growing there in flood seasons only. People operating on the lake bottom are endeavoring to get the protection and assurance that can be made theirs by the Pine Flat reservoir project in the upper reaches of Kings river. This will be discussed later.

AGRICULTURAL NOTES.

The first of many suits brought by the California Packing Corporation against Japanese tomato growers for damages for the failure of the latter to furnish tomatoes in accordance with their contracts, has been decided in the Superior Court of Alameda county by a jury in favor of the Packing Corporation and damages were imposed for the sum of $660, besides costs of suit.

Sugar beet seed equal to European seed, is being supplied to sugar beet companies in Utah by the experiment station of the Utah Agricultural College here. Originally the seed came from a strain of the best sugar seed produced in Europe. It has been carefully cultivated by the experiment station for fifteen years.

California's share of the 240,000 army motor trucks being assigned by the Federal Government to the states for highway construction and maintenance will be more than 230 machines.

Because they did not commence irrigating earlier some rice growers in Yuba county may lose their entire crops. It is believed thousands of dollars may be lost because of the inexperience of some of the growers.

The average farm implement is only about half worn out by use alone. The rest of the wear is due to rust and decay. The greatest possible profit is made out of machinery when it is used continuously for profit.



"It climbs like Hell," exclaimed a British General, referring to a "Caterpillar" Tractor in the fields near Antwerp in 1914. "Let's build a war machine along similar lines that will *climb to beat Hell.*" And from the "Caterpillar" Tractor principle the famous tanks were developed.

A Vision that brought Victory

They called them "Tanks" upon the Western Front because, in order to deceive enemy spies while they were being built, the British Engineers circulated the story that they were rolling water tanks, destined to carry fresh water to the troops in Egypt.

What they actually *did* do is history! And it is a very bright bit of history to the men responsible for the "Caterpillar" Tractor.

Speaking to the employees of The Holt Manufacturing Company at Stockton, California, a British General said:

"It (the machine gun with which the Germans did such terrible work against the unprotected Allied infantry) was really a disease against humanity, invented by the late Hiram Maxim; so you Americans not only have the credit of producing the disease but you have the credit of producing the antidote too. The antidote was the Holt 'Caterpillar' Tractor, invented by your employer, Mr. Benjamin Holt."

Each time one of these "armored mobile land fortresses" leveled an enemy trench or pill-box, it furnished an added proof of the superiority and soundness of principle employed in the "Caterpillar" Tractor.

And in addition to the Tanks, thousands of "Caterpillar" Tractors were in service in the war zone—hauling the big guns and ammunition trains into position — moving vast stores of food and supplies for the fighting men —*laying their own continuous tracks* over battle-torn, shell-pitted roads and fields in every kind of heavy and strenuous traction service.

"Caterpillar" Tractors—built only by Holt or under Holt contracts and patents—the only track type of tractor adopted, after rigid tests, for the hardest war service of America, England and France.

American agriculture may well be proud of its contribution toward the winning of this war, for this farming machine, invented and built by Benjamin Holt to till the soil, has been a commanding factor in sounding the death knell of vicious autocracy.

American farmers patriotically accepted the situation created by the fact that the Government, during the war, had first claim upon the products of the Holt factory and that only a limited number of "Caterpillar" Tractors were available for domestic use. But now the war is over and immediate deliveries are again possible.

The same efficiency of performance—the same durability and strength under heavy usage—the same superiority and soundness of principle—all the qualities which enabled the "Caterpillar" Tractor to do such effective war service are at the disposal of the American farmer. Today the "Caterpillar" Tractor, always the leader among tractors for agricultural and other peace-time uses, but now backed by severe war-time service and experience, is better than ever before.

The "Caterpillar" Tractor promises to be one of the greatest mechanical agents of the reconstruction. Write today for full information—ask for catalog 402.

CATERPILLAR
Reg. U.S. Pat. Off.

THE HOLT MANUFACTURING CO.

STOCKTON, CALIFORNIA — PEORIA, ILLINOIS
SPOKANE, WASHINGTON — LOS ANGELES, CALIFORNIA



PELTON

MORE WATER PER HORSEPOWER

A PELTON centrifugal pump, connected direct to an electric motor, makes the most efficient pumping unit it is possible to buy. The correct design and workmanship of PELTON pumps not only guarantees more water per horsepower, but further insures

More Satisfaction Per Dollar

whenever installed. The dealers listed below are eager to demonstrate the superiority of PELTON pumps.

McCormick Saeltzer Co., Redding
George W. Roberts, Marysville
Commercial Electric Co., Stockton
R. Lercroft & Sons Co., Merced
Electric Motor Shop, Fresno
Gridley Garage Co., Gridley.
J. H. Herring, Parlier
Seeger Plumbing House, Sanger
Devenney & Prather Co., Wasco
Farm Equipment Co., Chico
Ogilvy Hardware Co., Oroville
Wise Hardware Co., Modesto
D. Stephenson, Madera
A. R. Gilstrap, Kingsburg
C. A. Hughes, Orosi
A. J. Wheeler, Corning.
Ulmer Machinery Co., Porterville
Alexander & Wright, Palo Alto
California Mechanical & Electrical Engineering Co., Sacramento

THE PELTON WATER WHEEL COMPANY,
1900 Harrison Street, San Francisco, California.

Proved Crawler Durability

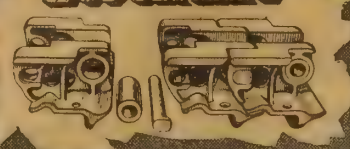
Correct mechanical principles combined with the proper alloy steels, specially heat treated for this hard service, make the BATES STEEL MULE Crawler Shoes of great durability. The knowledge of what these materials must be and how they must be heat-treated has become known to its builders only through the experience gained during the past six years with thousands of tractors in the field.

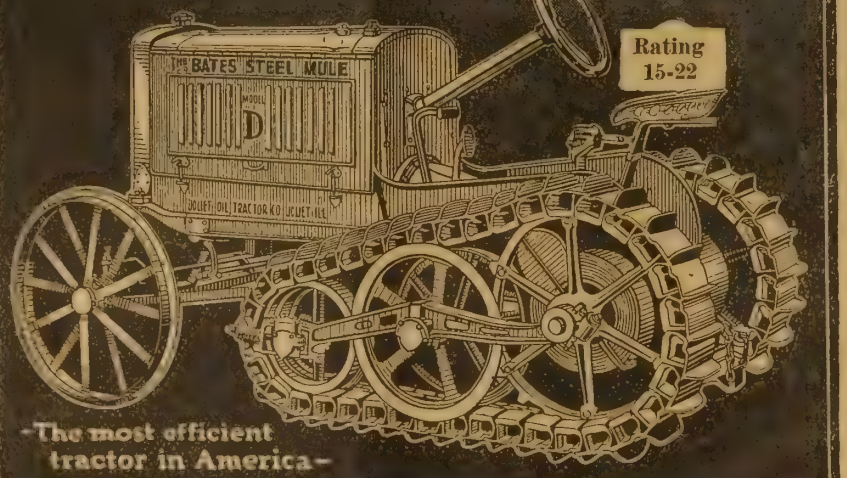
No less important than its crawlers are the Mule's valve-in-head; heavy duty kerosene motor; its hardened cut steel transmission gears; its Timkin Roller Bearings; and its enclosed working parts.

THE J. M. CONLEY CO.
No. California Distributor
417-423 East Weber St.
Stockton, Cal.

F. T. BRILES
So. California Distributor
214-216 No. Los Angeles St.
Los Angeles, Cal.
Excellent Agency Proposition

The Bates Steel Mule





-The most efficient tractor in America-

CHEAPER WATER



LAYNE & BOWLER PUMPS
have many distinctive construction features. The style illustrated is the latest type light duty belted head. Same may be had with direct connected motor, surface, or underground discharge.

Ask for Folder No. 25

Layne & Bowler Corporation
900 Santa Fe Ave., Los Angeles

ALLWORK KEROSENE FARM TRACTOR



Light and Powerful Strong and Durable

Five Years' Successful Service for Satisfied Owners

Our FREE CATALOG and Suggestions for Tractor Users will interest you whether you buy an ALLWORK or not. Write for them

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LEIGH M. RAILSBACK, California Representative.
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Mechanical Power on the Farm

Users of tractors, engines, pumping plants, motor trucks, automobiles, electric motors, and other mechanical farm power are invited to make this department an exchange of their experiences and troubles.

THRIFTY TREES, BIG CROP, PUMP AND TRACTORS.

If you follow Tres Pinos creek upstream from Hollister, you think several times that you have left the orchard country behind. But at Paicines, where the roads branch and the canyon widens, you will be delighted with the sight of 320 acres of Paicines Orchards. When the writer had this pleasure the last of April, a gang of men was thinning apricots an inch in diameter and were in a rush to avoid being equally late in thinning the peaches, which also were overloaded. The apricots had bloomed two weeks earlier than down the valley at Hollister, according to Mr. Richardson who was thinning, but brown rot did not affect a great deal of the fruit. Pear trees seven years old held a fine setting of fruit, largely due to their pruning; as Horticultural Commissioner L. H. Day is reported to have said that pears are not expected to bear much until they are eight or ten years old. These bore a fair crop at six years. After the first four seasons, they had not been pruned back at all for two winters. The idea was to give them a notion of fruit bearing rather than wood growth, and it worked. The common system of cutting back was practiced last winter, and of course a lot of useless, injurious shoots have started this spring. But the system of not cutting back seemed objectionable because the wind blew the growth to leeward and put the trees out of balance. It is expected hereafter to encourage setting of fruit spurs by summer thinning and pinching back of shoots.

Payne Seedling walnuts grafted about a year ago on trunks an inch in diameter were this spring full of buds on every terminal. About 20 acres of peaches and pears were interset with walnuts.

The prune trees had an outrageous load, one 35-acre black having what was estimated to be a 250-ton crop on trees not over nine years old. The estimate is based on the crop of two years ago which was equally heavy in proportion to bearing area. Last year there were only 90 tons.

This orchard is so thrifty and clean that we were surprised when E. A. Dunipace, who has been in charge for five years, said it had never been sprayed except once for aphis. No borers or thrips have been seen, and very little scale or red spider.

Pumping and Tractors.

Thrifty growth is due in considerable measure to good cultivation which in turn is made possible by pump irrigation and tractors. When we were there, the lack of April rains had caught part of the orchard with clods just as the caterpillar plowing had left them. This was not worrying Mr. Dunipace who was planning to work them down considerably with a Cunningham pulverizer which he praises highly. Then he expected to check and irrigate. By that time the growth turned under by the first plowing would be out of the way of a cross plowing. The soil will then be worked to a mulch for the summer.

ENGINE AND RANCHER SPUTTERED.

A rancher in Fresno county could not make his engine run. It would start and sputter and stop. The local dealer from whom he bought it was unable to find the trouble. He telephoned one evening to the head office in San Francisco, saying that the irate rancher was going to repudiate all payment for the newly installed plant, involving about $500. The San Francisco people could not afford, of course, to have one of their customers knocking their engine; consequently one of their men made the trip that night. He was unable to locate the trouble, so the local garage man was called upon. Meanwhile the rancher drove coolly by without even speaking to the folks who were trying to find out the trouble. He acted as if the incident were closed, and as if the pump installation were no longer of any interest to him. The garage man found that the intake manifold had been put on without a gasket. The engine was sucking air at this point. A piece of string was wound around the shoulder of the intake pipe to serve as a gasket, and the engine started off beautifully, throwing all the water that the outlet pipe could pass. This was early in the morning. The San Francisco man drove some miles to the rancher's house and waited several hours for him to come home. He told the rancher that the engine had been started and left with no attendants. He agreed that if it were not still running when the rancher and himself should reach the field, he would take it out and end the deal. On their arrival at the field, the pump was still throwing water to its utmost capacity, the dried-up alfalfa checks were getting a good soaking, and the rancher gave his check on the spot.

TRACTOR DEMONSTRATION POSTSCRIPTS.

Artillery Caterpillar.

The dashing of horses with cannon to the battle front used to work in former wars, but horses were found inadequate for many occasions in Europe. A five-ton U. S. Army Ordnance Department type of caterpillar tractor was exhibited in the Holt Mfg. Co. tent with a legend stating that "Caterpillar tractors were the only tractors used for artillery haulage by England, France and U. S." The tracks were full length of the machine and they showed lots of hard usage but were in good running order.

Premier Burner Users.

While we were watching the clean big blaze from a Premier burner in a common cook stove at the Demonstration, a couple of ladies approached interestedly. The attendant at once started to explain how much cheaper and more convenient and how much cleaner it is to burn kerosene than coal, but the ladies interrupted with the cheerful remark that they were already using Premier burners and wouldn't be without them.

Truck Axle to Support Load Alone.

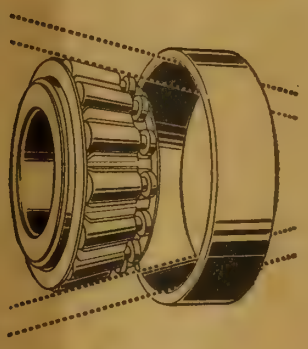
On most motor trucks, a large part of the truck weight and most of the load weight is carried on the rear axle. Every road shock and every side-sway adds to the burden carried by this axle. These points were among many explained by attendants at the International Harvester Co. motor truck exhibit at the Sacramento Tractor and Implement Demonstration in discussing the virtues of their heavy rear axle which does nothing but carry the load. The I. H. C. trucks are of the considerable number which use such axles and drive by an internal gear on the wheels where no additional strain is put on the axle itself.

All Wheels Help Turn Turner.

Short turning with no particular effort is accomplished on the Turner-Simplicity tractor, first shown in California at the Sacramento Tractor Demonstration May 6 to 11, 1919. In addition to two front wheels steering by the automobile principle, either rear wheel may be easily braked, throwing all the power onto the other wheel and greatly assisting in a short turn. This machine, rated at 14-25 horsepower, pulled four disk plows in the general demonstrations and is claimed to have 3600 pounds pull at the drawbar. It has a four cylinder Buda motor, roller bearings, and internal gear final drive.

A carload of Alpha engines of 1¾ to 10 h.p., and eight Viking rotary pumps of 1½ to 4 inch capacity, were recently shipped by the De Laval Supply Company of San Francisco to the Arizona Mine Supply Company of Prescott, Arizona.

TIMKEN TAPER



Dotted lines show how the inside of the "cup" of a Timken Bearing is *tapered* to fit over the *tapered* rollers.

Two Ways Out

When heavy trucking churns up the mud and cuts ruts deeper and deeper—

When mile after mile of sand holds back the wheels—

When rain-cut hilly roads and washed-out culverts call for careful driving—

For such ills as these, there is only one cure.

That's the remedy that begins with plow and scraper and ends with a hard-surface, well drained highway. Therefore, get back of the Good Roads movement and push it for all you are worth.

But there's a preventive against bad road DELAY that is written in the specifications of the trucks, and reads: "Reliability," one of the essentials of which is the selection of bearings that are capable of out-lasting the truck on which they serve.

Many builders have found the remedy in Timken Tapered Bearings, to which there is practically no "wear-out" except by abuse or accident. After a Timken Bearing has been slightly loosened by thousands of miles of wear, a part turn of the adjusting nut or removal of a shim puts all parts back just as when new.

As for Timken Taper—it always stays the same, ready to take end thrust and downward load—to keep gears up to their work—to stand guard over transmission and differential gears—ready to resist the constant heavy push of worm or pinion—ready to add at every point to truck life as well as efficiency.

There's more about these bearings in the booklet, "How Can I Tell." A copy will be sent to you on request.

THE TIMKEN ROLLER BEARING COMPANY
Canton, Ohio





Holtville, Cal., November 20, 1918.

The Empire Cream Separator Co.,

Denver, Colorado.

Gentlemen: Two of your double unit Empire Milking Machines have now been in operation in my milking barn over six months without missing a single milking. I have during all this time watched the work of these machines, and their effect upon my cows in a very particular manner, and I will venture to say that I am today perfectly satisfied that I found the successful machine for the Valley.

My cow's udders and teats are in a better condition than they were before I milked them with the Machine, and the fact that each cow in the herd averages better than one pound of butter fat a day is conclusive that the machines are doing good work. It is my great hope that by the constant use of your machine and careful breeding that I will increase this record to two pounds of butter fat a day from each cow of my graded cows.

C. F. MEYER.

"Good breeding and Empire Milking equally important in successful dairying."

This is the substance of Mr. Meyer's letter which we have reproduced in full at the left, although he mentions Empire Milking first. Mr. Meyer is not alone in his estimation of the importance of Empire Milking. More and more every day it is being demonstrated that from every angle the Empire Milking Machine is almost as important to dairying as a herd of cows. Greater milk production, lower cost of production, lower bacterial count, follow the installation of Empire Milking Machines. Our catalog No. 45 is well worth reading. Write for it at once and ask for the name of the nearest Empire dealer.

EMPIRE CREAM SEPARATOR COMPANY, Bloomfield, N. J.

Also ... Manufacturers of Empire Cream Separators ... Gasoline Engines

Chicago, Ill. Denver, Col. Atlanta, Ga. Montreal and Toronto, Canada

EMPIRE MILKING MACHINES

THE OTIS HERD

Milking Shorthorns

WILLOUGHBY, OHIO.

BEEF MILK



LADY OF THE GLEN.

Bred by us and acknowledged the best and most valuable individual of the breed.

Largest herd in America with the best connection. Many cows weighing 1,700 lbs. and above with records of over 10,000 lbs. of milk. Winners at the recent Congress sale owned by us or of our breeding. Sale cattle in carload lots or single. Calf clubs a specialty.

Write T. H. Harrison,

Santa Rosa Stock Farm, Santa Rosa, Cal.

California Representative.

HOLMES STOCK FARM

WATERFORD BD., MODESTO, CALIF.

Registered Holstein Friesians.

YOUNG SERVICE BULL FOR SALE

Prince Abbekerk Aralia Walker, No. 204267—Three-quarters white.

Write for pedigree and price. Inspection invited and satisfaction guaranteed.

REGISTERED HOLSTEINS

Creamcup Herd offers service bulls and bull calves of 34-lb. breeding. Females offered for foundation stock. Tuberculin tested.

M. M. Holdridge, San Jose, Cal.

R. D. "A," Box 437.

Two miles out North First Street.

Shropshire Rams

Pure blood yearling rams—singles and carload lots. Also pure-blood lamb bucks, ready for service by Sept. 1st. These bucks and rams are from pure-blood ewes (formerly registered) and the best registered rams to be purchased in the United States.

J. R. BLOOM, DIXON.

CALVES



The ONLY Calf Meal using pure dry milk solids as a base: feed

Red Horn Calf Meal

Wean calves from milk in four weeks. Send for free literature.

GLOBE MILLS, Los Angeles

California Breeders have sold more than $350,000.00 worth of registered cattle in our sales, under the most stringent requirements laid down by any sales organization in America. Satisfied buyers have been the rule in all our sales.

CALIFORNIA BREEDERS SALES AND PEDIGREE CO.

C. L. HUGHES, Sales Manager, Sacramento, Cal.

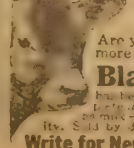


America's Pioneer Dog Medicines

BOOK ON DOG DISEASES And How to Feed

Mailed free to any address by the Author

H. CLAY GLOVER CO., Inc., 118 West 31st Street, New York



Calf Profits

Are you getting them? Calf profits mean more to you now than ever before.

Blatchford's Calf Meal

has been known since the year 1870 as the complete milk substitute. Costs less than half as much as milk — prevents scouring — promotes early maturity. Sold by dealers or direct from the maker.

Write for New Data See actual figures showing you how to increase your calf profits

COULSON CO. - - - Petaluma, Cal.

The Big Problem--Marketing

(Written for Pacific Rural Press by E. H. Whitten.)

"During the war the problem of production was of the greatest importance, but in time of peace the problem of distribution is paramount." So says Senator Thomas G. Gore of Oklahoma, chairman of the Senate Committee on Agriculture, and one of the leading speakers at the Federated Mass Conventions held at Modesto and San Jose last week.

You are right, Senator, and if you investigate conditions in this State you will find that the marketing of beef cattle is the first problem for consideration. In last week's issue we stated the reasons for the instability of our livestock market as seen by Owen B. Duffy, of the marketing committee of the California Cattlemen's Association, but before giving Mr. Duffy's remedial measures we want to cite two cases that came under our observation during the past week.

The first is that of Guy Allen of Upper Lake, who wrote us for himself and his neighbors, stating that they had small ranches with only a few cattle on each, and that they found it practically impossible to dispose of their stock to advantage. They did not raise enough stock to ship direct to the packers, and if they sold to a local buyer he would not pay them a satisfactory price. There are hundreds of similar cases in the State, and an ideal marketing plan should protect these small ranchers.

The second case is that of the Pacheco Cattle Company. The writer visited their big ranch at Hollister last week and saw hundreds of steers on the ranges that would tip the beam at 1,500 and 1,600 pound. They represent several pure-bred crosses, and not only are large, but show a wealth of evenly put on flesh-market-topping qualities galore. Yet it is practically impossible for Mr. Hawkins to satisfactorily market these fine steers here in California. Of course, he can sell them locally, but only at the price paid for 1,000 to 1,200 pound stuff of greatly inferior quality, while they should command a liberal premium. The packers claim that California is a cheap market, and that there is no money in heavy prime steers. Perhaps this is true, but if so, it is no reason why we should breed downhill and raise common stuff. It simply shows a condition which needs to be changed, for certainly there should be an unlimited market for the very best steers that California can produce—if not at home, then a satisfactory Eastern trade should be developed. Mr. Hawkins can market his steers in the East because he sells them in train-load lots, but the small rancher with similar stock is up against it, except as he may be benefited by the new plan of the Cattlemen's Association of shipping stock to Eastern markets during the months when there is a surplus in this State.

So much for conditions; now for remedies. Mr. Duffy makes his suggestions under six headings, as follows:

Study of Livetock Resources.

Intelligent marketing requires that all sources of supply be investigated, in order that full information may be had regarding such vital questions as number, age, breed, grade, conditions, location and ownership of at least 80 per cent of marketable cattle in the State and portions of adjoining States. A plan for taking a stock census at least by-annually must be worked out. A force of field men assigned to given districts will furnish the most complete and reliable, though most expensive, form of information. The State could be circularized in questionnaire form with poorer results, or a volunteer system of canvass by members of the Cattlemen's Association in their respective districts, might prove satisfactory.

Reliable Market Data.

An agency for gathering reliable market data must be maintained as one of the fundamentals of successful selling. This data must be authentic to a high degree, and furnish an index to demands of each market with regard to volume of sales, grade of stock, shipping facilities, yard accommodations, a list of reliable buyers or commission men doing business at the several markets, etc. The data must be compiled in simple form and be distributed frequently enough to furnish a true indication of market conditions up to date of publication, with a forecast of what might be expected in the near future.

Study of Market Conditions.

Before any plan for marketing can be decided upon, a thorough and comprehensive investigation of present-day methods of distribution by the large packing concerns must be made. Cold storage plants and icing stations are very largely controlled by the big operators, while 90 per cent of all refrigerator cars used for the shipment of fresh meats are owned by the five big packing companies. Also by their system of 1,093 branch houses and 1,297 car routes, they reach nearly 60,000 cities and towns.

These packers are resourceful and aggressive, being constantly on the lookout for any encroachment by independent or co-operative competitors. Evidence has been produced to show that in order to make it impossible for an independent to exist, the companies have each taken their regular turn at selling below cost, in this manner, making the burden fall lightly on each, while maintaining constant pressure on the competitor until eliminated.

While competition is undoubtedly keen in certain lines and at various points of contact, we must never lose sight of the fact that the big packers fully dominate the situation by reason of volume of livestock purchases, sales of dressed beef and by-products, control of transportation and preserving facilities, distribution of products, non-invasion of each other's territory, and in a general sense, elimination of healthy competition.

Producers seeking more and better markets might establish co-operative stockyards at which facilities for grading, feeding, sale, trans-shipment, weighing, etc., would be done at cost to members, while a reasonable charge for services to non-members would care for depreciation and betterments to the plant.

A mutual, non-profit or union stockyard, organized primarily for use of members in marketing their offerings, but with facilities for carrying on a general business in livestock, can be practically and economically established at any point indicating requirements for such, each share of stock in such yard to carry obligation on the part of the holder to pay a specified amount in proportion to the business done by him through the yard.

Commission buying and selling should be strongly developed in addition to handling of members' business, first, for the purpose of popularizing the yard, and second, rail and car service will be available in direct ratio to the volume of business done, while the overhead will be reduced for the same reason. Sale of feed, services, manure, disposal of dead animals, etc., are considerable, where many shippers patronize a yard, and members of the association would get their loading, grading, weighing, feed, care, etc., at cost.

With the outside buyers in the market for trainloads of cattle, either slaughter stock, stockers or feeders, the association would be in a position to give definite information as to what grade, breed, number and condition of stock could be delivered by members, with the date of assembly at the yards and shipment therefrom. In a word, buyers could be assured that their requirements could be met by the association at its yards on a certain date, the quality and grades to be guaranteed by the association.

Uniform System of Grading.

Particular stress has been laid on the subject of grading for the reason that too little attention has been paid to this very important factor in the sale of sock by the producer. Consignments of cattle uniform in size, age, color and condition will sell more

readily than mixed lots, while a good steer has never yet brought up the price of a poor one when sold together.

Securing an Outlet.

The outlet for such offerings from yards will require that the association give early evidence of a desire to do right by all patrons and that it establish a reputation for promptness and honesty in meeting obligations.

The establishment of a cattle loan bank with a fair working capital would be a wonderful assistance to all producers patronizing these yeards, as well as being of benefit to the cattle industry at large, in that it would enable the producer to finance himself in times of stress, instead of being compelled to sacrifice his stock in face of poor feed conditions or any of the other hazards of the business.

Ideal marketing conditions would be: A union stockyards in the center of a district producing many cattle, served by adequate rail and water transportation, financed by a strong cattle loan bank, officered by stockmen-bankers and having a feeding plant properly equipped for finishing consignments of stock to the feed pens. This feeding plant should control sufficient land, owned or leased, to produce all the alfalfa, hay, grain and silage or beet pulp required for the season's feeding operations.

This ideal can only be approximately approached, but enough progress can be made along one or more of the leads suggested to put the industry ahead twenty years, for our present methods are archaic and haphazard at best. Four or five yards advantageously situated would care for the entire State, while branches could be located as conditions demanded.

Financial Assistance.

Entry on the money market for the purpose of securing capital for either breeding, feeding or speculative operations, will require a carefully prepared plan of operation in order that long time loans with reasonable interest charges may be secured. This financial plan is a distinct phase of the situation and will require detailed study, separate from the other matters mentioned.

In order to keep properly in touch with conditions in the principal buying centers, it would be necessary to have a representative on the ground at all times. An agent or broker located at either Chicago or Kansas City would be in position to keep producers and shippers informed as to conditions in general.

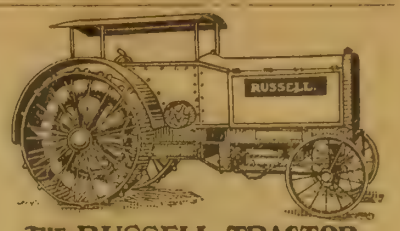
This representative could be in constant touch with buyers and shippers, bringing them together with the least possible delay or inconvenience. The agent would be in a position to give intending purchasers information regarding livestock on the ranges, in pastures or feed lots, with all data necessary to guide purchasers to the locality producing such stock as he desired.

The agent would also—having advance information—be in a position to give buyers information as to expected arrivals of livestock from his clients, in order that proper data as to date of arrival, weight, etc., would be available to buyers in advance of arrival of stock. All principal markets could be covered from the one central point.

What Is Your Solution?

We give Mr. Duffy's suggestions without comment. The problem is too big to be solved in one move, and our chief aim right now is to get suggestions from as many different cattlemen as possible, believing that from all of them a practicable plan may be worked out.

So now we want to hear from you, Mr. Reader. Don't leave it for the other fellow. We want to hear from him, but also from you. A suggestion on any phase of the situation will be gladly received. What are your ideas?



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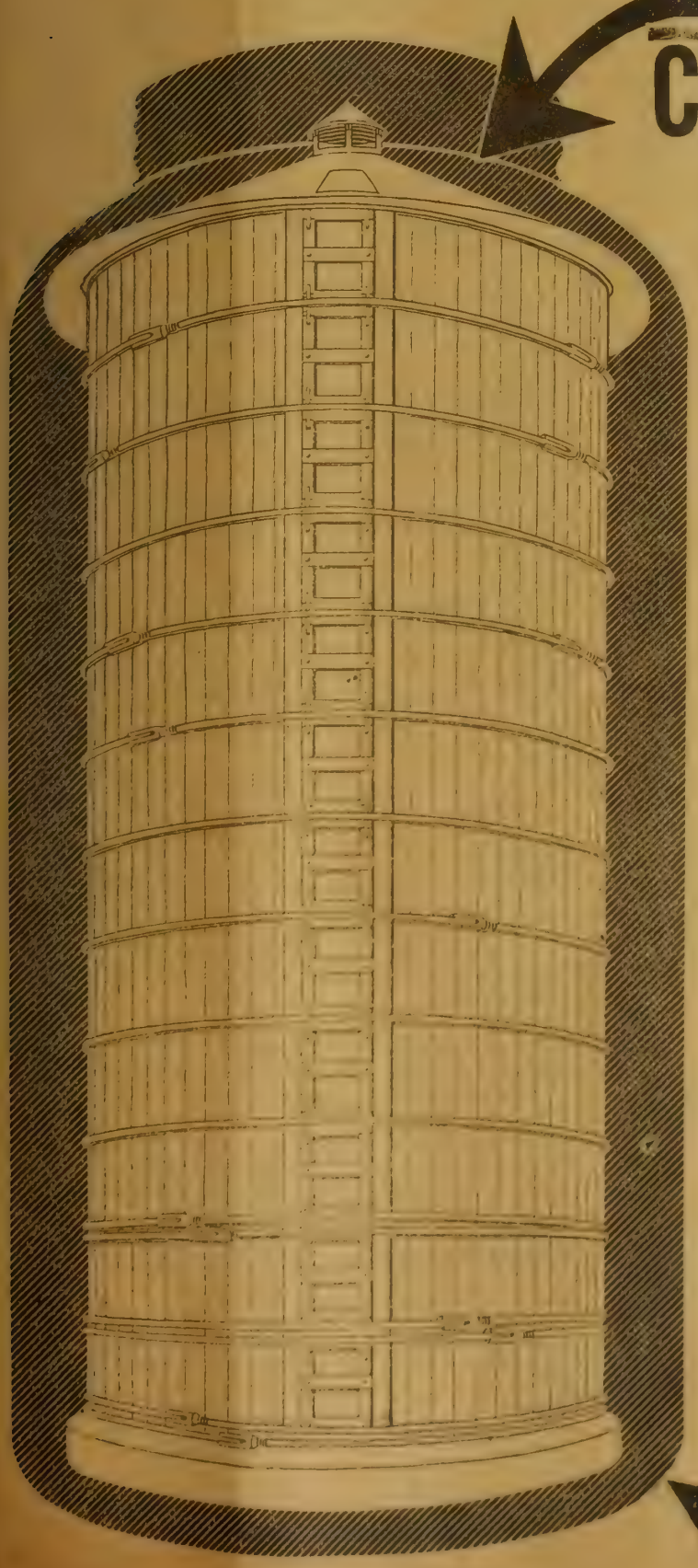
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Rubbing Elbows with Other Breeders

(Written for Pacific Rural Press by Thos. F. McConnell.)

Herds of High-Class Hogs.

The above title applies all right when reference is made to the herds of Poland-Chinas owned by W. A. Young of Lodi and his partners. Mr. Young furnishes part of the hogs under certain conditions, and his partners care for and raise them. One can hardly go in any direction from Lodi without seeing a herd of Poland-Chinas owned in part at least by W. A. Young. They are not common pigs either, but the very best type of big-boned Poland-Chinas, with lots of finish and the easy-feeding qualities which enable them to develop quickly into the market type desired, or they may be continued on to large-sized breeding animals.

Why shouldn't they be good hogs? Mr. Young has been breeding Poland-Chinas for years, and has shown in competition with the best breeders of the State, winning his full share of the ribbons. One old sow, Ora Price, that he has out on the Barton place, just above Clements, has farrowed so many prize-winners that he calls her the "mother of champions." To show that this Ora Price blood not only is popular in the show ring, but also sells for good money, Mr. Young sold to J. F. Lehman of Lodi a half-interest of this noted sow for $75 in January, 1918. In March the sow farrowed 10 pigs and raised them all. By the end of the following September Mr. Lehman had sold pigs and won money totalling $610, and has left 3 gilts, for which he had refused $350, and the original sow. Not bad, even in this era of high prices. Langhorst Bros., of Lodi, also have some of the same blood and are having just as good results from their swine-breeding ventures.

It would take a whole issue to describe the good ones seen on the different places, but two young boars, Barton's Big Korver and Smooth Young Korver, will be found in the money next fall if nothing happens in the meantime. The boar Long Big Bone Jr., the junior champion at Sacramento, and the Iowa boar, Golden State King, are doing fine service in this herd.

No Anthrax at Purvine's.

The farm owned by T. B. Purvine & Sons, 8 miles west of Petaluma on the Two Rock road, has been called an anthrax-infected area, as they have lost some sheep at intervals with disease diagnosed as such by several veterinarians. The animals have been vaccinated to prevent a recurrence of the malady, but with no results, as sheep continue to die occasionally in the same way.

Finally Dr. E. C. Morris, a veterinarian who has only been in Petaluma about a year, was called and performed an autopsy, which showed the disease to be hemorrhagic septicemia. In order to be positive, the findings at the autopsy were later substantiated by laboratory diagnosis, proving conclusively that the disease was not anthrax, but the much less dreaded hemorrhagic septicemia, and the animals were vaccinated accordingly.

The Purvines, father and son, are to be congratulated on employing a veterinarian who went to the bottom of things, as they have a most excellently stocked farm with about 400 sheep and 40 Jersey cows.

Horan's Great Herd Headers.

Two miles east of Lockeford on the highway is situated the modern Poland-China breeding establishment of N. K. Horan—the home of Big Bone Bob, Major Hadley Wonder, and females galore of equal note. Most of the latter are of I. B. A. Wonder, Model Giant, and Grand Model blood lines.

Mr. Horan has one of the largest registered Poland-China breeding establishments in this part of the State, and has personal supervision of the breeding and feeding of the herd. The brood sows are a grand lot, and, mated to such noted sires as the above, they are bound to produce prize-winners.

Mr. Horan was weighing some of his yearling gilts the morning the writer visited the ranch and they weighed right around 450 pounds, which certainly speaks well for Mr. Horan's ability as a feeder. Many people used to think that a hog weighing this amount at twice the age was about the average.

It Pays to Salt Your Hay When Stacking or Baling

Cattle Eat Up Salty Forage Clean

"An ounce of salt a day in the rations is all right for cows," says G. L. Stearns, formerly of the Vina Ranch. This is probably not enough, so there ought to be some stock salt in the yards for cows to eat at pleasure. Sometimes in feeding cows for official test, as much as 3 ounces per day is mixed in the feed. This makes the cows thirsty and they drink more water and produce more milk. But it is necessary to be very careful in feeding salt in the rations, for it is apt to give them the scours and is also likely to cloy their appetite so that they will not eat enough to make a record yield of milk.

Two crops of fodder per year, which the stock eat up clean, are grown by a settler on the Natomas Consolidated project in Sacramento county. He grows purebred Duroc hogs and Shetland ponies, and claims that his oat hay cut early in May yields 3½ tons per acre. Immediately after it is cut, corn is planted; and if this doesn't mature it is cut as fodder when the kernels have dented. The ears are taken off and the stalks stacked in the yard with a large amount of salt, which induces the stock to eat it more completely than otherwise. His neighbor, Mr. Jensen, salts his threshed wheat straw, which the cattle eat clean. Leading dairymen use salted alfalfa hay the year round for feeding dairy cows to increase the flow of milk.

The amount put into hay in stacking depends on the amount of hay each animal is expected to eat. Twenty pounds per ton in general may be all right if the stock has plenty of other food. But a cow which has nothing but hay will eat five tons per year if she weighs 1200 pounds, according to Mr. Stearns. At the rate of 20 pounds per ton, this would force the cow to eat a trifle over 4 ounces per day, which is altogether too much.

When it seems that there is danger of too much salt in the feed, a satisfactory test may be made by offering salt separately; and if the cow doesn't eat it, less of the salty feed may be given until she will.



Cross-section of hay stack showing how salt should be applied every 3 feet.

Kounias Has High-Class Holsteins.

One of the herds of registered Holsteins that is producing nicely now and gives great promise for the future is that of George Kounias at Modesto. Mr. Kounias is making a specialty of the Duchess of Ormsby line of breeding, and many individuals in this herd are closely related to Duchess Skylark Ormsby, the great 1,500 pound cow.

The senior herd sire, King Korndyke Hengerveld Ormsby 7th, was at the head of a grade dairy herd until 3 years ago when Mr. Kounias discovered him, and being impressed with his great individuality, constitution and Holstein type, bought him and placed him at the head of his registered herd. It is the aim of Mr. Kounias to get as many daughters from this sire as possible, there already being about 30 in the herd.

There is one female that is deserving of more than passing notice. She is the senior member and has almost passed her usefulness, but is still breeding. This cow is Dominitia Bonnie De Kol 2nd, 16 years old, and never has been dry since her first freshening.. She commences to show the effects of old age, but is expected to freshen in the near future. There are four other cows, sisters of this old cow, that have proven themselves worthy relatives, and ably assist in the makeup of this excellent herd.

A senior two-year-old heifer that was on test when the herd was visited, Kounias' Novena Hengerveld Ormsby, has the greatest system of milk veins ever seen on an animal of this age; many good cows of two or three times her age not being her equal. She was giving a most excellent account of herself in the test and was a superior individual in other ways.

The young stock, most of them sired by the senior herd sire, certainly are a very promising lot and reflect much credit on the herdsman's care and feeding. Like all up-to-date stock growers, Mr. Kounias is improving his place by the addition of new barns and buildings, and from the appearance of things will soon be most excellently equipped.

Levy's Lambs.

At Calla Grove Farm, Manteca, both the lambs and the older sheep certainly look good. They are of the popular Hampshire breed, noted for excellent mutton form, good size, quick developing lambs, and a nice, large fleece of medium wool. Mr. Levy, the proprietor, has about 75 registered sheep and expects to increase the flock soon. He purchased some of his stock from the University Farm at Davis, and altogether he has a most excellent start.

Mr. Levy finds that sheep are profitable in more ways than those of selling the increase and the wool, for they are great weed scavengers, although they cannot get rid of all of the foxtail. The fact remains, however, that they do eat more of such deleterious growth than other kinds of livestock.

Sheep on the small farms are not as popular as the hog, for instance, but it is possible with such a breed as Levy's Hampshires, that are noted for quick-growing lambs, to keep a few on most ranches where they will pick up a great deal of their living, keep irrigation ditches free from weeds, and produce lambs that weigh 60 pounds at a very early age, and sell for a high price in the markets.

This is, of course, from the standpoint of the grower of market lambs, but Mr. Levy grows his registered sheep for breeding purposes and to supply rams for the small flocks that have been started throughout California, or the large flocks of the ranges. His Hampshires are of the massive type, with backs well covered with flesh, and with beautifully developed hindquarters.

An outbreak of Hemorrhagic septicemia in Tehama County has been successfully controlled by the farm advisor and the extension veterinarian of the Bureau of Animal Industry. The outbreak occurred in a herd of 800 head and 75 had already died when the herd was vaccinated. About 400 head were given a second dose and 235 a third dose. After vaccinating there was a loss of only eight pigs.

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Livestock and Dairy Notes

Livestock breeders all over the state are invited to send on postal cards, notes regarding their sales, State and County Fair intentions, new stock, etc.

The Dairy.

Frank B. Anderson, the Berkshire breeder of Sacramento, has combined dairying with hog raising and has started a herd of Holsteins.

At Palo Alto Stock Farm, Palo Alto, the senior 2-year-old, Thelma Hartog Sunland De Kol, made a yearly record of 930.03 pounds butter from 21,703.5 pounds milk.

At the Cabana dispersal sale of Holsteins, held at Elma Center, New York, May 27 to 30, 226 head averaged $3,337. As reported last week, the top was the bull, Rag Apple the Great, who sold for $125,000.

Edgemoore Farm at Santee, the Guernsey breeding establishment owned by W. H. Dupee, has made 100 official records showing an average of over 500 pounds butterfat. Seven cows have qualified as class leaders.

Dean Fayne Segis, herd sire of Dean Beeman, Shady Glen Ranch, Woodland, is one of the best-bred young Holstein bulls in California. The records of his sixteen nearest dams average 29.56 pounds for seven days. The cows in this herd are noted for their persistent milking characteristics.

Alexander & Kellogg of Innisfail Farm, Suisun, report the sale of a Milking Shorthorn bull calf by Imp. Kelmscott Viscount 19th, out of Rose Fairfield 2nd, to John Whobrey, Myrtle Point, Ore.; the cow, Bessie Rose, to Kirtland Farms, Central Point, Ore.; and a bull calf to A. Hilborn, Suisun.

The California Dairy Council has signed up 99 per cent of all the dairymen in the Salinas Valley, and it is expected that Humboldt county dairymen will join in a body. Secretary Greene says that California dairymen seem quick to appreciate the benefits to be derived from the educational work that this Council is doing.

At a recent meeting of dairymen at Crescent City, the Del Norte County Dairy Association was formed with Raleigh Scott of Smith River, president, and Clarence Westbrook of Smith River, secretary. A farm bureau was organized at the same time and one of the first problems taken up will be the co-operative purchasing of mill feeds.

F. H. Scribner, who went back East to buy dairy cattle for Riverside county breeders, has purchased 33 very fine Jersey heifers from the herd of J. O. Terrell & Sons of San Antonio, Tex. J. E. Wherrell, the Jersey breeder of Riverside, accompanied Mr. Scribner on his trip and is responsible for much of the Jersey enthusiasm started up in Riverside county.

The last issue of the Jersey Bulletin illustrated a milker's mask invented by F. W. Elleby of Modesto, designed to protect milkers from the swishing of cows' tails. It is very much after the order of a baseball mask, only the mesh is much finer. With this mask there is no need to tie the tail or hold it, and consequently a nervous cow will produce better.

W. T. Birch of Palmdale has a Guernsey-Jersey cow that comes pretty near holding the record for persistency. She calved three years ago and gave 2½ gallons of milk. She has not freshened again since then and is still giving the same quantity. She didn't start out very heavily, but who else has a cow that is producing 2½ gallons after three years of continuous milking?

Palo Alto Stock Farm, Palo Alto, is doing a mammoth business in the sale of Holstein bulls for herd headers. Recent sales have been made to: E. A. Call, Fort Ross; Capital Dairy, Sacramento; James Gibson, Modesto; W. E. Clifford, Modesto; Mrs. Helen Decker, Modesto; S. J. Silva, Oakland; J. M. Gomez, Ceres; H. J. Kimmell, Modesto; S. L. Harscom, Modesto; Nickerson & Arnes, Modesto; L. R. Green, Modesto; W. H. Dixon, Hughson; W. R. Cook, Hayward; W. K. Adams, Modesto; G. T. Duncan, Modesto; Henry Robin, San Jose; L. C. Pingree, Modesto; A. Moracci, Modesto; W. L .Denison, Modesto.

Beef Cattle.

Eugene H. Grubb has just returned from Colorado, where he purchased 42 Shorthorn cattle for Butte City Ranch, Butte City.

"It is now too late to send any but very good cattle to the Pacific Coast," is the way the editorial page of the Shorthorn World in May starts out. Them's our sentiments, too.

T. T. Miller of Hollister has sold to the Pacheco Cattle Company of Hollister, the Roan Shorthorn bull, Dalmeney's Count, by Count Glory, former herd sire at Carruthers Farm, Live Oak. This bull was bred by Mr. Carruthers.

The coming sale of Shorthorns on October 16 next by Roselawn Farm, Woodland, is already attracting the attention of Shorthorn breeders throughout the West. There will probably be 45 head in the sale including such good ones as the bull, Crescent Dale, and a straight Scotch heifer by Sultan Mayflower, a grand champion cow, and many others of supreme merit.

Swine and Swinemen.

Thos. Shattuck of Hastings, Nebraska, has been secured by Sec. Chas. W. Paine to judge Poland-China at the California State Fair.

The American Hog Company of San Francisco recently sold 20 Poland-China sows and 2 boars to the Gulf Steamship Company of Gilroy.

H. P. Eakle, the Duroc breeder of Woodland, recently sold a boar, a tried sow, and 6 gilts to W. H. Eakle of Williams; also a gilt to W. H. Rehmke, Woodland.

H. E. Boudier, Napa, reports continued good results from Rural Press advertising and finds a ready market for his high-class Durocs, mostly sired by his herd boar, H. I. Royal Col.

A. L. Tubbs Company, Calistoga, the leaders in the breeding of Yorkshire hogs, report excellent results from Pacific Rural Press advertising. The orders are coming in faster than they can raise hogs to fill them.

The date for the first consignment sale of the Tulare County Poland-China Breeders' Association, has been changed from October 9 to 29, so as not to conflict with the livestock show to be held at Tulare October 6-11.

W. T. Hollingshead & Sons, Duroc breeders of Orland, have raised 76 pigs this spring from 9 sows, which is a mighty good average considering that 5 of the sows were gilts with their first litters. The pigs are a fine, thrifty lot.

The Tulare County Duroc-Jersey Breeders' Association will hold a consignment sale July 16, which will be the first event in the new $10,000 pavilion. Sixty animals, representing the best of the breed to be found in the county, will be offered.

W. P. Harkey of Gridley, who is developing a fine herd of Durocs, reports business good and the demand for sows heavy. He has recently sold 2 sows and a service board to Fruitland Ranch Company of San Francisco, and a gilt to Floyd Onyett, Palermo.

Fred Gatewood of Fresno writes that the classification in the swine department of the Fresno Fair, which will be held from September 30 to October 4, will be more extensive than last year, with classes about the same as at the State Fair. The Poland-Chinas and Durocs will have district futurities.

R. J. Merrill & Son of Imperial Stock Farm, Morgan Hill, have four gilts by Winona Champion 13th and out of Forest Grove Laurel 14th, that will surely be within the money at the fairs this fall. Those who say that Berkshires do not have enough stretch ought to see these gilts. They certainly are pippins.

Francis T. Underhill, owner of Ortega-Underhill Rancho at Santa Barbara, will hold on August 6th the first large public sale of Hampshire hogs ever staged on the Pacific Coast. Mr. Underhill spent over $25,000 in establishing his herd and is now in a position to make an offering that will show people the real value of Hampshire hogs.

Geo. L. Horine, the Duroc breeder of Winton, recently bought a bred gilt from W. M. Way & Son, Modesto, that looks like the real goods. She is a Gold Model gilt out of the 700-pound sow, Our Wonder, and her sire, Way's Model King, is by the Mumford boar, Brookwater Gold Stamp 4th. She is bred for June farrow to a yearling son of Crimson Monarch 2nd.

A. Buckland & Son, Fresno breeders of big-type Poland-Chinas, have an exceptional prospect in a September boar by King Big Bone, out of a Missouri Blue Valley sow. E. E. Marlowe & Son of Wellsville, Mo., thought so well of this boar that they were willing to ship him out on approval. He will stay here for keeps and will be shown at the big fairs this fall.

Sheep.

E. B. Holt of Heber got 450 lambs from 327 ewes during the last lambing season.

C. O. Councilman, Winters, says that shearers are receiving 12½ cents per head, and herders are getting $75 per month and board.

PROFITABLE POLAND-CHINAS

We offer at private sale 40 splendid young sows, 10 choice bred gilts and 5 carefully chosen boars. They are representative selections from the herds of leading California breeders, including M. Bassett, W. H. Browning, W. A. Young and Hewitt & Hewitt, and such Eastern breeders as Henry Fesenmeyer and T. F. Walker. They carry the blood of such noted sires as President, J. O. Orange, I. B A. Wonder and Chieftain

These registered hogs are sold for no fault. We are simply discontinuing this breed and offer what we bought for the foundation of one of the finest herds in the West. Prices reasonable. Write at once.

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LOUDEN BALANCE GRAPPLE HAY FORK

Lifts an enormous load. Binds it tight. Drops it clean. Spreads it well in the mow. Leaves no litterings to be cleaned up with a pitchfork. Three or four fork-fulls clear the rack. PERFECTLY BALANCED, slender but strong, will not bend or break. A money-saver in haying time.

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LIVE OAK CALIFORNIA

Second annual **SHORTHORN** sale will be held on July 10th, at Sacramento, at which time and place 45 head of bulls and females of rare breeding will be offered.

ORMONDALE SHORTHORNS

All are heavy boned, and of Scotch and Scotch-topped breeding. Suited for either the range grower or breeder.

EVERY ANIMAL POSITIVELY GUARANTEED.

Whether you buy or not, visit our ranch, 7 miles from Palo Alto on Woodside Road. We welcome inspection. Prices and pedigrees on application.

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DUROC-JERSEY SWINE

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BRIGHTON FARM SHORTHORNS

One three-year-old bull bred by H. R. Clay.
Two outstanding yearling bulls sired by Sir Type, a son of Cumberland Type.
A few yearling heifers of same breeding.
Also registered Berkshires of both sexes of best breeding.

H. L. & E. H. MURPHY, Perkins, Sacramento Co., Cal.

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Gives Great VALUE for LEAST MONEY. IT MAKES THEM FAT.

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DIGESTER TANKAGE

Send for Sensible Folder on Feeding Hogs

WESTERN MEAT COMPANY

Animal Food Dept. 704 Townsend St., San Francisco

The eighth annual Rodeo will be held at Salinas June 25-29, and in addition to all the customary Wild West stunts, Ed Bordieu, a Monterey county cattleman, will lassoo a full-grown mountain lion in the arena. The largest fleet of aeroplanes that Mather Field can muster will make the trip from Sacramento to attend the opening of the Rodeo. There will be a thrilling program of sky stunts.

LIVESTOCK DIRECTORY

Rate in this directory 3c. per word each issue.

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Berkshires.

CASTLEVIEW

GIANT TYPE BERKSHIRES

We are booking orders for spring pigs from Grand Champion Sows and sired by Mayfield Rockwood, sire of Champion Barrow at 1919 Western Berkshire Congress.

CASTLEVIEW RANCH, SANTA ROSA.

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MONEY-MAKING BERKSHIRES—The prolific, easy-feeding kind that make the highest priced pork from the lowest priced feed. They will increase your profits. Prices reasonable; satisfaction guaranteed. Write for free booklet, describing our world's reserve champion STAR LEADER. We are now making a special offering of classy boar pigs.
Anchorage Farm, Orland, Calif.

GRAPEWILD FARM BERKSHIRE-GUERNseys—Spring pigs sired by Big Leader and Grapewild Farm Leader. A. B. Humphrey, Prop., Escalon, Calif.

TWO SOWS AND A BOAR—$100 the trio. Two sow pigs from ten raised sired by Baron Duke 201st, 780-pound, $1100 Grand National Champion, from Rival B Princess, a prize-winner at San Francisco, Sacramento, Oregon, and Omaha National Swine Show, and a boar sired by the Grand Laurel Champion boar from Symboleer Belle, and of Superbus blood lines. A boar from a litter of ten raised, big, long, typey, stretchy pigs. Sandercock Land Co., in charge of Natomas Land Sales, 23 Montgomery Street, San Francisco, Cal.

BERKSHIRE BOAR PIGS—From large litters. Order one if you want the best. Satisfaction guaranteed. R. J. Merrill, Morgan Hill, California

RIVER GARDEN FARM BERKSHIRES—Weanlings and gilts. They'll surely please you. E. H. Whiting, Route 2, Box 631, Ukiah, Cal.

BERKSHIRES—Sired by Star Leader, the $1500 boar. Kounias Registered Stock Farm, Modesto Calif

FOR REAL GOOD BERKSHIRES write Frank B. Anderson, B. 724W., Sacramento, Cal.

CARUTHERS FARMS BERKSHIRES — Cholera immune. Live Oak, California

REGISTERED BERKSHIRES—Write R. D. Hume Dos Palos California.

BERKSHIRES—Fair Oaks Ranch, Wilhte, California.

Poland-Chinas.

MARCH BOAR PIGS—Out of sows selected from the best herds of the corn belt. One line-bred Big Bob pig sired by Bridges' Bob Wonder, Missouri, grand champion, and out of my great sow, Bridges' Bobby. Two sired by the noted Boulder Buster and out of the splendid sow Bob's Giantess. These are real tops and guaranteed to please. H. C. Shinn, R F D 1, Tulare.

EL PROFITO —Our great herd boar, will put profit-making qualities into your herd. His offspring have size, stretch, bone, good backs and feet, and easy feeding qualities. To make the right start with big-type Poland Chinas, get one of his boar pigs. Priced right. Correspondence cheerfully answered. Viola L. Renwick, Santa Barbara, California.

SOW BARGAINS—We are offering some exceptionally nice tried sows, bred and open gilts, at attractive prices. They are all sired by the undefeated and world's grand champion Superba and out of big type sows, which cost me $200 and over. Investigate before buying elsewhere. Rough's Greenfields, Arlington Station, Riverside, California

MAKE BIG MONEY with Cloverdale Farm big-type Poland-Chinas—the prolific, fast-growing, easy-feeding, money-making kind. We purchased the famous Whitten Ranch herd including great boar Jumbo Model. High class stock for sale—farmers' prices. Write us. Cloverdale Farm, R. F. D. 1, Escondido, Cal.

NOW BOOKING ORDERS for spring pigs, either sex from my prize-winning, large type Poland-Chinas hogs. Also will book a few orders for bred gilts, February and March farrow, and a few good serviceable aged boars. Hale I. Marsh, Modesto, California

ELDERSLY FARM—We are offering some excellent tops from our fall, and spring pigs at attractive prices, sired by one of America's best-bred boars, Big Black Bone Wonder, with grand championship breeding on both sides. He is a real 1000-lb. boar. J. H. Ware, Live Oak, California.

HORAN'S POLAND CHINAS—Young stock. Bred and open gilts. Big-Bone Bob and Wonder blood lines. N. K. Horan, Lockeford, Cal.

HORINE'S DUROC-JERSEYS — Everything sold out but weaned pigs and a few bred gilts. Geo. L. Horine, Winton, Calif.

BRED AND OPEN JULY GILTS by King Big Bone Leader for sale. Also September gilts by California Jumbo Buster and a few toppy young boars. A. Buckland & Son, Route E, Box 126, Fresno.

BOOKING ORDERS for spring pigs sired by "Bob Big Bone" 281289, litter brother of the Junior Champion of Sacramento, 1918, P. E. Mitchell, Atwater, California.

OXBONE HERD offers March boars for sale from King's Big Bone Leader, grand champion at State Fair, 1918. Write F. E. Fay, Tipton, California.

BIG-BONED POLAND-CHINAS—From Eastern prize-winners. Sold out of boars; a few choice October gilts for sale. D. H. Forney, Route G, Fresno, California.

FALL BOARS by a son of Caldwell Big Bob at bargain prices. Also booking orders for spring pigs. Forest View Ranch, J. H. Cook, Paradise, Cal.

WAUKEEN HERD POLAND-CHINAS—Big type herd boar, the $700 Grand Champion of California. Les McCracken, Prop., Ripon, Cal

BIG TYPE POLAND-CHINAS—Stock from the best herds of the Middle West. N. Hauck, Alton, Humboldt County, California.

LAKE SIDE STOCK FARM—Large smooth and big boned Poland-Chinas. Geo. V. Beckman & Sons, Lodi, California.

REGISTERED POLAND-CHINA SWINE—Prize winners. Finest stock in the State. M Bassett, Hanford, California.

POLAND-CHINAS—Young stock for sale Edward A. Hall, R. 1, Box 39, Watsonville, Calif

POLAND-CHINA PIGS—Bernstein Trewhitt, and Ross blood. B. M. Hargis, Tulare.

POLAND-CHINAS—A few young service boars for sale. R. F. Guerin, Visalia, Calif

REAOAKS RANCH herd of registered Poland-Chinas, W. J. Hanna, Gilroy, Calif.

BIG BONED POLAND-CHINAS—Stock for sale E S Myers Riverdale California

POLAND-CHINAS—Young stock for sale. H. E. McMahan, Lemoore, California.

POLAND CHINAS—Strictly large type. J. F. Lehman, Lodi, Cal.

LARGE TYPE POLAND-CHINAS. Winton Poland-China Farm, Winton, Cal.

Chester Whites.

BILLIKEN CHESTER WHITES—Just a few left to offer; One 1917 fall boar and one 1918 fall boar; both cholera immune. Spring farrows are all sold except 10 boar pigs. Will have 10 more sows farrow during May, June and July and will book orders now from these coming litters, delivery at weaning time. C. B. Cunningham, Mills, Calif.

DANDY REGISTERED CHESTER WHITE weanlings. Reasonable prices. K. Wellman, Los Altos, Cal.

Duroc-Jerseys.

WEANLINGS sired by Trailblazer, son of Pathfinder, Derryfield Col. and Derryfield Wonder Boy. King's Col. boars, ex Burke's Good Enuff, Golden Model, and Model Col. sows. Bred Gilts. Service Boars. Derryfield Farm, Capital National Bank Building, Sacramento.

DUROC-JERSEYS AT IRELAND—Home of Cherry Volunteer II., Grand Champion Boar at Riverside. Ireland's Orion Defender and Orion's King of Ireland are excellent sires in service. Booking orders for spring delivery. Ranch at Owensmouth. City office, 1219 Brockman Bldg., Los Angeles, Calif.

SWEETWATER DUROCS—The most popular herd in the West. Our Durocs make money for us—they will do the same for you. Winsor Ranch, Bonita, San Diego Co. Address R. K. Walker

BIG TYPE DUROCS—Herd headed by California Orion King. Am offering a few selected boar pigs. Inquiries invited. Harvey M. Berglund, Dixon, Calif.

WE WON MORE MONEY on Durocs at the State Fair than any other exhibitor. Why not buy some of this winning stock? June Acres Stock Farm, Davis, California.

REGISTERED DUROC JERSEYS — Open and bred gilts. August and November boars. Great herd headers. Weanling pigs, both sexes. Stock of the big strong type so much desired. Jack Borge, Dos Palos, Cal.

REGISTERED DUROC-JERSEYS — Weanlings both sexes—extra fine prize winning stock. Pearl Hoagland, Route A, Box 286, Ceres, Cal.

DUROC JERSEY SWINE FOR SALE—Best blood lines. Bred sows and gilts. Service boars. Jersey Queen Farm, San Jose, Calif.

DUROC JERSEYS—Fine big type gilts, tried sows and boars Eastern and California bred. H. P. Slocum & Son, Willows, Calif.

HEAVY-BONED DUROCS—A few service boars for sale Ormondale Co., Route 1, Redwood City California

REGISTERED DUROCS—All from prize-winning stock W P Harkey, Gridley, Calif.

REGISTERED DUROCS—Stock for sale. W. J Fulcham & Sons Visalia California

Hampshires.

HAMPSHIRES—Fine quality Weaned pigs, dandy young boars Imperial Hampshire Swine Farm Theo M Badger Prop Gardena Cal

MY HAMPSHIRES are money makers Stock for sale Buy now L. W. Denker, Saugus, California.

Miscellaneous.

CROLEY'S BALANCED HOG FEED—The cheapest feed to fatten hogs. Write Geo H Croley Co., Inc., Livestock Supplies 8th and Townsend Sts San Francisco Calif

LARGE YORKSHIRES—The ideal hog for the progressive farmer. Young stock for sale. A L Tubbs Co Calistoga Calif

MULE-FOOT HOGS—Large type. H T Bussey, P O Box 37, Lodi, California. "The Blue Gums"

DAIRY CATTLE.

Guernseys.

HIDDEN VALLEY FARM offers for sale 2 young Guernsey bulls, ready for service, out of high record advanced register dams. A. J. Welch, proprietor, Redwood City, California.

EDGEMOOR FARM GUERNSEYS —First in the show ring and in official records. Few animals of either sex for sale. Edgemoor Farms, Santee, California.

TWO REGISTERED GUERNSEY COWS, one yearling heifer, one bull eight months old, two bull calves. De Laval Separator. H. W. Moergeli, Rte. D, B 240B, Fresno.

PALO ALTO STOCK FARM, Palo Alto—Breeders of registered Guernseys; both sexes; prices reasonable.

Ayrshires.

ELKHORN FARM AYRSHIRES— Choice young bulls at reasonable prices. J. H. Meyer, 440 Montgomery St., San Francisco, Calif.

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NORABEL FARM AYRSHIRES—Le Baron Estate Co., Valley Ford, Cal.

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THE KEEP ON herd of registered Jerseys has a few extra good males and females to offer at reasonable prices. Satisfaction guaranteed. Dr. H. W. Hand, Orland, Calif.

SUNSHINE FARM JERSEYS—Tuberculin tested. Production counts. E. E. Greenough, Merced, California.

Milking Shorthorns.

BREEDERS OF REGISTERED SHORTHORNS—Milk strain; choice young stock for sale.. John Lynch Ranch, Box 321, Petaluma

INNISFAIL DAIRY SHORTHORNS—Registered young bulls for sale. Alexander & Kellogg, Suisun, California.

Holsteins.

A PRICE ON EVERY ANIMAL.
Herd free from tuberculosis. All sales subject to sixty days' retest. Sons of **Finderne Soldene Valdesa,** whose dam is not only a world record cow in seven-day division, but has two sisters holding world's records for yearly production.
Toyon Farms Association.
679 Mills Building San Francisco.

HIGH-CLASS HOLSTEINS—I have for sale some sons of Sir Veeman Korndyke Pontiac from A. R. O dams. Write for particulars or come see them. R. F. Guerin, Visalia, Calif.

FOR SALE—Ten high-grade young Holstein milch cows and registered Holstein bull Copa de Ora, Lord Wayne, Tuebie De Kol. Bought from the Welch herd. Joseph Darling, Rte. J, Box 348, Fresno, Cal.

PALO ALTO STOCK FARM, Palo Alto, breeders of registered Holsteins. Heifers and service bulls. Reasonable prices.

REGISTERED HOLSTEIN BULLS with world's record backing. Kounias' Registered Stock Farm. Modesto, California.

REGISTERED HOLSTEIN CATTLE—E. B Freeman, Route B. Modesto, California.

EL DORADO HERD OF HOLSTEINS—Alex. Whaley, Tulare, California.

BREEDERS OF REGISTERED HOLSTEIN cattle and Berkshire pigs. Whittier State School, Whittier, California.

CREAMCUP HERD—Registered Holsteins Pontiac bull calves. M. Holdridge, Rt. A Box 437, San Jose, California.

F. H. STENZEL, SAN LORENZO, CALIF.—Breeder of Registered Holsteins. High test producers

THE VICTORY HERD—Registered Holstein cattle and Duroc Jersey swine. H. E. Spires Hilcrest Farms, Caruthers, California.

REGISTERED HOLSTEINS—Young stock for sale from A. R. O. dams. La Driver Stock Farm, Nicolaus, Cal.

REGISTERED HOLSTEINS — Best blood lines of the breed. R. L. Holmes, Modesto, Cal

REGISTERED HOLSTEINS—We breed for production Leeman and Kilgore Ripon Cal

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J. W. BENOIT, Modesto, Calif. Breeder of registered Holsteins.

GOTSHALL & MARGRUDER—Breeders of registered Holstein-Friesians Ripon, Calif

CHOICE HOLSTEIN bulls for sale No females Milberg Dairy Milbrae California

HOLSTEIN BULLS and bull calves from A. R. O. cows. C. A. Miller, Ripon, California

REGISTERED HOLSTEINS and Duroc Jerseys Sturgeon Stock Ranch, Tulare, Calif

BEEF CATTLE.

RANCHO SAN JULIAN SHORTHORNS—Purebred range bulls unregistered for sale Estate Thos B Dibblee Santa Barbara o. Lompoc Calif John Treanor Supt

ALAMO HERD REGISTERED HEREFORDS (founded by Governor Sparks) Herd and range bulls Reasonable prices W. D Duke Likely Modoc county California

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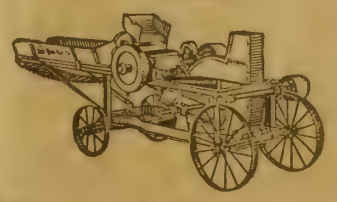
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HEREFORDS Sierra Vista Herd, Minturn California Over one hundred registered animals Prince and Repeater bulls head the herd On highway

THE NEVADA HEREFORD RANCH, Inc H Cazier & Son Co Props Wells, Nevada Registered Hereford cattle Breeding stock for sale

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FILLS THE SILO | MAKES ALFALFA MEAL | CUTS DRY FEED

Don't waste 15% to 20% of your hay this year. Chop it with an Acme Cutter. Chopped Feed is all eaten.

The durable steel frame Acme will more than return its cost the first season you use it on feed cutting alone, besides placing at your disposal a superior silo filler and alfalfa meal machine.

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Catalog upon Request.

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GEORGE CALLAHAN, breeder of registered Herefords, Milton, California.

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HEREFORDS—Mission Hereford Farm, Mission San Jose, California.

REGISTERED SHORTHORNS — Julien Ranch, Grenada, Siskiyou Co., California.

SHORTHORNS — Carruthers Farms. Live Oak, California.

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FOR SALE—A-1 Breeding Jack. Bargain. Have quit raising mules. W. P. Harkey, Gridley.

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PURE-BRED RAMBOUILLET RAMS, large smooth frames, extremely heavy shearers, from the very best strains of this country and France. Immediate delivery from ranch at Ord Bend, Glenn county. P. O. address, Windell Orchards, Glenn, Calif.

F. A. MECHAM ESTATE, Petaluma, Cal.—Breeders and importers of Shropshire, Rambouillets and American Merinos, both sexes. Also Red Polled cattle. Take electric car at Petaluma or Santa Rosa for Live Oak Ranch

HAVE FOR SALE fifty head of fine yearling Shropshire rams. Also 25 head of high-grade Rambouillet rams. These are big fine wooled rams. E. D. Dudley, Dixon, Calif.

ANGORA GOATS — PERSIAN SHEEP—Bucks from $25 to $50 each. Only fine stock for sale. C. P. Bailey & Sons Co., San Jose, Calif

500 GOOD TWO AND THREE-YEAR-OLD breeding ewes for sale in good order. Write James J. Connell, 390 North 3rd St., San Jose Phone 3703.

J. R. BLOOM, DIXON, CAL. Breeder of Shropshire rams out of pure blood ewes and imported registered rams. Single and car load lots.

DORSETS AND ROMNEYS—Dorset ram lambs for sale. John E. Marble, South Pasadena, California.

ONE TWO-YEAR SHROPSHIRE BUCK for sale. C. J. L. Stonebraker, Route A, Chico, California

BISHOP BROS., SAN RAMON CALIF.—Breeders and importers of Shropshire

KAUPKE BROS., WOODLAND, CALIF.—Breeders and importers of Hampshire sheep

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CALLA GROVE FARM, MANTECA, CALIF.—Breeders and importers of Hampshire sheep

MISCELLANEOUS.

BUTTE CITY RANCH Shorthorns Shropshires Berkshires and Shetland ponies Write for prices and descriptions before buying Butte City Ranch Box P Butte City, Glenn county, Cal. W. P. Dwyer and W. S Gulford owners Special Notice! Second Farm Sale Shorthorns, Shropshires, Berkshires; Ponies August 2, 1919

History Making Shorthorns
AT PUBLIC AUCTION
STATE FAIR GROUNDS, SACRAMENTO, CAL.
THURSDAY, JULY 10, 1919
FROM CARRUTHERS FARMS, LIVE OAK, CAL.

LADY RUBERTA



IN THIS SALE

45--Scotch Cows, Heifers and Bulls--45

In this sale Mr. W. M. Carruthers will offer a herd of registered Shorthorns that will compare favorably with the best offerings heretofore made by any American breeder, and will set a decidedly higher standard for Shorthorn quality in Pacific Coast sales.

Included in the sale will be the entire Carruthers Farms show herd, and the breeding is fully equal to the splendid type of the entries. An unexcelled opportunity for established breeders to strengthen their herds and for those about to establish breeding herds to secure foundation animals of the right sort.

A feature of the sale will be the great young Sire Hallwood Villager, admittedly one of the best of the younger sires of the breed.

Everything tuberculin tested and guaranteed to be breeders.

Catalog free on request.

NOTE—Most of the cattle are now on the sale grounds and visitors are cordially invited to call and see them before sale day.

AUCTIONEERS: REPPERT & MILNE

MANAGEMENT: California Breeders Sales and Pedigree Co.
C. L. HUGHES, Sales Manager, Sacramento, Cal.

Lendorris Ranch Poland-Chinas



PUT PROFIT IN FARMING

Our herd is the result of careful selecting and constructive breeding, and combines size, bone, easy-feeding qualities, prolificacy—everything you want for a profit-making hog.

GREAT BATTERY OF BOARS

YOUNG JUMBO (see picture), the great son of Jumbo Bob, who is all that his name and breeding imply; also the sensational young boar, **LENDORRIS LIBERTY BOND**, a son of Liberty Bond, for whom $10,000 was refused. He promises to become one of the Coast's greatest sires. This is the blood you need to insure your success.

W. L. HAAG & SON
Hanford, Calif.



REGISTERED DUROC-JERSEYS

We have for sale right now, big, heavy-boned, high-up, four-months-old boars. Also some A-1 weanling pigs, either sex. Also some young gilts. Our herd boar has the best blood of the breed and was a prize-winner at the State Fair last year.

Write for prices.

ROUTE 4, BOX 735 **THE GARDINER RANCH,** SACRAMENTO, CAL.

Chester White Boars

Here is your opportunity to secure Fall boars ready for service, and sure to put money-making qualities into your herd. Sired by the $1,000 Highlander and the pick of the season's crop. Prices reasonable.

OAK KNOLL FARM

LAKEPORT, CAL. SAN FRANCISCO OFFICE, 601 Balboa Bldg.

THE JOHNSON HERD OF DUROCS

We have for sale only a few yearling sows and tried sows bred for fall litters, bred fall gilts, two yearling boars and weanling pigs from

PRIZE WINNING SOWS

F. M. JOHNSON, Napa, Calif.

GREENWOOD DUROCS

OUR sows are all carefully selected individuals of greatest merit and choicest breeding. At the head of our herd is one of the very best boars in California, a genuine big type sire. Every sale guaranteed to make a satisfied customer.

H. C. WITHEROW, Mgr. Live Oak, Sutter Co., Cal., R. F. 1.

TAMWORTHS

(The Bacon Hog)
Largest Herd in the State
DUROC-JERSEYS
Mature Stock and Weanlings of both sexes. Sure to please.
SWINELAND FARM
W. O. Pearson, Prop. Woodland, Cal.

ROC STEIN RANCH DUROCS

Crimson Monarch, Gold Model and Orion Cherry King breeding. Weaned pigs and bred gilts and one service boar for sale. Write and get our prices before you buy.

W. M. Way & Son

Rt. 1, Box 320, MODESTO, CAL.

Will Dairymen Stand for This?

In the San Francisco Examiner of June 2 is an article that should be brought to the attention of every dairyman in California, as it strikes right at the heart of the dairy industry.

The article is headed in large letters, "Save 36 Cents by Margarine." A sub-heading states that oleomargarine cannot be detected from butter when properly colored and is much cheaper than cows' product, and that economy recommends the use of this substitute.

The article, which occupies more than half a column, is made up almost entirely of praise for oleomargarine and untruth about butter. It states that butter is now selling for 71 cents per pound, while the best margarine is selling for 35 cents, and consumers are advised to discontinue the use of butter and spend for some other food the 36 cents thereby saved. In another part of the article the statement is made that people do not eat butter for its food value, and it is intimated that Californians purchase butter because they hate to think that they have to count their pennies and not because butter is a highly important part of the diet.

The reason for this article is found on the same page in the form of a large and attractive advertisement for "Nucoa—the Original Nut Butter." One line in the advertisement reads, "Nucoa displaces cows' butter and does it without a single apology. We compete with creamery butter on quality lines and save you a lot of money."

Now what do dairymen think of this? Do they propose to drift along and allow the public mind to be filled with a lot of inaccurate knowledge, and to be made to believe that it is possible to get along without butter and other milk products? It has been conclusively proved that dairy products contain a vital element absolutely necessary for the growth of children and the proper maintenance of adults. But how will the public know this unless it is brought to their attention through similar advertising? Are not this advertisement and the article accompanying it the very strongest argument for the existence of a publicity organization that will tell the public the truth about dairy products and go just as far in recommending these products as the manufacturers of substitutes are going in promoting the sale of their products?

Two years ago less than 250,000 pounds of oleomargarine were sold annually in this State, but today the sales amount to over 18,000,000 pounds per year and are increasing steadily. No single dairymen or manufacturer, or no small combination, can cope with the situation. The work must be done on a big scale and it must be done at once if the industry is to be properly protected. It is for this very purpose that the California Dairy Council has been formed and it deserves the support of every dairyman and manufacturer in the State.

TICHENOR BUYS GREAT HOLSTEINS.

When M. H. Tichenor of Palo Alto Stock Farm, Palo Alto, jumped on the train for the East he said that he would bring back the best bull in the United States—not necessarily the highest-priced one, but the best one, to use on the daughters of his senior herd sire, King Segis Pontiac Korndyke. He found just what he wanted at the Cabana sale, and gave up $4,300 for the young bull Pioneer Pride, by Findern Pride Johanna Korndyke, a son of Findern Pride Johanna Rue, the former one-year record cow that made 36 pounds of butter 8 months after calving. The dam of the new Tichenor bull is Pioneer Bessie, with a record of 41.20 lbs. butter from 715 lbs. milk in 7 days. She was handled by Chas. Cole, who bought her in the sale for $7,200 and will continue her on yearly test.

Believing in scientific line-breeding, Mr. Tichenor secured four sisters of Pioneer Bessie at private sale. He also bought at the Cabana sale two daughters of Rag Apple the Great, who sold for $125,000, and a 32-lb. 4-year-old daughter of King of the Pontiacs in calf to Rag Apple the Great; also the young bull King Oatka Rag Apple, by Rag Apple Korndyke 8th, out of a 30-lb. 4-year-old.

Mr. Tichenor secured 30 head in all, and with the stock he is bringing two men who have been trained for test work at Cabana's under Chas. Cole, who has given world records to many cows.

MORRIS BULL BRINGS RECORD PRICE.

California has increased the prominence of her position on the livestock map, this time by the sale of the bull Sir Aaggie Mead DeKol for $11,000. He was owned by A. W. Morris & Sons, Woodland, and was consigned to the Moyer National Holstein sale, held at Philadelphia last week. By this sale he becomes the highest-priced animal ever sold at auction by a California breeder. In the hands of his new owners, Jorn Arfman and Carl Amos, he will have a good opportunity to make a name for himself and to spread the fame of California as a breeding State. He is considered the richest-bred long-distance bull in the world, his seven nearest dams averaging over 1,100 pounds of butter in a year.

The champion 51-pound cow, Rollo Mercena DeKol, sold for $26,000. A granddaughter of Tilly Alcartra brought $2,150.

SANTA ROSA BERKSHIRE SALE.

The success of the Berkshire Promotion Sale at Santa Rosa, June 7, cannot be judged by the average of $41.75 on the 29 head offered. It is the object of these sales to start new breeders in the localities where the sales are held. President A. B. Humphreys stated that so far an average of six new breeders had been made at each sale, and he expressed himself as well satisfied with the results, even though the stock sold greatly under its real worth.

J. Francis O'Connor managed the Santa Rosa sale in a very able manner, and it was cried by Col. Ord. L. Leachman. In the ladies' judging contest a sow pig was one by Mrs. J. G. Throckmorton of Sebastopol, and Mrs. B. E. Gass of Santa Rosa won a pig raffled off for the benefit of the Chamber of Commerce. Both pigs were donated by Mr. O'Connor.

Selling cream from the farm carries away practically no fertility. Farm separation carries the skimmilk directly back to the livestock, and through them directly back to the soil, increases the soil fertility and multiplies the salable products taken from the soil.

Make the sheep tame by kindness. They will do better for it. Keep a sharp lookout for anything wrong; find the cause and right it at once. Make it a point to count the sheep every day, and above all don't feed the sheep on the ground; have good troughs.

Western Duroc Men! Attention!

F. F. DEVORE says that the Duroc could have no greater field in which to develop than the Pacific Coast states.

It is the DUROC JERSEY that will put the pure-bred swine industry to the front. It is up to the Duroc raiser to put the Duroc to the front. It is up to THE DUROC BULLETIN, and this paper stands ready to help the Duroc man "over the top." Write for FREE copy containing DeVore's article, "DUROCS OF THE GREAT WEST."

SEND $1 FOR 1 YEAR.

THE DUROC BULLETIN

CHICAGO, ILLINOIS.

DUROC JERSEY BOARS

Rancho Del Sur offers 15 good fall boars sired by Orion's King Gano and California Orion Cherry King. I guarantee these boars to please you. Those bought on mail order may be returned if not satisfactory.

DONALD H. GRAHAM
P. O. Box 177, Lancaster, Cal.



No Belts—No Suspenders

LEE UNION-ALLS are all in one piece—so easy and comfortable you'll be glad you own a suit every time you put it on. Remember, too, that LEE UNION-ALLS cover your body from head to foot, protecting your skin from dirt, grime and chaff.

Superior quality features make LEE UNION-ALLS the most economical work garments manufactured. All seams are triple-stitched, all strain points are reinforced; buttons are rivited to the cloth; button holes are rip and ravel proof. Many other features insuring long, satisfactory wear. If your dealer does not handle LEE UNION-ALLS, write for further information and tell us his name.

DEPARTMENT 2206

The H. D. Lee Mercantile Co.

Kansas City, Mo. South Bend, Ind.
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UNION Lee MADE Union-Alls TRADE MARK REG. U.S. PAT. OFF.

Lee Union-Alls

Not a genuine UNION-ALL unless this design is embossed on the buttons. Look for it. Remember there is only one UNION-ALL, the LEE

Poultry and Rabbits for Profit

Conducted by R. H. Whitten.

VITAL ELEMENTS IN FEEDS.

Read this article carefully, for it tells of the most important discovery that has ever been made in connection with the feeding of poultry. For years we have been laboring under the impression that if we knew the protein content of different feeds, together with their energy value and digestibility, we could plan an adequate and satisfactory diet for our fowls. But now comes Prof. Harry R. Lewis, who upsets this theory just as Dr. E. V. McCollum upset theories regarding the feeding of the human race.

You know Dr. McCollum found, after 10 years of experimenting, that there are certain unknown properties about some feeds which give them the power to make the young grow and develop normally, and which provide a proper maintenance ration for adults. His experiments were first carried on with animals, and later with humans. Prof. Lewis has conducted similar experiments with poultry, and with the same results.

These unknown properties are called vitamines, and they are found in milk, in the yolks of eggs, and in the green, leafy parts of plants. They have been termed protective feeds, because they make good whatever deficiencies exist in rations composed of grains and roots, with or without meat. Withhold the feeds containing these elements and growth stops. The animal becomes languid, disease often sets in, and after a time death occurs. If these protective feeds are given again a few days before death would occur, the animal will start to develop and soon will become normal again.

Application to Poultry Raising.

Applying the result of these interesting discoveries to poultry raising, we find that grain alone, no matter whether whole or ground, is not sufficient, and that three principles must be observed. First, no effort should ever be made to raise chickens unless they can be provided with an abundance of leafy green food, such as alfalfa, clover, kale, chard, or lettuce. Second, the growing chicks should be fed liberal quantities of milk or milk by-products, preferably sour milk or skimmilk. Third, infertile eggs from the incubators should be boiled and fed to the chicks during their early growing period. They can be hard-boiled and fed in moderate quantities after the chicks are a few days old. They not only are relished, but contain a large amount of digestible material besides the vitamines which make normal development possible.

There are a number of sources from which milk products can be secured. Probably the best is skimmilk, which contains a limited amount of fat and much casein. Buttermilk is almost as good. In the absence of these, probably semi-solid buttermilk can be secured. It is buttermilk dried down to a thick paste which can be diluted with water and fed as a beverage. If no liquid milk product can be secured, it will be necessary to fall back on the dry or powdered products. One of the best is dry buttermilk, which is normal buttermilk with the water evaporated. There are milk powders and milk albumen on the market, but generally their prices make them prohibitive.

Two questions naturally present themselves—the relative advantage of liquid versus dry products, and of sour versus sweet milk. It can be said without hesitation that liquid milk is superior to the dry powder, especially when feeding very young chicks. They seem to relish it better and it has a stimulating effect on their appetite. Also, it is generally recognized that sour milk is superior to sweet milk. The sour product, containing lactic acid, is slightly more palatable and acts as an internal disinfectant, cleansing the digestive tract and killing undesirable types of bacteria. It is more readily and completely digested than skimmilk. Again, it is impossible to feed milk sweet all of the time, for in warm weather it will sour quickly, and it is unsafe to feed the product first sweet and then sour. Consequently, the best practice is to use some liquid form of sour milk or buttermilk entirely.

How Milk Affects Growth.

At the New Jersey Experiment Station records were kept on the growth of 2,000 chicks, raised under the same conditions except that half were fed milk and the other half received no milk. At twelve weeks the chicks of American breeds fed milk averaged 2.04 pounds, and those without milk only 1.40; Leghorns 1.77 and 1.41 pounds respectively.

The mash ration consisted of 300 lbs. bran and 100 lbs. each of middlings, ground oats, corn meal, gluten feed and beef scraps. The scratch ration consisted of equal parts of wheat and cracked corn. The chicks consumed about equal quantities of mash and grain. They were on alfalfa pasture, and those receiving milk were fed a beverage of 1 part of semi-solid buttermilk in 7 parts of water.

Prof. Lewis states that the weakest link in the whole chain of poultry practice is the problem of successfully rearing each year the required number of healthy, vigorous pullets to take the place of the old hens which have outlived their usefulness, and he sums up the whole situation in the apt expression, "Alfalfa and milk will do the trick."

GIVE THE BIRDS SHADE.

We generally give fowls protection from the cold and rain, but we are apt to forget that they need shelter from the sun in summer as well as from the rain in winter. Chicks — especially those that are late hatched—will become stunted to a certain extent if they are not provided with shade. Poults suffer quite as much from overheating, but they flatten down under a very small twig and seem better able to shelter themselves than other poultry.

Ducks suffer from sunstroke. Unless they have shelter from the sun, and unless they are provided with water to drink while they are eating, they are more likely to flatten out dead. Give them comfortable conditions and they will grow like bad weeds and bring good profit.

Geese need practically the same care as ducks. Chicks show more sense about caring for themselves, but all the young of the poultry world need shelter. It will pay to provide it even if this means going to the expense of putting up artificial shelter.

EAR CANKER IN RABBITS.

Ear canker is a very troublesome disease and quite painful to the rabbit. It starts with a creamy discharge from one or both ears, and this develops into a waxy substance, which the rabbit sometimes tries to remove with its hind feet. The eye on the side that is affected seems weak, and often has a slight discharge. The rabbit loses condition and does not relish its food.

Try to clean out the discharge by a little pressure and the use of a soft rag soaked in warm water, but be careful not to let any water run up into the ear. Then dry the ear and dust it twice a day with powdered boric acid or equal parts of bismuth and iodoform. Be sure that the pow-



International Motor Trucks
For Country Road Hauling

OF ALL the motor trucks offered for farmers' use, the **International** should be, and we believe is, the most satisfactory.

This Company knows the country — roads, farms, and all. Farmers know our standards of quality and service. When we offer a motor truck for farmers' use, it is understood that the truck will do the work expected of it at a cost farmers can afford.

The **International Motor Truck** is built for carrying capacity loads on country roads. It gives satisfactory everyday service, the kind that farmers must have. When an emergency comes — a tough piece of road, a steep hill, a rush trip, a bad day — the **International** has the reserve power, speed, and endurance to carry it through.

Mr. L. C. Henry of Utica, Minn., purchased an International Motor Truck to haul his live stock and farm produce to market and to bring return loads from town. He says, "We use the truck for nearly every kind of hauling. It saves more time than any other machine in our farm service." Five of Mr. Henry's neighbors bought International Motor Trucks when they learned, from his experience, what a useful economical farm machine he had.

There are four sizes of **International Motor Trucks** — 1,500, 2,000, 3,000 and 4,000 pounds capacity, with bodies suitable for every kind of hauling. We have a dealer, a branch house, or a service station somewhere near you, where the line can be seen, or we will send full information promptly if you will write us.

The Full Line of International Harvester Quality Machines

Grain Harvesting Machines
Binders — Push Binders
Headers — Rice Binders
Harvester-Threshers
Reapers — Shockers
Threshers

Tillage Implements
Disk Harrows — Cultivators
Tractor Harrows
Spring-Tooth Harrows
Peg-Tooth Harrows
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Planting & Seeding Machines
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Alfalfa & Grass Seed Drills
Fertilizer & Lime Sowers

Haying Machines
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Side Delivery Rakes
Loaders (All Types)
Rakes
Combination Side Rakes and Tedders
Sweep Rakes — Stackers
Combination Sweep Rakes and Stackers
Baling Presses
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Belt Machines
Ensilage Cutters
Huskers and Shredders
Corn Shellers — Threshers
Hay Presses
Stone Burr Mills

Belt Machines—Cont.
Cream Separators
Feed Grinders

Power Machines
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Motor Trucks
Motor Cultivators

Corn Machines
Planters — Drills
Cultivators
Motor Cultivators
Binders — Pickers
Ensilage Cutters
Shellers
Huskers and Shredders

Dairy Equipment
Cream Separators (Hand)
Cream Separators (Belted)
Kerosene Engines
Gasoline Engines
Motor Trucks

Other Farm Equipment
Manure Spreaders
Straw Spreading Attach.
Farm Wagons
Farm Trucks
Stalk Cutters
Knife Grinders
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International Harvester Company of America
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CHICAGO U S A

PROTEIN

SPELLS

Poultry Profit

FOR BEST RESULTS
feed high-grade
Beef Scraps of Uniform Quality.

The dealer who induces poultrymen to use High Protein Beef Scraps is a benefactor to his customers. The best is always the cheapest.

GOLD BEAR

BEEF SCRAPS

Backed by a guarantee which assures the poultryman, high and uniform quality.

Made in a government inspected packing house. Contains only blood and offal.

Food elements plainly marked on every sack.

Made and Guaranteed by

Western Meat Company

SAN FRANCISCO, CAL.

Write for our booklet,
"PROTEIN FOR PROFIT."

der gets to the seat of the trouble.

If the trouble has gone so far that the discharge has become waxy, remove as much as possible with the curved end of a hair pin or a blunt stick or instrument. Then inject warm olive oil or camphorated oil to soften and clean out what remains, and afterwards use one of the powders, or a mixture of equal parts sweet oil and flowers of sulphur.

Feed the rabbit on the best of food and give it extra good care to bring it back to normal condition.

USE THE AXE FOR "T. B."

"T. B." in the flock does not stand for "talented breadwinners." It means that the fowls are afflicted with tuberculosis. This is a most common as well as destructive disease, and it is estimated that as high as 10 per cent of the deaths among fowls from "natural causes" are due to tuberculosis. It is a chronic, contagious disease, characterized by the development of whitish patches, called tubercles, in various organs of the body, but most frequently in the liver, spleen and the lining of the intestines.

The disease is caused by a bacillus, or germ, and is generally brought into the poultry yard with fowls purchased from infected flocks, or with eggs obtained for hatching from diseased birds. If the disease exists in neighboring flocks the contagion may be carried by small birds or animals passing from one yard to another. A peculiarity of tuberculosis of fowls is that the liver and intestines are nearly always very severely affected; consequently, the bacilli are very numerous in the intestinal contents and are scattered with the droppings everywhere the fowls go. The introduction of a single diseased bird may, therefore, cause the infection of the greater part of the flock in a few weeks. In the same way, when wild birds contract the disease the bacilli are carried and deposited in all the yards which they visit.

The eggs of diseased birds frequently contain the bacilli, and young chicks hatched from such infected eggs are diseased when they leave the shell. Of course, they soon infect the poultry with which they run. Pigs, cats, rats and mice are liable to be infected with fowl tuberculosis from eating the carcasses of dead birds, and these animals may communicate it to fowls.

Symptoms—Generall symptoms are not observed until the disease has reached an advanced stage of development. They begin with gradual loss of weight, wasting of the muscles, paleness of the comb, and later on dullness, sleepiness, and diarrhoea, the droppings being of a greenish-yellow color. The mucous membranes which surround the eye and line the mouth are pale, and there is loss of appetite. Affected birds have an abnormal thirst, being seen constantly drinking, and often allowing the water to run again from the mouth.

Very often there is a tuberculous inflammation of the joints which is revealed by lameness, swelling of the joints and legs, and sometimes by the formation of hard external tumors of considerable size. Occasionally the skin over the swollen joint breaks, and a small quantity of pus is discharged. Swellings and bony enlargements of the joints are invariably suspicious, and their nature should always be investigated by killing the bird and examining the liver, spleen and intestines to determine whether these have any whitish or yellowish spots on their surface which, when cut into, prove to be tuberculous masses.

Treatment—There is no treatment that will cure fowls which have been attacked with tuberculosis. When the disease is discovered the effort should be to eradicate it at once by killing off the whole flock and thoroughly disinfecting all the houses and runs.

As the great majority of the birds will probably be more or less affected, the chances are that any which are saved will have diseased livers and intestines, from which the bacilli will escape and keep up the infection of the flock and the runs. The danger of this is so great that no attempt should be made to keep any of the fowls that have been exposed to the contagion, no matter how valuable they may be.

The bodies of the birds that have died or are killed, as well as all the accumulated manure, sweepings, and scrapings of the poultry houses, should be completely destroyed by fire. The entire inside of the houses, including the floor, should be thoroughly sprayed with a 5 per cent solution of carbolic acid or some other reliable germicide; also the feeding troughs, drinking vessels and nests should be treated in the same way, and lime should be generously scattered over the runs.

After the cleaning and disinfecting, the premises should be open to the air for a month before new birds are introduced, and it won't hurt if they are whitewashed two or three times, with a little carbolic acid added to the whitewash. If these measures are observed you may be reasonably sure that the contagion will be destroyed and that a new flock may be safely introduced.

If you intend to use any eggs for storage do not wash them or allow them to get wet. From 17 to 22 per cent of washed eggs become worthless in storage, whereas only 4 to 8 per cent of dirty, but unwashed eggs spoil. Wated removes the gelatinous covering from the shells.

Poultry Breeders' Directory

THE MISSION HATCHERY

Does not claim that June is the best month to raise chicks. You've got to know how to do it right. We have them—and good ones—stamina and vitality top notch, and we can pack them to travel safely; and will also send customers our circular on raising summer and fall chicks successfully.

FIRST COMES QUALITY—no use wasting time on scrubs, if you mean business. Then comes price—you can pay high or low, and get stuck both ways. A reasonable price with a reliable firm beats both bargains and humbugs.

WE CAN SUPPLY LEGHORNS—White-Brown-Buff—large or small lots, promptly. R. I. Reds, Barred, White Rocks, Black, White Minorcas, Anconas—that are the cream of their kind. We sell what we hatch—no rehandled or second hand chicks—and our hatchery is one of the most efficient plants in the State—capacity 15,000 chicks weekly. Why not get acquainted? Circular and prices for the asking. THE MISSION HATCHERY, Box 27, Campbell, California.

YOU ARE NOT TOO LATE—Our early maturing, winter laying strains, June hatch, develop quickest into profitable winter layers. "My thirty pullets laid at four, sixth month (January) cleared $31." Why? Bred 20 years to lay winters, 200-290 eggs yearly. White, Brown, Buff Leghorns; Reds; Anconas; Rocks; Minorcas; clearing customers $5. Many repeat orders, monthly, yearly. Valuable circular with proof free. 70,000 egg hatcheries supplying chicks. Thousands shipped promptly, below ordinary chicks. Breeders (Pullets). Sale beginning. J. Beeson, Pasadena, Cal.

WHITE LEGHORNS are the most profitable breed of poultry. If you are in the business for profit, you will eventually have them. Early broilers; early layers; early profits; we sell only White Leghorn Baby Chix from heavy laying Hoganized hens. Safe delivery of full count live chix guaranteed. Prices per 100: February $15; March, $14; April, $12.50. The Pioneer Hatchery, 408 Sixth street, Petaluma, California.

SINGLE COMB BROWN LEGHORNS—The large, modern, heavy-laying type that won high honors for us at the National Egg-Laying Contest. No better layers, none others so hardy. For 20 years our strain has won highest prizes at New York, Boston, Chicago, San Francisco, etc. Absolutely the finest Brown Leghorns in America. Eggs, $3 and $5 per $15; $15 per 100 Williams Bros., Fullerton, California.

LARM'S RHODE ISLAND REDS were never better. Rose and single comb hatching eggs from winners of the leading shows. Bred to lay. Eggs, now half price, from the best breeding lines in existence. Remember a few June and July chicks round into winners for the December and January shows. Send for circular. 3 Rose comb cockerels. Wm. Larm, 3915 39th Ave., Fruitvale, Cal.

BARRED PLYMOUTH ROCKS—Champion prize winners and wonderful layers. Choice cockerels, hens and pullets for sale. Hatching eggs from twelve grand matings. I have made a specialty of Barred Rocks for over twenty years. That's why I win at all leading shows. "Nothing Better In Poultry" than Vodden's Barred Rocks. Catalog free. Chas. H. Vodden Box 396, Los Gatos, California.

BABY CHICKS—Barred Plymouth Rock, R. I. Reds, Buff Orpingtons, Black Minorcas, Brown, White and Buff Leghorns from Pedigreed stock, bred to lay. Tolhurst Poultry Ranch, Washington Ave., San Jose, Cal.

ATKINSON'S FEARLESS ANCONAS Lay more and eat less than other breeds. 50 husky cockerels $5 and up. 200 pullets, trios and pens for sale. Hatching eggs. Catalogue free. J. W. Atkinson, Box B, 130 Willard Street, San Jose, Cal.

CROLEY'S RED STAR CHICK FEED—California's standard Baby Chick Feed for twenty-five years. Manufactured by Geo. H. Croley Company, Inc., 8th and Townsend Sts., San Francisco.

S. C. WHITE LEGHORN CHICKS—Any quantity from A-1 Hoganized and trapnested stock, winners of 1st, 2nd and special for pullet and 1st cockerel at Pacific Coast Land Show. Orders taken for June 7. A. O. & P. M. Forster, 2918 Otis St., Berkeley, Calif.

SANTA CLARA VALLEY HATCHERY has the chicks for you from six different standard breeds, all bred for egg yielders. Can furnish references from my old customers if desired. Lincoln Ave., San Jose, California.

SULLIVAN'S BUFF ORPINGTONS—Famous for 20 years in show and utility qualities. Line bred for 20 seasons. Bargains now in stock and eggs. Write Mr. and Mrs. W. S. Sullivan, 100 Market Road, Agnew, Cal.

GET BABY CHICKS NOW—Write for free booklet on fall chicks. See why they pay. Several varieties every week. Only good, strong youngsters shipped. Stubbe Poultry Ranch and Hatchery, Box 67, Palo Alto.

EGG BRED—Buff Brown, White Leghorns, Golden Campines, Dark Cornish. Winners wherever shown. Send for circular. Percy Ward, 3142 Ward St., Fruitvale, California.

GOLDCROFT BUFF ORPINGTONS—Winners San Jose show. Eggs, $5.00 and $3.00 setting. Heavy laying. Choice breeders for sale. Samuel Abrams, Los Altos, Cal.

BABY CHICKS—We have the large heavy-laying S. C. White Leghorns, severely culled last year. Send for prices. Tupman Poultry Farm, Ceres, California.

BABY CHICKS—Booking orders for spring deliveries. White and Brown Leghorns, Rhode Island Reds, Barred Rocks. E. W. Ohlen, Campbell, California.

EASTMAN'S BRED TO LAY Hoganized and trapnested Barred Plymouth Rocks. September chicks. Fairmead Poultry Farm, Fairmead, Calif.

CHICKENS, DUCKS, GEESE, GUINEAS, Pea Fowl, Pigeons. Wm. A. French, 545 W. Park St., Stockton, California. Stamps.

BUFF ORPINGTONS, BUFF DUCKS, BOURBON RED TURKEYS—The Ferris Ranch. Rt. 2, Box 144D. Pomona, California.

BRONZE TURKEY EGGS—No more eggs till further notice. Albert M. Hart, Clements, California.

RABBITS.

WILSON BROS. FEEDING BULLETIN tells how and what to feed rabbits. Price, 25c; catalog, 10c; circulars free. Wilson Bros. Flemish Rabbit Farm. Rabbits and Remedies. Highest award World's Fair, Route 4, Box 13R, Los Angeles, Calif.

RAISE RABBITS—Most profitable and popular small animal in America. Big demand. Clean, fascinating work. Send 10c for copy of leading rabbit magazine and our Rabbit Book. P N 5. Gilmore's Rabbit Farm, Santa Barbara, Calif.

PEDIGREED FLEMISH GIANTS; also utility stock. Prices low. Laura Beeching, 1578 W. 46th St., Los Angeles, Calif.

NEW ZEALAND RED RABBITS—Young stock for sale. O. C. Thompson, St. Helena, Cal.

NEW ZEALAND REDS—First class utility does bred $5.00 each. Young does, $2.50 each. F. R. Caldwell, Broadmoor, San Leandro.

RAISE RABBITS FOR US—We supply the breeding stock. Send stamp for particulars. H. E. Gibson Co., Arcadia, Calif.

NEW HARNESS

is cheaper than second-hand, dollar for dollar of cost. Come in and see what we have to offer you in **HERCULES HARNESS, Saddles, and Horse Collars.** Our own make and fully guaranteed.

W. DAVIS & SONS

California's Pioneer Harness Manufacturers

333 Market St., SAN FRANCISCO
427 J. St., SACRAMENTO

Catalogue of Harness, Saddlery, Trunks and Traveling Bags sent free on request.

THE SELF-OILING WINDMILL

has become so popular in its first four years that thousands have been called for to replace, on their old towers, other makes of mills, and to replace, at small cost, the gearing of the earlier Aermotors, making them self-oiling. Its enclosed motor keeps in the oil and keeps out dust and rain. The Splash Oiling System constantly floods every bearing with oil, preventing wear and enabling the mill to pump in the lightest breeze. The oil supply is renewed once a year. Double Gears are used, each carrying half the load.



We make Gasoline Engines, Pumps, Tanks, Water Supply Goods and Steel Frame Saws.

Write AERMOTOR CO., 2500 Twelfth St., Chicago



THE HOME CIRCLE

KEEP FISHIN'

Hi Somers was the durndest cuss
  Fer catchin' fish—he sure was great!
He never used to make no fuss
  About the kind of pole er bait,
Er weather, neither; he'd just say,
  "I got to ketch a mess today."
An' toward the creek you'd see him slide,
A-whistlin' soft an' walkin' wide.
I says one day to Hi, says I,
"How do you always ketch 'em, Hi?"
He gave his bait another switch in,
An' chucklin' says, "I just keep fishin'."

Hi took to readin' law at night,
  And pretty soon, the first we knowed,
He had a lawsuit, won his fight,
An' was a lawyer! I'll be blowed!
He knowed more law than Squire McKnab!
An' though he had no "gift of gab"
To brag about, somehow he made
A sober sort of talk that played
The mischief with the other side.
One day, when some one asked if Hi'd
Explain how he got in condishion,
He laughed an' said, "I jest kept fishin'."

Well, Hi is Gov'ner Somers now;
  A big man round the State, you bet—
To me the same old Hi, somehow;
  The same old champeen fisher, yet.
It wasn't so much the bait er pole,
It wasn't so much the fishin' hole
That won fer Hi his big success;
'Twas jest his fishin' on, I guess.
A cheerful, stiddy, hopeful kind
Of keepin' at it—don't you mind
And that is why I can't help wishin'
That more of us would jest keep fishin.'
—Chicago News.

KEEPING HOUSEHOLD ACCOUNTS.

What would you think of a merchant or banker who kept no accounts or books of any sort? Wouldn't you expect his business to go "on the rocks," or at least prove unprofitable? Would you like to entrust your business with a man of such slip-shod methods? I don't believe you would.

It is equally as important for a housekeeper to keep track of all expenditures, for the house should be run on a business basis if you expect to make a success of it. The wife is usually the "disbursing officer" of the household, for she it is who has the handling of most of the family funds; and certainly she should prove a good steward by rendering her accounts in a businesslike manner. Not to do so is "unfair to labor"—to the man who is the producer; he has a right to know where the money goes. Not that friend wife isn't already spending the money as wisely and carefully as she knows how—without keeping books! Her husband's interests are her own, and she probably thinks she is handling the family funds in the very wisest way.

It is almost unbelievable what "leaks" are occurring all the time, and we wonder "where the money goes"; and there is no possible way of knowing either, where household accounts are not kept. Aside from the question of its being good business, there is much to be said concerning the satisfaction and comfort one receives in return for a little effort to systematize household expenditures.

"It takes too much time," says one. "I wouldn't be bothered," says another. Now listen, ladies, one at a time, please. The writer for a number of years has kept such accounts, and would you believe it when I tell you that it never takes more than five minutes each day, and sometimes even less? The daily time consumed consists merely of entering the purchases for that day only. A dozen items can be entered in two or three minutes. And at the end of each month, the totaling of the various entries does not require more than twenty minutes. After keeping household accounts for a month or so, you will be surprised to find how interesting it becomes, and you will be taking a real pride in your books.

A practical ledger for the average family is one about fourteen inches long. Set aside a certain number of pages for each item listed, such as groceries, clothing, fuel, etc. A good idea is to reserve about twelve pages for the groceries—one for each month. Whatever is your largest expenditure will, of course, require the most pages. Items covered should include: Groceries, clothing, household furnishings, fuel, insurance, medical, dentist, education, amusement, miscellaneous, and any other items for which money is paid out. Supplies from the farm which are used on the family table should also be taken into account at prevailing market prices.

At the close of each month the various totals of all items should be entered in a summary. This summary should cover the entire year and show the amount of each item month by month, and then a grand total of each item at the end of the year. Of course, a new summary will have to be made for each year; and after you have three or four of them, it is most interesting to compare the different years' expenses with the preceding one.

It is claimed that the money question is a most delicate one in most households. I am sure I cannot vouch for the truth of the statement, as it is only hearsay evidence with me. However, if that is true, I believe the keeping of household accounts will help solve that disagreeable question. When the question arises as to "where the money has gone," the books will speak for themselves; and, again, I believe every husband will appreciate the efforts of his wife to run her house on a business basis. He will come to have more confidence in her ability to manage when he sees her efforts in that direction, and will lend his co-operation.

A budget is most practical in helping to keep down expenses, for naturally one tries to keep within the budget, when once you have decided what amount to set aside for the legitimate expenses. Of course every family has a different standard of living, and the question of the amount of a budget, like salvation, must be worked out by the individual housekeeper. However, after the first few months of keeping household accounts, one should be able to ascertain with some degree of accuracy the amount necessary to run their household, and then make the budget to conform.—Z. D. H.

"In men who men condemn as ill,
I find so much of goodness still;
  In men whom men pronounce divine
I find so much of mar or blot,
  I hesitate to draw the line
Between the two, where God has not."
—Joaquin Miller.

"From time to time you print statements from your readers that the Rural Press is the best of its kind on the Pacific Coast. In this they are on safe ground, and I would go so far as to say that the paper is second to none other of its kind printed anywhere on earth."—C. Braithwaite,

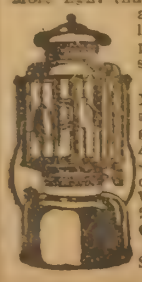
The popularity of knitted fabrics seems to increase each month.

More Light Than 20 Oil Lanterns

AT LAST—the light of lights! A lantern that lights with common matches just like the old style oil lantern, but makes and burns its own gas from common gasoline, giving a brilliant, steady, white light of 300 candle power.

MOST BRILLIANT LIGHT MADE

Brighter than the brightest electric bulb. More light than 20 oil lanterns. Cheapest and best light made. Costs less than one-third of a cent per hour. Safer than the safest oil lantern. The



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Blazing Away in Cost Defense

GOOD "EATS" FROM MOTHER'S KITCHEN



The Best Meal you ever had—did it come from a gas or oil stove?—NEVER. Your best meal, all best meals, come from a real stove—the good old wood or coal variety dear to the heart of every woman. So to mother and those who partake of mother's good food, we say, make it easier to continue to use the good old stove, eliminate the slavery, the fuss and muss, the smoke, soot and fumes—the everlasting poking in of wood to hold a third out of a two-thirds loss. Just think of the difference from the touch of a valve—clean heat of a high degree that does not vary—clean heat of a high degree that does not vary—real gas in the same stove—just kerosene and a little simple Dreadnaught burner. No changes to make. Nothing to saw or split and carry out again in the form of ashes—unconsumed fuel.

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HAROLD SOMERS, 150 De Kalb Ave., Brooklyn, N. Y.

SEASONABLE RECIPES.

Strawberry Mousse—Hull, wash and drain one quart of strawberries; add one cup of granulated sugar and mash well; one-half pint thick cream and one-fourth as much cold milk, beaten stiff, and added to the sweetened berries. Put into a mold with a tight cover and pack in ice cream bucket for four hours.

Creamed Strawberries — Dissolve three teaspoons gelatin in some water, add half a pint of water, grated lemon peel and the juice of one lemon and a little sugar. Stir over fire until sugar is dissolved. Then strain and cool. Before it sets, beat into it half a pint of cream, place a quart of strawberries in a large dish and pour mixture over them. Place on ice until set.

Tomato Marmalade—To one cup of tomato pulp add 1¼ cups of sugar, the juice of one lemon, half a teaspoon of powdered ginger and a little allspice. Cook until very thick. Serve at dinner with roast beef.

Cherry Salad—Cut in half and remove the pits from a pint of cherries; dice two or three slices of pineapple; chop two stalks of celery and two bananas. Mix well with mayonnaise dressing. Set on ice to chill. Serve on lettuce leaves with a ring of cherries as garnishment.

CULINARY HINTS.

To Increase the Quantity.—When scrambling eggs, if you will add a little rich sweet milk to them before cooking, you will find that they are almost doubled in quantity. In cooking brains and eggs, if you wish to increase the quantity, add a little sweet milk and bread crumbs or cooked oatmeal.

Saving Hint.—Grease the cup before measuring thick molasses, and every drop will come out.

Fruit or Chocolate Cake.—Use one-half as much cottonseed meal (well sifted) as wheat flour, and see how rich and nutty your cake will be.

When Boiling Eggs.—Wet the shells in cold water before dropping into the boiling water, and they will not crack.

To Keep a Ham from moulding in summer, sprinkle the new surface with black pepper every time a cutting for a meal is made.

CUTTING RETORT.

They are telling a good story at the Athletic Club in which Doc Hagan is the hero. Seems he had been invited to a dinner party. The hostess, who was at least 45, was a clinging, temperamental piece of femininity who tried to pass herself off as 30, and apparently imagined that being rude and tomboyish assisted her to sustain the youthful illusion.

At dinner she asked the doctor to carve a chicken and, never having carved a fowl before, he made a mess of it. Instead of trying to cover his confusion, his hostess called attention to it pointedly by looking down the table and saying audibly:

"Well, doctor, you may be a very clever surgeon, but if I wanted a leg cut off I should not come to you to do it."

"No, madam," he replied, still continuing the carving, "but then, you are no chicken."

California is called upon to produce everything these days, from dates to beet seed; from oranges and cotton to "cabbages and kings"; from wine and walnuts to grape juice and rice. Whatever is demanded California seems to be able to furnish, of the best quality and in any quantity. She will continue to do so if her producers are permitted to regulate their own affairs.

"Thank you for sending me the name of a buyer for milk goats, but before my ad had finished its run in your paper I was entirely sold out. I have been much interested in your recent livestock articles and hope to read many more of them."—Margaret B. Dean, Walnut Creek.

Such a Little Thing!

TEA is such a little thing that we never stop to think how intimate a part it plays in our daily lives and what a wholesome influence fine tea exerts upon our restful moments.

Would you like to get more enjoyment out of tea? And if that greater pleasure can actually be enjoyed for less money than you are now paying for tea, would you like to know about it? Isn't this worth a little thought?



When people think about tea, they forget that tea-leaves contain tannin as well as tea-flavor. *Tannin*, you know, is an acid found in all kinds of leaves and is used to tan leather. Tannin may be all right for leather, but not for the delicate tissues of the stomach. It injures digestion and is hard on the nerves. Besides, it isn't tea—that harsh puckery taste isn't tea.

People don't want tannin of course. They want tea-flavor which gives enjoyment, gentle stimulation, rest and cheer. That is the charm and value of tea—and the only thing worth buying.

Common tea, which comes from the older leaves of the tea-plant, has only a small amount of tea-flavor—and coarse flavor at that. The main strength of common tea is tannin.



Fine tea, which comes from the young tender leaves of the tea-plant, is rich in sap and fine tea-flavor. It has only a very small proportion of tannin, and even that is avoided by proper making at home.

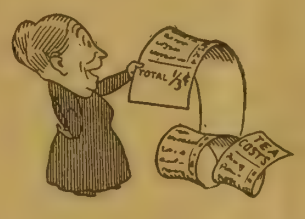
Now the tea in the cup can't be any better than the tea on the bush. A coarse leaf makes poor tea; and all the money you pay to bring it over here doesn't make it a bit better.

The costs of getting tea from the tea-plant to your kitchen are heavy; there is picking, grading, firing, packing, sending over in ships, and a lot more—20 or 30 things to be done, and each one costs money. All together these costs are more than two-thirds of the price you pay for common tea.



You are now ready to understand something that we have not dared ask you to believe before—and that is:

Fine tea is actually cheaper than common tea. It is much stronger in real tea-flavor, and makes a great many more cups to the pound. The result is that a cup of fine tea, like Schilling Tea, costs less than tea selling at 15 to 20 cents less.



This is astonishing but true; and the thing that makes it true is the great cost of getting tea to you from the tea-plant. You have to pay this cost for common tea, with half tea-strength, just the same as you would pay it for fine tea with full tea-strength. In buying common tea, you pay these expenses twice over for the tea-strength you get. It isn't worth this high cost to bring over poor tea with so little tea-flavor.

So you see that after all, getting full tea-enjoyment is more a matter of knowledge and good judgment than it is a matter of money.



Schilling Tea is the fine economical practical tea of this country. It is rich in tea-flavor and costs only ⅓ of a cent per cup. It is the cheapest drink next to water.

Isn't it pleasant to know that the comfortable social pleasure of enjoying fine tea is open to everyone?

A Schilling & Co San Francisco

Market Comment

No Foreign Figs.

No figs have been imported from Turkey by the United States since 1915.

$13,000,000 Walnut Crop Predicted.

According to General Manager C. Thorpe of the California Walnut Growers' Association, the Southern California walnut raising counties have prospects of a record crop of 25,000 tons, estimated to be worth $13,000,000.

San Quentin Bags 12c.

Warden A. Johnston of San Quentin announced that the price of San Quentin bags has been reduced to 12 cents each, whereas Calcutta bags and the so-called "locals," that is, bags made in San Francisco and Portland, are quoted at 12½c and 13.

New Barley Prices.

New feed barley of the 1919 crop has started to arrive and is quoted nominally on the San Francisco market at $2.45 to $2.50 per cental. Old feed is held around $2.55 to $2.60 and the shipping grade is quotable at $2.65 to $2.70 at Port Costa.

Independent Packers in Big Merger.

A new corporation to be made up of eight large packing houses outside of the "big five" is being formed, and John A. Hawkinson, vice-president of Wilson & Co. has resigned to head the new concern. It is announced that the capitalization will be $165,000,000.

Butter $1 a Pound Predicted.

Butter at $1 is predicted. This is reported due to the shortage in cold storage by half a million pounds. Butter for May this year averaged 57.25 cents. Last year the price was $41.11. In April it was 57 cents. In 1918, the April price was 39.92 cents.

The Strawberry Scrap.

Strawberries sold on this market are handled by wholesale commission merchants, charging 10 per cent commission on sales, so the higher the price the greater the margin of profit. The recent boycott on strawberries had but little effect on the market, and has been declared off.

To Sell Wheat at Market Price.

Representative Fitzgerald of Massachusetts introduced a resolution recently proposing to transfer the duties of the Food Administration in handling this year's wheat crop to the Department of Agriculture and requesting Secretary Houston to sell the wheat at the world market price.

Packers Advance Prune Prices.

Packers in the Marysville and Yuba City districts have voluntarily increased their price so that Prune growers wil realize as high as 13c. a pound for extra sizes. It is estimated that the crop in these sections will be 20 per cent greater than last year.

Poultry Famine in Canada and England.

The situation of the poultry and egg market in Canada and England is such that dealers say no matter how much they offer for fresh-killed and live poultry their receipts do not increase. The country is said to be cleaned up of old fowl and chickens, and farmers refuse to part with laying fowl. There is further surplus for exports.

200,000 Bags of Beans Sold.

The trade now confirms the sale of 200,000 bags of beans in New York and this has materially strengthened the local market. It is understood that the price of these beans was $7.00 for the large whites and $7.50 for the small whites. A growers' pool in southern California is reported to be rapidly selling off the surplus beans in the hands of its members. In the last few weeks the combine is reported to have disposed of over 400 cars of beans to eastern buyers.

THE MARKET REPORTS

Figures Given Are Independent and Reliable. Prices Quoted as Paid to Producers.

SAN FRANCISCO.

San Francisco, June 11, 1919.

WHEAT.

The following prices were announced by the Federal Grain Corporation last year and are still in effect. They are figured f. o. b. San Francisco, Los Angeles, Seattle, Tacoma and Portland and guarantee the grower a minimum of $2 f. o. b. shipping point:

Per bushel—	
No. 1 hard	$2.20
No. 2	2.17
No. 3	2.13
No. 1 soft	2.18
No. 2	2.15
No. 3	2.11
Club or Sonora, No. 1	2.16
Do, No. 2	2.13
Do, No. 3	2.09
Recleaned, per ctl.—	
California	$4.30@4.40
Early Baart	None

BARLEY.

While there is no charge in quotations of barley the market is strong with continued shipments and arrangements for future shipments.

Feed	$2.60@2.65
Shipping	2.75@2.80

OATS.

If anything oats are duller than they were last week. The demand is practically nothing.

Red feed, per ctl.	$2.30@2.40
Red for seed	Nominal
Black for seed	Nominal
Recleaned Red or Black for seed	Nominal

CORN.

There is no change in the corn situation. Ther has been some damaged Egyptian corn sold at prices ranging from $2 up, according to condition.

California	$3.30@3.50
Egyptian, choice	Nominal
Milo	Nominal

HAY.

Receipts of hay for the past two weeks were 2583 tons. This is about the average amount that has been arriving lately. The market has been inactive, with the possible exception of a few cars of fancy wheat and Red oat hay, which have brought top quotations. This grade of hay, however, is scarce, although many farmers believe their hay should be so rated, only to find buyers differ in the grading. There is little demand for other grades, and as dealers are rushing in the balance of their old crop in order to get it out of the way before the new crop comes along, they are selling at whatever they can get. It is therefore hard to give a correct idea of the present market. The first cutting of new alfalfa is selling from $10 to $13, if in good order, and the second cutting is now being harvested.

No. 1 wheat, per ton	$16.00@18.00
No. 2 Wheat, per ton	12.00@15.00
Choice Tame Oat, per ton	17.00@19.00
Wild Oat, per ton	11.00@14.00
Barley Hay, per ton	11.00@14.00
Alfalfa, per ton	15.00@19.00
Stock Hay, per ton	11.00@13.00
Barley Straw, per bale	.50@ .80

FEEDSTUFFS.

Alfalfa meal sold a dollar lower this week, but otherwise there were no changes in prices of feedstuffs. The market is dull.

Cracked corn	$72.00@73.00
Rolled barley	53.00@54.00
Rolled oats	52.00@53.00
Alfalfa meal	32.00@33.00

POTATOES, ONIONS, ETC.

Potatoes are easing off in price as the season advances and the supply becomes more plentiful. New red onions were stronger today on a not over plentiful supply. Very few Bermudas are coming into this market and the demand for them is not strong. Cucumbers were scarcer this week and the price advanced 25 cents. Tomatoes are getting cheaper as large supplies are coming in. The early green corn from Imperial Valley is not finding large sale on account of its quality and sold as cheap as 25 cents this week.

String beans	12@15c
Peas	8@ 9c
Carrots, per sack	$2.50@3.00
Asparagus	6@8c
Rhubarb, Strawberry, box	$2.00@2.50
Cucumbers, hothouse box of 30	$1.50@2.50
Los Angeles	$1.50@1.75
Eggplant per lb.	10@15c
Lettuce, per crate	75c@$1.25
Celery, crate	Nominal
Tomatoes, Southern, per crate	$1.00@1.75
do, Mexican	$2.50@3.00
Sprouts	Nominal
Summer squash	90c@1.10
Green Corn, Imperial Valley	25c
Potatoes—	
Rivers	None
Oregon	2.00@2.40
Washington	None
Idaho	2.00@2.25
Garnets, new on stree	$3.00@3.50
Other new on street	$3.25@3.75
Sweets, per sack	None
Onions, Warehouse Stock—	
Australian Browns	Nominal
Onions, new, red	$3.75@4.25
Bermudas—white	$2.50@3.00
do, yellow	$2.75
Green Alameda	$1.75@2.00
Garlic	15@20c

BEANS.

The bean market is showing strength on large Government sales.

Bayos, per ctl.	$6.00@6.25
Blackeyes	$3.75@3.90
Cranberry beans	5.75@6.00
Limas (south, recleaned)	$9.00
Pinks	5.75@5.90
Mexican Reds	4.75@5.25
Tepary beans	2.50@2.75
Garbanzos	11.75@12.00
Large whites	5.80@6.00
Small whites	6.90@7.00

POULTRY.

The market shows a decline on fryers, but otherwise it shows considerable strength. Broilers have declined to a figure where it is possible to ship them East and such shipments are reported. While hens are holding firm there may be lower prices for this description as the Eastern markets are lower and extra hens will now be diverted to this market from the East.

Turkeys, live, young spring, lb.	Nominal
do, old	Nominal
do, dressed	Nominal
Broilers, 1½ to 2 lbs.	33@35c
do, 1¼ lbs.	30@33c
do, ¾ to 1¼ lbs.	30@31c
Fryers	35@37c
Hens, extra, per lb. colored	38@39c
do, Leghorn	36@38c
Smooth young roosters, per lb. (3 lbs. and over	48@50c
Old roosters, colored, per lb.	23@24c
Geese, young, per lb.	33@35c
do, old, per lb.	33c
Squabs, per lb.	48@50c
Ducks, young	33@35c
do, old	30@33c
Belgian hares	14@16c
Jack rabbits	$2.50@3.50

BUTTER.

Butter showed strength last Thursday and Friday, going to 56 cents. On Saturday it dropped off 2 cents, and after being steady at 53½c on Monday and Tuesday it dropped 1½ cents on Wednesday. The immedicate cause of the decline was probobly due partly to a decline in the Eastern markets, but also to local conditions and to the feeling that butter was too high to go into storage at present prices. It is generally felt that butter should go to a lower level before there can be much if any in storage movement.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	52½	56	54	53½	53½	52
Prime firsts	....			Nominal		
Firsts	55	..	..	..	52	..

EGGS.

Eggs were strong throughout the week, although there was a recession on Wednesday's market of 2 cents for extras and 2½c for pullets. The strength of the market is due to shipments made from this city both north and south, and the drop today was due to a weakening of the Eastern market, together with the natural reaction that follows a material advance in prices. It is not believed that eggs are going to a much lower price.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	42½	44	45½	47½	49	47
Firsts	46½	46½	46½	46½	..	..
Ex. pullets	39	41	43	44	44	41½

CHEESE.

While there has not been a great deal of activity in cheese the demand is reported good and offerings are light. This, together with the upward movement of butter, caused California cheese to advance in price.

Fancy California flats, per lb.	26c
California Y. A., fancy	29c
Oregon Y. A.	33½c
Oregon Triplets	34c
Monterey cheese	22½@24c

FRESH FRUITS.

This is a cherry market with lower prices and increased arrivals. Most of the cherries now on the market are of excellent quality. Peaches and apricots are coming in rapidly, and prices are daily lowered. As yet, however, neither of these fruits is in prime condition. The first season of strawberries is about over and the fruit that is coming in is not choice. The report that the second crop will be small indicates that there is little prospect of lower strawberries. A good number of cantaloupes are now on the market, and last week's prices were about halved. Watermelons are getting common and sell at about 4 cents.

California apples	$3.00@4.00
Northwest apples	3.00@4.00
Peaches	1.00@1.25
Apricots	$1.25@1.75
Loquats, per lb.	8@10c
Strawberries, chest	$10.00@14.00
Raspberries	18.00@30.00
Loganberries	8.00@12.00
Currants, box	90c@ 1.00
Gooseberries	6@8c
Cherries—	
Royal Anne	10@11c
Black, bulk	8@10c
White, bulk	6@ 8c
Cantaloupe, Standards	$2.50@3.00
do, Ponies	2.00@2.50
do, Flats	$1.00

CITRUS FRUITS.

Lemons were very strong this week and were advanced about a dollar for all descriptions. Lemons are now selling higher than either oranges or grapefruit.

Cranges, Valencia	$4.00@5.25
Lemons, fancy	$6.00@6.50
do, choice	5.00@6.00
do, standard	4.00@5.00
Lemonettes	3.00@4.00
Grapefruit	3.50@4.50

DRIED FRUITS.

The market is rather quiet. The demand for all descriptions is steady, but buyers are not active. Apples and prunes were bid up half a cent this week, but otherwise there were no changes in prices.

Apples	17½@18c
Pears	17c
Peaches	14½@15c
Apricots	20@26c
Prunes	12½@13c
Figs, Adriatic	14@18c
do, Calimyrna	15@20c

RICE.

The mills have completed the season's milling with the exception of a few lots of damaged rice yet to be allocated. They have all sold their rice during the past season faster than they have been able to mill, and consequently, when the last lots of paddy arrived at the mills they had no more rice to offer. Immediately this condition was realized there was a wild scramble to replenish stock throughout the country. The Japanese dealers seemed to realize the necessity of carrying large stocks to take care of their trade, and they now have practically all the good rice available in California. This they have been selling from $7.85 to $10.00, and the latter price may be taken as the quotation on good Fancy Japan today.

HONEY.

The California Honey Producers Co-operative Exchange, controlling about two-thirds of the California honey crop, has issued a statement, under date of June 7, in which it quotes prices and guarantees them against decline until September 1, 1919. It states that these prices are the minimum to be paid growers and that they will be advanced as the season progresses. Following are prices named:

Water White, Orange Blossom	18c
White to Water White, sage (Subject to production)	17c
Light Amber Mountain (Sage-Buckwheat)	14c
Light Amber Alfalfa	11c

LOS ANGELES.

Los Angeles, June 10, 1919

BUTTER.

Butter prices remain unchanged since last week's report. There was a decline of 2c on last Wednesday, but the price advanced to 57c on Thursday. Receipts were a little lighter for the week, but demand keeps up well. Receipts for the work were 365,200 lbs.

We quote:	
California extra creamery	57c
do, prime first	55c
do, first	54c

EGGS.

Fresh ranch eggs advanced 1c during the week. The price on others are the same as quoted last week. This market is reported firm, with a fair demand. Receipts for the week were 1,568 cases.

We quote:	
Fresh ranch, extra	47c
do, case count	45c
do, pullets	43c

POULTRY.

Fryers, hens, and ducks declined. Broilers are in good demand at quotations. Hens are selling fairly at lower prices, and ducks moving better, though at lower prices. Demand is fair.

Broilers, 1 to 1¼ lbs.	27c
Broilers, 1½ to 1¾ lbs.	28c
Fryers, 2 to 3 lbs.	30c
Roosters (soft bone), 3 lbs. and up	35c
Stags and olds roosters, per lb.	14c
Turkey	35@40c
Hens	30@34c
Ducks	30@31c
Geese	28c

FRUITS.

Berries are reported slow of sale at present high prices, due to weather conditions. Other fruits are in fair demand at present quotations. Receipts only fair.

We quote from growers:	
Cherries, lb.	10@17c
Gooseberries, lb.	11@12c
Apricots, lb.	6@ 7c
Loquats, per lb.	6@10c
Strawberries—	
30 basket crates, fancy	$4.00@4.50
Poor to choice	3.00@3.75
Blackberries, case 30 boxes	3.00@3.50
Raspberries, case 30 boxes	3.25@3.75
Cherries, lb.	12c@15c
Loganberries, case, 30 boxes	3.25@3.75
Plums, Beauty, lb.	10@11c

VEGETABLES.

No more Oregon Burbanks coming in this market. New potatoes make slight drop in price. Sweet potatoes off the market. Nearly all vegetables now quoted cheaper and receipts are satisfactory. Stockton yellow onions just coming in. Melons are quoted lower. Lettuce is scarce and selling at 25c and 50c. Demand is good for all staples.

Potatoes—	
Idaho, Russets, per cwt	$2.00@2.50
New potatoes, lug box	90c@1.00
Garlic, per lb.	35@40c
Onions—	
Onions, New Red, per cwt	$3.75@4.00
do, Stockton yellows, per cwt	$4.00@4.25
Imperial Valley white silver wax, crate	$2.75@3.50
Imperial Valley Wax—yellow	$2.50@3.00
Cabbage, per 100 lbs.	75c@1.00
Rhubarb, per 30-lb. box	$1.25
Summer squash—	
Imperial Valley, 4 basket crates	90c@1.00
Asparagus, per lb.	10c
We quote from growers:	
Peas, per lb.	8@10c
Kentucky Wonders	9@10c
String, Wax	7@9c
do, Green	7@8c
Tomatoes, Imperial Valley, 4 basket crate	$1.00@1.50
Cucumbers, lug box	$2.25@2.50
do, flats	90c@$1.00
Lima Beans, Imperial Valley, lb.	15c
Cantaloupes, Stand. & Pony crates	$2.00@2.25
Watermelons, 100 lbs.	$1.50@2.00
Lettuce, crate	25@50c

BEANS

Prices steady; no changes reported. Limas in fair demand. On all others trade is reported dull.

Limas, per cwt.	$8.00
Large white, per cwt.	6.25
Pink, per cwt.	6.50
Small white	6.25
Blackeyes, per cwt.	3.25
Tepary, per cwt.	$2.00@2.50

THE ALFALFA GROWERS OF CALIFORNIA, INC.

The alfalfa market is strong. There are no changes in prices. The Association still has large tonnage booked for high-class hay at high market prices and purchasers want delivery. Sales of alfalfa by the Alfalfa Growers of California, Inc., 325 Central Bldg., Los Angeles, for the week ending June 10th, were at the following prices f. o. b. Los Angeles.

No. 1 Dairy	$26.00
Standard Dairy	$21.00@22.00
Standard Alfalfa	18@20.00
Stock Alfalfa	14.00@18.00

HAY.

Alfalfa in fair demand and slightly higher. Grain hay is reported very dull.

We quote f. o. b. Los Angeles.

Barley hay, per ton	$18.00@21.00
Oat hay, per ton	$20.00@22.00
Alfalfa, Northern, per ton	$20.00@22.00
Alfalfa, local, per ton	$21.00@23.00
Straw, per ton	9@10.00

Special Deciduous Market Report

By J. L. Nagle.

Shipments of cherries are decreasing and the crop will undoubtedly be cleaned up in about two weeks. As a rule, the cherry season lasts until the first of July.

The movement of apricots in the past week has been heavy. The quality has been of the usual standard, but sizes on account of heat have had a tendency to run small. At this writing but few cars have arrived East, consequently we are not in a position to get a line on the market, but judging from inquiries from different centers, indications are for a favorable demand.

There are numerous inquiries for plums but as the early varieties are light, it is deemed advisable to place these in assorted cars suitable for private sale markets.

Early peaches are now moving and although competition from Georgia would make it inadvisable to unload very many in the far Eastern markets, they can be disposed of to advantage in the North and in the middle west.

Bartlett pears are sizing up and the crop should be ready to move between the 20th and 25th of this month. The stock is clean and as quite a liberal proportion will be sold to the canners, that which is marketed East will undoubtedly realize high prices.

There is no change in the grape situation, growing conditions still being favorable.

Average for the week:

NEW YORK—Royal Anne Cherries, $2.32; Royal Anne Lugs, $2.63; Spanish, $2.48; Bings, $2.82; Oregon, $2.42; Tartarians, $2.24; Tartarians Lugs, $3.65; Lamberts, $4.25; Rockports, $1.97; Gov. Wood Cherries, $2.05; Republican, $3.14; Chapman, $2.45; Bigarreau, $1.90; Centennial, $3.49; Burbank, $1.42; Mayflower Peaches, $2.01; Newcastle Apricots, $3.75; Royal, $3.49

BOSTON—Tartarian Cherris, $2.16; Tartarian Lugs, $3.21; Bing, $3.12; Bing Lugs, $3.90; Oregon, $2.52; Royal Queen, $3.00; Rockport, $2.12; Chapman, $2.30; Bigarreau, $2.20; Royal Anne, $2.51; Royal Lugs, $3.11; Lambert, $3.77; Republican, $2.10.

CHICAGO—Tartarians Lugs, $2.60; Tartarians, $2.32; Royal Annes, $1.85; Royal Lugs, $2.65; Bings, $2.77; Oregons, $2.42; Lamberts, $2.75; Royal Queen, $2.40; Burbank, $1.60; Republican, $2.10; Mayflower Peaches, $2.02.

Special Livestock Market Report

San Francisco, June 11, 1919

CATTLE—In sympathy with the rapidly falling market in the East, and as a result of heavy receipts in the local market, the price trend is strongly downward. Feed in the country has been unusually good this season, and grass-fed steers are arriving in large numbers. To add to the plethora, export demand in the East has practically ceased. Still lower prices are expected.

Steers—

Grass Steers, No. 1, weighing 1000-1200 lbs.	10¾@11c
Grass Steers, No. 1, weighiing 1200-1400 lbs.	10¾@11c
Grass Steers, second quality	9@9½c
Grass Steers, Thin	5@7c
Grass Cows & Heifers, No. 1	8½@9c
Grass Cows & Heifers, 2nd quality	7@7½c
Grass Cows @ Heifers, thin	3½@5½c
Bulls & Stags, good	5½@6c
do, fair	4@4½c
do, thin	3@3½c
Calves, light weight	12½@13c
do, medium	11@12c
do, heavy	6½@10c

SHEEP—The mutton sheep market is easier, and there is a fractional decline in some classes. As is the case with beef and pork, retailers are not scaling down their charges over the counter in accordance with the drop in wholesale prices, and consumption is but little improved.

Lambs, yearling	10@11c
do, milk	13@13½c
Sheep, wethers	10@10½c
do, ewes	8@8½c

HOGS—The San Francisco market is getting more hogs than anticipated at this season of the year, but are absorbing all they get, though at lower quotations. The recession in price is partially in sympathy with improved receipts of cattle and the consequent price decline. The quality of the stock offered is fairly good, though some soft stuff is still arriving.

Hogs, hard, grainfed, 100-150	17¾c
do 150-250	18¼c
do, 250-300	17¾c
do 300-400	17½c

DRESSED MEATS.

Steers, No. 1	16½@17½c
do, 2nd quality	16@17c
Cows & Heifers	14@16c
Calves as to size, etc.	18@23c
Lambs, suckling	23@24c
do, yearling	20@21c
Sheep, wethers	16@18c
do, ewes	14@16c
Hogs	27c

PORTLAND LIVE STOCK.

Portland, Ore., June 10, 1919.

CATTLE—Lower; receipts, 55.

Steers, best, $11@11.50; good to choice, $9.50@10.50; medium to good, $9@9.50; fair to good, $8.75@9; common to fair, $7@8.50; good to choice cows and heifers, $8@9.50; medium to good, $7@7.75; fair to medium, $4.50@5.50; canners, $3@4; bulls, $5@8; calves, $9@13.

HOGS—Steady; receipts, 378.

Prime mixed, $19.25@19.50; medium mixed, $18.75@19; rough heavies, $18@18.75; pigs, $17.75@18.25.

SHEEP—Weak; receipts, 710.

Prime lambs, $11.50@13; fair to medium, $9@10; yearlings, $6@8; wethers, $7@7.50; ewes, $6@7.

Los Angeles, June 10, 1919.

CATTLE—Prices are declining. The market is badly demoralized as a result of Eastern conditions, coupled with the drying up of pastures. Sales very slow with a dull market.

Per cwt., f. o. b. Los Angeles:

Beef, steers, 1000@1100 lbs.	$10.00@11.50
Prime cows and heifers	8.50@9.50
Good cows and heifers	8.00@8.50
Canners	5.50@6.00

HOGS—Prices on this market are steady;—there are no changes to report. Slow sales.

Per cwt. f. o. b. Los Angeles:

Heavy avr'ging 275@350 lbs.	$15.50@16.50
Heavy, avr'ging 225@275 lbs.	16.50@17.50
Light	17.50@18.00

Rough docked 20 lbs. piggy sows 40 per cent.

SHEEP—Demand is light and market quoted lower.

Prime wethers	$ 8.50@ 9.50
Prime ewes	8.00@ 8.50
Yearlings	8.50@ 9.50
Lambs	12.50@13.50

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MISCELLANEOUS.

CORN HARVESTER—One man, one horse, one row, self-gathering. Equal to a corn-binder. Sold to farmers for twenty-three years. Only $25, with fodder binder. Free catalogue showing pictures of harvester. PROCESS CORN HARVESTER CO., Salina, Kans.

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All sizes standard pipe and wrought iron screw casing. All kinds of fittings. Guaranteed good as new. Write for prices. Weissbaum Pipe Works, 160 Eleventh street, San Francisco.

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CO-OPERATION (not operated for profit) reduces living expenses. Particulars and catalogue from Co-operative League, Commercial street, San Francisco.

PATENT ATTORNEYS.

WEBSTER, WEBSTER & BLEWETT, Savings and Loan Bldg., Stockton, California. Established 50 years. Send for free book on patents.

BEES FOR SALE—Golden Italians in patent hives. John G. Mee, St. Helena, Cal.

WANTED.

WANTED—Married dairyman; experienced in feeding, testing, calf raising, use of milking machines, gas engines, etc. Sunnybrook Ranch, Willits, Calif.

AGRICULTURAL EFFICIENCY expert desires to manage ranch on efficiency basis. Experience in all branches of farming. P. O. Box 750A, Chico, Calif.

COUNTRY LANDS.

$35,000—85 acres, 50 yards from school; county road on two sides. 10 room house (hot and cold water), 3 wells, windmill and tank, new gas engine and pump; barn, chicken and brooder houses; 2 horses, 1 cow, 350 chickens; 300 fruit boxes, 200 trays; complete set of implements to run place, including 4 wagons, $250 power spray pump, cider press, etc.; garage and work shop. Average income $5,000 per annum. Will guarantee $7,000 crop this year. 2 miles from Windsor station between Santa Rosa and Healdsburg, Sonoma County. 30 acres prunes of which 18 acres bearing, balance 3 to 5 years; 1 acre peaches; 10 acres apples; 2 acres pears; 14 acres resistant vines; plenty of berries, beans, corn, potatoes, etc. About 30 acres of this is deep rich bottom land with plenty of water to irrigate if necessary. Mortgage, $12,000 5%, can remain. Umbsen, Kerner & Eisert, 20 Montgomery St., San Francisco.

FINE FARM AND HOME—28 acres No. 1 land, one mile east of Live Oak near school highway and 2 railroads; half-mile from river. Big 8-room house with hot and cold-water system, bath and toilet, and big porch, large new cow-barn, horse-barn, tank house with 6 horse power engine and pump, new De Laval cream separator, 13 milch cows, one bull, 4 calves. All high-grade Holsteins. 3 brood sows, one boar; 60 young chickens. Land produces 6 crops of alfalfa per season. 3 acres in 4-year-old French prunes, 3 acres Thompson seedless grapes; peaches, walnuts, and all kinds of fruit trees around the house. All in first-class condition. Will sell everything, including furniture for $15,500. Fred Reber, owner, Live Oak, Cal.

RARE OPPORTUNITY—119¾ acres in the fertile Pajaro Valley, 4½ miles from Watsonville on first slope of foot hills, in what is known as the frostless belt. 31 acres in 16 year apple trees. 10 acres Royal Apricots in bearing. 18 acre vineyard. Seven-room modern house. Four-room house for foreman. Land described in Government Soil Survey as salispuedes loam. Excellent for apricots. Whole property under cultivation. Barn 50x70 and other good outbuildings. Implements. Good spring water tank and gravity pressure, nothing on account of age. Price, $52,000. A. Hall, Watsonville, Cal.

FOR EXCHANGE—160 acre bulltock ranch (half tillable). 10 acres good fall wheat, 2 acres garden and orchard, 8 more partly cleared, fair buildings, several streams, million feet timber. Good soil for fruit or grain. Daily mail. Want small improved home place, dear climate. Pacific California. Clair Murphy, Goldson, Lane Co., Ore.

FOR SALE. In Klamath County, Oregon, 600 acres good level land, unimproved, good for alfalfa, grain or stock. Price, $10.00 per acre. Easy terms. For particulars, address Mrs. Mary Johnson, 414 Wilson Ave., Vallejo

SEEDS AND PLANTS.

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FOR SALE—Capri Figs for distribution at proper time. Large ones containing many wasps. C. E. Christley, Orland, Cal.

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30x3½	11.50	13.50	2.50
32x3½	12.85	15.85	2.70
31x4	16.30	20.65	3.15
32x4	16.60	21.15	3.25
33x4	17.30	22.00	3.35
34x4	17.80	22.50	3.45
36x4	.....	26.60	.....
34x4½	24.00	28.90	4.20
35x4½	25.00	30.15	4.30
36x4½	25.45	30.65	4.45
37x4½	.....	35.75	5.10
35x5	28.70	34.45	5.25
37x5	30.25	36.50	5.40

All other sizes in stock. Write for them or call and see them.

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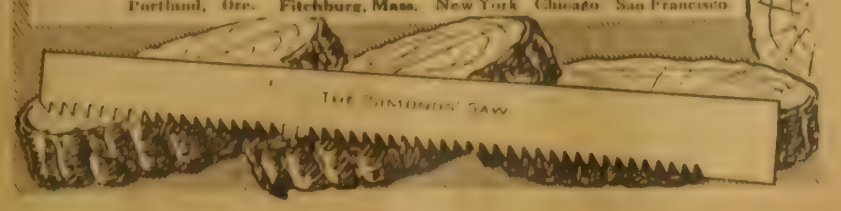
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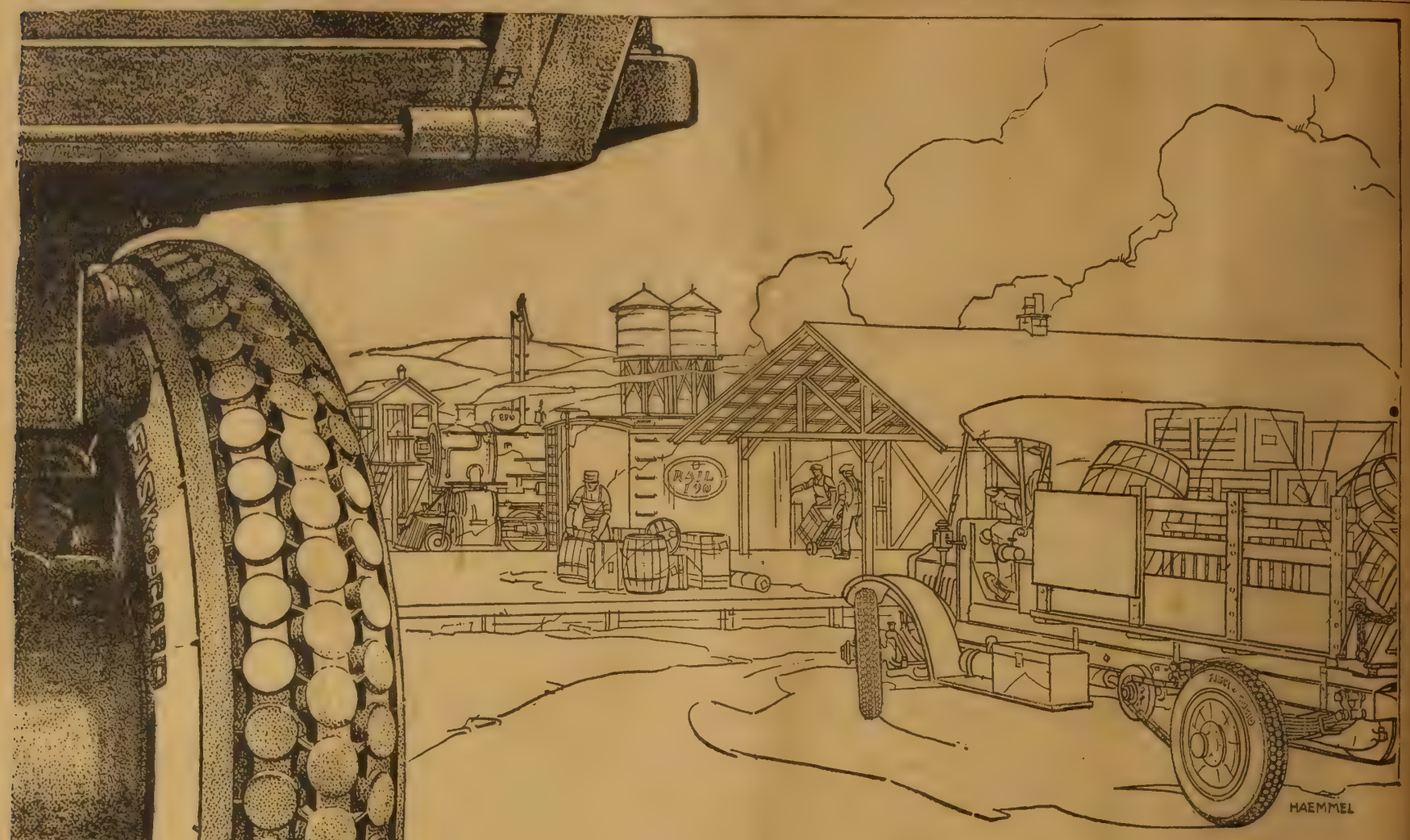
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Vol. XCVII—No. 25 Forty-ninth Year

THE PACIFIC RURAL PRESS

SAN FRANCISCO JUNE 21, 1919 LOS ANGELES

Karakul--The Only Fur-Bearing Sheep

California is now the American home of Karakul sheep. Dr. C. C. Young, the father of the industry and the only man who ever brought a Karakul to America, established a flock in Texas several years ago, but lately moved to California, where he already has a priceless flock of nearly 300 head. He believes that the Persian lamb and Astrachan fur industry has a great future in this country, and that the Karakul sheep is particularly adapted to California conditions.

(Written for Pacific Rural Press by Dr. C. C. Young, Kerman.)

THE KARAKUL is the only breed of sheep which produces valuable fur. Persian lamb skins are the product of Karakuls, not Persian sheep, as is commonly supposed, for the latter do not produce fur at all unless crossed with Karakul rams. The name "Persian lamb" comes from the fact that the Persians were the first to export Karakul skins to European markets.

The Karakul is a native of the Kara-Kum Desert of Central Asia, where no other domestic animals are able to exist except the camel, the burro and a species of goat. Owing to the great hardiness of the Karakul, it is able to thrive on pasture that would starve our domestic sheep, and last year, in the great drought of Mexico and Southwest Texas, where we lost 5,800 sheep, including the entire lamb crop and 60 per cent of the kids, our loss in Karakul sheep was practically negligible. One breeder who fed a number of Merino lambs for three months, giving them all they wanted to eat of alfalfa and milo, kept a flock of young Karakuls on a very hard, dry pasture during the same length of time, and the Karakul lambs accumulated fat quicker than the domestic lambs did.

In a 25-page bulletin of the Department of Agriculture, the hardiness of this sheep is mentioned as the result of tests made by the Government of the South African British Colonies. During my expedition in Central Asia I often saw Karakul sheep driven for 50 miles without being watered. They had nothing to eat except here and there an alkali weed or a bush of saksaul, yet they seemed to stand the awful hardship. Thousands of these sheep are driven from Northern Afghanistan across the desert to railway stations on the Central Asiatic Railway, and they arrive in the best of condition.

One thing is certain, the Karakul sheep enjoy the alkali weeds of California just as much as they do similar weeds in the Asiatic Desert, and people with waste lands covered with brush and alkali weeds can do no better than to raise Karakul sheep, for they will compete with any goat living; in fact, they are hardier.

The mutton qualities of this sheep, according to Armour and Swift, are unsurpassable, and are entirely void of the "sheepy" flavor characteristic of our native breeds. The fat is the butter of Central Asia and is admirably adapted for cooking purposes. It provides a very cheap way for the natives to secure their cooking fat.

As a wool sheep the Karakul presents wonderful opportunities. As much as 21 pounds have been shorn from one ram, although this is unusual. Eight pounds is the least that any Karakul ram has ever clipped. The wool will bring the same price as any other wool—more, if it is carefully graded and attention is paid to the length.





Above, 250-lb. Karakul ram of the large type, used for producing quick-maturing spring lambs. Below, first Karakul lamb born in California. Even though his mother was only a half-breed, the blood of an imported Karakul ram gave this little fellow the tight, black curls, which made his skin worth $30 when he was only three days old.

But it is from the lambs that the valuable fur is secured. When a Karakul ram is bred to our domestic coarse, long-wool sheep, we obtain in the first cross beautiful, tight-curled, lustrous lambs that must be killed a few days after birth. Tight curled lambs produce Persian lamb fur, while open curled lambs give us the Astrachan fur. From the skins of the slunks we derive the very expensive broad-tail or baby lamb fur, and coats made from such skins often cost as high as $1,000. Before the war, ordinary lambs 6 months old sold in this country at from $4 to $5, while black half-blood tight-curled Karakul lamb skins, obtained from lambs three days old, brought $15. Since the war these prices have been doubled.

Domestic ewes require but a small percentage of Karakul blood to produce curled lambs, and even the octoroons often come with black curls. It is not, therefore, necessary to kill the full bloods for fur. They are used for the creation of grade Karakul rams, which are again crossed to domestic ewes that will produce the lamb skins with the much required tight curls. It must be borne in mind, however, that while it is easy to produce the Astrachan fur with open curls it is extremely difficult to raise lambs with tight curls in the first cross; in fact, it is impossible unless one confines himself to tested Karakul rams and to ewes of Mexican Coriente, Navajo, Persian Fat Rump, Lincoln, Cotswold, Black-Faced Highland and similar breeds that are free from fine wool admixture.

Karakul lambs are exceptionally strong at birth and will mature much earlier than native lambs. It is possible to make 60-pound lambs in 60 days. The ewes never disown their lambs, never wear down their teeth, and herd well. They can cover tremendous distances, will stand any climate, and will thrive as well on weeds as native sheep do on alfalfa and grain.

The United States imports $11,000,000 worth of Karakul furs annually, and while the industry in this country is still in its infancy, it has unlimited possibilities. The Department of Agriculture yearbook says, "Results obtained by Dr. Young make it appear that the production of Persian lamb fur can be made a profitable commercial enterprise in the United States."

As it is against the laws of the United States to import livestock from Asia, and also against the laws of Bokhara to export Karakul sheep, the introduction of these animals into the United States presented many almost unsurmountable obstacles, and but for the assistance of the late Colonel Roosevelt and a few others, nobody would ever have seen a Karakul sheep on the American continent. However, enough foundation stock was secured to make a good start, and now, after several years of scientific breeding, a definite type has been established—a type that inseparably links Karakuls and Profit.

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R. H. WHITTEN - - - - Livestock

EDITORIAL.

VOTE ON ROAD BONDS.

ON other posts of this corral bells are ringing to call attention to the special election on July 1, which will give all voters a chance to declare themselves on the question of state bonding to build more good roads so that not only will new regions be traversed, but the whole state brought into better connection with the highways already constructed. So far as state sentiment is expressible by legislative and executive action, and so far as supporters thereof can declare themselves by enthusiastic manifestations, California has already approved this wide-reaching movement for state development. But the law properly provides that the incurrence of some kinds of obligation must be preceded by popular approval at the ballot-box. Thus the question arises: Will you vote for or against such an obligation for more good roads? We are giving on other pages a few facts about what is involved in the special election and a negative argument by one of our subscribers who has firm convictions on the subject. It does not seem necessary to indulge at any length in affirmative declarations. Not only is general sentiment, so far as we can discern it, strongly in favor of the undertaking, but the way the question arises all the advantage is on the affirmative side. Those who strongly desire approval of the bonding know all about the way to secure it; those who are opposed or indifferent will not wake up in time to say or do anything—but to be fair with them we are setting off an alarm clock in this week's issue. It is up to every voter to declare himself according to the quality of his vision, according to his best judgment of what is good for California in the terms of what there is now in his pocket or what he hopes to find there in the future, and according to his best hope for the joys of life for himself and his children. And while we point out the fact that the proposition is a burden upon the individual financial conscience, we do not hesitate to say that our judgment upon current affairs and our confidence in the future of California call upon us to vote in favor of an enterprise which will adequately serve current needs and be the best assurance of the realization of the future of which the state is capable and toward which this generation has a clear duty to perform.

OPEN DOOR AND OPEN HOUSE.

But while we declare that it is the duty of every man to vote his convictions straight on this question of highway bonds, and while we admit that it does not become us either to impugn the motives of others or to make insistent exhortation on the subject, there are a few things which we would like to say of the popular duty and advantage of laying this state wide open just at this time. We seem to be on the point of realizing the development for California of what the pioneers dreamed but could not live to see. Our manufacturing plants are extending and multiplying. We are building ships with a speed and to a weight of tonnage which no one ever anticipated, not only because Americans have been so long hugging the delusion that other people's ships would always carry their products, but because California was thought not to have material suitable nor a population with a capacity for shipbuilding. We are now getting our eyes widely open to the fact that our geographical position as improved by the Panama canal, places us on the world's highway of commerce, travel and industrial adventure and will stud our thousand miles of sea coast with commercial and manufacturing cities, naval and military bases, educational and recreative institutions and resorts and all other centers of human interest, activity and investment—will, in fact, make our coast bristle with all points of cosmopolitan energy and achievement. The door to such development is now thrown wide open and thousands are entering with their resources of industry, enterprise and capital. The question is shall we only open the door or shall we illuminate the hallways and welcome the world-developers to enter our great and inspiring patio of vast productive valleys, towering mountains and immeasurable resources of water and water-power—translatable into electric energy?

DEVELOPMENT OF ALL CALIFORNIA.

It must be evident to anyone who gives the subject a moment's consideration that the way to secure the symmetrical development of the whole state is to connect the immediate coast, with its present onrush toward greatness in city-building, through manufacturing and maritime industries, to the interior, with its immense undeveloped resources of food production, mineral production, lumber production and power production. The development of the state surely demands that our outmost ocean headlands and harbors be enchained to our inmost sources of industrial wealth. There is but one link in this chain and that is transportation, a long link of which one side is now creditably developed, though not complete, viz.: our latitudinal railways. The other side of this link is but partly developed and must be extended and improved, viz.: our highways and waterways. Both sides of this link must be evenly wrought to make the link efficient to give the strength of each side to the other. To enable railways to serve their main purpose, there must be easy access to them, and to make a system of highways and waterways serve its chief industrial purpose, it must lead at all desirable points to cross-country movement by rail. It might seem to the reader that it would be a little easier to work out the metaphor if we should call transportation a chain and try to connect the several links of it, but in that case we should lose the point we are laboring to uncover, which is that transportation is really a single force or agency—though there be sides and angles to it—and the strength and functioning of a link lies in the equal development thereof. How shall this be done? Our railways were built by private capital and enterprise with important public contributions. Our waterways are improved with public money for the operation of privately-owned craft. We doubt it either process has resulted in the greatest possible benefit to the public, but they probably could have been secured in no other way. We could get our highways by the same process with the same everlasting conflict between public and private interests and the same discrimination and extortion which we have fortunately brought under control in this state. Shall we build highways by establishing a lot of petty monopolies and dot the landscape with toll-gates at which everyone who turns a wheel must stop to pay a hateful tribute? Surely no one would choose to return to those days of highway enslavement. Evidently the highways which the state must depend upon to secure the development which the situation and resources invite, must be contributed at public expense and administered by public servants.

GOOD ROADS BELONG TO THE FUTURE.

Whatever may be the differences of opinion as to how railways should be owned and administered, there can be no doubt of two things, viz.: highways must be owned by the public and paid for by the public. The only way we know of by which this can be done is by borrowing money. To undertake it by direct taxation would be confiscation of property—which no one but an advanced socialist could approved even in theory, and which no one who has anything he feels that he has honestly worked for and earned, could tolerate for a moment. The famous roads of antiquity were built by slaves and captives who owned not even their own lives. Fortunately there is no such road-building agency now available. Our roads must be built by a free people which determines by vote when they shall be built and how they shall be paid for. As the service which such roads render will be largely in the future, it is only just that the future shall chiefly pay for them. The issuance of bonds is simply the most convenient way by which those who wish to lend money to the public shall get fair return for their money's service.

In our experience we have seen no reason to object to the public assumption of a debt to secure the improvements which the public needs for education, sanitation and transportation. Of course we recognize what seems to be a fact, that the issuance of bonds by a decadent concern or by a wild-cat enterprise, whatever either may be, maybe a dangerous and perhaps a desperate recourse. We have lived for over forty years in a growing California town which began by laying off a group of farms into dirt-road squares full of town lots. When we arrived there was not a sidewalk, nor a paved street, nor a public sewer, nor a street light, nor a school building except a shack country school house, but 1200 people were building houses here and there over six square miles of adobe. Now the town has 65,000 people, practically all streets macadamized or asphalted, sewered, sidewalked, etc., and there are public buildings worth several millions. All public improvements were made by bond issues, all of which were paid off as they matured and the people have just voted four million dollars of bonds for more school houses, parks, playgrounds, etc., and it is now reported that the county in which the town is situated will buy these bonds. There is nothing particular or exclusive about this. Many California towns have done as well or better. We cite the fact simply to concrete the truth that a town which is honestly growing can profitably borrow money to get on with just as a growing man or corporation can profitably borrow it. And exactly the same thing can be said of a growing state. If its improvement is wisely planned and it gets the worth of its money in the construction of it, a growing state need not worry about what it borrows to promote its own growth and development. The more it borrows for reasonable things to make it great in the eyes of those who are seeking desirability for home and business investments, the surer it is to pay its debts and the more easily also it will pay them.

A BREEZE NEEDED.

By all the codfish in the Pacific and all the horned toads on the hot plains: by all the snows that clothe our mountain peaks and all the rainbows which encircle our waterfalls, we do declare that California development never needed a good strong breeze as much as now, and never more than now has it been so clearly the duty of the state to blow in money to get it. California can feed and clothe and keep busy thirty millions of people just as easily as she is now doing these things for three millions. To get a chance at this we need not only an open door on the coast, but we need to have the whole area opened up as has been suggested. Large subdivision enterprises are now being launched in all parts of the state and promoters are paying more for land for cutting up than they ever paid before. The state is doing something also to show how land should be cut up so that small buyers can stay on it and pay for it. It is only a question of time when all the land capable of production, or being made capable of it, which is now held in inordinately large tracts, will be subdivided and sold. There are two ways provided in the state constitution which

lead to this result. One is to vote bonds enough by state and counties to bring a paved highway within easy reach of every tract of it. The second is to enforce the provision of the constitution that idle land shall be assessed at the same price as is adjacent cultivated land, if it is of similar capability of production. If these two things are done there will be plenty of investors coming from all the worried countries of the world to make homes in California as the place of delightful living and most open opportunity, and there will be land enough for all who come with upright intent and money enough to actuate it. It will require a generation or two for half of Europe to refit itself for its war-suffering and the other half quite as long to pay for its war outrages, and there will be grievous, continuous taxation over the whole continent. There will be, no doubt, many capable people who will save enough from the wrecks of their fortunes to make a new start in parts of the world which have clearer skies, and California's share of the best of them will depend largely upon her development of highways which shall outclass those of any other state or country—but we shall only get what we are willing to pay for with pledges of our confidence in California!

THE WHOLE STATE SHOULD PAY.

Next to importance to the State service which good paved highways render is the fact that the whole State will contribute to the cost of them. Under the old system, by which the town paid for its own streets and the country for its roads, there was great injustice because there was no recognition nor equivalent on the part of the town for the contribution which the country roads made to the upbuilding of the town and the increased value of urban property. Under that system the country people had to pay for their roads although their service, such as it was, was so largely rendered to townspeople—which was, manifestly, always unjust. Although free use of motors through the open country has led to great increase of urban depredation upon rural property, it must be credited with the recognition and enforcement of the principle that the State as a whole should assume the cost of great highways. It is this principle which has made our present system of highways possible, and it is upon this principle that their considerable increase in mileage is projected. It is manifestly just also that the nation should supplement our State highway system with great thoroughfares, which are needed for national defense or for other national ends. In fact the lines of transportation for owner-driven vehicles pursuing all ends of commerce, travel and recreation, should be provided at the cost of all the people because all the attainments of such transportation, whether for service or for development, confer their benefits upon the whole population. Therefore, one should review his attitude toward the bonding proposition from the point of view of philanthropy and patriotism quite as much as from his own personal considerations of taxes and his apprehension about the amounts of public debts—if they are incurred for purposes which are themselves constructive and compensative. Why, for instance, should a town man, who has owned no vehicle but a wheelbarrow since he outgrew the propulsion of a baby-carriage, vote for more state highways? Such a one, who pays quite a lot of taxes on town property, gives these as his reasons: Because they are good for the State and for all the people; because they share in bringing to him nearly all the things which he needs and enjoys and for and with which he lives and works; because they are one of the chief instrumentalities of civilization and their quality is conceded to be some measure thereof. Therefore he counts it incumbent upon him to vote for good roads and to obligate his property to pay for them with as good a will and as keen an interest as though he owned a super-six for speeding a most hearse-like limousine for afternoon teas or a line of trucks for produce-hauling. For none can live in this day and generation unless the wheels go around and he who owns no wheels owes it to himself and to his fellowmen to do all that he can to provide the best planes for other people's wheels to go around upon.

HIGHWAYS BUT NOT HIGHWAYMEN.

It is a proper rural grievance that the better the roads and the more numerous the motor-vehicles the greater are the farmers' losses from marauding highwaymen. This is so great a loss and so disconcerting a vexation that the very term "good roads" becomes hateful to many people. Joy-riders frolic in the orchards and carry away great loads of fruiting branches. Auto-campers go from end to end of the State picking the choicest fruits, digging potatoes, robbing hen-roosts, milking cows—in short, "living on the country traversed" like an invading army, and burning up fencing materials for camp fires. Both for the crime in it and for the better rural attitude toward town-promoted road improvements, such outrages must be stopped. In old time such robbers would be hanged at the cross-roads and their bones left to rattle in the night breezes. Some better way to punish and to warn must now be found and relentlessly applied. Cycle-mounted constables should patrol the highways to protect rural property and summary punishment be meted out to depredators by rural justices. Let these functionaries emulate the example of Justice Frank Glass of Contra Costa county, who declares that "this popular sport for townspeople" will stop if he has anything to say about it. And he had a chance to get a word in last week, and it cost a bunch of highwaymen $10 each to listen to his word-burning. This was the way of it:

When Frank T. Swett, horticultural commissioner and member of the State Viticultural Commission, was motoring home the other evening, he saw four men in the O. E. Balmer orchard in Alhambra valley. A machine was drawn up along the road and the four were in the cherry trees filling up receptacles of all kinds with cherries. Swett notified Balmer and together they took possession of the auto, first notifying the office of Sheriff Veale. When the men came out of the orchard they were placed under arrest and brought back to town. Balmer stated that his orchard has been raided nightly and that he is determined to put a stop to the thefts of fruit and the breaking down of the trees.

This is a State-wide abomination and must be rigorously suppressed. Probably citrus growers suffer most because their fruits are longest displayed in attractive condition, but no rural property is safe from stealing and destructive mischief. If town owners of automobiles, dealers therein and garage-men desire rural smiles for their activities, they must work together to enforce common honesty and decency toward rural property throughout their urban populations.

QUERIES AND REPLIES

By the Editor.

Inquirer Must Give Full Name and Address.

Wonder Beans Failing.

To the Editor: I send sample of Kentucky Wonder bean plants that are dying. The last two years everybody in the country spoke of what nice beans we had, but this year they are not doing any good at all. The ground is sandy and I put a moderate coat of barnyard manure on it every year. We irrigated about every ten days as we thought they needed it—enough to supply good moisture. Is the trouble in raising beans too long (four years) on the same ground? Would it be safe to put beans there next year? It is in the only place we have for a garden.—S. A. M., Modesto.

To the Editor: I send a sample of Kentucky Wonder beans, to see if you can tell me what is the trouble and what to do for them another year, as these seem to be destroyed the same as last year, as well as those planted by my neighbors. They start nicely, but when the runners are about a foot long them seem to dry up, the leaves turn yellow, dry and brittle as if sucked to death by some insect. Late planted beans are not affected so badly, but all early ones in this vicinity are ruined. W. F. R., Gridley.

The samples show some thrips and red spider, but not enough to account for the appearance of the plants, which both enquirers well describe. The seat of the trouble seems to be in the root in both cases and to be caused by fungi, which attack the plant in that region. There are indication on the samples of both rhizoctonia and fusarium, which invade the root and stem and cause the leaves to famish. A great deal of attention has been paid to these occurrrences by our plant pathologists and their conclusion is that the fungus invaders seize upon a weakened root growth caused by unfavorable growing conditions in the soil. This weakness and susceptibility to disease may result from planting, while the soil is too cold and wet, or it may also be caused by the opposite extreme—a drying out of the soil. Our Gridley enquirer's observation of the superiority of plants started late, agrees with the prescription of the need of better growing conditions, and it is possible that the Modesto failure may be due to over-irrigation even though the soil is sandy. However, the point for both growers, and for all others, to observe, is that it is more important to have the soil in good condition of warmth and moisture than it is to plant early, and it is more important to keep the soil well aerated and lively for growth than it is to hope to substitute irrigation for such soil-condition.

As for growing beans continuously, the things which we find on these specimens do not prevent it, but there are other root pests, such as nematodes, which do make the recourse to rotation necessary. It is, however, desirable whenever possible to let some other crop follow beans, because you are apt to get a much larger crop after a legume than otherwise.

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Sunflower Pest.

To the Editor: I send the top of a sunflower plant, with an egg of an insect. The same pest has spoiled all of the sunflowers in my small garden. In some of the plants the eggs have hatched into a little, fat white worm. Is there danger of its spreading to other plants? Is it common? It is the first time it has appeared in this district.—M. W. Y., Cobb, Lake county.

There are now eggs discernible on the specimen, but there is a crushed puparium of a fly (which possibly may be what you observed), and back of that a burrow in which the worm which you describe may have made its growth. The puparium, the worm and the burrow indicate the previous presence of a fly (resembling a general form of house-fly), which is presumably the mature form of the intruder, but which cannot be identified from the material sent. It is probably a pest of the sunflower and not dangerous to other plants. We are not aware that it has given notable trouble elsewhere.

Repressive Cherry Pruning.

To the Editor: What time of the year, if any, is best to prune cherry trees that are growing too strong and drop the fruit?—A. V., Healdsburg.

Prune when the new growth has finished its great seasonal push. This can be seen by the formation of buds at the ends of the new shoots. This is usually about the time that the fruit ripens. In such pruning remove the coarse shoots which have no promising short laterals or spurs near by, below. Clip back, perhaps, wood which has pushed out beyond such spurs, but do not cut them back closely for such spurs need the action of leaves beyond them. It is probably safer and better to take out some of the larger branches, if the tree has too many, and all of the coarse, sucker-like growth and not touch the spud-growth of foliage. Of course, fruit-dropping is not wholly explained by excessive wood-growth nor is it surely cured by summer pruning.

California Weather Record.

The following rainfall and temperature record is furnished the Pacific Rural Press by the United States Department of Agriculture Weather Bureau at San Francisco for the week ending June 17, 1919.

Stations—	Rainfall: Past Week	Rainfall: Seasonal To Date	Rainfall: Normal To Date	Temperature: Highest	Temperature: Lowest
Eureka	.11	39.80	45.77	60	43
Red Bluff	.00	26.10	24.01	92	57
Sacramento	.00	17.70	20.09	88	48
San Francisco	.00	25.04	20.77	67	49
San Jose	.00	18.87	16.79	80	47
Fresno	.00	6.90	9.68	86	52
San Luis Obispo	.00	18.09	20.51	80	47
Los Angeles	.00	8.58	15.04	76	54
San Diego	.00	8.74	10.01	72	58
Winnemucca, Nevada	.00	7.89	8.26	89	36
Reno, Nevada	.00	9.67	10.35	82	38
Tonopah	.00	5.04	10.02	78	44

Walnuts Pay, but Varieties Differ

(Written for Pacific Rural Press.)

A $30,000 orchard now pays dividends on a piece of the Tres Pinos Creek bottom in San Benito County which S. C. Hain found innocent of trees or buildings in 1910 or 1911 and bought for $5,000. Mr. Hain, in fact, was looking for alfalfa land; a small patch of alfalfa still survives to supply the work stock. The soil is deep sediment loam over gravel. The location is sheltered by hills. But Mr. Hain had good advice from Leonard Coates of Morganhill, who told him that he had fine walnut land and climate. He now enthusiastically shows visitors a couple of Chase Santa Barbara walnut trees planted by himself in 1911, eight inches through the trunks. From these two trees he harvested 125 pounds of nuts in 1917 and 160 pounds in 1918. They paid him at the rate of $100 per acre net after allowing $100 per acre for their care. He also shows a visitor a Payne Seedling scion grafted on a black walnut limb in the spring of 1916 which at the age of 30 months last fall had matured 467 nuts and is now apparently setting a great many more. Another Payne graft set in the spring of 1917 had matured 143 nuts 17½ months afterward. This scion is estimated to have about 600 nuts in sight at this writing. Thirty-five of these nuts weight a pound, and they crack out about half meat, which is about 63 per cent of deliciously flavored nutritious fat. Now find out how much the nutrition in these would cost you per pound and learn that walnuts are cheaper than beefsteak even at present prices. Also figure how much a treeful of such grafts would pay, but don't invest in an orchard on that basis.

Mr. Hain took the premium for seven varieties of walnuts at the Oakland Land Show in competition with exhibits much more extensive but judged of less quality and lower cracking percentage. These varieties, grown under similar conditions on the same creek bottom ranch, show interesting relations which are mentioned below.

The walnuts were planted six to eight years ago, some being nursery trees, others having been planted as nuts in orchard form after soaking the nuts a long time in moist sawdust. While the results by this method proved satisfactory in this case, Mr. Hain realizes that there is too much chance for a poor stand or weak trees. He planted several nuts in each place and selected the seedling which later showed best growth. But he is firmly of the opinion that nursery-grown trees are best and that it is an advantage to break off the tap root if it has not been cut off in the digging. By way of illustration: Two Eurekas planted at the same time with tap roots cut off as short as the Chases, bore 112 pounds of nuts last season. Cutting off the tap root encourages growth of feeders which are equally good as anchors and of course are responsible for the tree's supply of sap.

Fifteen walnut trees were planted per acre. The great interspaces made an intercrop necessary. The intercrops are chiefly Muir peaches and apricots (45 per acre) and grapevines. One hundred of the Muirs bore a crop last season which averaged $5 per tree. Eighty dollars worth were sold for canning, and 3,800 pounds of dried peaches were sold through the Peach Growers' Association, besides all that were kept for home use. These 100 trees had been set in 1911, and the fruit had been thinned to get good size.

Walnut Characteristics Here.

The Payne Seedling walnut is Mr. Hain's favorite after several years' trial on a small scale. About a hundred San Jose Mayettes are to be grafted over to Paynes this spring. The Payne makes as vigorous growth as any during its first two years, but in the second year it sets quantities of fruit wood and thereafter if the nuts are allowed to set and mature, the tree growth falls behind that of other varieties less precocious in bearing. The crop has been left on various Payne grafts and trees, but this is now believed to be a poor policy because it prevents the tree from attaining full bearing area at an early date. It is planned to find some way of preventing a crop during the first few years' growth of the grafts about to be set. There is an added advantage in doing this, as noted where grafts have broken under weight of nuts and west wind. Props of 1x3 redwood have broken so generally that pine is now being used. The Payne sets two to seven nuts on every growing tip and matures an average of two or three. The writer on April 30 counted 58 nuts formed, though perhaps not yet certainly pollenized, on one branch, selected at random and about ¾-inch in diameter. This branch carried approximately one-tenth of the bearing area of the scion from which it grew. This scion was grafted in two years ago this spring. Two seasons' growth of the Payne grafts gives them about two inches diameter above the swell of the union. The Payne growth is not so symmetrical as some other varieties and requires more attention to pruning. Mr. Hain has found by experience that the time to prune a walnut is just as soon as you find a branch that is likely to crowd another. He believes in thinning the wood growth consistently, but not in cutting it back. He is also considering the advisability of thinning the Payne walnuts for the same reason that he thins apricots and peaches. Larger fruit and nuts bring better prices per pound. The smaller number and weight of shells or pits make a smaller drain on the tree's strength and on the soil's fertility. It is not the fleshy part of a fruit or nut that exhausts fertility, he says. That is mostly water and carbon from the air; but the woody part of fruit and trees are the exhausting parts. Payne nuts in Mr. Hain's location bear a heavier proportion of meat to shell and wood than other varieties. The nuts are solidly filled and of fine flavor.

"Forty-pound" picking boxes of the various varieties have been weighed with the following results: Payne 23 pounds, Chase strain of Santa Barbara softshell 24, Eureka 26 to 27, ranquette 23, San Jose Mayette 15 to 16 pounds average.

The Eureka is probably the next favorite on this ranch. It makes a fairly rapid growth and does not slow up so early with a heavy crop as the Payne. The nuts are of fine shape, flavor, and weight, as heavy as 30 per pound. One tree on which grafts got mixed is now half Eureka and half Franquette. The Eureka side on April 30 had made an average of nearly a foot new growth while the Franquette side was just bursting its buds and the catkins were not yet shedding much pollen. Concord walnuts which do so well in Santa Clara and San Ramon valleys are not such good producers here. Their blooms and catkins were ready for each other April 30, and it was thought that they would pollenized the Paynes whose catkins were mostly gone, though the blooms were about at the active stage. The Concord needs the same sort of prunning as the Payne on account of their lack of natural symmetry.

San Jose Mayette, which are less favored than the other varieties



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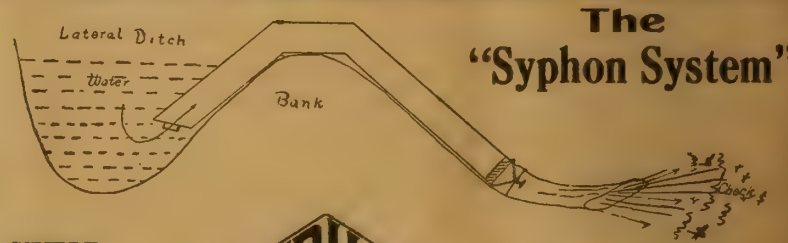
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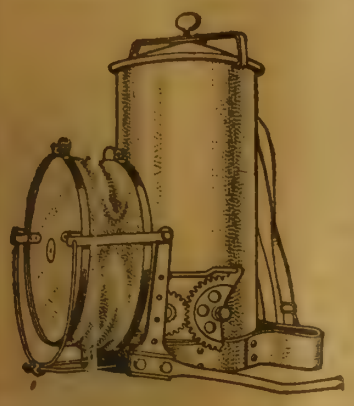
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named, average about 16 pounds of nuts per tree on 100 eight-year old trees last year. These cracked about 45 per cent sound nuts, but the meat is not so thick as in other varieties. Last year they were not well sealed. Frequently a little pressure would open them at an end and such nuts were often found to have molded partitions though the meats were not molded. This variety was just leafing out at the time of our call at the ranch. Its leaves are too scattering for a hot climate on account of sunburn danger.

The Chase Santa Barbara nuts were solidly, uniformly, tightly filled with meats of fine flavor. They were smaller in size than most of the others, but a boxful weighed heavier than the Paynes. These are in full foliage, having bloomed anywhere from March 5 to March 20 in various seasons. Their growth of trunk and top was best of any variety.

PRESENT CONDITION OF THE PEAR MARKET.

(Written for Pacific Rural Press.)

"Several canners have expressed themselves as being entirely satisfied with the prices named by the California Pear Growers' Association," said Frank T. Swett, President of the Association, in an interview last week. "They had been worried a little lest the growers be carried away with the phenomenal prices of $100 and $110 a ton paid for cling peaches and apricots. These extreme prices would have made the price of canned pears to the consumer abnormally high and restricted consumption. A number of canners who had submitted preliminary estimates of their needs prior to the naming of prices increased their requests, saying, 'Well, the prices are all right. You can put us down for 200 tons more each.'"

"On the 16th of this month the figures from each grower as to the tonnage he will ship East and the tonnage he will have for the cannery, will be tabulated and allotments made to the various canneries. Apparently there will be a notable demand made from Great Britain for canned pears, in fact, some of the smaller canners will be financed by the British purchasers or their agents, who wish to make absolutely certain of securing their requirements."

PREFERS A WET WASH FOR SPIDERS.

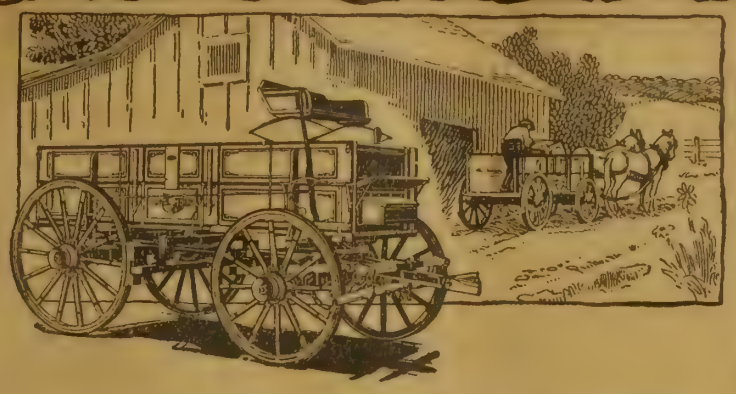
To the Editor: In your issue of May 31 John S. Davis of Los Angeles says he has to shoot his trees four times 5 or 6 days apart to get the red spider. My experience is the lime sulphur solution thoroughly applied gets the spider with one application. Two leads of hose, 2 men and a boy get over ten to twenty acres of 6 to 10-year trees, and the foliage remains bright until nature dismantles the trees. Four weeks after spraying, fumes from the sulphur were strong enough to give my neighbor the asthma! It takes five days to get over my 50 acres with two men and a boy, while Mr. Davis' way would take a month with one man. Even if the results were the same there would be a big difference in the expense.—J. L. Sweet, Arbuckle.

COTTONY CUSHION SCALE.

To the Editor: I am enclosing specimens of bugs with which one of my orange trees are infested in large numbers. Can you tell me what these are, and to what extent they damage the trees? Also, how I may destroy them?—J. C. H., Reedley.

Those white masses on the orange twig are cottony cushion scale. In the envelope were two larvae of the Vedalia cardinalis, which feeds on this scale and will destroy it, though the dead white masses may remain for some time. With the vedalia present, you may safely leave them to clean up your orange tree from this pest.

The great Lake States, once the greatest of timber producing sections, are now paying $6,000,000 a year in freight bills to bring in timber and timber products.



Guaranteed Wagon Capacity

TELL the dealer you want a wagon that the manufacturer will guarantee to carry your biggest load. If he is up to date, he will show you a **Weber** or **Columbus** wagon with its capacity stenciled in plain figures on the rear bolster. That is the way we protect you in your purchase of a wagon.

When you bought by skein size, you could not be sure that you were buying the most economical wagon. Now you can be sure. Every **Weber** and **Columbus** wagon that leaves the factory is guaranteed by the manufacturer to carry a known load over the roads that you have to travel.

Nor is that all you get when you buy a **Weber** or **Columbus** wagon. The folding end gate and link end rods save you a world of time. The fifth wheel, which only **Weber** and **Columbus** wagons have, makes your wagon run easier and last longer. Write us for complete information about these wagons or about any of the machines in the list below.

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Grain Drills
Broadcast Seeders
Alfalfa & Grass Seed Drills
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Manure Spreaders
Straw Spreader Attachments
Farm Wagons
Farm Trucks
Stalk Cutters
Knife Grinders
Tractor Hitches
Binder Twine

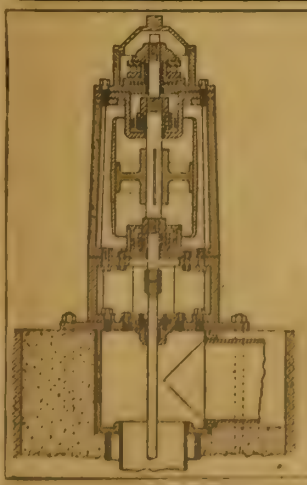
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When goods are sold through agents or middlemen you can rest assured that the agent's commission and dealer's profit are added to the price received by the manufacturer, and as "the consumer foots the bills," he pays all these profits and commissions.

After twenty-one years experience with agents we have decided that in the future we will sell direct to the consumer at wholesale prices giving the buyer all these profits and commissions.

Therefore, if you want to save money, BUY AT WHOLESALE and at the same time get the

Best Pump On Earth

Write for catalog N. and price list of the
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GOLDEN GATE WEED CUTTER
kills the Weeds and Cultivates the Soil

Greatest weed killer on the market. Cuts them off clean, under the surface, close down to the roots. Besides, it breaks up the ground so thoroughly that one user says he saved $200 in a single season because after cutting the weeds he did not have to plow. Cuts seven feet or less. Weighs but 230 pounds. Cut adjustable to any depth. Constructed of steel throughout. No other implement like it.

WRITE FOR CIRCULAR which illustrates and describes the Sigurd Weed Cutter and contains letters from many users.

C. G. SIGURD, Manufacturer
Capital Ave. and McKee Road, San Jose, Cal

Here and There in the Fruit Business

[Written for Pacific Rural Press.]

Pruning Experiments in San Benito.

Some careful pruning experiments on prunes and other deciduous trees are being carried out by E. A. Dunipace at Paicines Orchards (San Benito county), which will give the neighborhood tangible results next fall and spring.

Capri Grafts in Calimyrna Orchard.

Dave Oliver is grafting some of the trees in his 12-acre old orchard of Smyrnas to Roeding's No. 3 Capri, to obviate the necessity of introducing the blastophaga in baskets each year. Capri figs are being advertised this season at $12.50 per 1000!

Lemons to the Sea Beach.

George C. Power of Ventura has proved that lemons can be grown to the brim of the ocean. He has 200 acres of lemons 8 years old at Ventura. He needs no frost pots here because the ocean tempers the temperature to a degree that prevents frost. A packing house is to be installed this year.

A Record on Peaches at Modesto.

Eighty-one dollars a ton for Phillips and Tuscan cling peaches is the price reputed obtained by C. M. Whitmore Company of Ceres (Stanislaus county). One hundred and twenty acres of them will probably yield this company a return of $100,000. There are 20 acres of Phillips that are expected to yield 14 tons to the acre.

Walnut Production Is Profitable.

Eight acres of Santa Barbara soft shell walnut trees at San Juan Capistrano produced eight tons of nuts last year. The owner—Mrs. Frederica Strockeim—is a member of the Walnut Growers Association, and the fruit, marketed through the Association, brought $4,800. The entire cost of upkeep, outside of personal labor, was about $400.

A Curious Case.

Action for damages was recently brought in Contra Costa county for loss in nursery stock. A man in Tulare county bought a number of fruit trees from a grower in Contra Costa county. The trees were inspected at both ends by the county officers and passed sound. They were planted in land that had been an old pasture and said to be somewhat alkaline. Few of the trees grew and two years later the owner brought suit for damage, not only for the loss of the trees, but for what they ought to have been in his estimation by this time. The trial occupied about five days and the jury decided against the plaintiff in about five minutes.,

Crop Report in Kern County.

"Apples and pears in Kern county will yield about 95 per cent of a crop, according to my present estimates," said Norman G. Buhn, Horticultural Commissioner. It is a little early to tell about olives, but so far they look promising (May 25), and grapes are 100 per cent. Peaches and apricots will run from 90 to 95 per cent. At present, indications are good for a normal crop of oranges.

Johnson Grass in the Orchard.

Have you any Johnson grass in the orchard or vineyard. Probably by continuous cultivation you could get it out of the orchard, but what about the vineyard? A. L. Rutherford, Horticultural Commissioner of Stanislaus county, says that it can be killed by Stove Distillate. Squirt it on with a hand pump and it will follow the roots down, he says, but will not follow where they turn up again. So these must have a dose too as soon as they show above ground. These two applications are generally sufficient, Mr. Rutherford says, to discourage the plant entirely.

Inspection Points for Mailed Plants.

It was suggested at a joint meeting of Nurserymen and Horticultural Commissioners that mail order packages be sent to one point in each county (designated by the County Commissioner) for inspection and despatched thence to its destination. It was claimed that this would prevent unnecessary delay. The only objection was that of provision being made for postage forward to consignee. The matter has not been definitely settled, but will doubtless be considered by the State Director of Agriculture (George H. Hecke) before the next shipping season arrives.

Grasshoppers Damage Almonds.

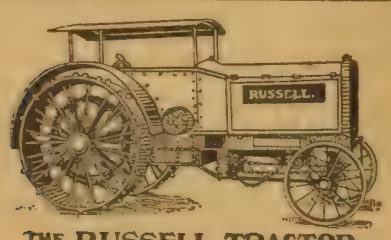
Grasshoppers have done quite a little damage to young almond trees in the Creston district—a new district for almonds—and we also noticed some of their work north of Paso Robles. A number of young trees were covered with cheese-cloth to protect them from the voracious pests. Theodore D. Urbahns, Assistant Entomologist, U. S. Dept. of Agriculture, is visiting the Horticultural Commissioners in counties affected so that methods of control against further infestation may be devised. He says the hoppers may be a menace to the middle of July. They not only defoliate the young fruit trees but injure the buds and the bark of the young trees.

High Prices for Yolo Prunes and Figs.

John Martin of Woodland was recently offered 19 cents a pound for his Imperial prunes and 13 3-10 cents a pound for dried black Mission figs of the coming crop. A lot of new acreage has been placed under irrigation this year, says Wm. Gould, the County Horticultural Commissioner. Six thousand acres are under the Yolo Water and Power ditch and the rest pumped from wells and from the Sacramento river. There is a large new pumping plant near Grimes, and probably 20 new wells have been sunk in this district. Farmers are right after the water now and a lot of boring is being done. The further development of the two big interior valleys depends on two things, irrigation and drainage. They are inseparable. And they should be owned and controlled only by the men whose land they serve.

Dusting for Walnut Aphis, Etc.

Some 36 dusting machines have been at work in Santa Barbara county for some time dusting the trees against walnut aphis. In a number of orchards we visited not a single live aphis could be found. Machines are now busy in the Carpinteria district of Santa Barbara county, dusting the first time against codling moth. The machines are doing very thorough work and results will be observed with much interest. If the arsenical dusting proves as satisfactory as that for walnut aphis, growers will have a heavy load of anxiety lifted from their shoulders. These experiments are being conducted by Professor Ralph E. Smith of the University of California at the request of the California Walnut Growers' Association. He is assisted both here and in Orange county by the County Horticultural Commissioners.

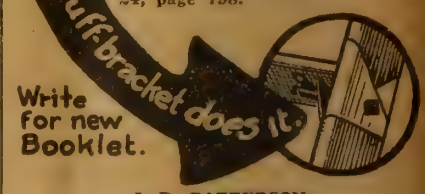


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—Made from Hard Red or galvanized sheet metal.
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It plows, harrows, cultivates, runs any 4-h.p. stationary machinery
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Fortunes this year for the Prune and Apricot growers. Our Driers will give you $50 to $100 per ton more weight over the Sun-Dried Product. Get all that's coming to you. Don't take a chance this year. See our representatives for particulars.
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HORTICULTURAL JOTTINGS.

Independent packers are reported to be offering 14½ cents for dried peaches in Butte county.

The olive crop in the Ehman grove will be large, according to J. H. Brown, manager of the Oroville plant.

Sugar prunes are being thinned in some localities to insure size and to relieve long branches of an excessive load.

It is said that quite a loss resulted in the strawberry plantations of the Upper Sacramento, due to lack of pickers.

The Whittier Walnut Association has commenced work on a new building for handling their crops, to cost about $30,000.

Two short courses in bee culture will be given in Los Gatos June 17 to July 3 and July 7 to 18, including hive building and shop work.

There are 14,000 acres of citrus fruit in the Upper San Gabriel Valley (Los Angeles county). The first navel orange was planted here 33 years ago.

A grower in the Rialto district (Los Angeles county) has been offered 4½ cents a pound for his orange crop by an independent cash buyer. The offer was refused.

The new grape-fruit packing plant now nearly completed at Imperial will be able to handle four cars a day. The grape-fruit acreage in Imperial Valley is increasing rapidly.

C. J. Peterson, who has one of the prettiest Thompson Seedless vineyards around Live Oak (Sutter county), expects to gather a banner crop from his four-year-old vines.

Nearly 200 carloads of cantaloupes are said to have been shipped from Imperial Valley in one day. Prices have ranged from $5.50 a crate to $12.50 with an average of from $7 to $8.

A species of forest tent caterpillar has been doing extensive damage to oak and madrone trees in Trinity county, and fruit growers have been using tree tanglefoot to protect their young orchards.

Strawberry packers in Stanislaus county have been warned that if the Standardization law is not complied with, such drastic action will be taken as is provided by the law to compel evenness of pack.

The new California Directory of Nurserymen has just been issued by the State Commission of Horticulture. It contains the names, addresses and designations of 820 nurserymen in this State and 80 interstate nurserymen.

Dried apricot members of the Association will receive 12 cents a pound on delivery, instead of 8 cents, as heretofore. We published the opening prices in a former issue. They run from 19 cents a pound for Standard to 32 cents for extra fancy Moorparks.

The California Co-operative Cannery is working on cherries and expects to pack from 300 to 400 tons of them. Apricots will begin on July 1 as the fruit to follow cherries. The price on cherries has been falling and as low as 6 cents has been offered, it is said.

One hundred and sixty baskets of apricots were seized in San Francisco by the Sealer of Weights and Measures for being several ounces short weight. They were shipped from Vacaville by a Japanese. The manufacture of the containers will come under investigation.

Many of the new canneries are providing comfortable cottages and accommodations for their employes. The Centerville Cannery, Alameda county, is building a nursery for children and will provide a competent nurse to look after them while the mothers are working.

The Hemet Valley (Riverside county) expects to raise 150,000 tons of apricots this year. Picking has commenced. Some uneasiness is felt as to the supply of labor in harvesting as well as in the canneries. The Associated Cannery is doubling its capacity and two-thirds of the crop is expected to be handled by the canneries.

Five hundred and eighty-six thousand, seven hundred and forty boxes of navel oranges (1270 cars) were shipped from the Covina district (Los Angeles county) this season. The Valencia crop is estimated at about as much more—1200 carloads. An average price for the navels was $2.80 a box.

The grasshopper pest in Sutter county is being brought under control by co-operative effort in poisoning them. The services of Professor Bruner, one of the foremost grasshopper specialists of the world, have been secured by the State Commissioner of Horticulture to assist in the present campaign against grasshoppers in California.

In the Walnut Growers' Association's warehouse at Goleta all sacks are put through a steam box. They are left in for ten minutes under a pressure of 15 or 20 pounds of steam. This system of killing all insect life is just as efficient and far cheaper than putting them through the steam mangle, in the opinion of Eugene S. Kellogg, County Horticultural Commissioner.

MODESTO DISTRICT CROP ACRES.

Acreage of various crops in the Modesto Irrigation District has just been compiled. It shows a total of 55,475 acres irrigated. Only 1969 acres are dry farmed. This is all grain, but comprises only ten per cent as mucharea as is planted to irrigated grain. The latter occupies 35.87 per cent of the irrigated acreage, second only to alfalfa, which occupies 36.8 per cent of the irrigated area. Fruit trees and first-crop beans occupy nearly eight per cent each; and the next of importance is corn with 4.93 per cent of the irrigated acreage. Second-crops are to keep 10,972 acres busy. Nearly eight-tenths of this is to be beans, and the rest will be corn. A bit over 1,000 acres of rice are being grown.

IT PAYS TO IRRIGATE GRAIN.

To the Editor: I planted 500 acres of wheat this year and lost all but 100 acres of summer fallow which will probably make 600 or 700 sacks. If I have a 34-horse-power engine, an eight-inch pump, and water to supply it, and irrigate before seeding, will grain growing be profitable? I am convinced that dry farming is too risky here; but if I can eliminate the drouth factor, am I taking any more of a chance with grain than the dairy, swine, poultry, or fruit men?—B. C. M., Tulare.

Figure what it will cost per acre to put in a crop and harvest it, including interest on investment or rental of land plus interest on machinery, etc. With irrigation in your territory we would guess that you could raise at least 12 or 15 sacks of wheat if all goes well. Distillate and oil for pumping with a head of 45 feet, using the equipment you mention, would cost about 12½ cents per acre-inch of water per acre. If you need eight inches of irrigation to supplement rainfall, figure on about $1 per acre for gas and oil. Find out what it will cost to level your land with a tractor land leveler and add that to the value of your land; do not charge to your crop, except interest on the investment. Now, taking chances on wheat market, rust, smut, fire, etc., answer for yourself whether twelve or fifteen sacks per acre would pay as compared with the negative profits you are making this year. Grain farmers are irrigating successfully in many parts of California.

Chicken fat is valuable for making other fats, like suet, more usable.

WHY it pays to

SALT YOUR HAY DOWN

When You Stack It or Bale It—

Because

It prevents musting

—checks the growth of molds when the moisture content is high.

Improves the feed

—cattle thrive on salted hay and they like its taste. Stock will eat it up clean, where unsalted hay will be mussed over and wasted.

Increases the Milk

—makes the cows thirsty and they drink more water and produce more milk. Leading dairymen use salted alfalfa hay the year round for feeding their dairy cows.

Really Costs Nothing

—the salt more than pays for itself in the weight of the hay—holds the moisture, makes 5 tons equal 6.

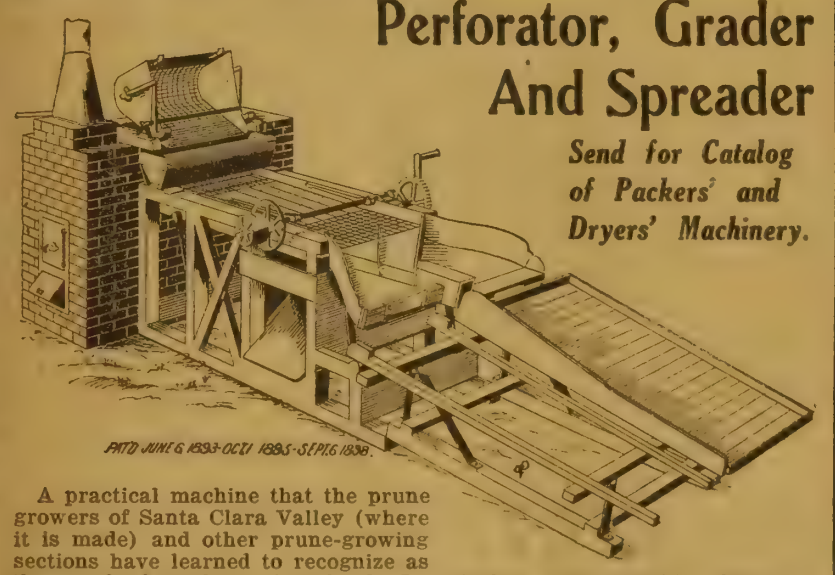
20 Pounds of Salt to Each Ton of Hay

—that's the proportion. And the method is very simple. Stack three feet of hay, sprinkle the salt over by hand; then another layer of hay, more salt, and so on.

Don't Fail to Try It This Year!

Anderson Combination Dipper Perforator, Grader And Spreader

Send for Catalog of Packers' and Dryers' Machinery.



A practical machine that the prune growers of Santa Clara Valley (where it is made) and other prune-growing sections have learned to recognize as the standard machine of its kind. It embodies every possible advantage—and does the work perfectly in every way. Durable and substantial in construction.

MADE IN VARIOUS SIZES

We can furnish this Combination Dipper, Perforator, and Spreader in any size desired—for either hand or power use. Write—and tell us your requirements.

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Dependable Pumping Plants

When you install a pumping plant you want water—plenty of water—full-rated production and more, if possible. And that's what you get when you install.

AMERICAN CENTRIFUGAL PUMPS

These pumps produce the full guaranteed amount of water and they keep power bills down to a minimum! That's more than a claim—it's a guaranteed fact.

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Open territory for live dealers.

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The Modern Farm Light and Power

HERE'S what you have been looking for—a *complete* light plant. Our 40 light "F" outfit is Fairbanks-Morse quality throughout — and comes all set up on one base. The low speed engine with ball bearing dynamo assures long life—less attention—lower maintenance cost. Engine is the famous "Z" which successfully uses *kerosene.* Construction is extremely simple — workmanship and materials, the best possible. Push a button to start and another to stop.

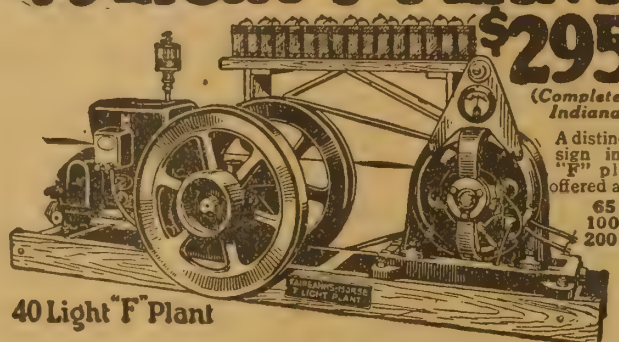
When you buy this "F" plant, you get a combined light and power service, as engine will also run a washing machine, churn or cream separator, independent of the dynamo, either direct or through a line shaft.

There is a dealer near you who will carefully explain all details and also prove why it is the one *practical* combination plant for which you have long been waiting.

40 LIGHT "F" PLANT $295

(Complete F. O. B. Indianapolis)

A distinctive design in larger "F" plants is offered as below:
65 Lights
100 Lights
200 Lights



40 Light "F" Plant

Fairbanks, Morse & Co.
MANUFACTURERS CHICAGO

NISCO MANURE and STRAW Spreader



Straw Worth $8 a Ton---Don't Waste It

(All statements approved by Experiment Stations, Departments of Agriculture and progressive farmers).

Science and the experience of many up-to-date farmers prove that your straw stack contains tons of humus and much phosphorus, potash and nitrogen. At present prices, straw has a fertilizer value of $8.00 a ton—too valuable to burn or sell at a low figure.

In addition to that, it prevents the winter killing of wheat, soil blow or washing, conserves moisture and makes tough, sticky soil much more friable.

But you can't get these results by haphazard, wagon-tail distribution. The straw must be well shredded, well distributed and put on evenly. The one sure way of getting all these results is to use the

NISCO ONE MAN Straw Spreading Attachment

You can put this attachment at small cost on your trusty Nisco—the original wide spreading spreader, and make it a perfect machine for both manure and straw—two machines in one. Spreads straw evenly 8 to 10 feet wide.

The Nisco has always been the bellwether of spreaders. It is always in the lead with new improvements and is built for a life-time of service. "Not a cent for repairs" is the statement of thousands of farmers who have used the Nisco for years.

See your Nisco dealer and have him show you the advantages of both the Nisco and the straw attachment. Don't wait for him to call on you as he is short of help now. Insist on the Nisco. Don't take some other machine or you will regret it later on. Ask the dealer or write us for illustrated circular and book on manure. Act now and be prepared for the spring drive of 1919.

New Idea Spreader Co.
Spreader Specialists
Coldwater, Ohio

In buying hatching eggs don't have said that the chicks from such eggs them shipped by parcel post. It is always want to roost on the letter box.

Poultry and Rabbits for Profit

Conducted by R. H. Whitten.

FOOLS HENS; GETS MORE EGGS.

Leland F. Fobes of Loomis, California, is an auditor. Figures, statistics and chickens are his hobby; efficiency is his watchword. A couple of years ago he played a light joke on his hens and they laid for it. His plan was to install an electric light plant and make the hens work overtime. Here is his story in his own words:

"I had always been convinced that if I could keep my hens working longer they would produce more eggs, but the trouble was they all belonged to the Daylight Union and refused to work after the sun went down, or before it came up, so the only way to get them to work overtime was to fool them as to the rising and setting of the sun. The only way I could think of to do was with electric lights, but as we were located some distance from a power line, this was impossible until I heard of an independent lighting plant, and in November, 1917, I installed a Delco-Light plant on my place.

"We were getting 1,000 eggs per day. In less than 20 days we were gathering 2,000 eggs, and they were increasing all the time. It is my opinion the eggs would have increased to about 1,500 per day without the light, but I am sure the installation of the light increased my output 600 or 700 daily.

"I keep the hens housed, excepting the breeding stock, and about October first begin using the light and continue using it until about the first of March. The lights are switched on by an alarm clock at five o'clock in the morning, and are turned off as soon as it is light enough for the hens to see. During November, December and part of January I use the lights in the evening until six o'clock—long after the hens would ordinarily go to roost. This is made possible by the installation of a simple dimming device, without which the hens would be left on the floor of the henhouse in complete darkness when the lights were turned off, and consequently could not find their way to the roost. The dimmer is easily operated by pulling out a switch, which dims the light considerably, yet enough is supplied to enable the hens to find their way to the roost. They are all up within ten minutes, when the lights are turned completely out.

"I have now used the lights for three winters, and find that if pullets are well raised the lights will cause them to give spring production during the fall and winter months. Second year hens are very materially affected. They get through the moult quicker, and if properly cared for should be laying 50 per cent by the middle of December. I seldom keep hens longer than two years, so am not able to say how lights would affect them for a third year and after that. Lights should not be used on the breeding stock, for the heavier egg production causes too many sterile eggs and the chicks are not so likely to be strong.

"Besides lighting the poultry houses the lighting plant furnishes light for the egg room, feed room and incubator cellar. I find that a 75-watt nitrogen lamp used inside of a searchlight egg tester lessens the work of testing eggs. By simply passing the tester over the eggs the infertile ones may be readily picked out.

"My lighting plant has paid for itself several times over in the time I have used it for the poultry business alone, besides which I have used it to light my home and run the electric washing machine and flat iron, and I am convinced that it will last the average farmer a lifetime. I say this because I have given mine quite hard usage, and it is as good as new. It has never failed to work properly and is always on the job.

"Nowadays farmers do not need to move to the city in order to have conveniences, for they can have them all—mail delivery, telephone, running water for the home and barn, electrically operated household appliances, and electric lights, all of which tend to keep the boys and girls on the farm,



You will not retire very early if you go to bed with the chickens on the ranch owned by L. F. Fobes, Loomis. Electric lights keep the hens working several hours after it is dark outside.

UNIVERSITY FARM RATIONS.

At the recent California Poultry Institute held at San Gabriel, Prof. J. E. Dougherty of the University Farm, Davis, spoke on "Principles of Feeding," and emphasized the fact that we feed for two purposes, to maintain the body, and to furnish a surplus to be used in production. Every ration should possess adaptability to the needs of the fowl, palatability to increase digestion, and variety to whet the appetite. It should be properly balanced and should have sufficient bulk;—also a natural tonic effect. And to return a satisfactory profit its cost should be kept as low as possible.

Prof. Dougherty said that the rations used at the University Farm with excellent results were as follows: Dry mash—5 pounds each of wheat bran, wheat shorts, and ground barley, 2 pounds soy bean meal, 3 pounds beef scraps, ½ pound charcoal, 1-10 pound salt. Scratch feed—1 pound each of cracked Indian corn, whole milo and barley, or of barley, oats and milo, or of milo and barley alone. The experiments at Davis have not shown any material advantage from the use of any particular grain, but hens not accustomed to a certain grain, like barley, may have to be given time to learn to like it. The food values of the different grains are so nearly similar that they may be used interchangeably according to cost, but better results will be obtained when a mixed ration of two or more grains is used.

The dry mash should be put in hoppers and kept constantly before the birds. The scratch grain should be fed in deep litter. The hens should have daily all of the tender green feed they will eat and should be given some animal food, such as sour milk or buttermilk. Grit and shell should be provided.

PROTEIN SPELLS Poultry Profit

FOR BEST RESULTS feed high-grade Beef Scraps of Uniform Quality.

The dealer who induces poultrymen to use High Protein Beef Scraps is a benefactor to his customers. The best is always the cheapest.

GOLD BEAR BEEF SCRAPS

Backed by a guarantee which assures the poultryman, high and uniform quality.

Made in a government inspected packing house. Contains only blood and offal.

Food elements plainly marked on every sack.

Made and Guaranteed by

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SAN FRANCISCO, CAL.

Write for our booklet, "PROTEIN FOR PROFIT."

TO PREVENT EGG EATING.

Egg eating is not only a most annoying habit, but also an expensive vice. In general, this habit, as well as all other bad habits, is caused by lack of exercise, overcrowding, or lack of proper food. Remedy these conditions and you will seldom be bothered with bad habits in your flock.

However, there are a few other causes which are accountable for egg-eating. There may be little straw in a nest and when a hen lays her egg it falls on the floor of the nest box and cracks; then she turns it over with her beak and tastes some of the escaped liquid. This leads her to a further examination and ultimately she eats all of it.

Eggs are dropped in the night from perches, broken, and eaten in the morning when the hens come down. Eggs left in the nests too long are liable to be broken, especially when the nests are on the ground, as this often leads to the eggs being played with, broken, and of course, eaten. The absence of shell-forming material—oyster shell—prevents the proper covering, weakens the shell, causes a fracture from which liquid escapes, and one taste leads to the habit. The lack of sufficient nests is another cause, as hens quarreling over nests often manage to break eggs and thus learn to eat them.

The egg-eating habit is a very difficult one to eradicate from a flock, once it gets firmly established, and it is much easier to prevent it than to cure it. Provide deep litter and make your fowls exercise for practically all the feed they get, remembering that digging for feed knee-deep in straw takes lots of vim, and leaves little time for developing vices. Do not overcrowd, and allow at least four square feet of floor space per fowl. Provide plenty of oyster shell, grit and beef scraps—skimmilk, if you have it. Have plenty of nests and locate them in a dark, secluded place, so that hens cannot see their eggs after they are laid. Place the nests well off the floor, so that the hens will have to fly to them. Guard against leaving broken eggs, or even whole eggs, around, and do not feed eggshells without breaking them into fine bits.

If the habit develops and is confined to one or two birds, the best cure is to cut their heads off, unless they are valuable layers or breeders. If it is important to save them, trim the ends of their beaks enough to make them sore, so that it will hurt them to peck an egg.

If this does not do the trick, or if several hens have contracted the habit, fill a number of empty eggshells with a mixture of one part cayenne pepper and three parts bread crumbs, corn meal, or other feed meal, and leave them in tempting places so that the biddies may taste and find that their favorite dainties have changed in flavor. You will enjoy watching them go about with their mouths wide open, trying to cool off. If this is attended to promptly the egg-eating will stop at once. If the habit has become well developed, it may be necessary to repeat the dose a few times.

Another method is to make a small hole in each end of an egg, blow out the white, seal one hole with wax or paste, and shake the yolk remaining in the shell until it breaks. Then pour in some ammonia, shake well to mix with the yolk, and seal the other end. One feast on this kind of an egg is generally enough, and the hen will look upon eggs with scorn for the rest of her life.

KILLING AND DRESSING RABBITS.

There are two ways of killing rabbits. The easier and probably the more humane way is to dislocate the neck. Take the two hind legs of the rabbit firmly in the left hand, place the thumb of the right hand just behind the ears where the neck joins the skull, the palm resting on the left side of the face and the fingers holding firmly under the jaws. Then stretch out the animal quickly and with force, pressing in the right thumb and bending the head backward. The dislocation will be distinctly felt. While this method requires considerable strength, when the knack of it is learned it entails little suffering.

The other way of killing is to hold the rabbit up in the left hand, as in the first method, and then to strike a sharp blow on the back of the head with a round stick, stunning the animal. As soon as the neck is dislocated, or the rabbit stunned, the jugular vein should be cut with a sharp knife and the animal hung head downward to bleed.

After the animal has been bled the paunch and entrails should be removed, for if they remained they would taint the meat. With a sharp-pointed knife make a longitudinal cut down the middle of the belly, dividing the skin and the thin abdomen walls, but being careful not to cut the intestines. Turn out the paunch and the intestines, but leave the lungs, liver, heart, and kidneys in place. Next make a slit between the large tendon and the bone of one hind leg and slip the other leg through the cut, so that the carcass may be readily hung up. It should hang long enough to stiffen.

HENS POISONED.

I have had several hens die during the past few days without any apparent cause. They suddenly began to droop and died within 48 hours. What could have been the cause?—A. L. M., Petaluma.

Probably the trouble was due to mouldy or partly decomposed food. You do not say whether your hens had free range, but if they did they may have picked up something which poisoned them. Even in pens mouldy table scraps, spoiled meat, or other mouldy food might cause the poisoning. Test out your beef scraps by scalding a small quantity with boiling water. If it gives off an offensive, putrid odor, the scraps are not fit to feed and should be replaced by a better grade of sweet, wholesome scraps. The usual antidote for poisoning is white of egg, milk, or a mucilaginous drink of flaxseed tea. A purgative does of epsom salts is also good. Give plenty of green feed and cut out rich, heating feeds until you see some improvement.

Poultry Breeders' Directory

YOU ARE NOT TOO LATE—Our early maturing, winter laying strains, June hatch, develop quickest into profitable winter layers. "My thirty pullets laid at four, sixth month (January) cleared $31." Why? Bred 20 years to lay winters, 200-290 eggs yearly. White, Brown, Buff Leghorns; Reds; Anconas; Rocks; Minorcas; clearing customers $5. Many repeat orders, monthly, yearly. Valuable circular with proof free. 70,000 egg hatcheries supplying chicks. Thousands shipped promptly, below ordinary chicks. Breeders (Pullets). Sale beginning. J. Beeson, Pasadena, Cal.

WHITE LEGHORNS are the most profitable breed of poultry. If you are in the business for profit, you will eventually have them. Early broilers; early layers; early profits; we sell only White Leghorn Baby Chix from heavy laying Hoganized hens. Safe delivery of full count live chix guaranteed. Prices per 100: February $15; March, $14; April, $12.50. The Pioneer Hatchery, 408 Sixth street, Petaluma, California.

SINGLE COMB BROWN LEGHORNS—The large, modern, heavy-laying type that won high honors for us at the National Egg-Laying Contest. No better layers, none others so hardy. For 20 years our strain has won highest prizes at New York, Boston, Chicago, San Francisco, etc. Absolutely the finest Brown Leghorns in America. Eggs, $3 and $5 per $15; $15 per 100 Williams Bros., Fullerton, California.

LARM'S RHODE ISLAND REDS were never better. Rose and single comb hatching eggs from winners of the leading shows. Bred to lay. Eggs, now half price, from the best breeding lines in existence. Remember a few June and July chicks round into winners for the December and January shows. Send for circular. 3 Rose-comb cockerels. Wm. Larm, 3915 30th Ave., Fruitvale, Cal

BARRED PLYMOUTH ROCKS—Champion prize winners and wonderful layers. Choice cockerels, hens and pullets for sale. Hatching eggs from twelve grand matings. I have made a specialty of Barred Rocks for over twenty years. That's why I win at all leading shows. "Nothing Better In Poultry" than Vodden's Barred Rocks. Catalog free. Chas. H. Vodden, Box 396, Los Gatos, California.

PEERLESS WHITE WYANDOTTES — Our 300-egg strain, bred for years for show qualities and high egg production. 50 cockerels, 100 pullets for sale. Trios and mated yards. Eggs for hatching. Catalogue free. J. W. Atkinson, Box 8, 130 Willard St., San Jose, California.

CROLEY'S RED STAR CHICK FEED—California's standard Baby Chick Feed for twenty-five years. Manufactured by Geo. H. Croley Company, Inc., 8th and Townsend Sts., San Francisco, Calif.

BRONZE TURKEY EGGS—No more eggs till further notice. Albert M. Hart, Clements, California.

BABY CHIX—R. I. Reds, Barred and White Rocks for July. Order early. Denton Poultry Yards, Campbell, Calif.

SANTA CLARA VALLEY HATCHERY has the chicks for you from six different standard breeds, all bred for egg yielders. Can furnish references from my old customers if desired. Lincoln Ave., San Jose, California.

S. C. WHITE LEGHORN CHICKS—Any quantity from A-1 Hoganized and trapnested stock, winners of 1st, 2nd and special for pullet and 1st cockerel at Pacific Coast Land Show. Orders taken for June 7. A. O. & P. M. Forster, 2918 Otis St., Berkeley, Calif.

SULLIVAN'S BUFF ORPINGTONS—Famous for 20 years in show and utility qualities. Line bred for 20 seasons. Bargains now in stock and eggs. Write Mr. and Mrs. W. S. Sullivan, 100 Market Road, Agnew, Cal.

GET BABY CHICKS NOW—Write for free booklet on fall chicks. See why they pay. Several varieties every week. Only good, strong youngsters shipped. Stubbe Poultry Ranch and Hatchery, Box 67, Palo Alto.

EGG BRED—Buff Brown, White Leghorns, Golden Campines, Dark Cornish. Winners wherever shown. Send for circular. Percy Ward, 3142 Ward St., Fruitvale, California.

GOLDCROFT BUFF ORPINGTONS—Winners San Jose show. Eggs, $5.00 and $3.00 setting. Heavy laying. Choice breeders for sale. Samuel Abrams, Los Altos, Cal.

BABY CHICKS—We have the large heavy-laying S. C. White Leghorns, severely culled last year. Send for prices. Tupman Poultry Farm, Ceres, California.

BABY CHICKS—Booking orders for spring deliveries. White and Brown Leghorns, Rhode Island Reds, Barred Rocks. E. W. Ohlen, Campbell, California.

EASTMAN'S BRED TO LAY Hoganized and trapnested Barred Plymouth Rocks. September chicks. Fairmead Poultry Farm, Fairmead, Calif.

CHICKENS, DUCKS, GEESE, GUINEAS, Pea Fowl, Pigeons. Wm. A. French, 545 W. Park St., Stockton, California. Stamps.

BUFF ORPINGTONS, BUFF DUCKS, BOURBON RED TURKEYS—The Ferris Ranch. Rt. 2, Box 144D. Pomona, California.

RABBITS.

RAISE RABBITS—Most profitable and popular small animal in America. Big demand. Clean, fascinating work. Send 10c for copy of leading rabbit magazine and our Rabbit Book, P N 5. Gilmore's Rabbit Farm, Santa Barbara, Calif.

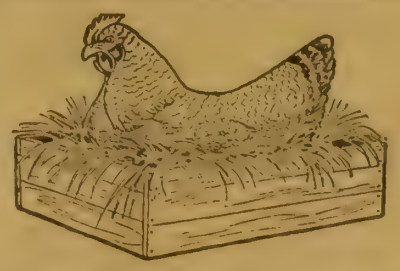
HIMALAYAN FUR RABBITS (Mock Ermine). The best for meat and fur. Mrs. Leroy B. Hackett, 3306 "P" West Street, Oakland, Calif.

PEDIGREED FLEMISH GIANTS; also utility stock. Prices low. Laura Beeching, 1578 W. 46th St., Los Angeles, Calif.

NEW ZEALAND RED RABBITS—Young stock for sale. O. C. Thompson, St. Helena, Cal.

NEW ZEALAND REDS—First class utility does bred $5.00 each. Young does, $2.50 each. F. R. Caldwell, Broadmoor, San Leandro.

RAISE RABBITS FOR US—We supply the breeding stock. Send stamp for particulars. H. E. Gibson Co., Arcadia, Calif.



Pack Eggs in Stoneware Jars

During April, May, June, July, August and September

Government Recipe for Preserving Eggs for Home Use

KIND OF EGGS—Fresh and clean. Do not use eggs that float. When eggs are slightly soiled remove such stains with a cloth dampened with vinegar. Do not pack dirty eggs under any circumstances.

WATER GLASS METHOD—1 Qt. Sodium Silicate (WaterGlass) to 9 Qts. Water that has been boiled and cooled. Place mixture in a 5 gallon crock or jar. This is sufficient to preserve 15 doz. eggs. Larger amounts in proportion. Jars should be thoroughly cleaned and scalded. Allow 2 inches of solution to cover eggs. Place jar containing eggs in a cool, dry place. Jars should be well covered to prevent evaporation. Waxed paper covering and tied around top will answer. It is not desirable to use Water Glass Solution the second time.

Preserved Eggs can be used for all purposes for table and cooking.

(When boiling preserved eggs a small hole should be made in the shell with a pin at the large end before placing them in water to allow air in the egg to escape when heated to prevent cracking.)

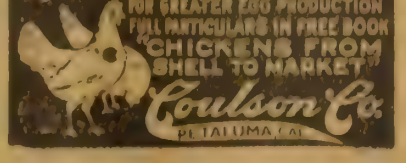
Eggs when properly preserved will keep from 8 to 12 months.

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WHEAT FARMERS, ATTENTION!

(Written for Pacific Rural Press.)

In buying wheat from farmers the U. S. Food Administration Grain Corporation will not make any allowance for valuable dockage, according to a telegram from W. A. Starr of the California office, June 13. Mr. Starr is at the head office of the Grain Corporation in New York, where conferences are being held to settle various questions regarding the handling of this year's crop. Last year the Government paid 1¼ cents per pound for all valuable dockage. Mr. Starr estimates the California wheat crop at 20,000,000 bushels. As a great deal of this is on old barley land, there will be a great deal of valuable dockage this year. Mr. Starr expects the value of this to be given to farmers by wheat buyers due to "the free play of competitive buying and demand for feed wheat by the poultry trade."

This assumes that there would be plenty of competition among wheat buyers and places a premium on their activities, discouraging the sale of wheat by producers to the Government because private buyers are supposed to pay for dockage which the Government will not do.

Why Private Wheat Buyers.

There will be no private buying of wheat except under three conditions: (1) Millers may buy at the Government prices, fairly to all concerned. (2) If buyers can get wheat at less than Government prices, they are then guaranteed against loss, because they can resell to the Government at any time. The farmer who sells for less than he could net by shipping to the Government is "buying automobiles, and diamonds for the other fellow's wife." (3) If buyers believe that the wheat market will go higher than the Government price, due to the dockage it contains, or due to other conditions, they will pay up to the edge of what they expect as their margin of profit. This may net the growers more than the Government price and if they don't sell, they will have to take their chances with the other speculators, all of whom will be assured of Government prices if they sell before the time limit. We have been personally assured by a high grain corporation official that payment will be made by the Government for all wheat immediately on receipt of a certificate of weights and official grades and a bill of lading if the grading is done from samples taken at a local warehouse by an inspector from the office of Chief Grain Inspector Henry C. Bunker, Merchants' Exchange Building, San Francisco. Such inspector will be sent at the growers' expense.

President Geo. H. Sawyer of the Stanislaus Farm Bureau had an interview with W. A. Starr of the California division of the Grain Corporation, just before the latter went East June 4. Mr. Sawyer says Mr. Starr expects that by July 1 the market price will fall to the Government price and remain there. He explains the recent demand for wheat at above Government prices as due to an overestimate of the crop last year and a consequent overexport, leaving a shortage recently. Of significance in this connection is the report of Chief Grain Inspector Bunker, as given in the table below:

Centals of Wheat in California.

Year	June 1	Dec. 1
1919	456,140	.....
1918	353,000	2,420,780
1917	481,640	2,142,704
1916	904,760	2,055,540
1915	667,260	2,506,780
1914.	619,680	2,226,420
1913	916,340	1,265,360

The U. S. Bureau of Markets Food Survey shows that the quantity of wheat in U. S. on May 1, 1919, was about 290 per cent of the quantity a year previous.

Sack Allowance 4½ Cents.

Grain growers will be allowed 4½ cents per bushel for bags this year, instead of 9 cents, the amount fixed by the Government last year as the allowance to the shippers for the cost of bags. Announcement of the reduction is made by R. A. Lewin, zonal agent of the Food Administration Grain Corporation. The reason for cutting down the allowance is a proportionate drop in the cost of bags in the market. Last year bags sold as high as 30 cents at one time, but since the signing of the armistice and the resumption of trade with the important bag-producing regions of the Orient, there has been a decline. Bags are now selling around 13 cents.

FIRE DANGER ON DIVISION LINES.

To the Editor: On a division line of 20 acres of brush land I have a rank growth of rye. My neighbor's almond trees are 15 feet away. If the rye should catch fire from some cause and scorch his trees, would I be held for damages? He has the privilege of cutting the rye, but not burning, as I do not wish the brush burnt.—G. R. H., San Francisco.

(Answered by G. M. Homans, State Forester.)

This inquiry should properly be referred to an attorney. There is nothing in the fire laws that covers this particular case. If a fire is wilfully or maliciously set and does damage to a person's property, he may recover double damages in a civil action.

In the case of G. R. H. the owner of the property would not be liable for the damage caused to his neighbor's almond trees by virtue of fires starting accidentally on adjacent property. If on the other hand the rye was burned and it could be shown that the intent was to damage the almond trees, then I should say the owner of the trees could successfully sue for damages. I do not consider the rye a menace until the owner of the almond trees secures an injunction from the court after a hearing in the matter. So long as the privilege has been given to cut the rye, if the owner of the trees feels that it would injure them should it catch on fire accidentally, the best solution of the problem is for the owner of the property to remove what in his judgment he believes to be a menace.

GRAIN AND BEANS IN STATE JUNE 1.

Careful compilation of figures on grain and beans in the entire State is made semi-annually by the Grain Trade Association through the office of Chief Grain Inspector Henry C. Bunker.

	Wheat Centals	Barley Centals	Oats Centals	Beans Sacks	Rye Centals
June 1, 1919...	456,140	1,632,180	194,720	2,006,694	31,200
Dec. 1, 1818...	2,420,780	1,719,320	465,460	2,892,952	54,580
June 1, 1918...	353,000	451,900	119,580	523,037	17,540
Dec. 1, 1917...	2,142,704	6,815,360	462,370	1,936,193	9,900
June 1, 1917...	481,640	322,740	109,880	269,947	3,260
Dec. 1, 1916...	2,055,540	4,835,120	180,460	2,032,942	23,540
June 1, 1916...	904,760	1,679,460	186,180	554,136	15,160

It will be noted that there is almost identically the same amount of barley in the State as there was on the same date three years ago when the total had declined from nearly the same amount on Dec. 1 as we had last December.

GOOD ROADS WEEK.

By proclamation of Governor Stephens, the last week of June is "Good Roads Week." The Pacific Coast Good Roads Association and the Pacific States Defense League will hold their conventions jointly at the Palace Hotel, San Francisco, June 25 and 26. An adequate system of motor truck highways is being urged. This convention precedes the day, July 1, which Californians will vote on the $40,000,000 highway bond issue.

Will Your Belt Stand This Test

The Ordinary Belt

separates between plies after it has been used a short time. This is due to the use of poor Rubber Friction. Once this happens the Belt is worthless. It cannot perform its duty and often breaks and causes loss of life. Just the moment a transmission belt opens up between plies it should be discarded.



A Good Rubber Belt

must be so woven and vulcanized as to insure permanent adhesion. It must be flexible and elastic, and yet not stretch.

Before buying a belt you should test it. Examine the grade of cotton used and the strength of the Rubber Friction.

The best way to determine this is to take a small section, say 1 inch in width and 3 inches long. Separate ends of plies with a knife and then endeavor to pull them apart. The amount of strength necessary to separate them determines the service it will give. **Don't invest money in a poor belt. It doesn't pay.**

NEW YORK BELTING AND PACKING COMPANY

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TEST SPECIAL BELTS

are made to wear and give service. Best grade, long fibre cotton and specially woven. Our special weave gives greatest possible strength and yet preserves flexibility.

A Test Special will never pull apart in plies. We guarantee it to give long and satisfactory service. If it does not we return your money.

Having Trouble? Write Us

Are you having trouble with your belting? If so, write us. We are experts along this line and will gladly tell you how to adjust your difficulties. Give us a rough drawing of your machinery and we will fix you up. **It's all free.** Write today.

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Send me samples of Belting that you will guarantee to give satisfactory service on my work and quote prices delivered at

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Horse Power	Diameter in Inches
Elec. Motor	Driving Pulley.....
Steam Engine	Driven Pulley .....
Gas Engine	

Kind of Drive

Cross .....
Straight .....
Perpendicular .....
Width of Belt .....Ply.....
Distance between centers of Pulleys.....
Rev. per minute of Driving Pulley.....
Kind of Machinery Driven .....
My dealer's name .....
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FARM OWNERS' AND OPERATORS' ASSOCIATION

Business Protection for Farmers.

The wheat, the vegetables, and the fruit of the farmer are not his investment. They are his accruing interest. Its rate rises and falls in value according to market conditions, which, in turn, are influenced by law, speculation, and social conditions. The land represents the farmer's primary investment and business. To gain recognition and to secure just returns, the business man first proves and emphasizes the capital he has invested. The value of the commodity or service he gives is determined by what it cost him to produce it. Therefore, to gain for farmers their financial equities, it is necessary to determine and emphasize that farming is a business. Protection for agriculture must come through legal and trade recognition of the farmers' invested billions. Most of the iniquities and injustice under which farmers labor are merely symptoms of causes that lie deeper. An anti-trust law that exempts labor and places farmers' cooperative organizations in the same class with market manipulators, can not be overcome by mere protests. Farmers must organize and insist on their business rights. The best way to avoid injustice is to oppose it before it is legalized. Most legislation of an economic character proceeds from the standpoint of investment and business influence. The equities of the farmer can be written into law by their organized expression at the fountain head. By co-operation in citizenship and compact organization in business, remedies can be secured for that which may now be wrong. Once the rights and dignity of the farmers' business is established by organized influence, justice will be assured in the future for the farmer.

FRUIT WAGES RECOMMENDED.

Forty cents per hour for fruit harvest work, four dollars per ton for picking French prunes, and a sliding scale for cutting apricots are recommended to orchardists for the present season by the Directors of the Santa Clara County unit of the Farm Owners' and Operators' National Association after getting the ideas of each of the 25 directors, who come from all parts of the Valley and who agreed on the scale mentioned. For apricot cutting: 10 per pound, 12 cents per box; 11 per pound, 13 cents per box; 12 per pound, 14 cents per box.

PRUNE ORGANIZATION MAY QUIT.

Unless a materially greater acreage of prunes and apricots is signed up in the California Prune and Apricot Growers', Inc., the directors have voted that they will not exercise the option which the Association has on the crops of 1920 and 1921. Actual figures as to the required acreage will be given out after delivery of the 1919 crop. All growers realize the slump that would come if the organization were out of the field. but a lot of growers have up to date proved unwilling to bear their share of responsibility.

NEW FRUIT SHIPPING ASSOCIATION.

The Fruit Growers of California, Incorporated, is the name of a new cooperative fruit shipping association now being organized at San Jose. A board of directors has been elected; R. P. Van Orden is the president and J. H. Bone, secretary. The new association has opened offices in the First National Bank Building, San Jose, and will endeavor to ship its share of fresh deciduous fruit to the markets next season.

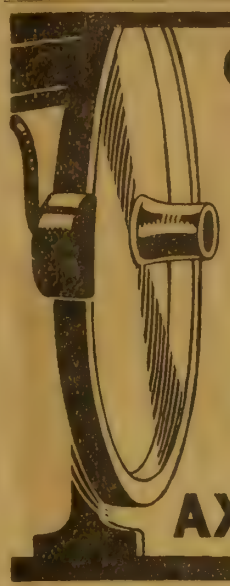
FUMIGATION FOR GRAY SCALE.

Citrus growers in Tulare county have been warned by Horticultural Inspector F. R. Braun that a wide campaign against the citricola scale will be necessary this fall by fumigation. The unusual increase of the scale this season, he attributes to the conditions of low atmospheric temperature and high humidity, which are conducive to a low death rate to the insects helped by the heavy foliage of increased vitality in the trees due to the same conditions.

BARRACKS FOR FRUIT HARVEST.

Because fruit farmers every year get up against it for help in the picking season, and still more because for lack of finances, so large a percentage of school boys never finish the High School course which is greatly needed to make them dependable citizens of America, and because previous sporadic efforts to get High School boys and girls to the farms have shown the necessity of special housing and supervision, President J. J. McDonald of the Santa Clara unit of the Farm Owners' and Operators' Association proposes that barracks be built on public school grounds where Y. M. C. A. and Y. W. C. A. workers have signified their willingness to furnish the supervision. We will say more about this next week. Meanwhile we invite our readers to write us what you think of it.

"I have raised my estimate on almonds," said Harry H. Ladd, Horticultural Commissioner of San Joaquin county, "to 70 per cent. Pears will make 60 per cent of a crop from present indications while table grapes, apricots, peaches, plums, etc., should all make 100 per cent crops, except perhaps olives. They are still in the lap of the gods."



Cool Slippery Spindles

Mica Axle Grease spreads evenly, forms a cool, slippery coating that clings to the spindle and makes pulling easier. The mica fills up all roughness in the metal, makes the grease work better and last twice as long. No hot boxes. Ask your dealer. Buy by the pail.

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Sweet, clean, succulent silage; how stock goes for it! If you have had experience with poorly designed or home-made silos, you know how wasteful such silos are because of moulded, soured or frozen silage, due to leaning and leaky walls.

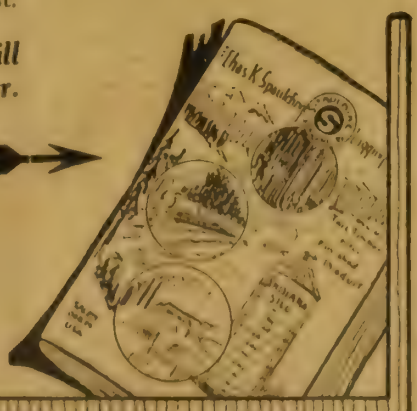
But in the Indiana—the Super-Silo—the smooth, straight, air-tight and moisture-tight walls keep the silage fresh, sweet and clean. There is practically no waste at all. Better beef and pork, and richer milk are the results.

Only the best grade of inspected timber, cut in Spaulding forests, properly seasoned in Spaulding kilns, selected by Spaulding silo experts, is used. Extra middlemen's profits are cut out. You get the best quality at the lowest cost.

Get an Indiana Silo this summer; it will put money in the bank for you next year.

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So extremely simple, a child could operate one, as a simple twist of the wrist raises and lowers the bucket or holds it stationary, as the case may require.

A GREAT ROAD MACHINE

Every road district should own one of these machines for constructing roads. They will cut down the high places and make fills quicker and cheaper than by any other known method.

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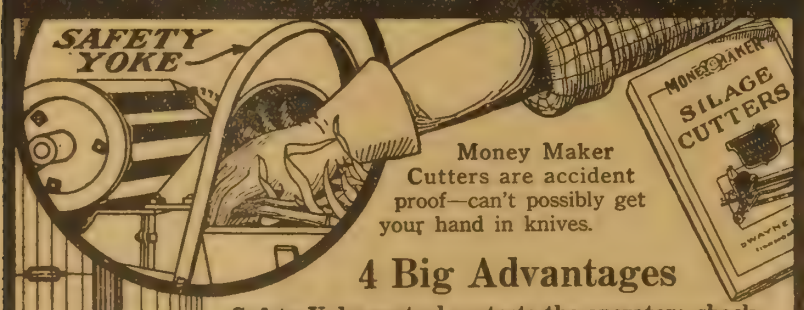
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Purpose and Stress of State Highways

(Written for Pacific Rural Press by C. M. Lovett.)

Sometime since, a correspondent of the Rural Press questioned the wisdom at this time of a bond issue of $40,000,000 for new highways. Later in the session the Senate voted $10,000,000 to aid counties that would furnish an equal sum for roads. This bill, however, was killed in the house. Then followed numerous sectional bills carrying millions for highways.

By the signature of the governor, the first-mentioned bill becomes law—if the people suspend the constitution and vote the measure at an election called for July 1.

Some of the other road bills received the executive approval, but more of them went into the graveyard of unfavored legislation.

Is there a real call of the people for these large expenditures for roads? Or is it a hurrah of the automobile trade supported by the daily press, whose keen interest in such matters is plainly shown by their huge Sunday supplements and their advertising columns. The fact that the State Automobile Association and certain northern supervisors figure largely as originators and sponsors of the road crusade is significant.

Few persons will question the wisdom of good roads when rightly placed, built in ordinary times, and kept within the ability of the State to pay; and that California needs good roads goes without saying. Nor should we question the wisdom of a constitutional limit to legislative expenditures.

The "put it up to the governor" methods of last winter are fresh in our minds.

In the case to hand, the constitution was set aside, and a special election ordered, at great expense to the people, for a want acknowledged, but not imperative, as might be the case under catastrophe, war, or invasion. And this was done when the legislature had before it the budget report of the Board of Control showing the straitened condition of public finances and the need of husbanding funds for urgent calls.

Never, perhaps, has a legislature passed appropriation bills more thoughtlessly, recklessly, or numerously.

As an example of indifference to the public welfare, the road bill of last winter is strictly in evidence. Starting out with a view (honest perhaps) of completing the original State highway, with a cross section or two for northern California, it soon became a scramble to see how many roads could be crowded into the measure. Los Angeles, Kern, Santa Barbara, and other sections came in for their share of the "divy," and could not be denied.

San Francisco is given a wholly unneeded, costly, mountain road to secure her vote—a scenic road, benefiting the city only as a tourist route. If ever the people asked for it, it is not on record. Of several other sections the same can be said.

They were trades to satisfy localities and secure votes. If an automobile could run on them it answered all requirements. Many of the roads serve small populations.

At a time when the State is burdened with unusual duties, and heavy war costs, new roads seem out of place to many voters. The unfinished highways of the original project still call for $20,000,000. These are an obligation; further, they will furnish the employment for the returned soldier and satisfy our needs in that direction. We can well assume that not many soldiers will seek road work.

The last highway commission report (July, 1918) shows 1451 miles of road completed (exclusive of the units of highway built by the counties), and 349 miles 60 per cent completed—leaving some 830 miles on which no work has been done beyond surveys. The unfinished work is chiefly mountain laterals; and inferentially, will prove more costly of construction than valley roads.

The cost of the highways completed to July 1, 1918, is $28,453,191, with a credit balance of $5,000,000; and the cost per mile has been $17,140.

Twenty million (or so much thereof as is necessary) is provided by the bill for the 32 new roads proposed. The milage is not given; but it cannot be less than a thousand miles and the most superficial knowledge of the country will show the extreme difficulties of building and maintaining these roads. It is not probable that $20,000,000 will build them.

But the purpose of this article is not so much to object to roads, as to the methods adopted to get them, and the financial condition likely to follow. It was thought in 1909 we were taking a large, advanced step in road building. And it is a fact that when that road is finished, no Western State has more miles of modern highway than California; and a glance at the map will show that these roads very well cover the needs of the State, when so many other public endeavors of equal merit are waiting.

Does any one suppose that $40,000,000 could be raised for roads, or for any other purpose, by direct taxation? No more should we do it through bonds.

With the proposed appropriation through this bill, the State, cities and counties will be near the $300,000,000 mark of bond issue; and according to Controller Chambers, we are increasing our bond debts $20,000,000 a year. "While in nine years, population has increased 64 per cent, bonds have increased 154 per cent—and property has increased only 52 per cent. The interest on this indebtedness is $11,000,000—or about one-sixth of the cost of the State government."

To add to the folly of obtaining improvements under the bond method, the bonds are usually long time, much outliving the improvement for which they were obtained. The present proposition has some merit in being issued in serials, but the last dollar will not be paid till 1965. Says Mr. Chambers on this point: "The practice in the past has been to issue bonds for nearly any old purpose, for nearly any old time, for nearly any old rate of interest."

The daily papers are telling us: "The wealth and prosperity of the State brought to us through these roads, will lift the burden from the taxpayer." If it was ever true anywhere, it has certainly missed California, as the above large interest item proves.

But it is not true. Nobody clips coupons from debts. Every dollar put into bonds becomes two dollars before it is paid.

Labor—the farmer and the working man—must pay the bonds. These classes are not always helped by wealth increase,, and less frequently by increase in population.

The moral—the honest way—is to let every generation pay for its own improvements; and it is worth something to us to be moral.

ALFALFA SEEDLINGS FAILING.

To the Editor: On November 15th I planted alfalfa, putting about twenty-two pounds to the acre. It came, and gave me a fine stand, but I found it was wilting and drying up. I thought it was the frost, so I replanted 30 pounds to the acre, but it is wilting again, and the land is moist and in good shape. I am sending you a sample of it. My neighbors are having the same trouble. Could you tell me the cause and what I could do to prevent it.—M. C. H., Turlock.

[The specimen is insufficient to determine anything of the cause. A single dried-up seedling an inch in length reveals no secrets. A little two-inch cube of the soil, with the dying plants just as they naturally stand on the surface of it might enable one to determine something to explain the trouble. It looks like killing by alkali, but that has to be detected in the soil, not in a dead plant. Besides, we are not saying that you have any alkali at Turlock.—Editor.]

Almonds in the Paso Robles district are exceptionally large this year, according to Tom Henry, Manager of the White Sox ranch.

FIELD AND GARDEN

Army Worms in Alfalfa.

Army worms have greatly injured many alfalfa fields in Kings county and have even made the highways slippery for autoists. The most successful protection gained last year was by plowing around the fields, leaving the vertical side of the furrow next to the fields.

Cabbage Butterfly Parasite.

Cabbage butterflies in Hawaii may need their doctors pretty soon. The Hawaiian Quarantine Officer, E. M. Ehrhorn, whom we met at the Riverside Fruit Growers' Convention, is taking home with him a colony of Pteromalus puparum, parasites supplied by the California State Insectary for control of the cabbage pest.

Baart Wheat Stands Moisture.

About a dozen varieties of wheat were irrigated occasionally during the past season in large plots about a quarter mile long by the Dodge Land Co. of Butte county, to see which variety would stand the most water. Two plats of Baart did exceedingly well throughout their strips, while all other varieties showed bad effects of water in the lower places.

Wheat Can Be Moved.

A city paper is proclaiming that most of the immense wheat crop can not be sold by farmers because of the impossibility of handling and storing it. Splivalo, McLean & Co. advise us that they are prepared to handle all wheat offered wherever located, making prompt payment on delivery of warehouse receipts or shipping documents.

Temporary Fences.

A great economy in half a dozen ways is the temporary fence for all fields within a farm. Less expensive, less of it, more adaptable to crop conditions, no need of providing a breeding place for weeds and insects, no land out of use, nothing in the way of turning at ends of rows, no extra time taken to drive around to gates, less repairs, less damage to stock. Get it.

Beans Moved Out of San Francisco.

A considerable movement of beans took place from San Francisco during May, according to the report of Chief Inspector Henry C. Bunker. This shows that on May 1 there were 292,693 sacks of beans in warehouses and wharves. During that month 143,430 sacks were received, but at the end of the month there were 16,712 fewer sacks in the city than at the beginning. We cannot help but believe that free movement must come soon.

Grasshoppers! Look Out!

Offensive warfare by the State Horticultural Commissioner's office against grasshoppers has been started by appointment of assistants-at-large, who will respond promptly to the S. O. S. call of any County Horticultural Commissioner who wires to the State office in Sacramento for such help. They are T. D. Urbahns for Solano, Yolo, and northward; E. J. Branigan and P. A. Bancquet for Butte, Placer, Nevada and El Dorado; Carl Olsen and Prof. Van Dyke for San Joaquin and south to Fresno; E. M. Rust for Fresno, Tulare, Kings and Kern; W. C. Jacobsen for San Luis Obispo and coast counties; and C. A. Wilkin for Sacramento.

Irrigating 15,000 Acres More.

A new 15,000-acre unit of the Natomas irrigation system has just been completed. Water is pumped from the Sacramento river and distributed to the high point of each 40-acre tract. Part of this system is one of the longest reinforced concrete flumes in the world, being about 6,000 feet long, ten feet wide, and six feet deep. Concrete weirs and concrete road crossings are built throughout the project. Each tract has a concrete-and-steel gate. Many Natomas farmers have already cut their second crop of alfalfa this year. Grain hay has been cut and grain harvest is on. A considerable acreage has grown other winter crops and practically all of this will be planted to beans, many acres of which are already planted.

NASH



QUICK AND ECONOMICAL TRANSPORTATION

LOAD the Nash Quad with three full tons of grain and if roads are good hook on two trailers with two tons apiece, then make a quick trip to town. Two round trips a day with such loads mean actual money in the farmer's pocket.

The fact that it drives and brakes on all four wheels enables it to pull these heavy loads over rough ground and stubble fields where ordinary trucks would meet with difficulty.

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NASH TRUCKS

One-Ton Chassis, $1875 Two-Ton Chassis, $2440 Nash Quad Chassis, $3600

BEAN THRESHERS THE TWO STANDARDS

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THE FARQUHAR VIBRATOR SEPARATOR

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Certified Seed Potato Inspection Rules

(Written for Pacific Rural Press.)

Uniform rules for certified seed potato inspection in the intermountain and western States were recommended by a committee representing eight States and the U. S. Department of Agriculture, which was appointed to report to the Vegetable Growers' Conference at Riverside, May 26 to 31, as indicated in the report of that conference in our issue of June 7.

There has been great reduction in yield per acre and consequently a great reduction in acreage and total yield, due to diseases and insects spread by infected seed potatoes. There has been great loss by refusal of buyers in other States to accept infected potatoes from this State and by refusal of quarantine officials to allow our potatoes entry into other States. Much loss has been occasioned by the buying of seed potatoes mixed or not true to name. It was to eliminate the necessity for these losses that Senate Bill 709 was passed by the recent Legislature. That bill authorized employment of a potato inspector by the State Horicultural Commissioner who is to promulgate rules for certification of seed potatoes.

Uniformity of such rules throughout the Western States is a necessity for efficient carrying out of the intentions of the law. Hence the following representatives of these States drew up the rules as mentioned below and recommended their use in enforcing State laws. Committeemen were: E. P. Taylor, Acting Dean of the University of Arizona, chairman; E. R. Bennett, Idaho State Field Horticulturist; Mrs. Hilda B. Nielsen, California grower of certified seed potatoes under our old law; M. B. McKay, Oregon Potato Inspector; H. R. Hagan, Utah State Crop Pest Inspector; A. L. Strauz, Montana State Horticulturist; M. L. Dean, Washington State Chief of Horticulture; Geo. M. List, Colorado Deputy State Entomologist; W. P. Allewelt, Potato Specialist for the U. S. Department of Agriculture.

Standards for Certification.

Certified seed potatoes should first conform to standards governing U. S. No. 1 market stock, practically free from dirt or other foreign matter, frost injury, second growth, growth cracks, cuts, bruises, or other damage caused by insects or mechanical means, with no more than a 3 per cent variation by weight from any of the above details. It is also recommended that certified seed be marketed in new sacks or containers.

Size.

Inasmuch as oversized tubers are wasteful and less desirable than properly grown uniform, seed-size, it is recommended that the seed-size standard shall be from two to twelve ounces, with a variation tolerance of five per centum by weight.

Varietal Purity.

Since mixed varieties of seed potatoes are a potent cause of economic loss in potato production and marketing, we recommend a rigid adherence to trueness to name. Furthermore, since the practice of renaming old varieties or changing the names of named varieties through ignorance, or with malicious intention to defraud, is detrimental to the potato industry, we recommend the adoption as a standard on nomenclature and use of the "Group Classification and Varietal Descriptions of Some American Potatoes" by Prof. William Stuart of the United States Department of Agriculture.

Since off type, or run-out strains of any given variety are essentially as detrimental to successful potato production, as mixtures of varieties, we recommend that no stock shall be certified or planted with the expectation of producing potatoes for certification that is not uniformly typical in all characteristics for that particular variety in the district where it is grown.

Pests and Diseases That Disqualify.

No potatoes shall be certified that show by inpection on vine or tuber the presence of the diseases known as black wart, powdery scab, and violet Rhizoctonia or eelworm and potato tuber moth.

No potatoes shall be certified which show upon the tuber at final inspection more than 5 per cent scab, with no deep scab pustules permissible. More than 12 per cent of rhizoctonia or black scurf shall disqualify, and no scurf spot larger than one-eighth inch in diameter shall be permitted. Not to exceed 5 per cent vascular infection of the tubers, as determined by transverse sections of stem end of tuber in the final tuber inspection shall be permitted. Vascular infection shall be interpreted as meaning wilt diseases such as Fusarium oxysporum, verticillium alboatrum, Bacillus phytophothorus, etc., not to exceed 2 per cent of the tubers infected with late blight or rot spots, and no spot to exceed one-half of an inch.

Vine Inspections.

Inspection of potatoes is not only necessary after the crop is harvested, but also during the growing season, to determine trueness to type and variety, and freedom from disease. This shall be accomplished by an inspection of the potato plants in the field at blooming time, and again, just prior to maturity of the plant.

More than 5 per cent varietal mixture at blooming time shall disqualify for certification. Furthermore, a variation in type of plants in excess of 10 per cent, indicating degenerate or inferior strains of a variety shall disqualify for certification. More than 10 per cent of the plants at this inspection affected by the following groups of diseases, or more than 5 per cent affected by any one of them, shall disqualify the field for certification: (1) Well-defined curly dwarf, leaf-roll, mosaic, or other inherited weaknesses, combined. (2) Wilt diseases and blackleg combined. (3) Rhizoctonia (Black scurf). Immediately following the bloom-time inspection, all diseased or objectionable plants must be rogued.

The tolerances at the second plant inspection governing certification shall be: Not to exceed 5 per cent of mosaic, curly dwarf, leaf roll and other inherited weaknesses; not to exceed 2 per cent of diseased plants from any one of the following diseases; wilt, black leg, or rhizoctonia, nor a total of 4 per cent of diseased plants from all three causes. Rogueing of the field must again follow the second plant inspection. If 10 per cent or more of the vines show infection of late blight, the field shall be disqualified for certification. The uniformity and the quality of the product as seed shall be determined at the second inspection, at which time not to exceed 5 per cent of the hills may each weigh less than 30 per cent of the average of 100 consecutive hills.

Final Tuber Inspection.

This inspection shall be after harvest and after final grading for the seed market. It shall conform to the conditions as hereinbefore specified, and a certificate of inspection shall be furnished to the grower. (A model blank certificate was recommended for the sake of uniformity). These rules were approved by the California State Horticultural Commission and were looked upon as the most important work of the Vegetable Growers' Conference.

PLACER COUNTY FARM WAGES.

The PlacerCounty Farm Bureau has fixed a schedule of wages on fruit and grain farms. While no fixed schedule of wages could be adopted that would meet all the conditions, the schedule should be considered as a guide to be followed as closely as possible:

General Farm Work.

A day of 9 hours with board, per day, including orchard and vineyard work, corn and bean harvest, irrigation of field crops, and miscellaneous work, $2.25.

Grain and Hay Harvest.

A day of 10 to 12 hours, as per local custom, haying, including board, $3.00.

Grain harvesting, $4.00 to $7.00 and board per day.

Fruit and Vegetables.

Per hour, without board, 30c to 40c, including picking, grading, cleaning and packing.

Picking: Piece Work.	
Cherries, per pound	2c
Plums, per 100 lbs.	25c
Peaches, per 100 lbs.	20c
Pears, per 100 lbs.	20c
Packing:	
Cherries, double faced	15c
Cherries, cartons	18c
Peaches	2½c
Pears, with tender	6c
Pears, without tender (includes lidding)	7c
Plums and crate peaches	6c
Grapes, cleaned	6c

THE BARLEY SITUATION.

Quite a stir has recently been created by barley buyers in producing districts offering a rising scale of prices. The market is firm and the demand strong, chiefly from the United Kingdom for brewing. The British Government has recently permitted increased brewing, and the shipments from San Francisco for May totaled 702,480 centals. The first ten days of June saw shipment of 260,355 centals. What the Government will do in the future, not many people wish to forecast, but if the food situation has eased up enough for such shipments for alcoholic drinks, there is little reason to expect unfavorable regulations soon. That prohibition does prohibit is not doubtful as viewed from the standpoint of decreased demand for brewing barley in U.S. and we must look abroad for barley markets. How long they will hold up under the $1.75 freight rate per cental from San Francisco to England plus the 6 per cent insurance rate on grain carried in the wooden vessels available, plus local freight rates to and from seaboard plus middlemen's charges will be conjectured by each one concerned.

Stocks in California outside of farmers' private granaries totaled 1,632,180 centals June 1, as reported by Chief Grain Inspector H. C. Bunker. This is nearly four times as much as a year ago and over five times as much as two years ago. It is almost exactly the same as we had in Californi June 1, 1916. The quantity reported by 5,071 firms on hand in U. S. totaled a trifle over 12,000,000 centals May 1. This was an increase to approximately 174 per cent of the barley on hand in U. S. a year ago May 1. The 1919 crop in California and the U. S. will be considerably less than last year.



Your Boy

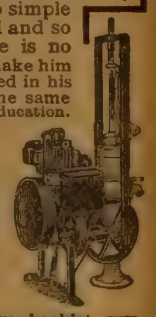
can run the

Fuller & Johnson

FARM Pump Engine

without any trouble and without any danger to himself. It is so simple that it is easily understood and so well protected that there is no chance to get hurt. It will make him more interested and contented in his work on the farm, and at the same time give him some valuable education. It will also relieve you of all worry about water for your stock.

The Fuller & Johnson Farm Pump Engine will pump from 270 to 2450 gallons of water per hour. Needs no belts, braces or special platform. No extras to buy—comes ready to set up to your pump and start going. It will also operate other machines. *Write for Catalog No. 17 and read all about this remarkable engine and the remarkably low price at which it is sold.*



Write for free descriptive booklet and name of nearest dealer.. Address the distributor.

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STAR WINDMILLS

MOLINE MANDT MOUNTAIN WAGON

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Plows (steel and chilled)
Harrows
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Cultivators
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Lime Sowers
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Hay Rakes
Hay Loaders
Hay Stackers
Grain Binders
Corn Binders
Pitless Scales
Spreaders
Wagons
Moline-Universal Tractors
Stephens Salient Six Automobiles

THE Moline-Mandt Mountain Wagon is now built according to United States specifications in standard auto track of 56 inches, and is built with a thorough knowledge of the difficulties of wagon traffic in all mountainous regions.

It is not merely an ordinary farm wagon built of heavier stock. It is correctly designed and properly proportioned to stand the extra strain and to resist the wear and tear of weather and of hard, rough-road hauling.

Axles, hubs, spokes, rims, reaches and poles—practically all wood stock, are one size larger than on ordinary wagons of same size. Special care is taken in selecting and air-seasoning the stock.

Wheels have heavy second-growth, white-oak spokes driven to place in glue. Hubs and felloes of same material.

All wheels and gear parts soaked in hot linseed oil before being ironed, and covered with two coats of old-fashioned red lead, the best and most expensive wagon paint known.

Moline-Mandt patent dust and sand-proof collars prevent wear. Extra heavy gear brakes with long, malleable iron shoes.

Ask your Moline Dealer to show you the Moline-Mandt Mountain wagon or write us for information.



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Mechanical Power on the Farm

Users of tractors, engines, pumping plants, motor trucks, automobiles, electric motors, and other mechanical farm power are invited to make this department an exchange of their experiences and troubles.

SIPHONING WATER FROM WELL.

To the Editor: I have a siphon from a well into a ditch. Water runs a few hours and then stops. The bottom of the ditch is 2 feet four inches below the surface of water in the well. The siphon consists of about 116 feet of one-inch pipe. It has valves below water level at both the inlet and outlet ends. We fill it with water through an opening at the highest point, close that, and open the inlet valve, and then open the one in the ditch. Does the length of the inlet pipe make any difference? What is the least fall required for a siphon to run? As the season advances the later level lowers some.—W. G. J., Tancred.

Theoretically, the friction of your pipe would prevent the flow of more than five gallons per minute when the water in your ditch becomes four inches deep; and the flow would stop entirely when it gets a few inches deeper. You seem to find this true. The principle of the siphon is that water will flow just so long as the water surface at the outlet is lower than at the inlet, not figuring on pipe friction. In your case, pipe friction at five gallons flow per minute would neutralize about two feet of the 28-inch difference between water level in the well and the bottom of your ditch. When the water level lowers, you will lose just that much of your present advantage. It may be that your pipe or your priming valve is leaking air. The length of the intake pipe will have no effect to speak of. You might find happiness by putting a lightweight ball-valve or swing-check-valve in the inlet pipe and leaving the outlet valve open all the time. This would automatically keep water in your ditch a little over four inches deep as long as the water level in your well remains as it is now. If it gets lower, our only suggestions would be to lower the bottom of your ditch or get a larger pipe. Use of a 1½ inch pipe would permit five gallons flow per minute with loss due to friction of only about three and a half inches as against two feet with the inch pipe. Thus a 1½ inch pipe would permit the waterlevel in your ditch to rise within about three and a half inches of that in your well, making it about two feet deep all the time if you use the check-valve mentioned.

WHAT SIZED WIRE FOR ELECTRICITY?

What sized wire to use for country home electric lighting is an important question to solve, because wire prices vary generally in proportion to their weight per foot. But the size of wire to convey a given electric current economically and without loss varies with the distance from the generator to the lamp. Thus a generator at the house will require wire of larger diameter to convey electricity to the barn five hundred feet away than to rooms in the house.

To decide just how big the wire must be for a given voltage and a given distance, a chart has been prepared by the National Lamp Works of the General Electric Co., Cleveland, Ohio, for free distribution. This chart is marked off in squares, each representing 50 feet of distance along one side of the chart and 50 watts along the other side. A curved line indicates the size of wire to use under all conditions between 750 feet and 1,000 watts with 28 to 32 volts. Another chart shows sizes to use up to 2,000 feet distance and 2,000 watts load at 110 to 125 volts. To figure the number of watts to be delivered, multiply the number of volts indicated on the dynamo by the number of amperes current to be used by all of the motors, electric lights, flat irons, etc., that are likely to be used at one time. Knowing the watts to be delivered to electric appliances, the distance from the generator to the end of the line, and the voltage generated, the charts tell what size of wire will be most economical.

A BARGAIN-TIRE SUCKER.

To the Editor: Referring to your article on automobile tire suckers in the issue of May 31: Yes, sir, I was one of those soft marks on bargain auto tires. These tires were guaranteed for 4,000 miles and for defect were to be replaced with a new tire for one-half price. One of these superior tire-fakes ran me 105 miles and went to pieces. The advertisement and picture represented new tires, but when I received them they were made-over tires. The Queen Rubber Co. of New York, I think, played the game in the ad and the Overland Rubber Co. of New Jersey filled the order. I sent my claim for adjustment: upon my own choice they sent me one tire free of charge rather than two at half-price, to replace the original two tires. The tire sent for adjustment came from the Giant Rubber Co. That tire lasted 195 miles. Such a company, for sending such ads through the mail, should be handled!—H. H. H., Sutter county.

TRUCKS SHOULD REPLACE BRANCH RAILWAYS.

"Heretofore, development of the country for 50 miles either side of a trunk line of railroad has required construction of light branch lines. Taken alone and considered as a unit, practically none of these small branch lines pay expenses; but as gatherers of freight and passengers to increase density of traffic on the main lines, they are sources of profit," said C. A. Morse, assistant director of operation for the U. S. Railroad Administration recently. "As, however, the traffic gathered by them is turned over to the main line with a deficit attached, which has to be overcome during the main line movement before any profit is made, it would be a decided advantage if this traffic could be delivered to the main line by means of the motor truck, tractor, and automobile without this bill of expense attached."

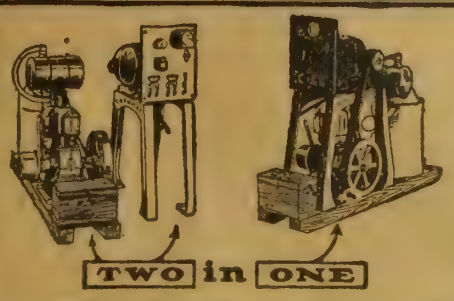
COMPLETE FARM MOTORIZATION.

California has the most discriminating tractor buyers in the world, as evidenced by the fact that farmers will pay more here than elsewhere for tractors which are believed to fit their needs, said Prof. J. B. Davidson at the recent meeting of the California Tractor and Implement Association. Moreover, California leads the world in complete motorization of farms where no animals are used for draft power.

NATIONAL TRACTOR DEMONSTRATION.

The only really "National" tractor demonstration to be held in the U. S. this year is dated for July 14, 15, 16 and 17 at Wichita, Kansas. The week of July 21 was first chosen as announced in our May 17 issue, but has been changed.

Cushman "Does-More" Light Plant



Light and Power

Picture on left shows outfit divided into power plant and light plant.

Picture on right shows complete unit plant for electric light service.

The Cushman Does More Because —

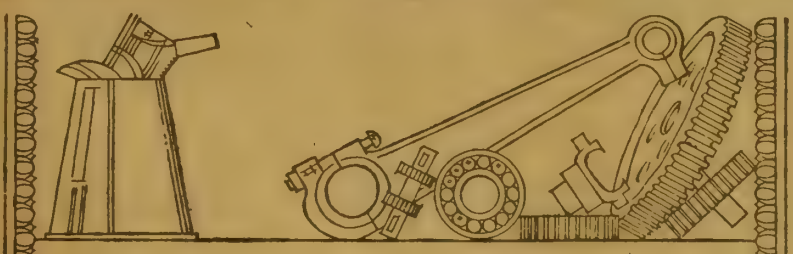
It gives you both portable light and portable power in one plant. There is less vibration to the Cushman, and less adjustments, repairs and service are required.

Every part is get-at-able. Not necessary to tear down the plant to correct trouble. The same engine—the 4 H. P. Cushman—can be used for work all over the farm. Other machinery can be run from the clutch pulley the same time batteries are being charged.

The Cushman Self-Starter permits the Cushman plant to be started, stopped and operated by woman or child. It is the only starter that automatically releases engine compression and turns on and off oil. Engine started from switchboard by pushing a button. Please call and see the Cushman plant.

Write for information.

THOMAS R. BROWNE
Factory Representative
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Now is the time to secure the best-rooted plants that are sure to grow.
Water freely.

Price: 100 Plants, $8.00, postpaid; 1 dozen Plants, $1.25, postpaid; ½ dozen Plants, 75c, postpaid.

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PELTON

PELTON--
The Ultimate Pump

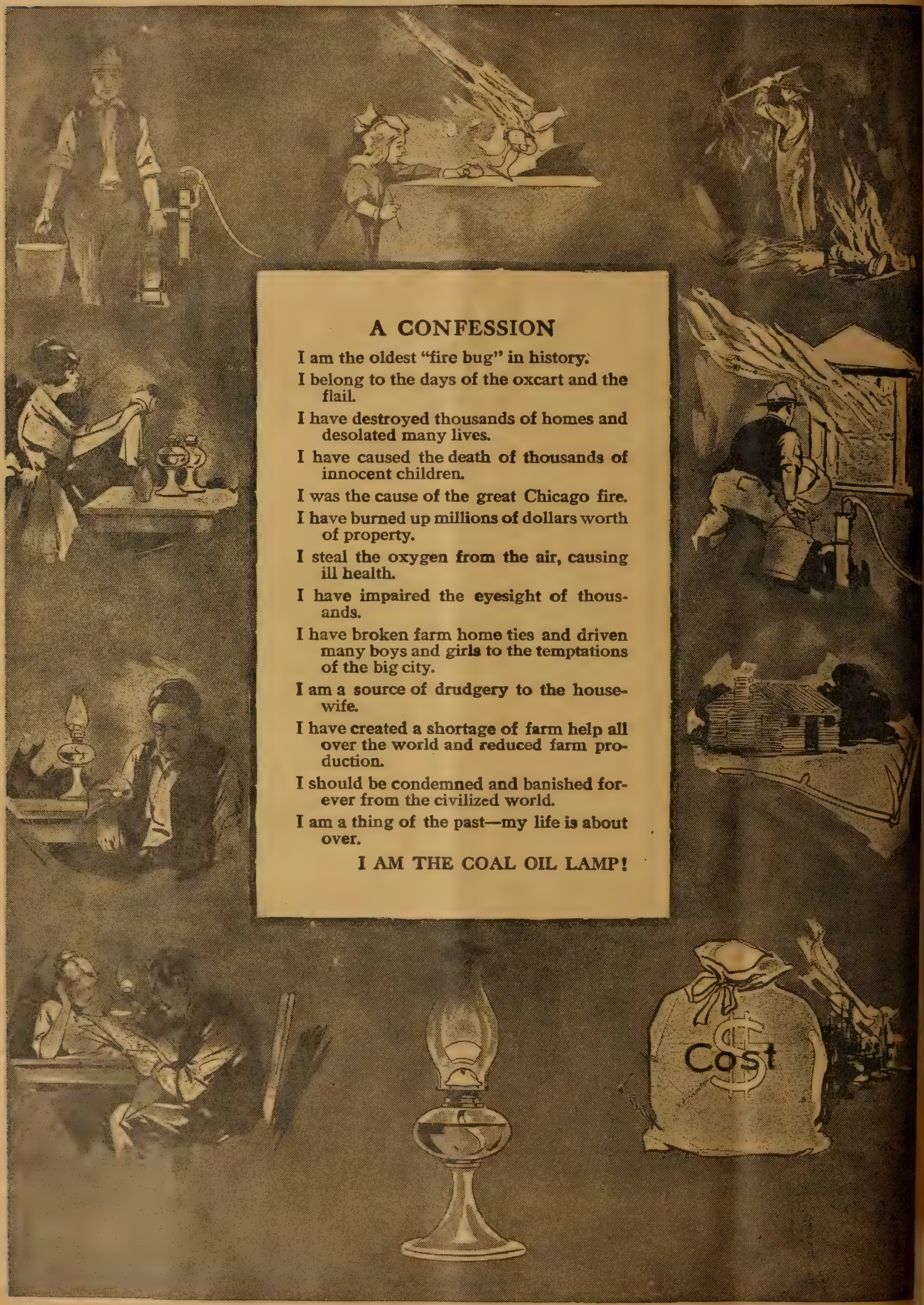
THE PELTON pump is the ultimate pump—the one which must ultimately be used for complete satisfaction.

It is properly designed, carefully made, thoroughly tested and promptly shipped. THE PELTON pump may be used with either an electric motor or gasoline engine and delivers more water per horsepower in every case, more satisfaction per dollar.

See your nearest dealer.

McCormick Saeltzer Co., Redding.
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Sanger Plumbing House, Sanger.
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Ophir Hardware Co., Oroville.
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California Mechanical & Electrical Engineering Co., Sacramento.

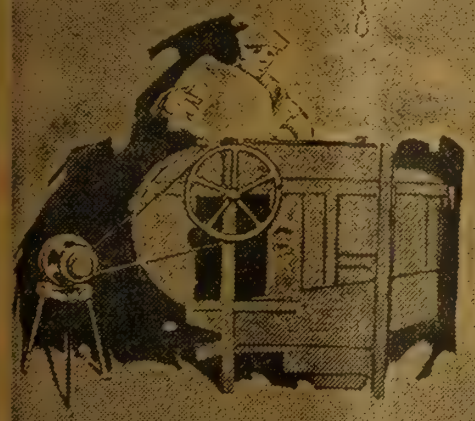
THE PELTON WATER WHEEL COMPANY,
1080 Harrison Street, San Francisco, California.

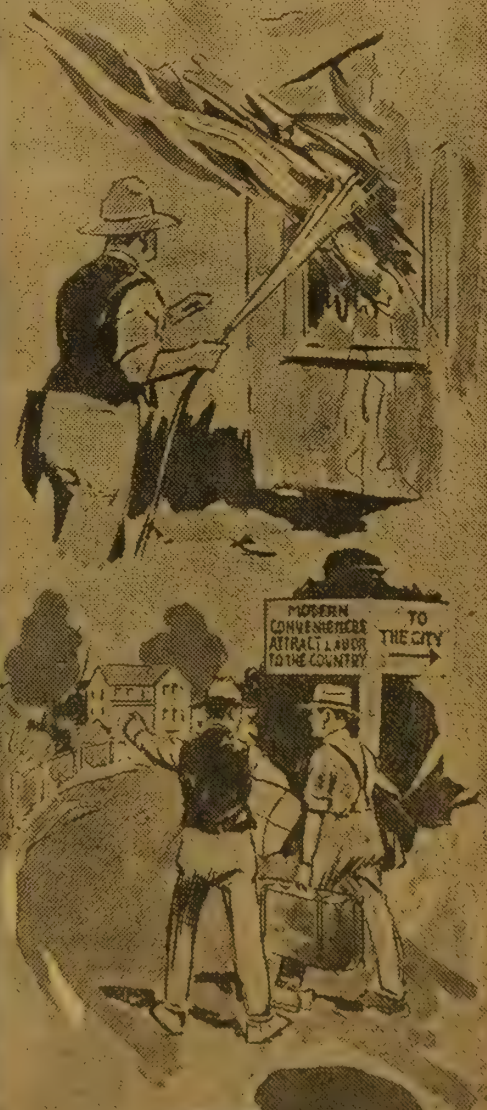

A CONFESSION
I am the oldest "fire bug" in history.
I belong to the days of the oxcart and the flail.
I have destroyed thousands of homes and desolated many lives.
I have caused the death of thousands of innocent children.
I was the cause of the great Chicago fire.
I have burned up millions of dollars worth of property.
I steal the oxygen from the air, causing ill health.
I have impaired the eyesight of thousands.
I have broken farm home ties and driven many boys and girls to the temptations of the big city.
I am a source of drudgery to the housewife.
I have created a shortage of farm help all over the world and reduced farm production.
I should be condemned and banished forever from the civilized world.
I am a thing of the past—my life is about over.
I AM THE COAL OIL LAMP!
Cost

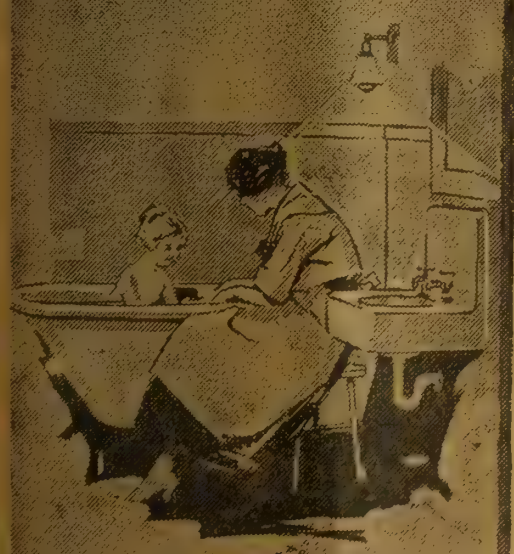














WHO I AM

I am the farmer's friend.

I work for him 365 days a year—24 hours a day.

I bring to the farmer modern city conveniences and sanitation.

I pump the water, and turn the churn.

I lessen the housewife's drudgery.

I make the working-day shorter and do the chores.

I improve living conditions.

I eliminate fire risk.

I give the farmer clean, safe, and better light.

I pay for myself and increase the farmer's earnings.

I am used by 70,000 farmers who cheerfully recommend me.

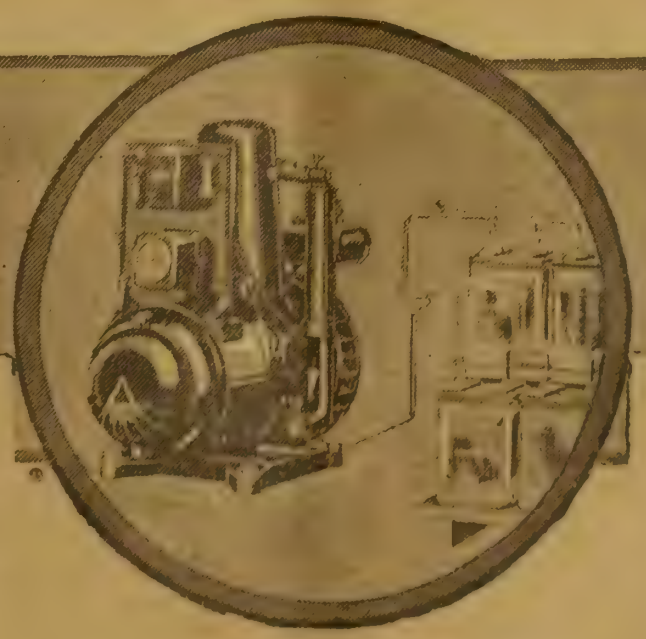
I am daylight's only rival.

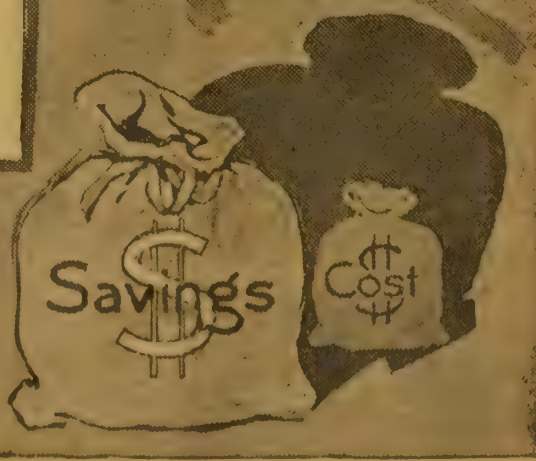
I am the last word in light and power.

I am DELCO-LIGHT

Delco-Light is a complete electric light and power plant for farms and country homes. It is air-cooled and runs on kerosene. Send for our new illustrated Catalog. Just mail the coupon to the nearest distributor or dealer.

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R. P.

Sheep--The Great Little Money-Makers

(Written for Pacific Rural Press by R. H. Whitten.)

How about the future of the sheep industry? We all know that during the war both lamb and wool sold high, and sheep raisers made good money. But will this prosperity keep up? Let's study the situation at close range and see.

It is predicted by good authorities that the sheep industry is being revolutionized at a rapid rate, and that within a few years it will be on a new basis. The Western ranges are decreasing by thousands of acres each year, due to the fact that they are being settled by homesteaders, and of course there is a similar reduction in the number of sheep in these localities. On the other hand, farmers are starting small flocks of sheep on diversified farms so rapidly that they just about make up for the losses on the ranges. There was a slight increase during the war years, due to high prices and patriotic appeals, but even this rate of increase is not in keeping with our increase in population.

The United States is a large importer of wool, producing less than



A flock of sheep should be kept on almost every farm to clean up the waste, and in proportion to the cost of feeding they will prove the best money-makers on the place.

half the amount consumed within its borders. Leaving the abnormal war-time conditions out of consideration, we find that in 1914 we produced 306 million pounds, while the consumption for the same year was over 650 million pounds. The principal sheep countries of the world were not increasing their production before the war, and seemed to have reached their limit.

Prior to the war over 2,800 million pounds of wool was produced annually. Of this, 700 million pounds was coarse or carpet wool. Ninety per cent of the clothing and combing wools came from allied countries and most of the remainder from South America. Before the war the central powers produced 275 million pounds and consumed 700 million. During the war production was curtailed and this meant a great shortage of wool in those countries. Most of the allied countries have consumed more than their usual amount of wool. Since 1914 the sheep population of the world has decreased over 10 million annually, and the wool clip has fallen off nearly 100 million pounds each year.

By reviewing these figures it is apparent that there is not the surplus of wool in the world that there was prior to the war. It will take time to regain that surplus, and it can only be after several years of high-priced clothing and restricted consumption. Only last week the National Clothing Manufacturers' Association announced that next spring ordinary ready-made suits would retail at from $50 to $75, and this level of prices may be expected to continue for some time. So all indications are that wool will bring good prices for years. Not war-time figures, but prices which will return the wool growers a most satisfactory profit.

"Eat More Lamb" Campaign.

A nation-wide campaign to promote the consumption of lamb has been inaugurated by the National Wool Growers' Association, and a former Government food inspector has been employed to demonstrate the dressing and cooking of lamb and lecture on its food value. Sixty per cent of the sheep men's profits come from the sale of lambs, and the future of the industry depends largely upon the increased consumption of lamb. In this country we use only about 5 pounds per person annually, as compared with 17 pounds of pork and 67 pounds of beef. In England 26 pounds of lamb are consumed by each person, and there is no reason why the consumption should not be as great in this country. If our people would only eat lamb or mutton one day a week it would mean more than 20 pounds annually per person, or four times the present consumption. It is reasonable to expect that an "Eat More Lamb" campaign will accomplish such an increase in consumption, and it is safe to predict a good future market for lamb and mutton.

It is the opinion of many sheep men that this is just the beginning of a new era for the sheep industry—that the time is approaching when the American farmer will see the real value in a flock of sheep. Progressive farmers have come to the conclusion that they must have more livestock on their farms and they have found sheep the most profitable animals to raise.

Convert Waste into Profit.

Sheep, in proportion to the value of their products, are raised more economically than any other class of livestock. They get much of their subsistence from rough forage, weeds and grass that would not support other stock. Only about 50 per cent of the plants called weeds are eaten by horses and cattle, while 90 per cent are eaten by sheep. They can utilize materials that otherwise would be wasted; they can be maintained on lost grain in stubble fields, and on voluntary growth too scanty for other stock. They can be kept on the average farm without entailing a reduction of other livestock, without interfering with any other agricultural plans, and without making it necessary to hire more help.

Sheep add materially to the farm revenue, but add almost nothing to the expense. The lambs are marketed when about five months, bringing nowadays from $7 to $10.50 per head. Twins are common, and under farm conditions the increase should be well over 100 per cent.

Average farm sheep shear about 8 pounds of wool annually, which at present is worth 50 cents per pound, although this price probably will drop to about 35 cents after a time, and lambs undoubtedly will sell for less. Still, the gross returns per ewe should be from $11 to $14.50, and as ewes can be purchased within these figures, it may be said that a ewe will return her purchase price the first year. This is gross, but the feed bill will be light, for her lamb will be finished on

Hillcrest Stock Farm

Shorthorn Cattle

Shropshire Sheep

Merino Sheep

RAMS AND BULLS FOR SALE
Single or in Carload Lots

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GRAND CHAMPION RAM P. P. I. E. 1915

The flock includes selections from the best blood of England and America. It has won at all the leading Pacific Coast shows.

Won at the Panama Pacific International Exposition 15 firsts, 9 seconds and 6 championships, including grand champion ram.

Won at the Chicago International, first pen of 5 yearling rams, first ram lamb, second aged ram, fourth, fifth and sixth yearling ram. Second get of sire, fourth pen of 3 ewes, fourth flock.

We have a few choice registered and range rams left for this season.

Write or Call and See Them.

BISHOP BROS.

FRANK RUTHERFORD, Manager

SAN RAMON, Contra Costa Co., Cal.

Of course, for best returns you send Hides, Calfskins, Sheepskins, Wool and Furs to

W. B. SUMNER & CO.

220 Townsend St. San Francisco

its mother's milk and grass, while the ewe will be run on pasture or stubble most of the year, with not more than 3 pounds of alfalfa a day in winter.

Don't Rush Into It.

If you are inexperienced with sheep, start with just a few. You can acquire experience rapidly with ten or a dozen, and by keeping all of the ewe lambs you will soon have a good-sized flock. However, as a rule, it is not advisable to start at all unless you can eventually keep at least 30 ewes, and if possible, 50 or 60, as the larger flock can be cared for with practically no more labor or expense, and consequently will return a greater net profit per head.

Remember, no animal approaches the sheep in converting weeds and waste into wool and mutton. There is a wealth of food and raiment in the wasted grass and weeds of corrals, fields and roadsides.

Coggins Sheep Company of El Centro recently shipped four decks of lambs to Kansas City averaging 68 pounds. They brought $18.50 per cwt. which topped the market by 25 cents. On the following day they sold four carloads at $18.85 topping the market by 10 cents.

CREAM
Separated and Cooled in One Operation



IDEAL SANITARY CREAM COOLER

Quickly cools the cream to within a few degrees of the cooling water used; is easiest to clean; therefore the most efficient cooler of its kind on the market.

Use with any size or make of separator.

Price $10.00

including adjustable stand and cover.

Details upon request.

De Laval Dairy Supply Co.
61 BEALE ST. SAN FRANCISCO

NEW HARNESS

is cheaper than second-hand, dollar for dollar of cost. Come in and see what we have to offer you in **HERCULES HARNESS, Saddles, and Horse Collars.** Our own make and fully guaranteed.

W. DAVIS & SONS
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Catalogue of Harness, Saddlery, Trunks and Traveling Bags sent free on request

BUTTER CAMPAIGN NECESSARY.

California dairymen will have to get together and defend themselves against competition or suffer a reduction in prices that will make their business unprofitable. The manufacturers of butter substitutes are using every possible means to boost the sale of their products and are selling 18 million pounds annually, while the dairymen are doing nothing to counteract the effects of this campaign.

Such was the alarming statement made by Sam H. Greene, secretary of the California Dairy Council, to a gathering of Tulare county dairymen last Saturday. Wisconsin dairymen have raised a fund of $250,000 for advertising, and Iowa dairymen have raised $175,000. Mr. Greene wants at least $50,000 for the California campaign, and as this will require only 20 cents for each cow over 24 months old, no dairyman should fail to do his part.

As a result of the meeting at Tulare a committee, consisting of Messrs. Murphy, Higdon, Thompson and Silvierra of Tulare, Beck of Visalia, H. C. Carr of Porterville, Farm Advisor Connor and Dairy Inspector Peairs, was appointed to revive the old Tulare County Dairymen's Association, and through it co-operate with the Dairy Council.

MILK PRODUCERS' MERGER NOT COMPLETED.

As the appraisements of the creameries to be included in the southern San Joaquin Valley merger of the Milk Producers' Association were not completed at the time of the meeting held at Fresno on the 16th, no definite action was taken and another meeting was called for July 19th. Secretary S. N. Ayres stated that it was not the intention to discontinue the operation of any plants, except for economic reasons, and then only after action by the directors of a plant.

Mr. Ayres told how the Co-operative Creamery at Soledad had been bought by the Association, and outlined plans for a $60,000 plant. Progress was reported for the membership campaign around Los Banos.

TULARE DUROC SALE.

The first event in the new sales pavilion at Tulare promises to be a hummer. It will be a mid-summer sale of registered Durocs, to be held July 16 under the auspices of the hustling Tulare County Duroc-Jersey Breeders' Association. A selection committee has visited the different herds in the county and picked 60 of the top sows and gilts, bred for fall litters. They are strong in the blood of Golden Models, Defenders, Crimson Wonders, Critics and Orion Cherry Kings, and are bred to some of the greatest boars on the coast.

This will be a great opportunity for the breeder, the beginner and the farmer alike, as there will be offerings suitable for show animals, foundation herds and profitable pork producers. Let's go.

The Imperial Wool Growers' Association is a live body which has undertaken to educate the public to the value of lamb and mutton. It also has gone into the marketing end. The association is made up of the small farmers who have flocks of not more than 200 or 300 head. It includes over 140,000 head of sheep. Lambs are being shipped by the association direct to Kansas City, where they are bringing from $1.50 to $2.50 salary return to the raiser.

A sale of Herefords will be held at the San Francisco Livestock Show in November under the auspices of the Pacific Coast Hereford Breeders' Association. The number of animals will be limited to 40 head, to be chosen by a selection committee so as to insure topnotch offerings.

Alfred Kuhn of Healeyville has a large flock of Rambouillets that sheared an average of 10.96 pounds of wool this year, for which he received 50c per pound. The ewes lambed heavily and the lambs actually raised made an average of 101 per cent.



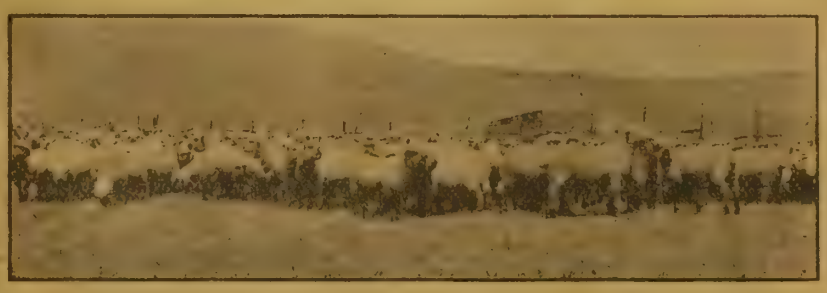
BULLARD RAMBOUILLETS

Flock founded 48 years ago by the late Frank Bullard. Years of selection have produced the large smooth-bodied heavy-shearing kind that give the best results either under intensive conditions or on the range.

Home of the $3,000.00 Butterfield ram, purchased last year at the Salt Lake sale.

Yearling rams of supreme quality and great size for sale.

BULLARD BROS., WOODLAND, CALIFORNIA



1000 YEARLING SHROPSHIRE RAMS.

The big strong active kind. Covered from the "nose to the toes" with a long stapled medium wool. None better bred and grown anywhere.

Only the very best registered Shropshire rams have been used on my flock of purebred ewes, the foundation of which was a flock of registered Shropshires.

Come and see these rams or write for further particulars.

C. E. BARNHART, Phone No. 251-F-2 SUISUN, CALIF.



RAMBOUILLETS

Big, smooth-bodied, shearing heavy fleeces of long-stapled white fine wool. The kind of wool the mills are paying long prices for now. Registered Rambouillet rams only have always been used in the flock ever since the original flock of registered Rambouillet ewes were procured. Choice yearling rams for sale. Come and see them and you will be convinced they are what you want.

E. C. SPEAR ESTATE

Ranch 1 mile east St. Helena, California

Purebred
Shropshire Rams
FOR SALE

These rams are the result of continuous breeding of purebred ewes (formerly registered) to registered rams from the best breeders in the United States. Lamb bucks will be ready for Sept. 1st service. Immediate delivery in singles or carload lots.

For further information write, or call upon

P. O. Box 21 **J. R. BLOOM** DIXON, CAL.



AUCTIONS

A postcard with your name and address will put your name on my mailing list for announcements of sales worth attending.

ORD L. LEACHMAN, THE AUCTIONEER
1001 Fifth St. Sacramento.

Starting Right with Sheep

(Written for Pacific Rural Press.)

As early lambs are desired in California, ewes are bred the latter part of July or in August, and this is a good time to buy a bunch. They probably will be thin after nursing their lambs and can be bought at a comparatively low figure, yet they will be in just right condition for flushing, which will bring more and better lambs. Flushing means to have the ewes gaining in flesh a few weeks previous to and during the mating season, generally by putting them on succulent pasture. It is sure to increase the percentage of twin lambs.

The inexperienced farmer should begin with good grade ewes and a registered ram. Have all of the ewes of one breed, for not only will they look better, but their fleeces will be more alike and their lambs will be more uniform than from a mixed bunch.

The breed you choose is not so important as to have good specimens of the breed decided upon. The Merinos are the sheep of the range country. They are very hardy, and both Rambouillet and Delaine Merinos will breed early. However, while they are good shearers, they are inferior mutton sheep, and an infusion of mutton blood makes the ewe a better and more prolific mother. She will have larger, stronger and faster-growing lambs, will suckle them better, and have them ready for market earlier. For a mutton ram to use on Merino ewes, a Shropshire or a Hampshire is generally selected. Corriedales are quite popular and California has some excellent specimens of the breed. She also has some very fine Dorsets and a few Romneys.

The head of a good mutton ram is short and broad, the nostrils large, and the eyes clear and bold. He should have a short, thick neck; a wide, deep chest; broad, level shoulders; legs straight, short and set well apart; heart girth full. A broad, level back, with well-sprung ribs and a thick, wide loin are very essential. The fleece should be dense and good in length of staple, lustre and crimp. He should have a brisk movement, denoting vim and vigor. Fair size is desirable, but it is rarely that the largest ram proves the best breeder. The best results are generally obtained from animals of medium size.

Discard ewes with small bodies, narrow chests and small heart girths; also those with crooked or club feet that will catch and hold filth between the toes. Sheep that have long, thin, "goose" necks usually have weak constitutions and are poor feeders. Select upheaded, vigorous ewes, with straight, broad backs and well sprung ribs, roomy bodies and plump hindquarters. Don't look for exceptionally heavy fleeces, as a moderately heavy fleece means a more vigorous breeder.

The price of young ewes is pretty high at present, and often you can do well by buying broken-mouthed ewes if you have good feed. These are ewes that have lost some of their teeth as the result of age and cannot pick up a living on the range, yet would be good for two or three more lambs on the farm, after which they could be fattened on alfalfa pasture and sold to the butcher. These older ewes produce more twins and triplets than those that have never lambed before, but be sure that the udders are free from lumps that would prevents them from being good milkers; also that the ends of the teats have not been clipped off in shearing.

Ewes come in heat at intervals of from 15 to 19 days and remain in heat from one to three days. The period of gestation is 145 days—not quite 5 months. It is better to use a ram over a year old, but a lamb may be used on a small flock of 10 or so. A yearling may serve from 15 to 25, and a mature ram 50 to 75. In California it is customary to keep the ram with the flock about two months.

Calla Grove Farm

Manteca, California

Breeders of

HAMPSHIRE SHEEP

Sired by "Walnut Hall" rams. Ewes carrying blood lines of Stevens, Waters, Fowler and Dean flocks. The breed noted for big early lambs and lots of wool.

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ELLENWOOD & RAMSAY

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CORRIEDALE SHEEP

Sole Agents for Ellenwood's Iron for Docking Lambs

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SHROPSHIRES

43 Yearling Shropshire Bucks for sale.

HARRY L. HUSTON

Winters, California

Range Raised

SHROPSHIRE RAM LAMBS

From Imported Registered Ram

Prices very reasonable.

G. W. WATSON, Napa Junction, Cal.

TAMWORTHS

(The Bacon Hog)

Largest Herd in the State

DUROC-JERSEYS

Mature Stock and Weanlings of both sexes. Sure to please.

SWINELAND FARM

W. O. Pearson, Prop. Woodland, Cal.



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MOLASSES

will increase pork production approximately five-tenths pounds daily over a barley and tankage feed, yet it sells for less than half the price. Do you know of any other feed at any price that will do this?

Why not get all the profits out of your hogs?

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KIMBLE RAMBOUILLETS



Imported Stock from the first blood lines in America.

They are large and smooth with heavy fleece of fine long staple wool. They will make money on any farm.

RAMS, YEARLINGS AND OLDER BREEDING EWES

Any Number. Prices Attractive.

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Importers and Breeders

Shropshires

Rambouillets

AND

American Merinos

(Also Red Polled Cattle)



WE HAVE FOR SALE THIS SEASON:

350 PUREBRED SHROPSHIRE RAMS, yearlings and two-year-olds. They are sired by sons of the famous Senator Bibby one of the best Shropshires ever imported into the United States. He is now nine years of age and is still hale and hearty.

500 AMERICAN MERINOS AND RAMBOUILLET RAMS. Our Rambouillets are all from prize-winning rams at the P. P. I. E. Strong, hardy, range-raised stock. We have a fine lot of yearling American Merinos of our own breed.

400 PUREBRED SHROPSHIRE AND MERINO EWES, 3 and 4 years old.

All stock sold singly or in carload lots.

WRITE OR CALL Take electric cars at either Petaluma or Santa Rosa for Live Oak Station.

Don't Let Pigs See Their Birthdays

(Written for Pacific Rural Press.)

A pig should never see his own birthday. In other words, he should be fed so that he will go to market before he becomes a year old.

It has been a much-discussed question as to whether it is best to bring pigs along on alfalfa alone and only give them grain in finishing them off, or to hustle them along by feeding them grain constantly after weaning. It is now pretty well settled that the sooner the pig makes a hog of himself the more profitable it will be for his owner.

Although pasture reduces the amount of grain needed to bring pigs to a profitable weight and prepare them for market, it does not furnish a complete food. A sufficient quantity of roughage cannot be consumed and digested to supply all the nutrients required for rapid growth. The forage, especially from leguminous pastures such as alfalfa, furnished a cheap source of protein, supplies ash for bone making, adds bulk to the ration, acts as a mild laxative and tonic, and keeps the hog's system in condition to utilize profitably the concentrated feeds.. But without the concentrates growth will be too slow. Pigs that are fed grain while on pasture will gain a pound or more a day from weaning to a weight of 200 to 250 pounds, while those getting little or no grain will gain but one-half to three-quarters of a pound per day.

The use of grain will bring pigs to a marketable weight by fall. A grain ration, then, reduces the time of feeding, the labor, the risk from disease and the interest on the investment. Also it produces a better carcass, with finer and more palatable meat and fat, thus commanding a higher market price per pound. Light, steady grain feeding on pasture gives better results than heavier feeding during a shorter finishing period.

COW TESTING SHOWS PAIL-FILLERS.

Excellent records are being made in the different California cow-testing associations, according to the figures given out by Prof. E. C. Voorhies of the University Farm at Davis.

Humboldt county, of course, has long been known as a wonderful dairy district, and much of its prosperity is due to the Ferndale Cow-testing Association, which was the first one organized in the State. Its success led to the recent formation of an association at Arcata representing 1,760 cows. There are 122 cows during the last month that produced over 62 pounds of fat, the highest record being 128.9 pounds.

In the Contra Costa Association, organized in April, there are 835 cows, and 12 made over 50 pounds in May, with a high mark of 73.8 pounds.

In the Riverside-San Bernardino Association there are 960 cows, of which 13 produced over 50 pounds, and 75 produced better than 44 pounds. The best monthly record was 71 pounds.

The Klamath River Association is in a remote part of the State, yet excellent work is being done, and 38 cows out of 797 produced over 50 pounds, with a high mark of 63.18 pounds.

The Sacramento-Yolo Association, with 1,300 cows, had 172 produce over 45 pounds, and the best cow produced 85.8 pounds. This association has grown so large that it has become necessary to form a second unit and employ another tester.



UNEEDA QUEEN MODEL,
Grand Champion State Fair, 1918.

UNEEDA GLENN COUNTY HERD OF
Duroc-Jersey Hogs
KEY HERD OF PACIFIC COAST
Won at Sacramento:
Grand Champion Sow, Senior Champion Sow, Junior Champion Boar, seven Firsts, 23 other prizes.
PIGS BY NOTED SIRES
High Orion, the world's record-breaking sire, Great Wonder, Grand Champion Iowa; King Orion Cherry, First Prize Indiana and Ohio, and other best boars of the breed. Get some of their pigs. Few bred sows and gilts left.
H. P. SLOCUM & SON
WILLOWS, CAL.

DUROC JERSEY HOGS ARE PROFITABLE
REGISTERED DUROC-JERSEYS
We have for sale right now, big, heavy-boned, high-up, four-months-old boars. Also some A-1 weanling pigs, either sex. Also some young gilts. Our herd boar has the best blood of the breed and was a prize-winner at the State Fair last year.
Write for prices.
ROUTE 4, BOX 735 THE GARDINER RANCH, SACRAMENTO, CAL.

THE JOHNSON HERD OF DUROCS
We have for sale only a few yearling sows and tried sows bred for fall litters, bred fall gilts, two yearling boars and weanling pigs from
PRIZE WINNING SOWS
F. M. JOHNSON, Napa, Calif.

Chester White Boars
Here is your opportunity to secure Fall boars ready for service, and sure to put money-making qualities into your herd. Sired by the $1,000 Highlander and the pick of the season's crop. Prices reasonable.
OAK KNOLL FARM
LAKEPORT, CAL. SAN FRANCISCO OFFICE, 601 Balboa Bldg.

15 CRACKING GOOD BRED GILTS
For the coming Duroc-Jersey bred sow sale to be held at Tulare, July 16, next. These gilts are bred to two supremely good grandsons of Orion Cherry King. Watch for them at the sale.
Some corking good weanling boars for private sale.
Write for breeding and prices.
ALLEN THOMPSON, Tulare, Cal.



DUROC JERSEY BOARS
Rancho Del Sur offers 15 good fall boars sired by Orion's King Gano and California Orion Cherry King. I guarantee these boars to please you. Those bought on mail order may be returned if not satisfactory.
DONALD H. GRAHAM
P. O. Box 177, Lancaster, Cal.

ROC STEIN RANCH DUROCS
Crimson Monarch, Gold Model and Orion Cherry King breeding. Weaned pigs and bred gilts and one service boar for sale. Write and get our prices before you buy.
W. M. Way & Son
Rt. 1, Box 320, MODESTO, CAL.

MONTELENA HERD
OF LARGE
YORKSHIRES



LAKE PARK KING 25211
Grand Champion Boar—California State Fair, 1917.

Due to the ever increasing popularity of the breed, Yorkshire breeders are almost entirely sold out, and it would behoove the prospective purchaser to place his order soon.
We are only able to offer at the present time a very exceptional lot of fall pigs, some sired by "Lake Park King," others by "Montelena Prince 2d." They are out of such sows as "Deer Creek Nena 8th," present Grand Champion sow of the State, who has averaged a fraction over 17 pigs per litter for nine consecutive litters; "Riverina Nena 9th," one of her best daughters, and "Lake Park Lady Frost 291st," the top sow at the Thomas H. Canfield sale last year.

We solicit your correspondence.

A. L. TUBBS CO.
CALISTOGA . CALIFORNIA

SPECIAL! SPECIAL!
Wednesday, July 16, 1919, Tulare, California
Announcement Extraordinary!
Mid-Summer Public Sale of
Purebred Registered Duroc-Jersey Swine
by the
Tulare County Duroc-Jersey Breeders' Association
Selected Sows and Gilts bred for early fall farrow.
Arrange NOW to attend and be our guest. Special Features—Lunch—Drinks—Free.
For Catalog, address R. C. STURGEON, Sec'y.
COL. GEO. W. BELL, Auctioneer. ALLEN THOMPSON, Pres.
Further particulars next week's paper.

Grand Champion Herd of Hampshires
FOR SALE.
Brood Sows, litters at foot. Sows bred for fall litters. Young Boars and Gilts
Best families.
Finest individuality and clean-cut markings.
Call or write
Address F.V. GORDON or F. A. LANGDON, Llano Vista Ranch, Perris, Cal.



IT'S A SOURCE OF SATISFACTION
To Know Where to Find the Right Kind of Hogs
KING JONES OVER
a son of the Great King Jones. Dam by Long King out of a Big Bob sow. Weighs 600 lbs. at 14 mos. Stretchy deep bodied, well hammed and right up on his toes.
He heads the best herd of strictly big type sows in California.
Some extra good fall boars for sale. Cholera Immune
McCARTY & STARKWEATHER
P. O. Box 2200 San Francisco
Ranch, Paradise Road, Modesto, California



Livestock and Dairy Notes

Livestock breeders all over the state are invited to send on postal cards, notes regarding their sales, State and County Fair intentions, new stock, etc.

The Dairy.

R. C. Sturgeon of Tulare recently sold a young Holstein bull sired by a son of the 41 pound Bridgford cow, Adirondac Wietske Dairymaid, to C. H. Annis, Shafter.

Norma Korndyke Cornucopia in the Victory Holstein herd, owned by H. E. Spires, Caruthers, has just completed a 7-day test at 4 years and 8 days, making 27.33 pounds butter from 665 pounds milk.

Gotshall & Magruder of Ripon have increased their Holstein herd to nearly 100 females by the purchases of the Kenneth Abbott herd, consisting of 22 cows, and the W. I. Clapp herd at Manteca, consisting of 14 cows.

W. J. Higdon of the Tulare Holstein Farm, Tulare, has just received $125.75 in prize money from the Holstein-Friesian Association for the remarkable records made on his farm during 1918. He expects to make even a better showing this year.

A committee has arrived in this country from France to purchase several thousand head of dairy cattle. It is stated that 3,000 cows and heifers will be purchased the first month and the number will be increased if the first purchases proves satisfactory.

A. A. Jenkins of Tulare is finding the demand for registered Jerseys heavy and reports the following recent sales: Two bulls to Jos. Chively, McFarland; bull to W. W. Caldwell, Tulare, a bull and a Register of Merit heifer to Bertha and Mrs. H. H. Watts of Lindsay.

Ila of Venadera, a 2-year-old Jersey in the herd of Guy H. Miller, Modesto, has made a yearly record of 319 pounds of fat while running with the herd and being milked only twice a day. Mr. Miller reports the sale of a Jersey bull to Miss Rose E. Crook of the Hawaiian Islands.

Dr. H. W. Hand of Orland has recently added several noted individuals to his Keep On Jersey herd. The herd sire is Oxford Daisy's Keep On, a senior 2-year-old grandson of Champion Flying Fox, out of Oxford Daisy with a record of 613 pounds butterfat as a 3-year-old. All females in this herd that are old enough have Register of Merit records.

Tilly Alcartra 2nd, a 2-year-old daughter of Tilly Alcartra, who was consigned by A. W. Morris & Sons to the Moyer National Holstein Sale at Philadelphia, sold for $11,200. As was reported last week, the young bull, Sir Aaggie Meade De Kol, brought $11,000. Two granddaughters of Tilly Alcartra sold for $2,150 and $1,654 respectively.

Dean Beeman, Holstein breeder of Woodland, is proud of his junior 2-year-old heifer Johanna Hengerveld Capone, who holds the thirteenth highest record in the United States for heifers of her class made at 240 days after calving. This record was 11.30 pounds butter in 7 days and was actually made at 341 days after freshening and only 14 days before dropping a calf. Mr. Beeman's herd is noted for its large number of persistent milkers.

Beef Cattle.

J. H. Ware, Live Oak, breeder of registered Aberdeen-Angus cattle, reports sales of a yearling bull to J. M. Jolly, Paraiso Springs, and a bull calf to G. B. Pearce, Aetna Springs.

Aberdeen-Angus sales records were smashed at Manning, Iowa, June 3, when Chas. Escher, Jr., and Escher & Ryan sold 71 head for an average of $2,200. The bull Enlate topped the sale at $36,000, and the heifer Blackcap McHenry 151st brought $10,000.

Chas. L. Weaver, Tulare, has purchased North Star, said by Thos. Harrison to be the best bred dual-purpose Shorthorn bull in the states. He is out of Blossom 23rd, imported by J. J. Hill at a purchase price of $3,000, and by Brandsby Coming Star, a consistent winner at all the leading shows in England and purchased for $4,000 to come to America. Mr. Weaver intends to show a small herd at the fairs this fall.

Ned T. Hooker, the live wire superintendent of the beef cattle department of the Glenn County Fair to be held September 22-27 at Orland, is hustling for a great exhibit in his department. He says the prospects were never so good for a great fair and invites all breeders of beef cattle to come and make an exhibit. Breeders expecting to hold sales after the fair would find it good advertising to make an exhibit, as this is a growing community rapidly forging to the front as a livestock center.

Swine and Swinemen.

R. C. Sturgeon of Tulare has sold a young Duroc-Jersey boar to the Green Cattle Company, Tulare.

E. S. Myers, the Poland-China breeder of Riverdale, has sold to Fiori Bros., of Duncan Mills, the fine young boar Myers' Boy. This youngster is a very growthy fellow and at 3 months old he tipped the beam at 100 pounds.

Harvey M. Berglund, the Duroc-Jersey breeder of Dixon, has sold 65 breeding hogs of all ages during the past year, and commenced another year by booking orders for a boar pig to E. A. Peabody, Vacaville; a boar pig to Mrs. Rose Spangler, Dixon, and a yearling herd boar to J. A. Barker, Dixon.

Allen Thompson, Duroc breeder of Tulare, reports business good and recent sales as follows: Two boars to Pleasant Valley Farm, 2 bred gilts to Robert Gilbert, Bakersfield; a boar to Post-Card Ranch, Corcoran; 2 weanling sow pigs to John Kincaid, Visalia, and a young gilt to H. C. Carr, Porterville, for the Pig Club.

The officers of the newly formed San Joaquin Poland-China Breeders' Association are J. F. Lehman, president; Eugene Miner, vice-president; Sherwood Beckman, secretary and treasurer. These and Frank Langhorst, John Hagel and W. A. Young make up the Board of Directors. The association plans on doing some big promotion work.

Anchorage Farm, Orland, has imported a new boar from the well-known herd of E. J. Barker, Thornton, Ind. His name is Champion's Value and he is by Duke's Champion by Baron Duke 170th. This boar was second prize senior yearling at the 1918 Indiana State Fair—the only time ever shown. He is a stylish fellow, is well proportioned, has good full hams, strong back and lots of a brood quality.

J. Bidegaray, Fresno, has sold to the Whitney Estate of Roseville 150 Rambouillet rams which will be mated with the Whitney Estate flock this season. This concern carries about 12,000 ewes.

ROSEDALE FARMS
Hampshire Sheep
WE OFFER FOR THIS SEASON:
25 Head of Ram Lambs
50 Head of Yearling Ewes
100 Head of Ewe Lambs
One 3-year-old Butterfield Ram.
Apply to or address
D. E. KELLIHER, EUGENE, CAL.

ABSORBINE STOPS LAMENESS
from a Bone Spavin, Ring Bone, Splint, Curb, Side Bone, or similar troubles and gets horse going sound. It acts mildly but quickly and good results are lasting. Does not blister or remove the hair and horse can be worked. Page 17 in pamphlet with each bottle tells how. $2.50 a bottle delivered. Horse Book 9 R free.
ABSORBINE, JR., the antiseptic liniment for mankind, reduces Painful Swellings, Enlarged Glands, Wens, Bruises, Varicose Veins; heals Sores. Allays Pain. Will tell you more if you write. $1.25 a bottle at dealers or delivered. Liberal trial bottle for 10c stamps.
W. F. YOUNG, Inc. 86 Temple St., Springfield, Mass.

The World's Greatest Shorthorn Families
ARE STRONGLY REPRESENTED IN
CARRUTHERS FARMS
SECOND PUBLIC SALE
45 – Scotch Shorthorns – 45
State Fair Grounds, Sacramento, Calif.
Thursday, July 10, 1919
In this sale Mr. W. M. Carruthers, owner of Carruthers Farms, Live Oak, Calif., will make an offering that means much to Shorthorn development and progress on the Pacific Coast, as it will make available to other breeders a class of cattle never before offered in equal number in a single western sale ring.
Individual features will be found in abundance in this sale, while several outstanding groups will also claim the attention of discriminating buyers. A feature of prime attractiveness will be the splendid young daughters of the famous bulls, Count Glory and Hallwood Villager, bred at Carruthers Farms and out of Scotch dams of royal breeding.
HALLWOOD VILLAGER will be a star attraction in the offering, and by every standard of Shorthorn quality and value he should make a fortune for the breeder fortunate enough to buy him.
SOUND INVESTMENT in registered Shorthorns such as will be found in this sale is one of the most attractive in California today. Future market for such cattle is practically unlimited.
EVERYTHING TUBERCULIN TESTED AND GUARANTEED TO BE BREEDERS.
Every young animal permanently immunized against blackleg by Purity Blackleg Aggressin made by the Kansas process.
NOTE—The cattle are now practically all on the sale grounds and interested parties are cordially invited to call and see them.
WRITE FOR CATALOG NOW. READY TO MAIL ON JUNE 24.
Auctioneers— REPPERT MILNE
Management CALIFORNIA BREEDERS SALES AND PEDIGREE CO.
C. L. Hughes, Sales Manager, Sacramento, Calif.

Herefords
LEADING HERD OF THE STATE
My stock is the result of nearly 40 years of careful breeding and selection. Have for sale a carload of registered bulls and a carload of heifers—1917 calves, grandsons and granddaughters of Beau Donald 31 No. 109885 and Mr. Perfection No. 215575.
They will go quickly. Write or call at once.
Wm. Bemmerly Woodland, Cal.

ORMONDALE SHORTHORNS
All are heavy boned, and of Scotch and Scotch-topped breeding.
Suited for either the range grower or breeder.
EVERY ANIMAL POSITIVELY GUARANTEED.
Whether you buy or not, visit our ranch, 7 miles from Palo Alto on Woodside Road.
We welcome inspection. Prices and pedigrees on application.
SHORTHORN CATTLE
DUROC-JERSEY SWINE
ORMONDALE CO.
REDWOOD CITY, CAL. R. D. No. 1

BRIGHTON FARM SHORTHORNS
One three-year-old bull bred by H. R. Clay.
Two outstanding yearling bulls sired by Sir Type, a son of Cumberland Type.
A few yearling heifers of same breeding.
Also registered Berkshires of both sexes of best breeding.
H. L. & E. H. MURPHY, Perkins, Sacramento Co., Cal.

ASK YOUR DEALER FOR
El Dorado Cocoanut Oil Cake
for Milk Cows and Chickens and Young Pigs and Hogs. Cheapest food in the market today. If your dealer doesn't carry it, address
EL DORADO OIL WORKS
433 California Street, San Francisco.

Calf Profits
Are you getting them? Calf profits mean more to you now than ever before.
Blatchford's Calf Meal
has been known since the year 1800 as the complete milk substitute. Costs less than half as much as milk—prevents scouring—promotes early maturity. Sold by dealers or direct from the makers.
Write for New Data See actual figures showing you how to increase your calf profits.
COULSON CO. - - - Petaluma, Cal.

CALVES
The ONLY Calf Meal using pure dry milk solids as a base; feed
Red Horn Calf Meal
Wean calves from milk in four weeks. Send for free literature.
GLOBE MILLS, Los Angeles

J. H. Ware of Eldersly Farms, Live Oak, sold some pigs last winter to the Shasta county pig clubs and at the recent Farm Bureau picnic the clubs made an exhibit and the first and second prize pigs were those sold by Mr. Ware. The owners of these two pigs report daily gains of 2 pounds and 1.6 pounds respectively. Mr. Ware thinks it a pretty good demonstration of the excellent feeding qualities of Poland-Chinas at Eldersly Farms.

Mark L. Requa of Oakland has resigned his war position as general director of the oil division of the United States Fuel Administration to take up private work. Mr. Requa is prominently identified with the California livestock industry.

LIVESTOCK DIRECTORY

Rate in this directory 3c. per word each issue.

SWINE.

Berkshires.

CASTLEVIEW

GIANT TYPE BERKSHIRES

We are booking orders for spring pigs from Grand Champion Sows and sired by Mayfield Boockwood, sire of Champion Barrow at 1919 Western Berkshire Congress.

CASTLEVIEW RANCH, SANTA ROSA.

ANCHORAGE FARM

MONEY-MAKING BERKSHIRES—The prolific, easy-feeding kind that make the highest priced pork from the lowest priced feed. They will increase your profits. Prices reasonable; satisfaction guaranteed. Write for free booklet, describing our world's reserve champion STAR LEADER. We are now making a special offering of classy boar pigs.

Anchorage Farm, Orland, Calif.

GRAPEWILD FARM BERKSHIRE-GUERNseys—Spring pigs sired by Big Leader and Grapewild Farm Leader. A. B. Humphrey, Prop., Escalon, Calif.

TWO SOWS AND A BOAR—$100 the trio. Two sow pigs from ten raised sired by Baron Duke 201st, 780-pound, $1100 Grand National Champion, from Rival B Princess, a prize-winner at San Francisco, Sacramento, Oregon, and Omaha National Swine Show, and a boar sired by the Grand Laurel Champion boar from Symboleer Belle, and of Superbus blood lines. A boar from a litter of ten raised, big, long, typey, stretchy pigs. Sandercock Land Co., in charge of Natomas Land Sales, 23 Montgomery Street, San Francisco, Cal.

BERKSHIRE BOAR PIGS—From large litters. Order one if you want the best. Satisfaction guaranteed. R. J. Merrill, Morgan Hill, California.

BERKSHIRES—Sired by Star Leader, the $1500 boar. Kounias Registered Stock Farm, Modesto, Calif.

FOR REAL GOOD BERKSHIRES write Frank B. Anderson, B. 724W., Sacramento, Cal.

CARRUTHERS FARMS BERKSHIRES — Cholera immune. Live Oak, California.

REGISTERED BERKSHIRES—Write R. D. Hume, Dos Palos, California.

BERKSHIRES—Fair Oaks Ranch, Willits, California.

Poland-Chinas.

PROFITABLE POLAND-CHINAS

We offer at private sale 40 splendid young sows, 10 choice bred gilts and 5 carefully chosen boars. They are representative selections from the herds of leading California breeders, including M. Bassett, W. H. Browning, W. A. Young and Hewitt & Hewitt, and such Eastern breeders as Henry Fosenmeyer and T. F. Walker. They carry the blood of such noted sires as President, J. O. Orange, I. B A. Wonder and Chieftain

These registered hogs are sold for no fault. We are simply discontinuing this breed, and offer what we bought for the foundation of one of the finest herds in the West. Prices reasonable. Write at once.

AMERICAN HOG COMPANY

922 Crocker Bldg., San Francisco

MARCH BOAR PIGS—Out of sows selected from the best herds of the corn belt. One line-bred Big Bob pig sired by Bridges' Bob Wonder, Missouri, grand champion, and out of my great sow, Bridges' Bobby. Two sired by the noted Boulder Buster and out of the splendid sow Bob's Giantess. These are real tops and guaranteed to please. H. C. Shinn, R. F. D. 1, Tulare.

OXBONE HERD offers March boars for sale from King's Big Bone Leader, grand champion at State Fair, 1918. Write F. E. Fay, Tipton, California.

BIG-BONED POLAND-CHINAS—From Eastern prize-winners. Sold out of boars; a few choice October gilts for sale. D. R. Forney, Route G, Fresno, California.

J. H. COOK

LARGE TYPE POLAND-CHINAS — Fall boars by a great son of Caldwell's Big Bob; also spring boars by the Grand Champion King's Big Bone Leader and other noted sires. Satisfaction guaranteed.

PARADISE, CALIFORNIA

EL PROFITO—Our great herd boar, will put profit-making qualities into your herd. His offspring have size, stretch, bone, good backs and feet, and easy feeding qualities. To make the right start with big-type Poland Chinas, get one of his boar pigs. Prices right. Correspondence cheerfully answered Viola L. Renwick, Santa Barbara, California.

SOW BARGAINS—We are offering some exceptionally nice tried sows, bred and open gilts, at attractive prices. They are all sired by the undefeated and world's grand champion Superba and out of big type sows, which cost me $200 and over. Investigate before buying elsewhere. Rough's Greenfields, Arlington Station, Riverside, California.

MAKE BIG MONEY with Cloverdale Farm big-type Poland-Chinas—the prolific, fast-growing, easy-feeding, money-making kind. We purchased the famous Whitten Ranch herd including great boar Jumbo Model. High-class stock for sale—farmers' prices. Write us. Cloverdale Farm, R. F. D. 1, Escondido, Cal.

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HAVE FOR SALE fifty head of fine yearling Shropshire rams. Also 25 head of high-grade Rambouillet rams. These are big fine wooled rams. E. D. Dudley, Dixon, Calif.

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BISHOP BROS., SAN RAMON CALIF.—Breeders and importers of Shropshires.

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MISCELLANEOUS.

BUTTE CITY RANCH—Shorthorns, Shropshires, Berkshires and Shetland ponies. Write for prices and descriptions before buying. Butte City Ranch, Box P, Butte City, Glenn county, Cal. W. P. Dwyer and W. S. Guilford, owners. Special Notice: Second Farm Sale, Shorthorns; Shropshires; Berkshires; Ponies. August 2, 1919.

Fitting and Feeding for Test Work

[Mr. Fasola is herdsman in charge of test work at Bridgford Company's ranch, where during the past season he has done wonderful work, giving the Holsteins State, Coast and even world records. He has written this article in response to numerous inquiries regarding his methods.]

(Written for Pacific Rural Press by A. J. Fasola, Knightsen, Cal.)

Without good cows to start with it is impossible to make good records. A cow should have a strong constitution and great capacity, and should be free from disease. Study the constitution and capacity of the cow and plan to fed her so as to get the maximum of production without injuring her.

This proper selection of feeds is most important, and the feeder must have the ability to mix a properly balanced ration. This means one which has the proper proportion of protein to carbohydrates so that there is no waste in the feed given. Experience has taught that for every pound of protein the cow is fed she should receive from five to six pounds of carbohydrates, including fat. The proper combination will vary with the individual cow—with the quantity and quality of milk she gives, and her condition. My experience is that when a cow is of the beefy type she requires less carbohydrates and more protein in proportion, while one of the opposite tendency requires more carbohydrates. As milk contains a relatively large amount of protein, fat and ash, the ration should carry a liberal supply of these nutriments so that the cow will not have to draw from her own body to make up the deficit.

No rules can be laid down for feeding test cows, and the best ration is only a guide and not applicable to all cows. The feeder should ascertain the amount of nutriment necessary for the cows' highest production and he must take palatability into consideration, as it is a factor of great importance. It is most essential that a cow's food should appeal to her appetite and ordinarily far too little attention is paid to this phase of the feeding. No matter how good the ration is from the standpoint of digestible nutrients, the best results cannot be expected unless the cow relishes her feed. To secure this palatability, feeds of good quality that are liked best by the cow should be fed in a clean manger, never letting any food remain after the cow has finished eating. Let her eat as much as she will, however, for when a cow likes her feed she makes lots of milk on it, and the more you can get her to eat, within a safe limit, the more she will produce.

As to grain mixtures, two grains are more palatable and better than one, and three are even more so. Furthermore, it is desirable to feed several grains because part of them may lack in ash, while if there is a variety, one at least is almost certain to contain it.

Succulence is of great importance, as when succulent foods are fed with other roughage and grains, the latter are rendered more palatable and are more easily digested.

The cow must have a large quantity of roughage in her paunch—that being her nature. She naturally eats a great deal of grain, and if there is not a goodly amount of roughage to mix with the grain it will pack and be harder to digest. This causes the cow to use more energy in digesting her food, while her energy should be used to make milk and fat. Some cows are so heavily grained week in and week out that they have no appetite for roughage, and if this is kept up for a few generations it will produce cattle with small paunches. My experience is that when a cow has a very deep paunch it indicates a large storage capacity, and she will produce more milk and live longer than a cow lacking girth. Digestibility is aided by palatability and this accounts to a great extent for the success of one feeder over another where the same feeds are used. One tempts the cow's appetite; the other does not.

However, good digestion alone does not mean maximum production. The cow herself, her health and surroundings, all affect the use she makes of the food given her. After you have a cow on full feed, be regular in feeding and do not make any sudden changes, for this is liable to be followed by indigestion, bloat or impaction.

The proper time to begin feeding a cow for high production is eight weeks before freshening. She should have at least this length of time to rest and prepare for the next lactation period. The proper feed at this time is just as important as at any other time. It should cool out the system, supply nourishment to the foetus, and build up the flesh and strength of the animal.

For the first three days after calving a cow should be fed no grain but ground oats and bran as a hot mash, to which should be added about a handful of linseed oil meal and a little salt. Continue the feeding of hay and succulent feeds and be sure to give

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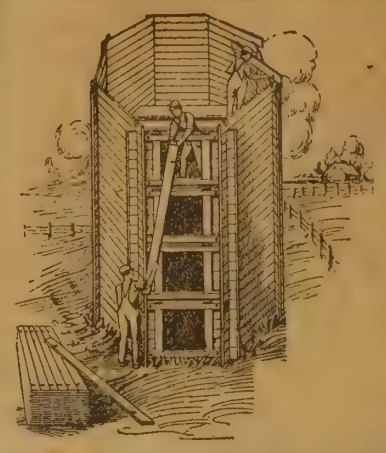
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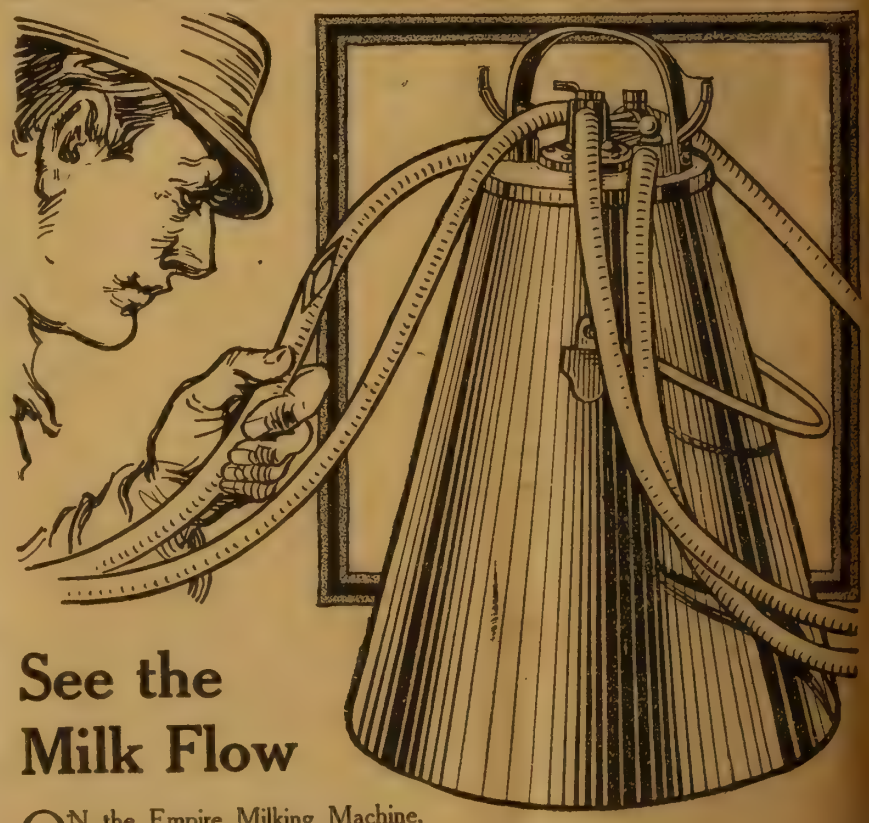
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Herd headed by Altama Interest, Grand Champion 1918 State Fair. Awarded two other championships and 10 firsts, including Aged Herd Breeders' Young Herd, and get of sire. Young bulls for sale from dams and granddams in Register of Merit.
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Choice young bulls of King's Valet Blood, backed by Records.
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Register of
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A limited number of bulls for sale.

FOR LARGE AND ECONOMICAL PRODUCTION Get one of my young Jersey bulls from a high producing dam. They are rich in the blood of Gertie of Glynllyn and Lady Letty Lambert. Occasionally one old enough for service.
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Observe the calves of two different breeds; of one they live and grow without especial care; of the other they perish easily if they do not have the best of care. Holstein-Friesian calves weigh 100 to 135 lbs. at birth. Reasonably fed on skim milk and a little oil-meal, they grow like weeds.
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her all of the water she wants. In cool weather, if the water is warmed, it will aid materially in increasing the milk flow, for if the cow is chilled by drinking very cold water her flow will be checked.

When the cow begins to increase her flow of milk, which is generally about the fifth day, begin to substitute the richer milk-making ration, increasing it about a pound per day as long as she responds by an increased flow of milk. In from 10 to 14 days she should be on an entire milk-making ration.

A cow is born with a fixed normal per cent of butterfat, which varies more with the breed than anything else, but if she is well fed she will give a slightly higher fat than normal. Thus when a cow is fed a rich protein ration while dry she will store layers of flesh on her body, enabling her to give an abnormal percentage of fat when she freshens. As the meat works off her body the fat per cent becomes normal. This accounts for the high abnormal fat percentage that a cow is able to maintain for a short period. A Holstein giving a high percentage of fat, say over five per cent, and accompanied by a comparatively small amount of milk is abnormal. Her record does not demonstrate her true ability. I like to see a big record made on a big flow of milk with a normal percentage of butterfat, for it certainly shows that the cow has capacity.

SOLD FOUR BULLS FROM RURAL PRESS AD.

My classified ad in the Rural Press certainly did the work. I sold four Holstein bulls in one week. Three were by my 30-lb. bull, Sir Aralia De Kol Forbes, and the other was by my senior herd sire, Creampcup Cornucopia. Naturally, I am greatly pleased with the results.—Lester A. Driver, Nicolaus, Cal.

Stagnant mud wallows are fine breeding places for germs. The germs collect and breed there in great numbers, and are picked up by the hogs. There is no more fruitful source of spreading disease than these stagnant holes from which there is no outlet.

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There is service built into every part of a De Laval. Forty years of leadership in cream separator construction have made it the unquestioned leader in close skimming, light running, easy cleaning, and durability.

The De Laval is sold through local agents who are well informed with regard to the machine and the Company's policy. These agents localize the Company's service. They carry repair parts in stock and are trained to give intelligent advice and prompt help, in order to insure complete separator satisfaction and continuity of service.

There is a De Laval agent in every dairy community throughout the world—a constant reminder of the fact that when you buy a De Laval, the Company feels that its obligation to you has just started.



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Farm on Grisly Island.

On the Trail of the Golden Hoof

(Written for Pacific Rural Press by Thos. F. McConnell.)

Huston Has Hummers.

Harry L. Huston of Winters has a dandy flock of registered Shropshires, consisting of 165 ewes headed by rams of royal breeding. The sheep are run on alfalfa and are in excellent condition. Mr. Huston got a 100 per cent lamb crop this year.

Dudley of Dixon.

E. D. Dudley, who has a flock of 800 Shropshire and Rambouillet ewes on his ranch near Dixon, has recently purchased three very fine registered Shropshire rams from Frank Brown of Carlton, Ore. Mr. Dudley has a fine bunch of Shropshire ewes, and some mighty good Rambouillets.

Kimble's Rambouillets.

For years Chas. A. Kimble of Hanford has been breeding Rambouillets from the best blood in the world. They are large, smooth, heavy-shearing sheep, with fine, long staple white wool. At the Salt Lake sale last fall he was a heavy purchaser, buying one ram at $875 and another at $575. Mr. Kimble does a very large business, often selling many hundred head at a time.

Levy Increasing Flock.

Last week I told about the excellent flock of registered Hampshires owned by Joe Levy at Calla Grove Farm, Manteca, but in this special sheep issue I must make mention of the importation that Mr. Levy is making from England. Some time ago he sold his Guernsey cows and decided to give more attention to sheep, so he placed an order for some of the best to be had in England and expects to receive them in September. He plans to enlarge his flock so as to maintain about 200 breeding ewes.

Kaupke's Classy Sheep.

Kaupke Brothers, the Hampshire breeders of Woodland, make a specialty of furnishing ram lambs. They say that customers prefer to buy their rams at this age and grow them out themselves. The demand is heavy and they are able to get an average of $45 per head for all they can deliver. One of the members of this firm is still in the U. S. Navy, so they will not show at the fairs this fall, but they are keeping up their flock and have 85 registered ewes to breed this season. The ram at the head of this flock is one of their own raising, sired by Imp. Steatford 200, a Walnut Hall importation.

Butte City Shrops.

The Shropshires at the Butte City Ranch, Butte City, have been conspicuously in the limelight for some time. The flock consists of 300 head of registered ewes, representing the best imported and American breeding. The rams were secured from Broughton, Bishop, Wardwell and others. Mr. Guilford recently purchased a fine lot of Shrops in Oregon, including animals that have been prominent prize-winners at the Northern shows. At the next Butte City Ranch sale, August 2, 125 Shropshires will be included.

Dorsets at Rancho Del Rio.

Horned Dorsets are not very numerous in California, but C. H. Kerbaugh, manager of Rancho Del Rio at Oakdale, says that they find Dorset sheep great money-makers in small ranch flocks, owing to the rapid development of the lambs which, if lambed at the right time of the year, bring a fancy price for Easter. Also, they are a good shearing sheep, having a good fleece of coarse, light wool which lately has been selling at a fancy price. On this ranch are 200 head of Dorsets of fine type and breeding. The owner is Dr. Verdo B. Gregory.

Barnhart's Big Business.

C. E. Barnhart of Suisun does things on a big scale. He has 10 ranches, including over 5,000 acres of range land, mostly given over to Shropshire sheep raising, and secures the very finest imported rams to keep up his flocks. Last winter he carried 6,000 ewes and of these the Shropshires lambed 125 per cent and the Merino grades 115 per cent.

Mr. Barnhart recently sold 20,000 lambs at $9 per head, which speaks well for the quality of his stock. He says that now is the time to breed sheep and that they will pay whether raised in tens or in thousands.

Merritts Have Meritorious Sheep.

G. N. & J. B. Merritt of Woodland have been busy for several years breeding up a flock of large, smooth and heavy-shearing Rambouillet sheep. Their stud rams were picked from the Quealy and Seely flocks with great care. They have made a fine cross on the Merritt Rambouillet ewes, of which there are now 500 purebreds in the flock. The Merritts are doing quite a large business and are making many sales. They are also continuing to build up their herd, and are expecting a shipment of registered Rambouillet ewes of the large type from the East in a short time.

Bloom's Business Booming.

J. R. Bloom, the Shropshire breeder of Dixon, says that his advertisements in the Rural Press are bringing in orders much earlier this year than formerly. He does not know whether this indicates a fear that good rams are going to be hard to get on account of the heavy demand, or that breeders want to breed earlier and catch the first high prices for lambs. Mr. Bloom has a flock of 500 purebred Shropshire ewes. He is deeply gratified with the satisfaction that his rams are giving, as former buyers are returning for more and are sending their friends to him. One recent buyer took five yearling rams and they weighed 815 pounds when being loaded.

Hillcrest Shrops and Merinos.

I recently mentioned how the combination of beauty and utility impressed me when I visited the Hillcrest Stock Farm of T. S. Glide at Davis. At that time I was telling about the beef cattle, but the same impression applies to the sheep as well. Mr. Glide has been breeding Merinos and Shropshires for years in a large way and has some wonderful animals of both breeds. His Shropshires are sired by rams imported from England, including the rams Simon, Shentstone Cavendish and Hillcrest Lad, some of these being noted prize-winners. The Merinos are the famous Blacow-Roberts-Glide French Merinos that are so well known here on the coast.

Kelliher's Rosedale Hampshires.

The flock of Hampshires at Rosedale Farms, Eugene, owned by D. E. Kelliher, was founded in 1912 with stock imported from the famous Stephens flock of Cholderton, England, and was added to in 1916 by purchases of Walnut Hall and Butterfield stock at the Salt Lake sale. Also during the present season Mr. Kelliher has received selections from the best English flocks made by Robert S. Blastock of Walnut Hall Farm. Mr. Blastock was instructed to select the best stock obtainable regardless of price, as Mr. Kelliher is determined to establish one of the finest flocks of Hampshires in the United States on his Rosedale Farms.

Spear, a Sheep Specialist.

For years E. C. Spear of St. Helena has specialized on big, smooth-bodied heavy wooled Rambouillets, and has used on his original foundation of purebred ewes and their offspring only the best registered Rambouillets he could find. In this way he has built up a wonderful flock bred for fine wool and heavy lambs. This season his ewes sheared nearly 14 pounds each for an eight months' fleece, which at 50 cents per pound makes sheep-raising mighty profitable.

Mr. Spear reports that numerous inquiries are being received from new buyers, showing that many California farmers are becoming interested in sheep. He predicts an excellent future for the industry.

Marble Strong for Dorsets.

John E. Marble of South Pasadena has established a reputation as the leading Dorset Horn breeder of the West. His ranch is located near Redlands and is stocked with the finest foundation animals that money could buy. Mr. Marble says that the Dorset rams cross well with range ewes and that many breeders who want early lambs prefer Dorset grade ewes from the Merino cross to any other. These grade ewes are great milkers, very hardy and excellent for mutton makers. When mated to purebred Dorset rams they produce a very blocky, easily-fattened lamb.

Mr. Marble has been a consistent winner at California shows and most of the lambs on his ranch at present are the get of the Sacramento grand champion, Woodland 88.

Bidegaray a Booster.

J. Bidegaray of Fresno put himself on the map as a sheep breeder who does things in a big way when at the Salt Lake sale last fall he purchased 31 head of Rambouillet rams to head his flock. These rams were of the very best Butterfield, Quealy and Bullard strains and they have sired a fine lot of lambs. Mr. Bidegary makes a specialty of big, smooth, heavy-wooled rams.

San Ramon Shropshires.

Those who keep posted on livestock winnings at shows do not need to be told anything about the San Ramon Shropshires of Bishop Bros. at San Ramon. This flock has been a heavy winner for years at the very best shows, including not only our own State Fair, but the Panama-Pacific Exposition and the International Livestock Show at Chicago. In competing with the leading Shropshires of the United States Bishop Bros. have always won their share of the blues, and at the 1918 State Fair they won all awards. Although they have a large flock they have established a reputa- flock which has caused a keen demand for their stock and they have difficulty in raising stock fast enough to fill the orders.

The Home of Corriedales.

Ellenwood & Ramsay, Red Bluff, are among the large sheep breeders of northern California. They are conservative and not inclined toward fads, but they are so firmly convinced of the great worth of Corriedales over other breeds of sheep for coast range conditions that they are boosting this breed to the limit, and are increasing both their registered and cross-bred flocks as rapidly as possible. An importation of 20 registered rams and ewes is on the way from New Zealand now and will include the best Corriedale ram that has ever left its native place. This firm have 25 half-blood Corriedales that they are fitting for the ram sale at Salt Lake City in August. They breed about 20 head of register ewes and about 400 head of half and three-quarter blood Corriedales, and still the demand exceeds the supply. In fact, one prominent Wyoming sheep breeder wanted an option on all of their rams for the next five years.

Bullard Rambouillets Popular.

Bullard Bros., the noted Rambouillet breeders of Woodland, recently sold a carload of yealing rams to the Standard Meat and Livestock Company of Rawlins, Wyoming; 5 rams to C. A. Markwood, Del Rio; 3 rams to Frye Bros., Elmira. They will consign 100 range rams and 25 stud rams to the Salt Lake sale to be held in August. It will be remembered that only a short time ago Bullard Bros. sold 75 Rambouillet ewes and 25 rams to Samuel Moss, a wealthy sheepman of South Africa. Mr. Moss came all the way from the Orange Free State to California to visit Bullard Bros. noted ranch. Frank Bullard, one of the members of the firm, says that the demand for registered Rambouillets is rapidly increasing and that small small flocks are being started in all parts of the State.

This wonderful flock consists of over 1,000 ewes in all, and at the head of the registered ewes is the noted Butterfield ram purchased at the last Salt Lake City ram sale for $3,000. Prof. Coffey pronounced him the best Rambouillet in the United States.

Brotherton, a Hamp Breeder.

R. H. Brotherton of the United States Shipping Board at San Francisco, who has a fruit ranch at Los Altos, imported 15 registered Hampshire ewes from Utah last winter sired by a Walnut Hall ram 12 of which were bred to a very fine ram imported from England by Anoka Farms, Waukesha, Wis. These 12 ewes lambed 150 per cent, giving 18 lambs, whose development has been astonishing. One ewe lamb weighed 70 pounds when 9 weeks old.

ATTENTION DAIRYMEN



Large production and fine type are combined in this bull. His three nearest dams (including his own dam's two-year-old record) average 24,568.6 milk and 978.5 butter in one year. If you are looking for a herd sire with such backing get in touch with us right away

J. B. Gibson Co., - Williams, Cal.

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Gives Great VALUE for LEAST MONEY. IT MAKES THEM FAT.

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Send for Sensible Folder on Feeding Hogs

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EXPERT LIVESTOCK AUCTIONEERS

Purebred Stock Sales a Specialty

Sales Conducted in All Parts of California.

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Registered Holstein Friesians.

YOUNG SERVICE BULL FOR SALE

Prince Abbekerk Aralia Walker, No. 204267—Three-quarters white.

Write for pedigree and price. Inspection invited and satisfaction guaranteed.

Calco Stock Products make farm work easier

Modern, sanitary equipment not only saves the farmer money on feed used and loss resulting from disease but helps to make farm work more pleasant. Calco products are designed and carefully built to SAVE for the farmer. They modernize the farm.

Calco farm products not only save time and make work easier, but they are built for lasting service—the first cost is the last cost. Armco Iron—used in the construction of Calco products, is 99.84 per cent pure iron. Its rust-resisting quality, durability and economy are known throughout the country.



Model No. 251

Calco Hog Watering Tank

Gives the same service as the Calco Automatic Watering Fountain, where water must be carried or hauled. Easily moved about for your convenience. Strong, durable, sanitary. Get capacities and prices from price list.



Model No. 244

Calco Hog Troughs

Calco Hog Troughs help you to raise healthy hogs. They are sanitary, strong and durable. Built of Armco galvanized iron with cast iron ends. Description and sizes in price list.

Model No. 200



Calco Stock Watering Trough

Built ready to be placed on supporting frame; light, easily moved when desired, sturdy and durable. Armco galvanized iron used in construction. There is a size to fit your needs. Sizes in price list.



Model No. 252

Calco Automatic Hog Watering Fountain

Furnishes constant fresh water, without overflowing. Connects to water supply pipe —works automatically. Bottom and trough of cast iron, reservoir of galvanized rust-resisting Armco iron. A safe and sane fountain for your hogs. Ask for circular with specifications and prices.

Calco Sheep Troughs

Low, water-tight, galvanized trough without rough edges or disease-catching cracks. Easily fitted on wooden supporting frame. Write for sizes and prices.



Model No. 257



Model No. 250

Calco Automatic Grain Feeder

Gives plenty of feed to hogs — without waste. Clean and sanitary. Made of galvanized, rust-resisting Armco iron, with cast iron trough. Capacities from 2 to 10 bushels. Write for price list.

CALIFORNIA CORRUGATED CULVERT COMPANY

LOS ANGELES
117 Leroy Street

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calco products

THE HOME CIRCLE

SUPPLICATION.

Give me the hills and a stout ash stick
And the turf beneath my feet,
And a leafy tree to rest beneath
In the height of the noontide heat.

Give me the road, the long gray road,
As it wanders o'er the hill
Past the ivied church and the larchwood copse
And the mumbling stone-tooth'd mill.

Give me the moors that stretch around
Like a gray and purple wreath.
And the topping clouds, and the setting sun,
And the wind across the heath.

Give me the dew on the meadow grass
As it glints in the light of morn,
And the glassy tarn, and the gemmy pools
At the hour when the night is born.

Give me but these—and the winking stars—
When the long glad day is done,
Then give me a friend to share it all,
A friend—and only one!
—Poetry Review.

ELECTRICITY ON THE FARM.

(Written for Pacific Rural Press.)

In these modern days of easy transportation via good roads and automobiles, the family on the ranch or farm has nearly as many advantages and conveniences as the city dweller. With a more universal use of electricity in the rural districts, the ranchman will be enjoying about the "last word" in modern comfort, heretofore considered available only in the city.

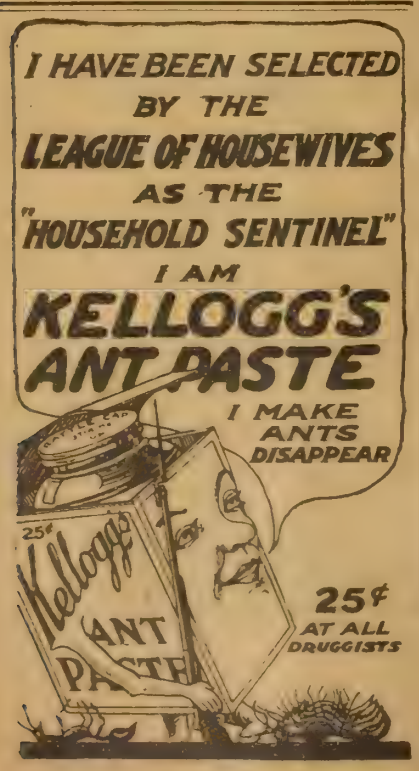
The advantages of electricity are so many that it is hard to begin to enumerate them. First in the matter of safety, as compared to the oil lamp or lantern on the farm, is the greatest argument in favor of electricity for lighting purposes. A lamp is easily overturned; a gust of wind may cause it to explode; it is dirty and smelly, and has to be cleaned and filled ever so often. A lantern around a barn is an even greater menace with fodder and hay stacks near by. One of the greatest conflagrations in history—the Chicago fire—was caused by a cow kicking over a lamp in a barn, and caused the loss of millions of dollars in property, and many lives.

Americans are "good sports," however, and are always willing to take a chance, (even to the burning down of the barn!) but at the same time their standard of living is high, consequently more than as a matter of safety, is the appeal of the greater comfort and convenience to be derived by the use of electricity for lighting purposes. Beautiful electrical fixtures and the soft glow of the electric lights, shedding their rays over the living room, bath, or kitchen work table, are dear to the heart of every woman as she realizes that the drudgery has been taken out of housework. Particularly that great bogy—washday—is robbed of its terrors, for it is no longer necessary to bend over the washtub in a back-breaking performance. Electricity will wash your clothes, and iron them, too, and if the weather is hot, you can have a fan generating a cool breeze as refreshing as any from Sierra's snows. A vacuum sweeper eliminates the dusty germ-raising broom, and the family does not have to quit the house when mother starts to sweep; the sewing machine, with a little motor attached, regulated to any speed desired, enables the family sewing to be done in less than half the time by foot power, to say nothing of the greater comfort to back and leg muscles. A percolator and a toaster provide fragrant steaming coffee, and golden brown crisp toast right on the breakfast table, with no running back and forth between bites to the kitchen.

To the man on the ranch or farm electricity is an even greater necessity and time-saver than it is in the home, for it can be made to attend to the milking, churning, separating, grinding, fanning, shearing, and even incubating and brooding. In this way one man is enabled to do the work which otherwise required the assistance of two helpers; the work can be done quicker and better; labor cost is reduced, and production is increased; living conditions are improved, and with such an equipment, it is easier to obtain and keep hired help on the farm. With life thus made easier and more attractive, it is also an incentive for the boy and girl to remain at home instead of deserting the home nest for the greater attractiveness of modern conveniences of the city.

There are two methods of supplying electricity on the farm. One is to tap the great power lines which are so numerous here in California, and the other method, which is probably more satisfactory and economical, is to install your own individual electric plant. This can be placed in the cellar, garage or barn; it takes up little space, is simple to operate, and by the saving of time and labor, should pay for its cost the first year.

"The proof of the pudding is in the eating," and likewise the practicability of electricity on the farm is made manifest in the fact that when once used, no family is ever willing to return to coal oil lamps and the antiquated methods of hand labor, and what is more, it isn't done!—Z. D. H.



HOUSEHOLD HINTS.

Use a paint brush with long bristles for sweeping stairs. The bristles reach every corner and crack as a cloth cannot do.

Rubber roofing makes a good kitchen floor covering. It can be stained or varnished when laid. This is inexpensive and its wearing qualities are unequalled.

When a hot water bottle is not in use, blow a little air into it, cork tightly and hang up. The air keeps the sides from touching and thus prevents deterioration and decay.

A few drops of oil of lavender poured into a glass of hot water will purify the air in a sick room.

A box of borax beside the kitchen sink will save its price in soap.

To clean lamp burners, boil in water that beans have been parboiled in. All tarnish will come off, leaving burners as good as new.

To clean bean pots, fill with cold water, add a large tablespoon of soda and put in the oven for half a day. No scouring will be necessary and the pot will feel like new.

WANTED WINGS.

A caterpillar tractor
Saw airships in the sky.
"Do you suppose," it muttered,
"That some day I shall fly?"

FIG RECIPES.

(The following fig recipes are copyrighted. Reprinted by permission of the J. C. Forkner Gardens.)

Spiced Figs—Peel ripe, white figs, and to ten pounds of the figs add five pounds of brown sugar, one quart of vinegar, one ounce of cinnamon, one-half ounce of allspice, one-half ounce of cloves, the spices to be tied in bags and boiled with sugar and vinegar. When the vinegar and spices have come to a boil, add the figs, a few at a time, to prevent mashing, and boil until they look clear. When all are done, put into jars and pour the vinegar over them hot.

Potatoes and Figs (A breakfast special.—One cup of coarsely-chopped figs; two cups of mashed sweet potatoes (boiled in skin until done); one-half cup of cream; a little salt and cinnamon; two eggs well-beaten. Mix, folding in the eggs at the last. Drop heaping tablespoonfuls on well-greased pie pans; bake one-half hour, or until brown.

Fig and Date Salad.—Use large, fresh figs and dates; slice, arrange on lettuce leaves, and serve with either cream or French dressing.

WORSE THAN THAT.

The old lady was looking for something to grumble about. She entered the butcher's with the light of battle in her eyes.

"I believe you sell diseased meat here?"

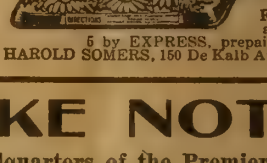
"Worse!" replied the butcher blandly.

"What do you mean, worse?" demanded the astonished patron.

"The meat we serve is dead!" confided the butcher in a stage whisper. —Chicago News.

Kill All Flies! THEY SPREAD DISEASE

Placed anywhere. DAISY FLY KILLER attracts and kills all flies. Neat, clean, ornamental, convenient and cheap. Lasts all season. Made of metal, can't spill or tip over; will not soil or injure anything. Guaranteed.



DAISY FLY KILLER at your dealer or 5 by EXPRESS, prepaid, $1.25.
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PLEASE TAKE NOTICE



The Pacific Coast Headquarters of the Premier Burner is now located at 270 Market St., San Francisco, Calif. The wonderful four-year record of the Premier is well known to the readers of the Pacific Rural Press and needs no introduction here.

To Know and to Conjecture Differ Widely

Every article of worth has its imitators. This is usually done "by men having no ideas of their own," in hopes of deriving an advantage gained by the genuine article—and precedent shows that imitations are of little worth—except, however, that they compliment the original.

Complete outfits from $12.50 up, according to size of stove.
Your orders and inquiries will receive prompt and personal attention.
A postal will bring you literature
VAUGHAN & MATTISON, Pacific Coast Agents
270 Market Street, San Francisco, Calif.



A Social Help

Let's suppose it's a church or school social—or a Red Cross rally—or a "get-together" meeting of the Farm Bureau—or what not—

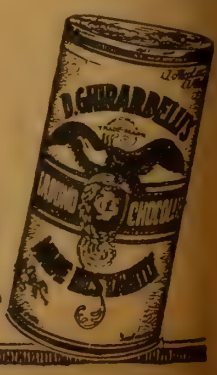
Will Ghirardelli's be there? What a question! For this delicious, appealing food-beverage is *always* in order at any social function. It means cheer and comfort and warmth! It provides a social help that no hostess (whether she has in mind a "big affair" or a "little party") can afford to overlook.

In ½ lb., 1 lb. and 3 lb. cans—at the store where you do your trading.

Say "Gear-ar-delly"

D. GHIRARDELLI CO.

Since 1852 San Francisco



Ghirardelli's Ground Chocolate



Do you know the comfort, cheer and after-glow of fine tea?

There is no other drink like it; it gently stimulates and cheers, but makes no demand upon the digestion.

It is a royal drink, and yet, next to water, is the cheapest of all—⅓ cent for a cup of fine rich-flavored invigorating satisfying tea!

Schilling Tea is the fine practical economical tea of this country.

There are four flavors of Schilling Tea—Japan, Ceylon - India, Oolong, English Breakfast. All one quality. In parchmyn-lined moisture-proof packages. At grocers everywhere.

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THE STEPHENSON PATENT COOLER

Absolutely Sanitary Perfect Ventilation

NO ICE REQUIRED



Awarded first prize wherever exhibited. If not for sale at your dealer's Write for particulars and prices

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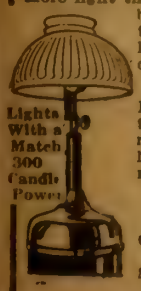
MORE LIGHT THAN 20 OIL LAMPS

AT LAST—the light of lights—A beautiful lamp that lights with common matches just like oil lamp, but makes and burns its own gas from common gasoline, giving a brilliant, steady, restful, white light of 300 candle power.

MOST BRILLIANT LIGHT MADE

Brighter than the brightest electricity More light than 20 oil lamps. Cheapest and best light made. Costs less than one-third of a cent per hour. Safer than the safest oil lamp. The

COLEMAN QUICKLITE



No wicks to trim—no globes to wash. No dirt, no grease, no glare or flicker. Absolutely safe. Fuel can't spill—no danger even if tipped over. —will last a lifetime.

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A HIGH RECOMMENDATION.

In a rural district in the South a senator was making a campaign speech and telling his constituents how he had saved the country from the demnition bow-wows, and what he proposed to do further in that direction if he were re-elected. A belated arrival approached and after listening awhile to the speech, asked a darkey standing near who the speaker was. The negro answered, "I dunno who the gemman is, boss, but he sho' do recommen' hisself mos' highly."

WUSSER THAN HE IMAGINED.

A justice of the peace who performed the marriage ceremony for two of his colored friends was surprised one morning about a month after the wedding to see Sambo amble into his office, and request that the marriage knot be untied. The justice said, "Why, Sam, didn't you take Caroline for better or for worse?"

"Yassir, jedge," replied the darkey, "but she am wusser than I tuk her for."

"The Rural Press is the best all-around farm paper that I have ever read, either east or west. I was born in the East and have farmed all my life. Took several Eastern farm papers, but yours has them all beat."—J. C. Weaver, Oakhurst.

DREADNAUGHT BLAZING-AWAY-IN-COST-DEFENCE!

FUEL PROBLEMS



Fuel problems vanish instanter the moment you turn your attention to fuel-gas from kerosene—the cheapest, cleanest and most abundant fuel in Nature's storehouse. The work has been done for you. Just fill the tank and light the fire. The same wood stove—you don't change that a bit.

We were reluctant in giving up the horse, sceptical about the automobile, but now we wonder how we ever got anywhere. Let's get somewhere quick with this fuel problem—think what a blessing to mother and the whole household. More clean heat than you ever had in your life, for less money and without any work.

May we tell you more about it? Mail a card asking for our factory circular—all the details you want.

A Burner that fits any stove—making real gas, not burning oil. Fully guaranteed, and including a combination needle valve and drain will be mailed anywhere upon receipt of price—**$6.50.**

All connections standard—just ordinary black pipe and anything that will hold the oil. The tank may be large or small. Gravity, the natural "fall" of the oil, is the pressure. Connections can be purchased of us or at the nearest hardware store.

We want good agents in every county. Burners at wholesale, not "rights" and blue sky.

SCIENTIFIC SPECIALTIES CO. 310 South Hill Street LOS ANGELES, Cal.

A San Joaquin county fair will be held at Stockton right after the State Fair early in September. These dates are claimed so that those who show at the State Fair can take in the Stockton Fair on the way home.

The Most Wonderful Burner

EVER MANUFACTURED



Will fit any standard-size stove.

Uses ordinary coal oil or kerosene and produces a perfect gas. Simple installation. Costs about 1½c per hour to operate. No smoke, soot, or carbon.

ABSOLUTELY CLEAN

Every burner sold under positive guarantee to give perfect satisfaction or your money will be refunded.

Burners shipped to all points in Coast States on receipt of remittance for $42.50. Complete with 8 gallon tank, wire and pump.

We also sell Oxo-Gas Burners for heating stoves, furnaces, bake ovens, dehydrating plants, etc., etc.

We do not sell territory, but give exclusive selling rights to responsible representatives.

WRITE FOR CATALOG AND FULL PARTICULARS

Oxo-Gas Heating Company of California

457 MARKET STREET, SAN FRANCISCO

References: Bradstreet or Dun Agency. Bank references also, if desired.

Market Comment

Nevada County's Wool Clip.

It is estimated that the Nevada county wool clip this year aggregated 60,000 pounds. Prices ranged from 45 to 50 cents per pound.

Big Peach Contract.

The Santa Clara Valley Growers' Association has closed a contract with the Tulare Peach Growers' Association for 6000 tons of peaches valued at about $500,000.

Tomato Canning Held Up.

Due to the uncertainty of just what the War Department intends to do with millions of canned tomatoes bought for the American expeditionary army, packers in Central California will make no definite offers for canning for fall deliveries.

Nevada Wool.

Approximately 1,350,000 pounds of wool, valued at $540,000, is ready for shipment from Hawthorne, Nev., following the end of the sheep shearing season in Mineral county. The total value of Mineral county wool for the year is probably $1,000,000.

Big Hop Demand.

Active demand on the Pacific Coast for hops continues. Old hops are also reported in request at advanced prices, 19c having been paid to a grower for 1000 bales of Mendocinos, for English account Sonoma county hops have jumped to 37 cents a pound. Thousands of bales will be shipped to England this year for making beer and ale.

Dried Fruit Prices Advance.

The advance in dried fruit prices leads to make the apricot, peach and prune growers of Northern San Joaquin county very jubilant this year. John Montgomery, local fruit buyer, is offering the following scale of prices: 23c per pound for apricots, 14½c for peaches and 12c for prunes. Prices for the same fruits last year were, 17, 11, and 8c in the order above named.

Draft Horses Bring High Prices.

According to a recent report of the American Consul at Glasgow to the Department of State, relative to the prices received for horses in Scotland, "horses for agricultural work and for heavy haulage purposes in cities and towns are in strong demand, and sell readily for about $316.32, but extra good ones bring as high as $729.97 each.

Armistice a Boon to Barley Growers.

Some few months ago fear was felt that the California crop of barley would be left on the hands of the growers, or would have to be sold at a sacrifice. Opportunely, however, the demand from Europe was larger and ships were made available, and the surplus moved quickly. For some time prices have been advancing. The bulk of the crop is now sold.

Tariff Sought by Bean Growers.

Bean growers of Santa Barbara and Ventura counties fear the warehouses will be jammed with the holdover crop when this year's crop is harvested. They think the Food Administration opened the country too readily to Japanese beans, and that speculations by men with advance information followed, demoralizing the market. They have therefore decided to ask for a tariff to protect California beans from Japanese imports.

Cantaloupe Prices Lower.

Offering of cantaloupes were extremely heavy at the Imperial Valley shipping points this week and most stock was reported shipped on consignments but quotations ranged fully 50 cents lower at $1.50—$1.75 f. o. b. for standard 45's. Consuming markets quoted Imperial Valley stock at $3.50—$5.00 compared with $6.00—$8.00 last week. Shipments 2,349 cars compared with 1,548 last week and 1,207 for the corresponding week last year. Growers are well satisfied with the way in which the railroads and Bureau of Markets' officials have handled the shipments.

THE MARKET REPORTS

Figures Given Are Independent and Reliable.
Prices Quoted as Paid to Producers.

SAN FRANCISCO.

San Francisco, June 18, 1919.

WHEAT.

The following prices were announced by the Federal Grain Corporation last year and are still in effect. They are figured f. o. b. San Francisco, Los Angeles, Seattle, Tacoma and Portland and guarantee the grower a minimum of $2 f. o. b. shipping point:

Per bushel—	
No. 1 hard	**$2.20**
No. 2	**2.17**
No. 3	**2.13**
No. 1 soft	**2.18**
No. 2	**2.15**
No. 3	**2.11**
Club or Sonora, No. 1	**2.16**
Do, No. 2	**2.13**
Do, No. 3	**2.09**
Recleaned, per ctl.—	
California	$4.30@4.40
Early Baart	None

BARLEY.

Some new barley is coming on the market, but dealers are not inclined to make quotations behind which they are willing to stand. Tentative quotations of $2.45 to $2.55 are suggested for new feed barley delivered at Port Costa. December futures sold to $2.75 on the local exchange.

Feed	$2.60@2.70
Shipping	2.75@2.80

OATS.

Oats continue in light demand, but the price is unchanged, owing to the activity in barley.

Red feed, per ctl.	**$2.30@2.40**
Red for seed	**Nominal**
Black for seed	**Nominal**
Recleaned Red or Black for seed	**Nominal**

CORN.

The corn situation is unchanged, with some below grade yellow California selling below quotations.

California	**$3.30@3.50**
Egyptian, choice	**Nominal**
Milo	**Nominal**

HAY.

Receipts of hay for the past week were 1,203 tons, which is about the same as the average for several weeks past. A good part of the receipts has been of the new crop, both first cutting of alfalfa and volunteer oats with some good No. 1 wheat hay coming in from the San Joaquin and Antioch section. New hay has been selling on a basis of $14 for No. 1 first cutting alfalfa, $12 for volunteer, and $15 for No. 1 wheat.

No. 1 wheat, per ton	**$16.00@18.00**
No. 2 Wheat, per ton	**12.00@15.00**
Choice Tame Oat, per ton	**17.00@19.00**
Wild Oat, per ton	**11.00@14.00**
Barley Hay, per ton	**11.00@14.00**
Alfalfa, per ton	**15.00@19.00**
Stock Hay, per ton	**11.00@13.00**
Barley Straw, per bale	**.50@ .80**

FEEDSTUFFS.

There was no rolled barley to be had at $52 this week, and practically all sales were made on the basis of $54. A quantity of new alfalfa hay is now being ground up for meal, but not enough has been thrown on the market to change quotations.

Cracked corn	**$72.00@73.00**
Rolled barley	**54.00**
Rolled oats	**52.00@53.00**
Alfalfa meal	**32.00@33.00**

POTATOES, ONIONS, ETC.

While both potatoes and onions have shown almost daily changes in price, the range has been small and the quotations given below will include the fluctuations of the week. The market is now reported bare of Bermudas, and no more shipments are looked for to this market for the present. New yellow onions are quoted at the same price as new reds. Garlic is plentiful and 16 cents is about the top price. Carrots took a drop this week, and $2 was the best price for today's arrivals. Tomatoes are also lower, with a good supply on hand.

String beans	**12@15c**
do, Garden	18@20c
Peas	10@11c
Carrots, per sack	$1.75@2.00
Asparagus	**6@8c**
Rhubarb, Strawberry, box	**$2.00@2.50**
Cucumbers, hothouse box of 30	**$1.50@2.50**
Los Angeles	$1.50@1.75
Eggplant per lb.	10@15c
Lettuce, per crate	75c@$1.25
Celery, crate	**Nominal**
Tomatoes, Southern, per crate	.75@1.25
do, Mexican	$2.00@2.50
Sprouts	**Nominal**
Summer squash	**90c@1.10**
Green Corn, Imperial Valley	35@50c
Potatoes—	
Rivers	**None**
Oregon	**2.00@2.40**
Washington	**None**
Idaho	**2.00@2.25**
Garnets, new on stree	**$3.00@3.50**
Other new on street	**$3.25@3.75**
Sweets, per sack	**None**
Onions, Warehouse Stock—	
Australian Browns	**Nominal**
Onions, new, red	**$3.75@4.25**
Bermudas—white	None
do, yellow	None
Green Alameda	**$1.75@2.00**
Garlic	15@16c

BEANS.

The local bean market did not sustain the strength that appeared last week. Government purchases have had little effect on local conditions.

Bayos, per ctl.	**$6.00@6.25**
Blackeyes	**$3.75@3.90**
Cranberry beans	**5.75@6.00**
Limas (south, recleaned)	**$9.00**
Pinks	**5.60@5.80**
Mexican Reds	**4.75@5.25**
Tepary beans	**2.50@2.75**
Garbanzos	**11.75@12.00**
Large whites	**5.75@5.90**
Small whites	**6.75@6.90**

POULTRY.

The poultry market as a whole is weaker and lower prices are predicted for next week. While there have not been heavy arrivals from the East the local shipments have been larger than the market can absorb, especially on all descriptions of hens which are weak at the prices quoted. Broilers and fryers held up pretty well this week, but if hens go much lower these are bound to follow in their wake.

Turkeys, live, young spring, lb.	**Nominal**
do, old	**Nominal**
do, dressed	**Nominal**
Broilers, 1½ to 2 lbs.	**33@35c**
do, 1¼ to 2 lbs.	**30@31c**
do, ¾ to 1¼ lbs.	**30@31c**
Fryers	**35@37c**
Hens, extra, per lb. colored	**35@36**
do, Leghorn	**34@35c**
Smooth young roosters, per lb. (3 lbs. and over	**48@50c**
Old roosters, colored, per lb.	**23@24c**
Geese, young, per lb.	**30c**
do, old, per lb.	**28c**
Squabs, per lb.	**48c**
Ducks, young	**32@33c**
do, old, per lb.	**30c**
Belgian hares	**14c**
Jack rabbits	**$2.50@3.50**

BUTTER.

There were no sensational features to the butter market this week. Extras started at last week's close and after advancing 2 cents, dropped off a half-cent at the close, on heavy receipts both locally and on the Eastern markets. Some outside demand is reported, and butter is still going into storage in large quantities.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	52	52	53	54	54½	53½
Prime firsts				Nominal		
Firsts				Nominal		

EGGS.

Extras started the week a cent off the close of last week and closed 2½ cents higher than the opening. The advance in price was steady with no reaction, and the close within half a cent of last week's high. Extra pullets followed the lead of Extras, and compared with last week's fluctuations the market may be regarded as steady, although quotations are higher. Approximately ten per cent of the receipts go into storage daily.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	46	46	46	47	48	48½
Firsts				Norminal		
Ex. pullets	40½	40½	41	41½	42½	42½

CHEESE.

The market for cheese was firm and higher at the close. California flats show an advance of 1½ cents and California Y. A. of 3 cents for the week. Oregon cheese receipts were rather heavier than for the past several weeks and the prices remained unchanged for these varieties.

Fancy California flats, per lb.	27½c
California Y. A., fancy	32c
Oregon Y. A.	**33½c**
Oregon Triplets	**34c**
Monterey cheese	**22½@24c**

FRESH FRUITS.

The fresh fruit market shows a weekly increase in the varieties arriving. Blackberries are now in sufficient quantity to quote regularly and plums and figs made their appearance in quantity this week. The market is in excellent condition and the demand shows a constant increase as prices get down to somewhat of a permanent basis. Apricots sold somewhat lower, though they are not expected to go much lower. Plums and figs will undoubtedly go lower when they become more plentiful, but present arrivals are choice and in excellent condition. Strawberries are not much in demand at present quotations, and these prices will undoubtedly be lowered when the second crop gets into full swing. Blackberries and raspberries are still regarded as high by the retailers and the general purchasing public.

California apples	$3.00@4.00
Northwest apples	3.00@4.00
Peaches	1.00@1.25
Apricots	$1.00@1.50
Plums	$1.50@1.75
Figs	$1.50@1.75
Loquats, per lb.	.8@10c
Strawberries, chest	$11.00@15.00
Raspberries	$12.00@15.00
Loganberries	8.00@10.00
Blackberries	$12.00@13.00
Currants, box	90c@ 1.00
Gooseberries	6@8c
Cherries—	
Royal Anne	10@11c
Black, bulk	9@11c
White, bulk	6@ 8c
Cantaloupe, Standards	$2.25@2.75
do, Ponies,	2.00@2.25
do, Flats	.85@1.00
Watermelon, lb.	2½c

CITRUS FRUITS.

There are no changes in the quotations of citrus fruits, although it is said that lemons may go to a higher level, notwithstanding their recent advance in prices. Lemons always go up at this season on account of the demand from the East during the hot weather. Some of the dealers are looking for a decided local increase in the demand after July 1, when the city goes dry, as they figure that the demand for lemonade will show an enormous increase when the customary thirst assuagers are dispensed with.

Cranges, Valencia	$4.00@5.25
Lemons, fancy	$6.00@6.50
do, choice	5.00@6.00
do, standard	4.00@5.00
Lemonettes	3.00@4.00
Grapefruit	3.50@4.50

DRIED FRUITS.

Pears and apricots were both bid up in prices this week, notwithstanding the fact that buying was not very active. Pears were advanced two cents and apricots three. On the whole the market continues quiet, although it is very firm.

Apples	17½@18c
Pears	17½@19c
Peaches	**14½@15c**
Peaches	14½@15c
Apricots	23@29c
Prunes	12½@13c
Figs, Adriatic	**14@18c**
do, Calimyrna	15@20c

RICE.

There is no change in the rice situation. Some fancy Japanese rice is reported to have been sold at $10.25, although $10 is regarded as the top price. Paddy ranges in quotations from $4.10 to $4.32, although there are no sales being reported. Reports from the growers indicate that the crop is in as good condition as could be expected at this stage of its growth.

HONEY.

It is stated that local dealers are not buying honey from the Producers' Exchange at the prices recently made by the exchange. Practically no honey at all is arriving here.

Water White, Orange Blossom	18c
White to Water White, sage (Subject to production)	17c
Light Amber Mountain (Sage-Buckwheat)	14c
Light Amber Alfalfa	11c

LOS ANGELES.

Los Angeles, June 17, 1919.

BUTTER.

Butter prices remain the same as quoted last week, though on the 12th the price slumped off 2 cents, going up to 57 cents again the next day. The demand continues to be good. Receipts for the week, 360,100 lbs.

We quote:	
California extra creamery	57c
do, prime first	55c
do, first	54c

EGGS.

Case counts advance and pullets make decline since last week's report. Fresh ranch remains unchanged. The market reports selling fairly. Receipts for the week, 1,539 cases.

We quote:	
Fresh ranch, extra	47c
do, case count	45½c
do, pullets	42c

POULTRY.

Broilers, hens, turkeys and ducks showing drop in prices. Though quotations are lower, the demand is holding up well, with selling reported.

Broilers, 1 to 1¼ lbs.	24c
Broilers, 1½ to 1¾ lbs.	26c
Fryers, 2 to 3 lbs.	**30c**
Roosters, (soft bone), 3 lbs. and up	30c
Stags and olds roosters, per lb.	**14c**
Turkey	**35@40c**
Hens	26@28c
Ducks	27@28c
Geese	**28c**

FRUITS.

Cherries and berries are in good demand. Plums reported dull and apricots slow sale. Weather conditions improved and receipts showing improvement.

We quote from growers:	
Cherries, lb.	8@16c
Gooseberries, lb.	**11@12c**
Apricots, lb.	3@ 4c
Strawberries—	
30 basket crates, fancy	**$4.00@4.50**
Poor to choice	**3.00@3.75**
Blackberries, case 30 boxes	2.50@3.00
Raspberries, case 30 boxes	3.50@3.75
Loganberries, case, 30 boxes	3.00@3.25
Plums, Beauty, lb.	5@ 6c

BEANS.

Some little movement in this market. Limas in fair demand but on all others the report is dull. Prices remain unchanged.

Limas, per cwt.	**$8.00**
Large white, per cwt.	**6.25**
Pink, per cwt.	**6.50**
Small white	**6.25**
Blackeyes, per cwt.	**3.25**
Tepary, per cwt.	**$2.00@2.50**

VEGETABLES.

Idaho russets now off this market. New potatoes quoted lower. Asparagus about through and not quoted. Imperial Valley summer squash out for the season. Local summer squash selling at 45c and 50c the box. Slight drop in Tomatoes. Lettuce advances to 50c and 75c per crate. Peas show higher and cantaloupes decline slightly. All staples selling well and receipts coming in better owing to more favorable growing weather.

We quote from growers:	
Potatoes, new, lug box	75@85c
Onions, New Red, per cwt.	$4.00@4.25
do, Stockton yellows, per cwt.	$4.25@4.50
Imperial Valley white silver wax, crate	**$2.75@3.50**
Imperial Valley Wax—yellow	**$2.50@3.00**
Cabbage, per 100 lbs.	**75c@1.00**
Rhubarb, per 30-lb. box	**$1.25**
Summer squash, lug	45@50c
Asparagus, per lb.	**10c**
Peas, per lb.	10@14c
Kentucky Wonders	9@10c
String Beans, Wax	7@9c
do, Green	7@8c
Tomatoes, Imperial Valley, 4 basket crate	**$1.00@1.25**
Cucumbers, lug box	$1.35@1.50
Lima Beans, Imperial Valley, lb.	10@12c
Cantaloupes, Stand. & Pony crates	$1.75@2.00
Watermelons, 100 lbs.	$1.50@2.00
Lettuce, crate	50@75c

HAY.

Receipts light and grain hay very dull. Some little alfalfa moving and fair demand

for choice. There are no change in price since reported last week.

We quote f. o. b. Los Angeles.

Barley hay, per ton	$18.00@21.00
Oat hay, per ton	$20.00@22.00
Alfalfa, Northern, per ton	$20.00@22.00
Alfalfa, local, per ton	$21.00@23.00
Straw, per ton	9@10.00

ALFALFA GROWERS OF CALIFORNIA, INC.

Alfalfa market remains strong. Prices show a change since last report of a week ago. The Association continues to have large tonnage booked for high-class hay at highest market prices and purchasers are eager for delivery. Sales of alfalfa by the Alfalfa Growers of California, Inc., 525 Central Building, Los Angeles, were at the following prices, f. o. b. cars Los Angeles.

No. 1 Dairy	$24.00@25.00
Standard Alfalfa	18.00@19.00
Stock Alfalfa	12.00@15.00

Special Livestock Market Report

San Francisco, June 18, 1919.

CATTLE—The San Francisco cattle market is weak and sluggish, in sympathy with depressed conditions in the East. The marked decline in beef values that has taken place in the last month or two is doubtless due to an oversupply and a greatly diminished demand for this class of meat. The discontinuance of foreign outlets and of Government demand is mainly responsible for this situation.

Steers—	
Grass Steers, No. 1, weighing 1000-1200 lbs.	10¾@11c
Grass Steers, No. 1, weighing 1200-1400 lbs.	10¾@11c
Grass Steers, second quality	9 @ 9½c
Grass Steers, Thin	5 @ 7c
Grass Cows & Heifers, No. 1	8½@ 9c
Grass Cows & Heifers, 2nd quality	7 @ 7½c
Grass Cows @ Heifers, thin	3½@ 5½c
Bulls & Stags, good	5½@ 6c
do, fair	4 @ 4½c
do, thin	3 @ 3½c
Calves, light weight	12½@13c
do, medium	11 @12c
do, heavy	6½@10c

SHEEP—While there is no decline in quotations on sheep and lamb there is weakness felt in the market. The wool that mutton sheep carry seems to be a large factor in determining the price.

Lambs, yearling	10@11c
do, milk	13@@13½c
Sheep, wethers	10@10½c
do, ewes	8@ 8½c

HOGS — The movement of hogs marketward continues strong, though prices hold up well on the local market.

Hogs, hard, grainfed, 100-150	17¾c
do 150-250	18¼c
do, 250-300	17¾c
do 300-400	17½c

DRESSED MEATS.

Steers, No. 1	16½@17½c
do, 2nd quality	16 @17c
Cows and Heifers	14 @16c
Calves as to size, etc.	18 @23c
Lambs, suckling	23 @25c
do, yearling	20 @24c
Sheep, wethers	16 @20c
do, ewes	14 @17c
Hogs	27c

Los Angeles, June 17, 1919.

CATTLE—The cattle market remains very dull. Prices stationary since last week's quotations.

Per cwt., f. o. b. Los Angeles:

Beef, steers, 1000@1100 lbs.	$10.00@11.50
Prime cows and heifers	8.50@ 9.50
Good cows and heifers	8.00@ 8.50
Canners	5.50@ 6.00

HOGS—All quotations unchanged. Demand light and sales slow.

Per cwt. f. o. b. Los Angeles:

Heavy avr'ging 275@350 lbs.	$15.50@16.50
Heavy, avr'ging 225@275 lbs.	16.50@17.50
Light	17.50@18.00

Rough docked 20 lbs. piggy sows 40 per cent.

SHEEP—No change in prices to report in this market. Quotations steady.

Prime wethers	$ 8.50@ 9.50
Prime ewes	8.00@ 8.50
Yearlings	8.50@ 9.50
Lambs	12.50@13.50

PORTLAND LIVE STOCK.

Portland, June 17, 1919.

CATTLE—Steady; receipts 906.

Steers, best, $11@11.50; good to choice, $9.50@10.50; medium to good, $9@9.50; fair to good, $8.75@9; common to fair, $7@8.50; good to choice cows and heifers, $8@9.50; medium to good, $7@7.75; fair to medium $4.50@5.50; canners $3@4; bulls, $5@8; calves, $9@13.

HOGS—Steady; receipts, 417.

Prime mixed, $19.25@19.50; medium mixed, $18.75@19; rough heavies, $18@18.75; pigs, $17.75@18.25.

SHEEP—Steady; receipts, 521.

Prime lambs, $11.50@13; fair to medium, $9@10; yearlings, $6@8; wethers, $7@7.50; ewes, $6@7.

A COMPARISON OF CATTLE AND DRESSED BEEF PRICES AT CHICAGO

The sharp declines registered on both live cattle and dressed beef the past two months have been the cause of considerable comment on the part of the producers and consumers. The farmer on the one hand, who two months ago received $20.00 for steers, fails to understand why he should take $3.00 to $3.50 less for the same kind of cattle at present. Many fat cattle are now selling at equal or less money than they cost as feeders a few weeks ago, thus causing considerable loss to their feeders. Consumers, on the other hand, are clamoring for lower prices and maintain that there has not been any noticeable reduction in the cost of beef over the block since last winter. A comparison of live cattle and of wholesale beef prices is given in the following table, which shows the drop in values from the high point the last of March to the recent low point on the Chicago market.

Live Steers:	March	May	Decline	Per ct. Decline
Choice and Prime	$17.00-20.40	$14.75-17.00	$2.25-3.40	15-17%
Good	15.00-18.75	13.00-15.50	2.00-3.25	13-12
Medium	13.50-16.75	12.00-14.00	1.50-2.75	11-10½
Common	11.00-14.00	10.00-12.00	1.00-2.00	9.13½
Dressed Steers:				
Choice	26.00-29.00	22.50-24.00	3.50-5.00	13.17
Good	25.00-26.00	21.00-22.00	4.00-4.00	16.15
Medium	23.00-25.00	19.00-20.50	4.00-4.50	17.18
Common	18.50-22.50	16.50-19.00	2.00-3.50	11-15
Live Cows:				
Choice	13.25-16.00	11.25-13.50	2.00-2.50	15.15½
Medium to Good	11.50-13.00	10.00-11.25	1.50-2.25	13.17
Common to Medium	8.50-11.50	9.00-10.00	.50-1.40	5.12
Dressed Cows				
Good	22.00-23.00	19.00-20.00	3.00-3.00	14.13
Medium	20.00-21.00	17.50-18.50	2.50-2.50	12½-12
Common	18.00-20.00	16.00-17.00	2.00-3.00	11.15

It will be noted from the above table of prices that declines in market values of live cattle have been most marked on the good, choice and prime grades, whereas declines in wholesale beef values have been practically horizontal.

EGG AND FEED PRICES.

What will egg prices be for the rest of the year? Will they gradually drop along with prices on other things? The Tulare Co-operative Poultry Association keeps in close touch with conditions, and it is the opinion of the manager that with eggs at from 10 to 15 cents each in England and France they can strike no lower level here until the great European hole is filled. The recent wobble in prices was simply due to a shortage in shipping facilities. Eggs are being stored in immense quantities along the Atlantic and will be taken across to hungry Europe just as fast as ships can be provided. It is pretty certain that there will be no low priced eggs for a long time, and many dealers are predicting $1 eggs for next winter. Feed promises to be plentiful, and at fair prices. Probably barley will not go much below $45 per ton, but this looks favorable to poultry raisers as compared with the recent prices for a year ago. Corn probably will remain at the present price of $80 per ton until something more definite is known about the coming crop. A year ago it was costing 5 cents per pound, while eggs were 6 cents below their present level. Summing up the entire situation, feed prices promise to be fair and egg prices high, so the coming season looks like a mighty good one for poultrymen.

The Secretary of Agriculture has announced that beginning July 1 all cattle for inter-state shipment must be tuberculin tested. It is stated that the new requirements will be rigidly enforced.

Special Deciduous Market Report.

By J. L. Nagle.

Sacramento, June 17, 1919.

The market on peaches showed a sharp decline and at the prevailing prices difficulty was experienced in interesting buyers, owing to the unusually heavy supplies of Georgia stock on the market, which are selling at greatly reduced prices on account of condition, brought about by continued rains. This applies also to Oklahoma stock, which is not giving satisfaction on account of heavy decay. California peaches moving West of Chicago are meeting with more ready demand.

What few varieties of plums have reached the Eastern markets have brought extremely high prices. Indications are that the plum market will remain firm throughout the season.

The market is easier on cherries during the last few days, due to the weak offerings. This applies also to quite a few cars of apricots, which have been arriving in wasty condition.

There is considerable activity among the canners who are displaying a keen interest in Bartletts. At prices being offered F. O. B. shipping point of $85 a ton, it is expected that a heavier tonnage will be disposed of to the canners this season, than last, and this will naturally affect the Eastern shipments from the Sacramento River District. Eastern buyers are negotiating for Bartletts on the basis of $2.50 F. O. B. the cars. This is practically equal to the price offered by the canners. But, in any event, regardless of the amount of shipments East of Bartletts, we feel safe in prophesying that the market will remain firm throughout the season, in all markets, on fruit from all districts.

NEW YORK—Royal Anne Cherries, $2.02; Royal Anne Lugs, $2.85; Oregon, $2.31; Oregon Lugs, $4.00; Lamberts, $2.55; Tartarians, $1.99; Tartarian Lugs, $3.81; Bings, $2.43; Bings Lugs, $4.60; Royal Queen, $1.80; Republican, $2.32; Republican Lugs, $3.70; Oxheart Cherries, $2.75; Centennial, $2.12; Nonpareil, $3.30; Bigarreau, $2.10; Newcastle Apricots, $1.99; Early Rose, $2.37; Seedling, $3.20; Seedling Lugs, $3.75; Royal, $2.60; Mayflower Peaches, $1.12; Apex Plums, $4.00.

CHICAGO—Tartarian Cherries, $1.50; Bings, $2.35; Bings Lugs, $5.30; Royal Anne, $1.43; Oregons, $2.27; Republican, $1.97; Royal Queen, $2.45; Lambert Cherries, $2.63; Apex Plums, $4.15; Mayflower Peaches, $1.48; Newcastle Apricots, $1.93; Royal, $2.60; Royal Lugs, $2.40; Seedling, $2.60; Seedling Lugs, $2.55.

BOSTON—Royal Anne Cherries, $2.32; Royal Anne Lugs, $2.09; Bings, $2.57; Tartarians, $1.97; Tartarians Lugs, $2.87; Oregons, $2.59; Bigarreau Cherries, $2.17; Lamberts, $2.87; Republicans, $2.52; Republican Lugs, $3.37; Royal Apricots, $2.57; Newcastle, $2.30.

FRUIT SHIPMENTS.

The California Fruit Distributers report daily shipments for June 15 and 16 as follows:

	1918	1919
Cherries	4¾	..
Apricots	17½	12
Peaches	½	10
Plums	4½	34
Totals	27	86

Total shipments to date—590 cars.
Total same date 1918 261 cars.

Classified Advertisements

Rate in this directory 3c. per word each issue

MISCELLANEOUS.

REAL TRACTOR BARGAINS

Samson R-12	$ 450.00
Cleveland	650.00
Samson S-25	1000.00
Bates Steel Mule	1200.00
Samson S-25 (new)	1500.00
Samson 30 X (new)	1650.00
Best 90	3500.00

All in good condition. Will show and demonstrate. Terms. L. S. Jenness, Merritt 2379, 1075 Glendora Ave., Oakland.

CORN HARVESTER—One man, one horse, one row, self-gathering. Equal to a corn binder. Sold to farmers for twenty-three years. Only $75, with fodder binder. Free catalogue showing pictures of harvester. PROCESS CORN HARVESTER CO., Salina, Kans.

REMANUFACTURED PIPE.

All sizes standard pipe and wrought iron screw casing. All kinds of fittings. Guaranteed good as new. Write for prices. Welsbaum Pipe Works, 160 Eleventh street, San Francisco.

ALL SIZES OF PIPE and screw casing, both new and second-hand, dipped and undipped. Guaranteed. Prices right. Sheeler Pipe Works, 304 Howard St., San Francisco.

MADE OF REDWOOD, Hawley's Perforated wooden well casing, the best and cheapest well screen made. Send for descriptive circular. C. M. Hawley, La Mesa, California.

CO-OPERATION (not operated for profit) reduces living expenses. Particulars and catalogue from Co-operative League, Commercial street, San Francisco.

PATENT ATTORNEYS.

WEBSTER, WEBSTER & BLEWETT, Savings and Loan Bldg., Stockton, California. Established 50 years. Send for free book on patents.

BEES FOR SALE—Golden Italians in patent hives. John G. Mee St. Helena, Cal.

FOR SALE—One fruit cutting machine in first-class order. R. R. Beard, Vacaville.

AGENTS—Mason sold 18 sprayers and Autowashers one Saturday. Profits, $2.50 each. Square deal. Particulars FREE. RUSLER COMPANY, JOHNSTOWN, Ohio.

WANTED.

WANTED—Married dairyman; experienced in feeding, testing, calf raising, use of milking machines, gas engines, etc. Sunnybrook Ranch, Willits, Calif.

AGRICULTURAL EFFICIENCY expert desires to manage ranch on efficiency basis. Experience in all branches of farming. P. O. Box 750A, Chico, Calif.

WANTED—Experienced dairyman to take charge of small purebred herd, with one helper. Box 1580, Pacific Rural Press.

FOR SALE—In Klamath County, Oregon, 600 acres good level land, unimproved, good for alfalfa, grain or stock. Price, $10.00 per acre. Easy terms. For particulars, address Mrs. Mary Johnson, 414 Wilson Ave., Vallejo.

COUNTRY LANDS.

$35,000—Sixty-one acres located a short distance from Mountain View, in a good location. There are 41 acres in alfalfa, and 20 acres in tomatoes, with a small family orchard. Improvements consist of a fine modern residence of 7 rooms, barn and a complete set of outbuildings. There is a first-class pumping plant on the property, which furnishes an abundance of water for irrigation the year round. The place is fenced and cross-fenced and divided off into several fields. Can be bought on terms.

$500 per acre. 40 acres all in bearing alfalfa, located in the rich Mountain View district, and divided into two fields, irrigation from pumping plant and artesian well. No buildings. Terms of payment can be arranged.

DAIRY AND ALFALFA LAND

$205 per acre, for 113 acres of rich vegetable, dairy or alfalfa land; located near Mountain View, in a very good district; improvements consist of a 5-room ranch house, 3 barns, pumping plant and two flowing artesian wells. The property is fenced and cross-fenced and divided off into six different fields; a remarkably cheap place; one-third cash required.

WILLIAM P. WRIGHT
Mountain View, Santa Clara Co., California.

RANCH FOR SALE—Greatest bargain ever put on the market. $12,500 buys 460 acres in the choice spot of Modoc. 360 acres in mountain ranch on State highway. Mail daily. 100 acres fenced, most all in Red Top and Timothy hay. Fine garden spot. Family orchard, five-roomed house, barn and garage. Good range, lots of timber, ready market for same at good price. Numerous springs and creeks, never known to go dry and recorded water right. Five miles from this ranch and on same State highway in Surprise Valley, 100 acres all fenced; meadow alfalfa and grain land. Springs, artesian well and water right. 1½ miles from good grammar and high schools. All farming tools, team of horses. Clear title, no mortgage. Will take one-half cash, the balance at 7 per cent interest, if desired. Florence A. Hardwick, Cedarville, Modoc Co., Calif.

$35,000—85 acres, 50 yards from school; county road on two sides. 10 room house (hot and cold water), 3 wells, windmill and tank, new gas engine and pump; barn, chicken and brooder houses; 2 horses, 1 cow, 350 chickens; 300 fruit boxes, 200 trays; complete set of implements to run place, including 4 wagons, $250 power spray pump, cider press, etc.; garage and work shop. Average income $5,000 per annum. Will guarantee $7,000 crop this year. 2 miles from Windsor station between Santa Rosa and Healdsburg, Sonoma County. 30 acres prunes of which 18 acres bearing, balance 3 to 5 years; 1 acre peaches; 10 acres apples; 2 acres pears; 14 acres resistant vines; plenty of berries, beans, corn, potatoes, etc. About 30 acres of this is deep rich bottom land with plenty of water to irrigate if necessary. Mortgage, $12,000 5%, can remain. Umbsen, Kerner & Elsert, 20 Montgomery St., San Francisco.

RARE OPPORTUNITY—119¾ acres in the fertile Pajaro Valley, 4½ miles from Watsonville on first slope of foot-hills, in what is known as the frostless belt. 31 acres in 16 year apple trees. 10 acres Royal Apricots in bearing. 18 acre vineyard. Seven-room modern house. Four-room house for foreman. Land described in Government Soil Survey as salsipuedes loam. Excellent for apricots. Whole property under cultivation. Barn 30x70 and other good outbuildings. Implements. Good spring water, tank and gravity pressure, retiring on account of age. Price, $25,000. Edw. A. Hall, Watsonville, Cal.

FOR SALE—10 acres of fine land, contains fine 2 self-contained chicken brooders. Good house and improvements. 2 acres in young prune trees. For particulars inquire of Box 620, Rocklin.

SEEDS AND PLANTS.

FLORIDA SOUR AND CALIF. SWEET ORANGE seed-bed stock. The time to plant is propitious; order now. Southland Nurseries, 1911 E. Colo St., Pasadena, Calif.

FOR SALE—Capri Figs for distribution at proper time. Large one containing many seeds. C. E. Chantry, Orland, Cal.

NEW CROP WHEAT

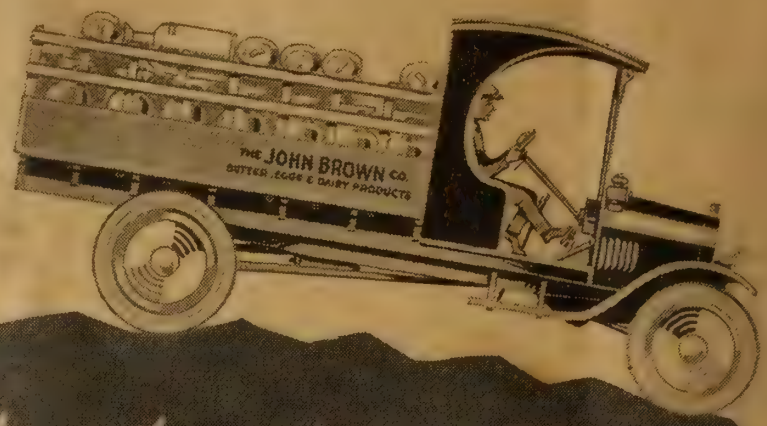
Splivalo, McLean & Company

825 Merchants' Ex. Bldg.
San Francisco

Quick returns *Top prices*

Reference Anglo & London Paris National Bank





Like the teeth of a buzz saw!

YOU'VE stood in awe before a buzz-saw and watched it literally tear its way through a piece of material. Being driven at such a terrific speed, it produces results that are almost startling. But if you were to run the buzz saw at a much slower speed, and take some of the keenness off of the teeth, then you would have an action very similar to that of road bumps, ruts and rough places as they rack, strain and wear our your Ford Car or Ford One Ton Truck.

The thousands of sudden, heavy impacts, while not sufficient to cause instant breakage, yet cause great and unnecessary wear on all parts, particularly the power unit and the tires.

It has been proved by nearly a million Ford owners that by properly cushioning their machines against road shocks and vibrations with Hassler Shock Absorbers, that you save at least 30 per cent of the ordinary tire and repair expense, and that your Ford's depreciation is decreased a like amount. You also obtain considerable increase in gasoline mileage, due to the smoother running. Hasslers prevent squeaks, rattles and deterioration, for the spiral, conical springs of chrome-vanadium steel compress on either upward or downward movements.

In addition to all of these savings you have such greatly increased comfort that your Ford Car or Truck rides and drives as well as the highest priced heavy models. It steers easily, holds the road, travels safely at high speed, and the general and good satisfaction you derive from its use is increased astonishingly by Hassler Shock Absorbers.

Hassler Shock Absorbers can be put on in a very few minutes, either by you or your garageman. There are two types, one for all Ford Passenger Cars, the other "Double or Twins" for the rear of the Ford One Ton Truck.

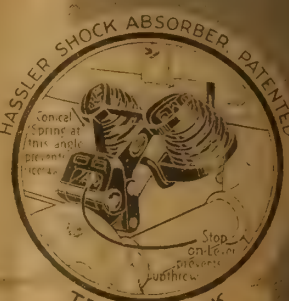
10-DAY TRIAL OFFER

Don't ride without Hasslers because some one tries to discourage you. They are a quality product—worth their price. The Hassler dealer in your vicinity will put them on for 10 days' trial. You money refunded if you say so. Write for name of dealer and Trial Blank.

ROBERT H. HASSLER, Inc., 1193 Naomi St., Indianapolis, Indiana.
Canadian Factory, Hamilton, Ontario

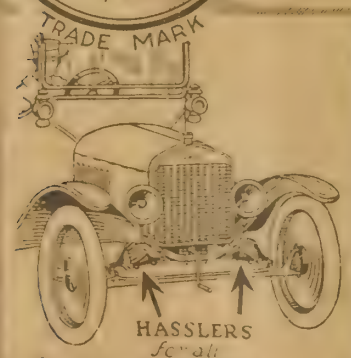
The Hassler Guarantee: "Absolute satisfaction or your money back"



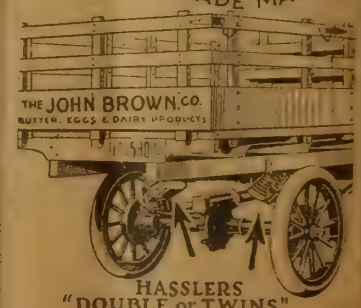


HASSLER
TRADE MARK REGISTERED
Shock Absorber
PATENTED

The conical springs set at the angle shown prevent sidesway and allow for the most resilient downward action. The springs compress on either upward or downward movements—do not stretch out of shape—do not allow up-throw. Hasslers last as long as the Ford and make it last.



HASSLERS
for all
Ford Passenger Cars



HASSLERS
"DOUBLE or TWINS"
for the Ford One Ton Truck

Vol. XCVII—No. 26 Forty-ninth Year

THE PACIFIC RURAL PRESS

SAN FRANCISCO JUNE 28, 1919 LOS ANGELES

Will Store Sweet Potatoes Until Spring.

Written for Pacific Rural Press by R. E. Hodges.

THE LARGEST SWEET POTATO STORAGE PLANT in the world is to be built at Turlock this summer. Early in June the deal was closed for a strip of land 716 feet long and 50 feet wide along the railroad in that city. One of the four units of the plant is to be finished by September 10, and the contract calls for completion of all by October 1. About 5,000 tons of sweet potatoes will be handled, according to A. Ashton Reed of San Francisco, who claims responsibility for the deal. Contracts for growing and delivery of 3,500 tons had already been signed June 7, growers to receive $1.25 per hundredweight field run. A partnership, consisting of E. L. Jewett, L. E. Bontz, and C. W. Hunt (of Hunt, Hatch & Co.,), is handling the proposition, and they expect to incorporate soon for $200,000.

The system of curing and storage is a new one, being a development by J. B. Wells of Texas, from the best plans resulting from experiments made in the Southern States by the U. S. Department of Agriculture.

Cure Ten Days—Store Indefinitely.

Sweet potatoes may be stored as long as desirable, but after a certain period, they may be removed and kept in common bins. A yam which had been out of storage sixteen months made a fine pie for the office force of Mr. Hunt. Mr. Jewett showed the writer a sweet potato on April 28 which had been lying around the office since it was taken out of storage in January. It was still entirely sound and firm. The weight shrinkage due to curing is not over four to six per cent, and even on infected tubers diseases do not progress to any great extent. Common potatoes, if sound, could be cured the same way.

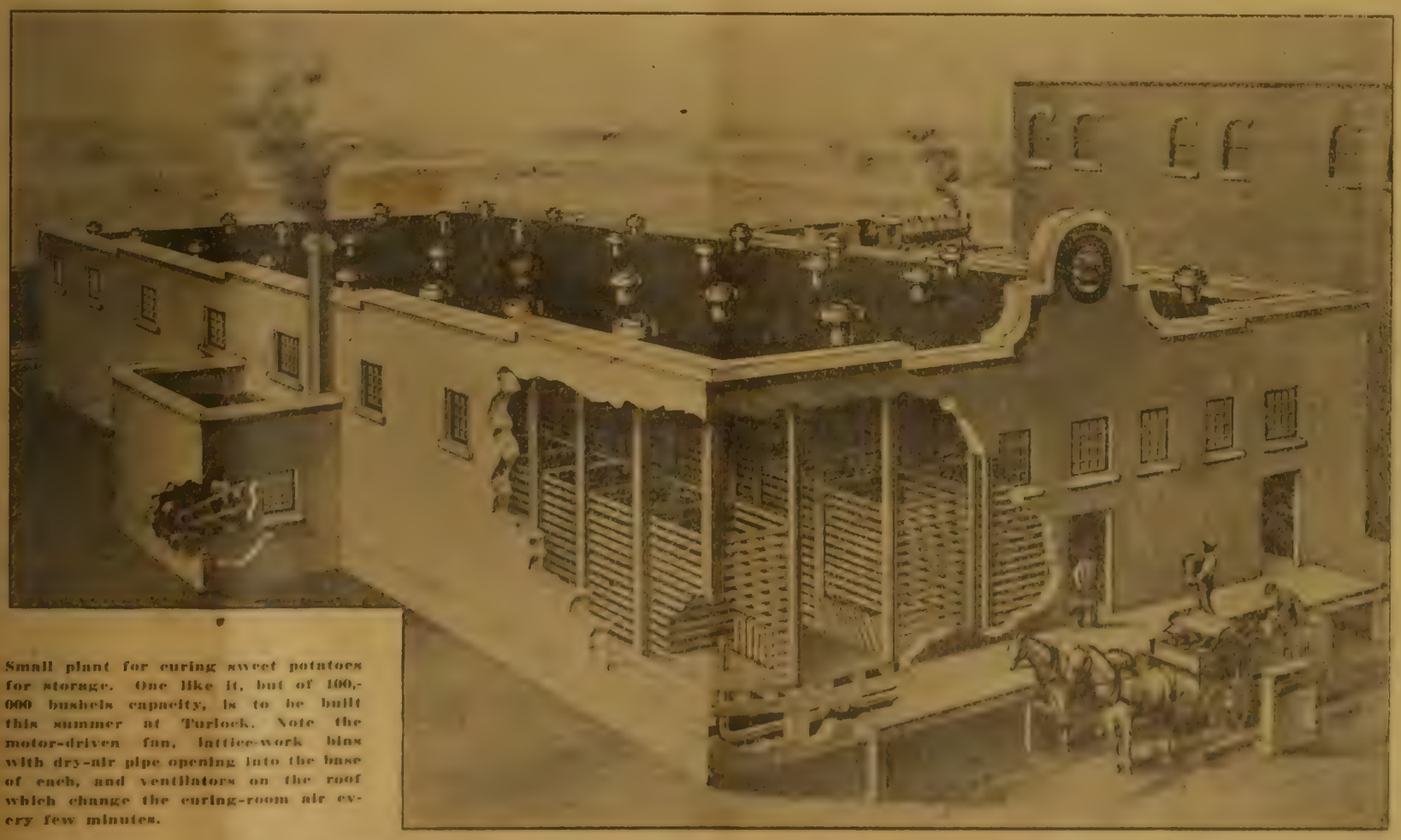
The system is to store sweet potatoes in bins 6x6 feet and with latticed sides. Dry air at 85 to 90 degrees temperature is forced by a motor and fans through the bins from pipes in the floor to ventilators in the roof. After about ten days of this, the temperature will be reduced to approximately 55 degrees. This treatment toughens the skin and outer layer of each sweet potato, so it will endure handling after being taken out. Shipments will be made from January until the crop is sold.

Sweet Potatoes for Spring Markets.

This will give a wonderful impetus to the production of one of our finest vegetables. Heretofore, it has been practically impossible to keep sweet potatoes in marketable condition after New Year's. If they seem sound when brought out of ordinary cellar storage, the skins are soft and the sweets break down in a very few days. Mr. Jewett has noted a 50 per cent loss within three days after arrival on the markets after January 1. Such risk, of course, prevents many merchants or growers making a second attempt, and holds production down to what can ordinarily be used before New Year's. Then no more sweet potatoes are available until the new crop comes on. With the new system, acreage can be increased to raise all that the whole population will want to eat the year around, and the cured sweet potatoes can be sold at $3 and $3.25 per hundredweight. This plant will cost about $75,000 besides the land, and will require about 20 men about 90 days per year and a superintendent the year around, to operate it.

Acreage and Yield May Multiply.

Practically all of California's sweet potatoes are grown in the vicinity of Turlock, Livingston, Atwater, and Merced. A few hundred acres are grown in Orange and Los Angeles counties. The total acreage the past three years has been about 6000 in California, and 774,000 to 922,000 in the United States. It is increasing each year. Around Longview, Texas, where the system of curing described above has been put into operation, the crop of sweet potatoes increased from less than 30,000 bushels in 1914, to 200,000 in 1918. As the yield in California has been 160 to 170 bushels per acre, we produced over a million bushels the past season. With proper curing and storage, there seems no reason why we should not increase as they did in Texas, which would give us on output of nearly 7,000,000 bushels four years hence! Even then we would be producing less by 5,000,000 bushels than Georgia did last year, and less than half as much as Alabama produced. The total for the United States was 86,334,000 bushels in 1918, so whatever we may increase would not seriously influence the market even without storage.



Small plant for curing sweet potatoes for storage. One like it, but of 100,000 bushels capacity, is to be built this summer at Turlock. Note the motor-driven fan, lattice-work bins with dry-air pipe opening into the base of each, and ventilators on the roof which change the curing-room air every few minutes.

PACIFIC RURAL PRESS

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JNO. J. FOX - - - - - Horticulture
B. H. WHITTEN - - - - Livestock

EDITORIAL.

THE GLORIOUS FOURTH.

IT IS grand to know that the daylight of the 143rd anniversary of our national independence will break upon a world at peace. Four anniversaries dawned beneath the clouds of war made and maintained to sweep from the earth the liberty born of our forefathers and by them proclaimed the light of the world. Four birthdays of that light were dimmed and national joy restrained by deep conviction of national danger. As we recall those days—

> The dawn is overcast, the morning lowers,
> And, heavily in clouds, brings on the day;
> The great, important day, big with the fate
> Of Woodrow and of us!

[We have slightly amended the last line of Mr. Addison. Poets are conspicuously better in depicting situations than in fitting personalities durably into them.—Ed.]

And so on Friday next the American eagle will fly low and thrill every patriotic heart with his triumphant cry of Victory and Peace—an allied peace made in Germany, because the allied armies were so near that there was nothing else to be made to set the Germany people free. The way of the transgressor will be hard, but there is hope—hope "to turn from darkness to light," as the now recognized ruling and representative power in Germany has resolved to do.

FOURTH OF JULY TOPICS.

It is fitting that commemorations of the American birthday should be eloquent of delivery from autocratic menace and the new demonstration of the perpetuity of our principles of equal opportunity at home and fair play among the nations. Those who drew the sword have fallen by the sword, and their followers have repudiated their authority and invoked their punishment. This much and the bond to make good, as far as possible, the outrages which unrighteous war visited upon peaceful people, could have been secured six months ago as well or perhaps even better than now. Have we gained aught by the half-year of labor by the peace conference? That remains to be determined by the process ordained for representative government—by open discussion and formation of popular judgment, which will doubtless influence those constituted to ratify and approve, or otherwise dispose of, the policy formulated by the executive branch of the Government. It was the duty and the privilege of the executive outfit to develop its policy; it is just as much the duty and privilege of the popular outfit to approve, modify or reject it. To approve it because it is a constituted policy is unwise and uncalled for—the time for "war measures" is fortunately passed. To approve or reject it because of some relation of the policy to partisan politics is unwise and unworthy. All the people must live for generations by the decision soon to be reached at Washington; it is not a proper thing to hold or to get offices with. Therefore, every American should look, listen, learn and think for himself to the fullness of his individual capacity for knowing and thinking, and to make known the conclusions of his best knowledge and judgment that every other American may test them out by measurement with his own. For half a year the American people have groped in the dark; led by some, tripped up by others. If peace brings light, it will not be the least of its blessings. Is the league of nations a vagary or a true vision; is it curative of war or provocative of war; is it a menace to our government, which is the greatest popular government, and the longest in continuous existence, in the world, or is it the surety of its widest world-service? Do we constitute this league (for it will not exist without us) in response to a true call of duty to all mankind, or do we exchange our birthright for a mess of internationalistic pottage? These are all questions which Fourth of July oratory will strenuously and very properly attack this year. We do not undertake discussion of other than agricultural aspects of statesmanship, nor are we clothed in the mantle of prophecy concerning their outcome, but we conceive it to be our patriotic duty to advise all readers to consider them seriously in all phases in which they may be presented by those Americans in whose insight and patriotism each one may have confidence.

WILL THERE BE A LEAGUE OF NATIONS?

We see no reason to doubt that there will be; in fact, a league of nations came into existence when the Germans signed the peace treaty. The allies must of course sign also what they made by six months at hard labor at Versailles. The representatives of the world's nations will sign just as surely as a physician signs his own prescription. But will the popular assemblies in these nations approve what their representatives have prescribed? They surely will—perhaps with reservations and modifications which will not destroy the league, but will merely add to the literary treasures of a going and growing concern and constitute a part of its prenatal development. This newest child of weltpolitik will therefore be duly born with its hair cut and its tonsils removed. We have often thought of late of the views which historians might hold a few generations hence of the way the league of nations was brought into the world. The first signature will be that of the German people, which had to the league no creative relation and in which it had no membership, and to whose terms of surrender and reparation the league had no visible connection. The signature of the German people to the league covenant will therefore be looked upon as chiefly decorative—but in order to enforce the terms of the peace-treaty the signatures of the allied nations must also be affixed, and as they become by the act of signing members of the league, their signatures become, as between themselves and in their relation to the rest of the world, binding—and the league exists. We imagine that in the future this birth of the league will be looked upon as one of the most adroit pieces of international statesmanship the world has ever realized. The victorious allies set out to make peace with the vanquished, and find they have entered into a binding relation to each other and to all neutrals as well. The ardent youth goes forth with his hair slicked and his boots polished, to marry the maiden who surrenders her future to his direction, and finds out later that he has surrendered himself to the direction of his mother-in-law, becomes morally liable for the old debts of his father-in-law; also provider and guardian of his wife's charming sisters; The league has often been referred to by President Wilson as a "family of nations," and he probably knows very well what those words imply. His vision of America's world duty justifies his conception and his metaphor as well. We have an idea that the future historian then will credit the creation of the league to the insistence of President Wilson; and what some of us are now disposed to consider vain, opinionated and visionary in his attitudes and actions, may be counted in the far future as manifestations of foresight and indispensability. For it seems clear enough that the only way to make the world come through with a league of nations was to put it over as a rider upon the peace which the world must make or perish. Thus the league, to utterly destroy the evils of diplomacy, may perhaps become to future generations the highest exemplar of the diplomatic art.

NO MERGER FOR AMERICANS.

No doubt our Fourth of July orators of 1919 will fall into two categories: those who proclaim the league as the greatest gift of America to the world, and those who will claim that this gift involves the greatest peril and menace to American institutions and industries. It is our judgment that the claims of the two lines of thought and utterance, taken together, constitute the full truth of the matter, and that either of them by itself is inadequate, partial, and perhaps partisan. For to give away Americanism would be national suicide, but to give Americanism to the world while we duly guard and protect the progress of Americanism at home must really be the discharge of our highest duty to humanity. Our national level is above the world-level in average motive, purpose and achievement, and the assertion of the fact is not jingoish because we credit other nations with having given in times past and passing the best people they had in breadth of view, courage, confidence, aspiration and altruism, and thus the world gave us the seed from which greatness has grown under our favoring spiritual attitudes and with our material endowments. As the American people has been bred, fed and trained, there could be only greatness attained—therefore the American people is thankful to the world; liberal and sympathetic in international attitude and desire; but resolutely determined not to yield to any sentimentality which attempts to teach that the way to lift the world is to merge ourselves into the world and sink to the world level. It is our duty to ourselves and our recognition of all the world has given us, to maintain what the American people is and stands for, because for future generations, as in generations past, those forces of faith, tolerance, freedom and humanitarianism must continuously develop on this continent on a higher plane and to a greater potency than in older countries, where such inherent nobilities of manhood must, for a long time to come, continue to be ground between the upper and nether millstones of class domination and anarchy. And the maintenance of the spiritual qualities for which America is conceded to be distinctively greatest among the nations depends upon promotion of sound finance and industrial conditions generally which shall be fair to the producing classes with resultant national prosperity—and of course the Fourth of July orators will tell us how to do it. Whatever they may say, however, we shall remain firm in the conviction that any hope of sweetening the waters of the world by throwing our own triumphant Americanism into an international pool in which others and not we ourselves shall control our industrial relations and internal affairs will be as visionary and disappointing as was the marrying of a sot for his reformation while all the street-corners were resplendent with saloon illumination. Both national leaguery and reformatory marriage seem to us to need strong prohibition amendments.

AGRICULTURE AND THE LEAGUE.

It does not appear from such transcripts as we have seen that agriculture has any specific recognition in the ninety thousand words which are used in the league covenant and peace treaty. This may be due to the fact that though agriculture presented claims as discordant and diverse as the peace conference could desire to make discussion interesting, none of the claims had political influence enough to cause anyone to suggest that it be considered. For although the peace conference was expected to be the forum for open-air discussion of all matters of world moment, it turned out to be the most tightly closed cabinet of world-legislation which has ever been sealed up. Perhaps this was unavoidable. It is significant, however, that federated labor had pull enough to enter, and secured a special chapter in the proceedings. And we are not objecting to that. It is, however, another warning that no one will pay attention to farming, except to prescribe for it without reference to its own interests and desires, unless it speaks for itself in ways which do not lead to the rest-cure. As things are, it seems to us that agriculture must get what it can from the efforts of those with whose interests its own may at some points coincide. The future of American agriculture will depend largely upon the maintenance of the governmental policies under

prosperity. If American labor can free itself from competition with the cheap labor of other countries, and at the same time expect agriculture to compete with foreign food production while paying the wages which the American laborer secures by excluding immigration, it must soon appear that some one's arithmetic is pretty bad. And if publicists figure that the American farmer can produce stuff for the export trade which can sell abroad in competition with products produced at half the American labor cost or less, they also need an adding-machine. But such things, and others like them affecting farming, can be adjusted if we do not adopt a league which destroys our management of our own affairs. It is up to the American people to see to it that Americans do not lose the right and power of self-determination!

QUERIES AND REPLIES

By the Editor.

Inquirer Must Give Full Name and Address.

Growth Season of Blackeyes.

To the Editor: Will blackeye beans, planted as late as July 1st, mature before November 1st in this part of the Sacramento Valley? Are they good hog and chicken feed?—H. E. W., Los Molinos.

Yes; if the frost does not get them before that date. All beans are a nutritious food for hogs and fowls, but they must be fed reasonably with other feeds and not as a sole ration.

Peaches 98 per cent Efficient.

To the Editor: I have 200 Philip cling peach trees and four out of these 200 throw off their fruit. The peaches crack and get gummy and fall off. The trees have sandy loam and look sound and healthy. What is the cause of this?—F. S., Valley Home.

If you mean that the trees which lose their fruit in the way you prescribe look "sound and healthy" as the other trees, we are stumped in diagnosis and will have to cause it "heart-failure." If, however, the leaves are small on these trees and there is die-back and gumming of the twigs as well as the fruit, there may be soil or water-trouble at the root, or San Jose scale on the bark. Either of these kinds of trouble might affect single trees and not others, for a time at least, but the whole tree is apt to look sick. If you have some pest working only to dislodge the fruit, some signs of it ought to be seen on the fruit. Ask your county horticultural commissioner, Mr. Rutherford, at Modesto, to make an examination of the trees for you.

Pear and Cherry Slugs.

To the Editor: I send leaves from 3-year-old pear trees which had the best of care, and early this season I sprayed the trees with lime sulphur and salt, and they were looking fine until the leaves became just covered with small green snails, which stay with the leaves until the sap is gone. Most of the trees are bare now, as the wind blew off all the dead leaves. I put a lot of dry sulphur all over the trees, but the pests are still here. What is it and what shall I do?—Subscriber, Union.

You have a slimy larva of a four-winged shiny black fly less than a quarter of an inch in length. It has no relationship to a snail, though from its resemblance thereto it is commonly called a slug. It infests both cherry and pear. Fighting it should begin early in the season as soon as the first are seen. It can be poisoned by spraying with lead arsenate, 2 lbs. to 50 gallons of water, or by dusting with lime or sulphur or with fine road dust—covering the upper surfaces of the leaves well, for it is there the insect works. Any fine dry dust covering the insect sticks to it and causes it to wriggle and roll off. Perhaps your sulphur was not finely ground enough to stick well. Adobe road dust is very effective and cheap if you are in a region where it is plentiful.

Wild Plums with Pockets.

To the Editor: I am sending specimens of blighted wild plums. These wild plum trees grow to a height usually of four to five feet. They bloom freely in May. The young fruit forms and when they are about the size of peas they become blighted and pods or large sacks form. These wild plums are delicious, and much esteemed here in Scott Valley. We would like to know if there is any prevention for this blight, and if so, will you kindly inform us?—J. A. D., Etna Mills.

The disease which you find is caused by a fungus (Exoascus pruni), a sister species of the same genus with the fungus (Exoascus deformans), which causes the curl-leaf of the peach. The common name of the trouble you find is "plum pockets" because the fungus transforms the fruit into an enlarged and deformed hollow sack. It has been noted on the wild plums of the Sierra region from time to time, and it sometimes causes considerable injury to cultivated plums in other parts of the State, but cannot, fortunately, be called prevalent. Nothing can be prescribed in the way of treatment for the areas of wild plums because no one will undertake to spray the whole landscape, but in orchards it can be controlled by the same treatment which is employed for the curl-leaf.

Cause of Branch-Failure.

To the Editor: What make some limbs on trees die back to the main body after they have leafed out?—A. F., Healdsburg.

Unless the death of a branch is accounted for by parasitic invasion—either by fungus, bacterium or insect—it is due to sap-failure. This assignment of course is just exactly as satisfactory as the verdict that if a man has not been shot or hung, the cause of his death is heart-failure. Human doctors put up a great bluff when you ask why the heart failed, and why should not a tree-doctor have the same right of defense against the question, why did the sap fail? However, it is probably that when a branch fails without visible cause, either the roots have been hurt so that they cannot push up sap enough for the whole top, and the result is "die-back," or the connection of the dying branch has been broken by some cellular fight inside which diverts the sap from this branch to some other upward channels. In either case, and from whatever cause, a dying branch should cut back to some lower point where active growth is manifested, or, lacking such manifestation, should be cut back to its starting point from the trunk and the wound painted as soon as the surface of the cut dries.

Ways Out of the Mud.

To the Editor: I have some ground that absolutely will not take water. It will hold water for as long as a week, and as some of it has alfalfa on it I am afraid when I wet it again in hot weather that it will drown it out. The ground has a brownish clay underneath and it runs down ten to twelve feet, so I don't know what to do with it. I had some of it in corn last year, but as soon as it gets wet it stays wet, and then when it dries it cracks and bakes considerably. Kindly let me know the best way out of it.—H. J. R., Tulare.

Unless you are willing to do a lot of work and spend some money on such an obstinate piece of land, the best way out of it is the lane which leads to the State highway. But perhaps the case is not as bad as it might be. As you speak of alfalfa and corn growing on it, it is probably not alkaline, and that is very important. First of all, the land needs dynamiting. Get the publications offered by the powder-makers who advertise in the Rural Press, and read carefully all the advice they give about materials and methods. Next, send to the College of Agriculture at Berkeley for their publications about the use of lime on heavy soils, and write to our advertisers of agricultural lime for their announcements about the use of it. After you get posted about shooting and liming land, study about under-draining with tile, and decide as to what lies within your power do to. Now take immediate notice of these things: (1) all the green stuff, weeds, cover-crops and plant-refuse you can plow into the land will act immediately in mellowing the surface soil; (2) all the dry vegetable stuff, straw, hay, grape pomace, sawdust, etc., will act in the same way, if you put on water enough to keep it decaying in moist soil; (3) all the animal manure you can get will not only do the same thing, but will also help you to grow more stuff to plow into the soil, to feed to stock or to sell for cash. Resolve to do all these things as you are able.

For the growth on the land before and while you are improving it, remember these things: (1) catch the land with plow and cultivator just when it is in condition to work most easily. If you try to work it too dry you will kill your team; if you try to work it too wet you will kill the land. You must catch it betwixt and between, when it is just right and then work fast, and stop when it begins to get wrong. You can beat the land, but if you give it any chance it will beat you.

WHAT ARE YOU DOING?

We have a number of men who are doing excellent work in our circulation department, looking after our renewals and securing new subscribers. They enjoy the work and are making good money.

We can use a few more men, and if you are not satisfied with your present work and feel that you can earn more money, perhaps we have just what you are looking for. Anyway, it won't do any harm to investigate.

So if you have an automobile and are free to travel; if you are not afraid of hard work, and believe that you can successfully present our paper to the people, write us about yourself and we will give you full particulars.

As for irrigation, your slogan must be, little and often. If you really have a stand of alfalfa, do not treat it the way which is right for a loamy soil. Give it two small irrigations between cuttings and none at all after cutting until the growth gets high enough to shade the water from the sun and put the water on late in the afternoon and not early in the morning. Get acquainted with your neighbors who are working similar soil, and turn your swearing to some social account. Your comfort must be that in all probability if the land is not alkaline, it will stand by you and repay all the wise work and outlay you can make in its improvement. If you do it right and long enough, you will have a farm which all the mud-farmers in the district will envy.

Jerusalem; Crickets!

To the Editor: I send you a dead bug in a bag. Most of them are bigger and fatter than the one I send. I find from one to three or four in a hole and thousands of them in a little piece of three acres of beans and other truck—mainly eating the leaves of beans and continually checking their growth, as they bloom without branches and few leaves. These bugs work under ground like gophers, 12 to 18 inches deep in burrows nearly an inch large and one to two yards long in sandy soil. Thousands of them make the subsoil dry like a sieve though I had fine surface cultivation. The cultivator does not reach down to them, so they come right up again. What are they, and how can they be fought? I thought rats were eating my plants and only lately found out what it was, as they seldom show themselves feeding at night. I have fought gophers, rats, squirrels, rabbits, but this pest beats me.—W. P. W., Marina.

No wonder you are startled for you have struck the largest and most formidable looking of all the insect pests which the California gardener is ever up against. It is the Jerusalem cricket or sand cricket, sometimes called the "California potato bug," because it attacks spuds underground, making large holes in them, and, if we remember correctly, tunneling clean through the tuber, sometimes. Ordinarily, in common gardening one throws out a few with a spade and is startled as they seem to square off for a fight. How a chap would feel with thousands of them your letter clearly indicates. You are right about their habits; they keep out of sight in the daytime, if they can, and feed at night—when they want things above ground. They are sometimes nearly two inches long—brownish, hard-shelled and striped-bodied above and yellowish when turned over. Their legs are long and fitted for digging and their jaws formidable. If you wish to hear some hard swearing, give one to a hen with a brood of chickens. She will hit hard and cuss hard all the time and the chicks will gather up the pieces. The best way to route them out is to plow deeply and let a good large flock of poultry loose to follow the furrow. We do not know of other ways to get at them which are practicable. They rapidly decrease with deep cultivation and soon become negligible. It is possible they would take to poisoned bran mash as used for grasshoppers and cutworms. They belong to the grasshopper and cricket order of insects and their proper name is Stenopelmatus irregularis.

California Weather Record.

The following rainfall and temperature record is furnished the Pacific Rural Press by the United States Department of Agriculture Weather Bureau at San Francisco for the week ending June 24, 1919:

Stations—	Rainfall: Past Week	Rainfall: Seasonal To Date	Rainfall: Normal To Date	Temperature: Highest	Temperature: Lowest
Eureka	.00	39.80	45.58	66	48
Red Bluff	.00	36.10	24.00	100	54
Sacramento	.00	17.70	20.09	96	56
San Francisco	.00	23.04	22.2	74	50
San Jose	.00	14.87	16.70	88	44
Fresno	.00	6.00	9.08	102	—
San Luis Obispo	.00	18.00	20.51	82	48
Los Angeles	.00	8.58	14.01	92	—
San Diego	.00	8.24	10.01	82	60
Westmoreland	.00	7.82	8.11	94	56
Reno	.00	9.67	10.42	92	48
Tonopah	.00	5.94	10.09	86	44

Dusting for Aphis and Codling Moth

(Written for Pacific Rural Press by John J. Fox.)

The walnut aphis has always been with us more or less—that tiny yellow bug that lives on the under sides of the leaves and saps the juices, destroying the function of the leaves and therefore the vigor of the tree. The codling moth on walnuts is another matter. For though it has been known to work on walnuts here and there in Orange county at least ten years ago, it was not until recently that it was looked upon as a serious menace to the walnut industry. In Orange county and one district of Santa Barbara county losses were reported of from 25 per cent to 70 per cent of crops in some orchards. The little worm burrows intothe heart of the nut and ruins it for marketing purposes.

The Walnut Codling Moth.

It was not until this last fall that its identity was definitely established as being the real apple codling-moth (Laspeyresia Pomonella) by Dr. A. L. Quaintance of the U. S. Bureau of Entomology. Its life habits under its new environment appear to have changed and are being closely studied with a view to fighting it at the right time—the only time. And that is before it bores into the nut.

Professor Ralph E. Smith, Plant Pathologist of the University of California, has been "borrowed" by the California Walnut Growers' Association to carry out actual field experiments in co-operation with the County Horticultural Commissioners. Professor H. J. Quayle, Entomologist of the University of California, has been assigned to study the bionomics of the codling moth in the walnut orchards at Santa Ana. It is believed that the first brood lays its eggs about the first of June, and the second about the first week in August. They string along and no general exodus takes place, but these seem to be about the dates, subject to modifications and conditions observed. The second brood is much more abundant than the first, Professor Smith said, and though a very thorough spraying of the first brood might possibly obviate the necessity of the later spray, growers seem to be quite willing to make the two dusting sprays.



The dust-sprayer entirely envelopes the tree with a pest-destroying cloud.

The New Dust Method.

There are 36 Niagara dust sprayers in use in Santa Barbara county alone, though all the walnut growing sections are using them and other makes of power dusters. A gasoline engine runs a small centrifugal air-blower, which delivers a cloud of dust that completely envelopes the tree so that every leaf is covered. The jet is directed from beneath and the team or tractor keeps steadily moving, both sides of the row being "shot." Two men only are required—one to drive the team or tractor and the other to direct the nozzle. In fact, some men are doing the work alone, having the blower mounted on the tractor and stopping under each tree to blow the dust.

Codling Moth and Aphis Formula.

The following formula is for the compound used by Professor Smith and which he hopes will prove efficacious: 15 per cent powdered lead arsenate; 65 per cent Kaolin; 18 per cent hydrated lime and 2 per cent Black Leaf 40: This is mixed under a special process in the California Walnut Growers' Association's warehouses. The Association is purchasing, making and distributing all materials and charges growers eight cents a pound for the above combined mixture. It takes about three pounds of the dust for a large walnut tree. The two men start to work at about 5 p. m. and work till 11 p. m., when the wind starts up. They both wear masks. This constitutes a good day's work and about 25 acres are dusted in that time. This brings the cost of dusting at from $8 to $9 an acre, inclusive of team and men's time, gas and oil for little gas engine.

Cheaper Than Spraying.

This is, of course, much cheaper than spraying. The same amount of amount of arsenate is used as would be used in liquid spraying per tree, and it is believed to be better distributed per leaf. The greatest advantage is the saving in time as well as money. Professor Smith said that it was not by any means expected to supplant liquid spraying but to supplement it. Also, so far as the codling moth is concerned, it has not yet been proven. In only one orchard there had been a little burning of foliage where rain had immediately followed the dusting—acid lead arsenate being used. The acid lead, Mr. Smith said, was all right, whether foggy, dull or bright,but the rain had produced some burning. In any case he recommends basic lead aresnate.

Formula for Aphis Only.

The dust formula used for aphis only consists of 74 per cent Kaolin; 24 per cent hydrated lime, and 2 per cent of Sulphate of Nicotine. We went into a number of orchards where this was being dusted on and failed to find a single living aphis where the machines had passed. Numbers could be seen dead where they had dropped onto the upper surface of leaves beneath them. Those still adhering to the under surface of leaves were upended and dead. Only one side of the row is done—working from the windward—for aphis. The hose is 25 feet long and has a three-foot spout. The enveloping cloud seems to deposit sufficient on the lee side to do the business. From 2 to 3 pounds of dust to a tree is enough. The Professor said that crop loss from the ravages of aphis alone is estimated to average 125 pounds of nuts to the acre apart from its injury to the tree.

Experimental plots on the Main orchard, extending over three years, have given a definite basis for this estimate.

Mixing the Material.

Two hundred tons of Kaolin (or powdered clay) has been bought so far and five tons of Black leaf 40 —in one shipment. The latter comes in ten pound cans and costs (retail) $10.75 a can. At the mixing station in the warehouse at Goleta they are turning the dust out wholesale. The Kaolin and lime are put through a power flour-mixer in regularly weighed batches. The mixers' sieves are 60 mesh above and 100 mesh below to insure fineness of dust and the black leaf 40 is prayed onto the sifted mixture under centrifugal pump pressure as it is passing through the machine. All separated lumps are broken and screened again. The Association of Growers has rendered this concerted action possible. It has bought machines, provided for expert aid, bought and made the material and distributed and sold it at cost.

If this dusting is as useful for red spider and thrips as it has so far been for walnut aphis, there seem to be vast fields for experimenting among other deciduous fruit men.

CROP ESTIMATES TO DATE.

The State Horticultural Commission publishes the following Fruit Crop Estimate for the state average to June: Almonds, 71%; apples, 89%; apricots, 85%; cherries, 83%; figs, 100%; lemons, 91%; olives, 98%; Navel oranges, 97%; Valencia oranges, 98%; peaches, 98%; pears, 87%; plums, 81%; prunes, 96%; walnuts, 100%. To which may be added Muscat and seedless raisins, 100%.



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Fertilizers and Fertilization--IV.

(Written for Pacific Rural Press by Dr. C. B. Lipman, Professor of Soil Chemistry and Bacteriology, University of California.)

Specific Effects of Fertilizer Elements on Plants.

The text books on soils and those on plant physiology teach, so far as I know, with a rare exception or two, that the so-called plant food elements of fertilizers—nitrogen, phosphorus and potassium—are not merely essential to plant growth, but that each produces a specific effect on the plant which is outwardly visible. For example, nitrogen is supposed to stimulate leaf and stalk development; phosphorus is presumed to increase seed production and to hasten maturity and potassium is presumed to have a vital connection with early maturation of a crop, and with sweetness and quality in fruit. Many other such statements have been made in the literature with respect to the specific effects of these three chemical elements in plant growth. Moreover, some authors have gone so far as to say that certain colors, textures, or other characteristics of plants in growth indicate a lack of sufficiency of a given one of the three elements in question.

Claims Which Are Not Proven.

There is little or no basis for all such statements and assumptions. The term "little or no basis" is used advisedly, because it is a fact that color of foliage may in most cases be a guide to the determination of whether or not an ample or a deficient supply of available nitrogen is present in the soil or other growing medium. Thus, a deep green foliage is usually an indication of a plentiful supply of available nitrogen. Yellow, or light geen foliage is frequently an evidence of a deficiency of available nitrogen. But even these indications are not always correct and particularly is this true of the yellow color of leaves. Likewise, an excess of nitrogen does seem to encourage rank stalk and leaf development, resulting with the cereals even in "lodging," but this too might be taken as evidence of a badly unbalanced condition of the nutrient medium of growth—the soil solution—rather than a specific effect of nitrogen. It is, nevertheless, true that the encouragement of heavy stalk and leaf production by nitrogen is very marked with some plants and comes nearest being a manifestation of a specific growth-producing effect of an element which we know about. As for the idea of the specific effects mentioned above as being characteristic of phosphorus and potassium and others found in the literature which I have not mentioned, there is absolutely no unexceptionable evidence to support it. We have no data upon which to base the common belief that phosphorus hastens maturity of plants; or that a lack thereof manifests itself in some abnormal appearance of the plant which has been definitely recognized and correlated with it. The same statements will apply to the potassium questions, and we thus find no justification for the idea that there has been established a certain well-defined correlation between the appearances, colors, or other qualities of plants and a deficiency of any one of the essential elements to plant growth unless, possibly, it be nitrogen.

What We Really Need to Know.

This does not mean, however, that each of the mineral elements does not perform a specific function in the metabolism of the plant for there is some good evidence that it does. It does not even mean that every one of the elements may not specifically affect the plant by its sufficiency or by its inadequacy in such a manner as to be indicated characteristically in the appearance or quality of the plant which human senses can discern. It does mean that if such specific effect or effects for any of the mineral elements except nitrogen exist, we know nothing about them to date. Moreover, the probability of the existence of such specific effects as those in question is not great.

The denials of the common beliefs and of the current teachings in our text-books, which I have made above, are not intended, however, as disclaimers of the existence of other visible effects on plants which a deficiency of a given mineral element may induce. For example, it is pretty well established now that it is necessary not only to have the nutrient solution of a plant of a certain concentration, but also that there be a proper balance among the various constituents thereof. It is clear, therefore, that a plant may show an unthrifty condition, due to too low a concentration of its nutrient medium or to an improper balance of the different elements, without giving us leave to correlate the unthrifty condition with a specific effect of a given element. To put it in another way for emphasis, we may assume that a plant will show a stunted condition or an abnormal color, which will be removed and the plant brought to a normal condition by an application, let us say, of phosphorus or of potassium. This does not argue that a deficiency of the element applied specifically and characteristically causes the abnormal condition in question, but may merely mean that a deficiency of any element by bringing about an unbalanced condition in the nutrient solution may induce abnormal growth and development.

Things Which Seem to Be True.

This statement is intended not merely to deny and disprove the statements on the subject which appear in text-books, but also assumptions to the same effect which constantly appear in the literature of the fertilizer trade. It is well to understand the following clearly:

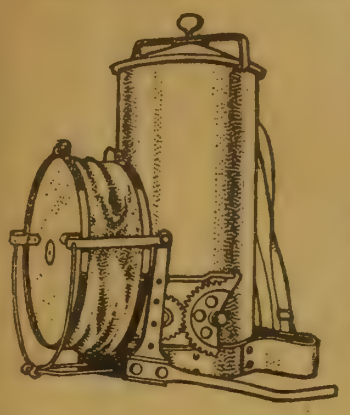
(1) Certain chemical elements in the soil solution, including at least nitrogen, phosphorus, sulphur, lime, magnesia, iron and potash, are essential to normal plant growth.

(2) These elements must be present in sufficient concentration and the whole nutrient solution must be sufficiently concentrated.

(3) These elements must, regardless of the total concentration of the solution, be in a proper balance among themselves.

Beyond these conditions, we know nothing about the soil solution, which is above question. This is particularly pertinent regarding the specific effects of the individual elements or the characteristics of plants which the human senses can discern.

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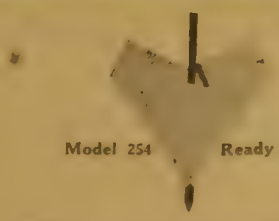
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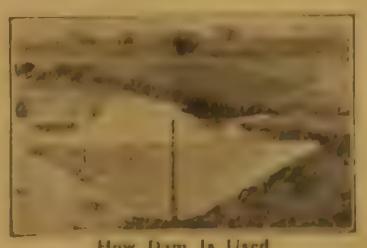
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Explanation of Two Quarantine Measures

(Written for Pacific Rural Press.)

As readers may perhaps get a little mixed on what was done at the recent Fruit Growers' Convention with regard to protection of our plant industries by quarantine of the Coast States, it will be well to explain that there were two measures—one of which by intimate association of local conditions could better support the big League in carrying out the work.

The Present Status of Horticultural Quarantine.

On June 1 the United States Government prohibits the entry into the United States of all trees, shrubs and nursery stock from all parts of the outside world.

No. 1. The Western Plant Quarantine Board is laying the foundation to maintain a barrier against the introduction into the Western States of any injurious insects or plant diseases known to exist in the East and from which we are free, now.

The Quarantine law does not exclude nursery seedlings or valuable new varieties of any kind, but these things are hedged in with "permits," which will allow nothing to pass without rigid scrutiny and fumigation or other treatment by expert inspectors.

No. 2. The Western Plant Protective League is made up of anyone in the League of States who is interested in the protection of his State from plant pests introduced from the outside. In addition to its five officers it will be subject to a Board of Governors of 10 members from the outside, making 15. Three of these must be technical entomologists, three technical plant pathologists and four fruit-growers—practical men.

The purpose of the organization is to co-operate with Federal, State, Provincial and Territorial agencies, operating along parallel lines and to lend aid in the suppression of any insects or pests which may appear. It will be an active practical support of the protective laws as they stand. For instance, if the white pine blister rust were to be introduced, the State might not be able to cope with it unaided. It is a practical organization that can co-operate and lend its support to No. 1 at the least possible cost and in the most practical way.

Components of Western Plant Quarantine Board.

This Board (No. 1) is compared of the Quarantine Representatives of the different States and Territories present at the convention (13). It is a practical board for acting on any proposed quarantine order or regulation affecting the different States. Before any action is taken in any State, the Board will be consulted, and the measure most be approved. It constitutes co-operation in the most practical manner for the safeguarding of our whole plant industry, be it forest, orchard, farm, or truck patch.

The eleven States involved are California, Oregon, Washington, Idaho, Montana, Utah, Nevada, Arizona, Colorado, New Mexico and Wyoming. To these are added the district of Lower California (Governor Canta sent two representatives), British Columbia and Hawaii. The representatives of these States and the growers look upon this as being the best piece of constructive legislation that quarantine officials have undertaken in the West. They came to Riverside with a single purpose and achieved it.

Are You Short of Help?

(Written for Pacific Rural Press.)

Rastus and Sam died at the same time but took different routes, so when Sam got to heaven he called Rastus on the phone and asked him how he liked it down below.

"Oh, boy!" exclaimed Rastus, "dis am some place. All we has to do is to wear a red suit wid horns, an' shovel coal about two hours a day."

"Mah goodness!" responded Sam, "we has to git up at fo' and gathah in de stahs; den we has to haul in de moon and hang out de sun. Den we has to roll de clouds aroun' all day long."

"But, Sam, how comes it you all has to work so hard?"

"Well, to tell de truf, Rastus, we's kinda short o'help up here."

They say that California is the next best place to heaven, and she is in a simliar predicament regarding a shortage of farm help, particularly milkers. Up to this time 60 per cent of all the cows in the State have been milked by Portuguese, but they are going back to their native country by the hundreds, and according to the present outlook very few men of the same nationality will be coming in to take their places.

Who, then, will fill the gap? The problem must be solved before harvest time, or California dairymen will be right up against it. The matter is of such grave importance that the California Dairy Council has interested itself, and last week a committee met with Wm. T. Boyce, Director of Employment of the U. S. Department of Labor for California, Nevada and Arizona. The consensus of opinion was that the time has come when the dairyman must turn to Americans to take the place of foreigners as milkers to a certain extent, but that the average American will not put up with the living condiions on the average farm. As Louis F. Post, Assistant Secretary of Labor, puts it, "The farm must be made a more attractive place to work."

Wages need not be further increased; in fact, it was the opinion of Mr. Boyce that in many cases they are higher than is necessary, because there is too much bidding among farmers for workers. Wages should be standardized, and working and living conditions should be made as uniform as possible. For instance, there are many good farm workers back East who are not getting much more than half what is being paid out here, yet Mr. Boyce can do little in bringing them out here because he cannot offer them anything definite. Mere general statements as to wages and conditions will not go with them. They must have definite assurances. An organized effort would bring them to California, but first there must be uniformity in wages and conditions. Let the dairymen get together on this basis, and much can be expected to relieve the labor shortage.

The California Co-operaive Canneries has purchased the Visalia pool of peaches, paying $92.50 for clings and $55 for freestones. A large plant is now being erected at Tulare to handle about 2,000 tons of peaches for canning and peach butter. This company will buy small or overripe cots for making apricot butter.

IS RED SPIDER BOTHERING YOU?

The Red Spider and Almond Mite is beginning to show what they can do again in sections where they were bad last year. Prunes and almonds will need all the nourishment the leaves can afford them, to say nothing of the health of the tree. Dry sulphuring two or three times a week apart will control them if it is done thoroughly, or they should be well sprayed at least twice—a week apart—with a sulphur solution. Wettable sulphur (milled or atonic) 10 to 12 pounds to 100 gallons of water, or lime-sulphur solution, 2½ gallons to 100 gallons of water, may be used. Spray now. You will get it all back in the fruit as well as in the vigor of the tree for next year.



The most independent man on earth

A Farm Becomes a Home when Drudgery leaves

A farm becomes the ideal home when back-breaking tasks are eliminated. And tasks of this kind can be eliminated. Such chores as milking, churning, wood sawing, water pumping, and feed cutting may be handled with little manual labor and in quicker time if they are done electrically.

G-E FARM MOTORS

are giving this kind of service economically and satisfactorily. You will find that the nearest Central Station or G-E Motor Agency has complete information on motor costs, sizes required and operating charges. You will find experienced men ready and willing to offer suggestions on the best motor installation for your own particular needs. This service is freely given.

General Electric Company

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Pioneer – the everlastingly good Roofing

We say, "It covers California," but it does more than that for in a dozen or more western states and several foreign countries Pioneer Roofing has made a host of friends among owners, architects and contractors.

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PACIFIC PIPE CO.

MAIN AND HOWARD STS. SAN FRANCISCO, CAL.

FIGHT RED SPIDER AND OTHER MITES.

(Written for Pacific Rural Press.)

The ravages wrought by the myriads of these tiny mites is not realized. They are difficult to eradicate, true, but they can and must be controlled. The Horticultural Commissioners and Farm Advisors are making their annual push in this direction greater than ever—truly a labor of Sisyphus who is condemned to perpetual labor. Why do the leaves turn ashy or prematurely yellowish, many buds showing a weakened condition? Why do the leaves fall early, starving both tree and new wood and impairing the quality of the fruit? Red spiders and mites are probably responsible. They are now showing up everywhere in numbers. Spray them or dust them with sulphur and then do it again and again if necessary, yet again and give the trees a chance. It is a part of the profession and we can't afford to ignore it. If caterpillars chewed all the leaves off, you fellows who don't spray would be frantic and work night and day to "do them up." But these mites suck all the life out of the leaf and destroy its functions (outside of shade) as effectually as if the worm had chewed it up. Where the red spider works let us spray: and then, instead of heaving a sigh and saying, "There, thank the Lord that's done," we must look in a few days to see if it really is done. If not go to it again and get the new hatch too.

SULPHUR



It has been proven and so recommended by the University of California that if you sulphur your grape vines and orchards 6 times they will not be affected by MILDEW or RED SPIDERS.

ANCHOR Brand Velvet Flowers of Sulphur, also EAGLE Brand, Fleur de Soufre, packed in double sacks, are the fluffiest and PUREST sulphurs that money can buy; the best for vineyards; the best for bleaching purposes, LEAVING NO ASH.

VENTILATED Sublimed Sulphur—Impalpable Powder, 100% pure, in double sacks, for Dry Dusting and making Paste—(Atomic Sulphur).

For LIME-SULPHUR SOLUTION, use our DIAMOND "S" BRAND REFINED FLOUR SULPHUR. We can furnish you this Sulphur at such a low price that it would pay you to mix your own solution and net you a profit equal to the amount paid out in labor for spraying your orchard, even if you pay your men $4 per day for making the solution and applying same.

To create additional available plant food, drill into the soil 100 to 400 pounds per acre DIAMOND "S" BRAND POWDERED SULPHUR, 100% pure. This has increased various crops up to 500%.

Also PREPARED DRY DUSTING MATERIALS, Tobacco Dust, Dry Bordeaux, Dusting Sulphur Mixtures, etc. And "Anchor" Brand Standard LIME-SULPHUR SOLUTION 33 deg. Be., Sulphur Paste, Nicotine, Black Leaf 40, etc. Fungicides and Insecticides. Carried in stock and mixed to order.

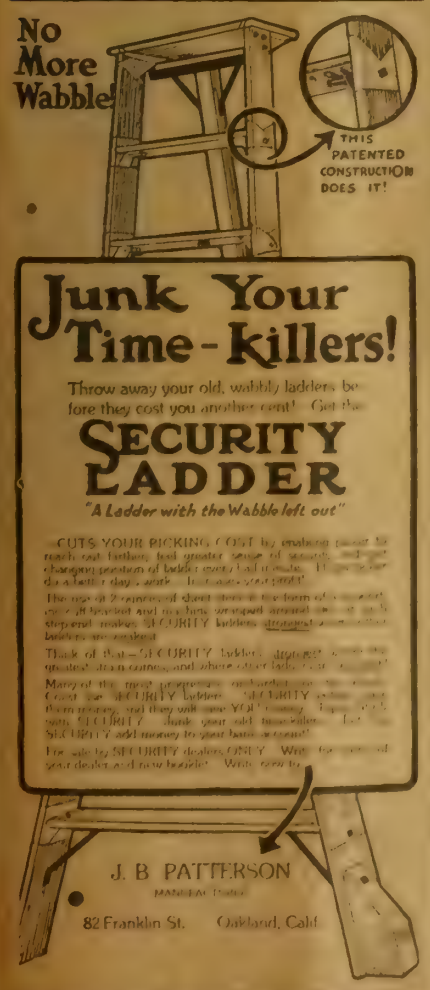
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We are equipped to make immediate shipments. Send for "ILLUSTRATED BOOKLET"; also booklet "NEW USES FOR SULPHUR." Price-list, and Samples.

Please state for what purpose you use the sulphur, quantity needed, and date of shipment preferred

TELEPHONE KEARNY 871.



For list of 65 Security Ladder dealers throughout California, see Pacific Rural Press, issue of May 24th, page 798.

PRUNE AND APRICOT MARKETS.

Santa Clara valley will probably have the largest crop of prunes in its history," said H. C. Dunlap of the California Prune and Apricot Growers, Inc., June 17. "Outside districts generally have an excellent setting, but not a bumper crop. The June drop has not been serious so far.

"Nearly all apricots will go for canning or shipment as fresh fruit. The crop will be heavy for those purposes if temperate weather continues through the ripening season. The market opportunities for dried apricots and prunes also were never so good as now, due to reopening of export business. The grower's opportunity to avail themselves of this advantage comes through the association," says Mr. Dunlap, because it did not name its prices until the conditions were known. Many independent growers sold to packers at five to ten cents below the opening price announced later by the Association and several cents below the Association's prune prices, which may be named at the directors' meeting the second week in July."

MINIMUM WAGE FOR CANNERY WORKERS.

The State Industrial welfare commission has given notice to the fruit and vegetable canners of California that the provisions of the commissioner's order relative to the minimum wage for women workers in the 247 canneries in the State will become effective July 10. The minimum compensation for experienced women and female minor wokers is fixed at $13.50 a week, or 28 cents an hour. Inexperienced women day workers are to receive not less than 21 cents an hour and inexperienced female minor day workers must receive not less than 18 cents an hour. Male minor day workers must receive not less than 28 cents an hour.

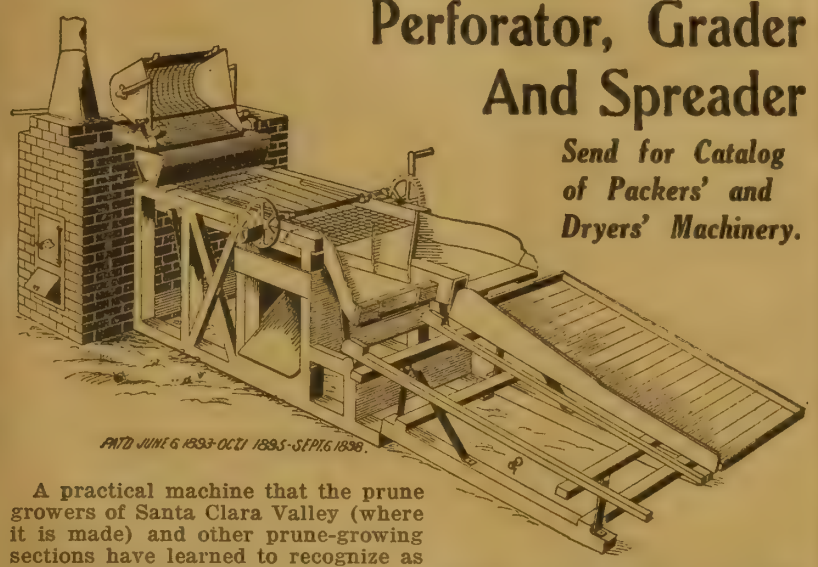
BACK FROM PERSIA.

R. S. Vaile, Professor of Orchard Management, University of California at Riverside, has returned to his old post after a year in Persia—first, with the American Commission for Relief, also making investigations in general agriculture for the U. S. Government. We shall doubtless have some interesting data later from this section, said to be the cradle of the world's best efforts in agriculture and horticulture.

There is a paradox walnut tree at Santa Barbara, originally set in orchard form, which in size might come next to the one at Yuba city. It is 14 years old and the budded nuts, set out at the same time, adjacent look like newly set trees in comparison.

The California Peach Growers' new plant at Hanford in Kings county will be completed in 60 days or less. The cost is $100,000. Peach peeling machinery will be installed, and the building will also be used for the Prune and Apricot Growers' Association.

Anderson Combination Dipper Perforator, Grader And Spreader



Send for Catalog of Packers' and Dryers' Machinery.

A practical machine that the prune growers of Santa Clara Valley (where it is made) and other prune-growing sections have learned to recognize as the standard machine of its kind. It embodies every possible advantage—and does the work perfectly in every way. Durable and substantial in construction.

MADE IN VARIOUS SIZES

We can furnish this Combination Dipper, Perforator, and Spreader in any size desired—for either hand or power use. Write—and tell us your requirements.

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A Comparison of Costs

A graphic picture of the high cost of doing business is shown by the rise in a long list of commodity prices during the past five strenuous years.

By the exercise of unparalleled economies, telephone rates have been kept almost unchanged.

The fact is, the increase in the cost of commodities has resulted in what is equal to a decrease in telephone rates. In other words: The dollar which was spent for the telephone has bought more than twice as much as the dollar spent for the commodity.

The activities of reconstruction which are now upon the nation have put a great burden upon the telephone. This condition has made necessary an advance in telephone rates.

This advance does not exceed an average of eight per cent; almost negligible as compared with the advances in other lines of industry, yet enough to cover the increase in the cost of operation.

Only through adequate revenue can there be assured the maintenance of a high standard of telephone service.

AMERICAN TELEPHONE AND TELEGRAPH COMPANY
AND ASSOCIATED COMPANIES

One Policy *One System* *Universal Service*

Here and There in the Fruit Business

[Written for Pacific Rural Press.]

The Coming Walnut Crop.

A preliminary crop survey by the California Walnut Growers' Association indicates that a heavier crop than usual is set. The setting is very uniform. A few blighted nuts are showing up as usual. Even where there is no irrigation the crop may still come up to that of last year. A 20,000-ton crop and a $15,000,000 return are records expected from this year's yield.

Warning Against Setting Fires.

Farmers who contemplate using fire to fight grasshoppers are warned that they must first secure the consent of of the district fire warden and provide a sufficient number of hands so that the fire won't get away from them now everything is dry and parched. The state campaign against grasshoppers under the Horticultural Commission is now in full swing in 26 counties whence appeals for help have come from farmers and orchardists.

Citrus Improvement Pays.

The reason Rialto growers have taken first place in grapefruit prices is because they have built up their business by careful bud-selection, according to A. H. Morgan, manager of the Rialto Heights Association. On a sale made in Boston last month the Canal Brand averaged $7.35 a box. The Butte County Farm Bureau has inaugurated a campaign for more care in selecting buds for budding citrus trees in their section.

California Association of Nurserymen.

The membership of this association represents 70 per cent of the total annual volume of nursery products in the state. The annual nursery production of economic and ornamental plants in California aggregates about four millions of dollars with a total investment of land and improvements of $10,000,000. These nurseries provide for a wider diversity of orchard and vineyard products, plants and flowers than any other geographical area outside the tropics.

Practically Peeled Peaches.

The man with a clean shave can always do more business than the man with a fuzzy chin. He is more attractive. Same with the peach. Forty thousand tons will be marketed this year of the practically peeled peach, according to A. L. Sunderland of the California Peach Growers' Association. It's the clean shave that does it. Twice as many could easily be marketed if we had them. Seven thousand tons were sold in six days in cartons. Advertising pays.

Farm Extension Work in California.

There is great opposition in the House of Representatives to the proposed increase in the bill for farm extension work from $1,500,000 to $4,-500,000. The California Congressmen declared that unless the appropriation was increased by three millions, farm extension work in the whole country would suffer, and particularly California. The amendment was not put to the vote. The Californians will make an effort to secure the additional millions in the Senate Agricultural Bill. Representatives Elston, Barbour and Raker championed the cause.

Lemons Between Walnuts.

In the J. B. McNab walnut orchard near Fillmore (Ventura County) we noticed some young lemons, set out this year between the walnut trees. This is a fine looking walnut grove of 150 acres and the trees are about 20 years old, according to the manager, J. W. McClintock. The orchard runs clear down to the river and the young lemons are watered about every ten days. Probably a lemon will start here if anything will, though it is an interesting problem to watch. Where an old established root system has pre-empted the ground it is difficult for a young beginner to jump the claim. However, these lemons have made a good start and show promise.

Mexico for U. S. Winemakers.

The Mexican Government has been encouraging the growing of grapes and the development of the wine industry in view of U. S. National Prohibition, and millions of cuttings of our improved wine grape varieties have been imported. The Mexican Consul General in San Francisco, it is said, has notified his government that at least 80,000 persons, largely of foreign ancestry, are preparing to leave with the intention of emigrating to Mexico to continue the conduct of viticulture and wine-making. Plans are now being prepared to welcome these immigrants and aid them in re-establishing their industry. All the northern states of Mexico have extensive areas that are suitable to the cultivation of the wine grape.

Increase of Prune Acreage Signed.

Unless the acreage under contract to the Prune and Apricot Growers' Association is materially increased it is likely that co-operative marketing in the prune and apricot industry will have to be abandoned. The directors of the association say that the acreage increase demanded will be announced during the coming fall, according to a resolution passed by the board. New orchards coming into bearing and not yet signed up have materially decreased the percentage of business controlled by the association, which started with 75 per cent of the acreage. Bidders have already asked for more than twice the amount of prunes the association is willing to book on orders, it is announced.

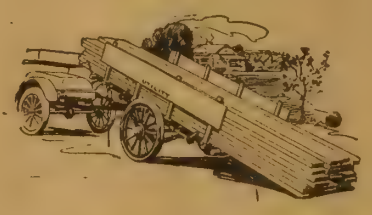
Proof of California's "Class."

The writer was sitting in solitary state at dinner in a Los Angeles hotel when a sunny-faced individual breezed in and sat opposite with a bow and "with your permission." It was soon learnt that our vis-a-vis was a hotel man who was making good—had been out from Ohio for 12 years and become a dyed-in-the wool Californian. "This is the country to make money in," he said. "I went East last year for the first time since I came out.

UTILITY TRAILERS



Mr. A. L. Whiteside of Oxnard, California, has used the 2-ton Model D Utility Trailer, illustrated above, for three years. He has doubled his trucks' capacity and pays for only one operation cost. You can do likewise.



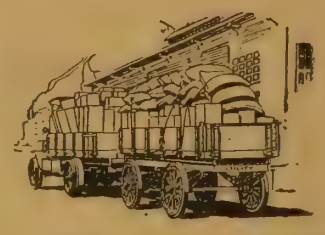
For Light and Heavy Duty Service on The Ranch

Good, well-balanced trailers are absolutely necessities on every well-equipped farm. They permit definite savings in time and money of 50 per cent or more.



28 STANDARD MODELS

Utility trailers are built like the finest motor truck. Will not wobble or sidesway. Doubly reinforced. Track perfectly. Capacities — 800 pounds to 10 tons, 2 and 4-wheel models.



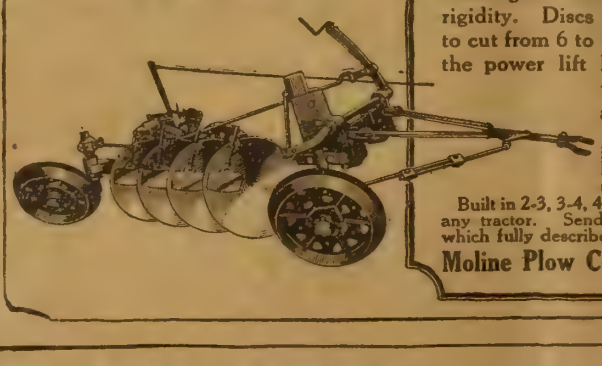
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Ask for name of Utility distributor nearest you.

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MOLINE Power Lift DISC PLOW



IF your soil is hard, dry and difficult to plow, use the Moline Power Lift Disc Plow. It is made for just this kind of work and has plowed and made productive soils which were almost impossible to handle before this Moline plow was used. It penetrates easily because of the correct set and angle of the discs and proper distribution of weight. One heavy main frame beam gives extra strength and rigidity. Discs easily adjusted to cut from 6 to 10 inches. And the power lift has distinct advantages over any other.

It gives you a positive lift or graduated lift—just as you desire.

Built in 2-3, 3-4, 4-5 and 5-6 sizes, for any tractor. Send for folder RF-65 which fully describes it.

Moline Plow Co., Moline, Ill.



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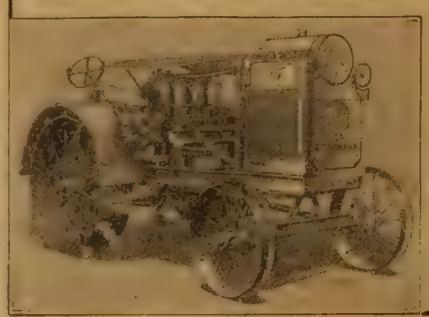
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LEIGH M. RAILSBACK, California Representative.
914 Story Building, Los Angeles, Cal

Called on a friend of mine—another hotel man—and said, 'Well, Jim, how much a year are you making now?' Well, sir, I had to laugh when he told me, and I said, 'Why, Jim, I am paying out more than that in alimony!' And I am, too,—and making a good living on top of that. Yes, sir—California is 'It.'" No insular reserve about this.

To Finance Harvesting of Crops.

Arrangements have been concluded with San Francisco and New York banks whereby the raisin and prune and apricot growers will be financed in the handling of this year's crops (and future years) through the use by the association of trade acceptances—a new departure on such a wholesale plan. It is said to involve from $12,000,000 to $15,000,000. The Bank of Italy will act as the financial agent of the two associations in California. The greater amount of paper will, however, be handled by New York banks. The plan involves delivery of the crops at designated warehouses which will be in charge of an appointee selected by the bank, who will issue warehouse receipts for the goods. These receipts will be collateral for the drafts accepted by the New York banks.

YOUNG ALMONDS AT PASO ROBLES.

(Written for Pacific Rural Press.)

"There won't be so much new growth on our almonds this year," said Tom Henry of Paso Robles. "The almonds generally take a rest about the last of June to mature their wood, but this year they checked length growth earlier. On the other hand the nuts are exceptionally large. Let me show you some trees that have been properly handled," he said. "I have always felt that heavy cutting back was a mistake. This young orchard of 150 acres belongs to I. M. Kalar of Paso Robles, and you can see what growth they are making the second year on this gravelly adobe."

Very little cutting was done either year and the trees are headed low with fruiting-wood left low so that the butts have protection. The cultivation here is done with the spring-tooth cultivator, which I consider our most valuable implement. As we are running things now, one plowing in four years on this class of soil is enough—we can conserve the moisture very nicely with the double disk and spring tooth."

Summer-fallow Important.

"As you know, in dry farming here it is necessary to summer-fallow to get results. Now I consider it even more important to fallow the ground the year preceding tree-planting than it is to summer-fallow for a surface crop. It puts the ground in shape to retain sufficient moisture to establish the young trees in good shape. In future I shall practice this on setting out young trees. Also growers are beginning to recognize the mistake of 'whacking' their trees back, as has been the custom heretofore." Mr. Henry has 220 acres on the White Sox Ranch all in almonds and very little cutting back has been done—only enough to shape the young trees.

Record of Young Trees.

We went next to the M. R. Van Wormer orchard on the Adelaide road—28 acres of six-year-old almonds, all Hatch varieties except a few Texas Prolific. They may yield 1400 pounds to the acre this year and are very even in growth. We were told that at three years old the nuts from these trees were sold to bring $41 an acre. At four years old the net profit above all expenses was $58.72 per acre. Last year the crop was light, owing to frost, but this year's crop will more than make that up.

Van Norman and Trussler have a 20-acre orchard of 27-year-old trees, which they bought after it had been subjected to years of neglect and abuse—in fact, it had been pruned with an axe. They cut it back three years ago to form new heads to the trees, and these new heads are now carrying a heavy crop of almonds. Before this treatment the trees had been shy of bearing from neglect and the heroic treatment has resuscitated them, at least for a while.



The Motor Truck a Farmer Would Build

IF FARMERS pooled their ideas for building a practical motor truck that would best serve their everyday hauling needs, it would offer nothing not now found in the International Motor Trucks.

The reason is plain. The International is the result of a thorough knowledge of farm conditions. This Company knows country roads. Ample provision has been made to withstand the strain and stress of highways that place an unusual tax on parts subject to wear. Only the best materials are used, after thorough test. The truck is simple and durable.

International Motor Trucks

will do the work expected of them at a cost farmers can afford. They give a service that is reliable, prompt and economical in the severest test of all—**steady performance in actual daily use.** They have ample power for any emergency and can be depended upon to keep going every day in the year.

Farmers everywhere find an International Motor Truck a source of profit from the outset. It saves time, labor and distance. Markets are brought to the door and better prices are possible for farm produce, which retains all its freshness. The item of return loads is an important one from the standpoints of both business and convenience.

There are four sizes of International Motor Trucks—1,500, 2,000, 3,000 and 4,000 pounds capacity, with bodies suitable for every kind of hauling.

We have a dealer, a branch house, or a service station somewhere near you, where the line can be seen, or we will send full information promptly if you will write us.

The Full Line of International Harvester Quality Machines

Grain Harvesting Machines

Binders Push Binders
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Harvester-Threshers Reapers
Shockers Threshers

Tillage Implements

Disk Harrows
Tractor Harrows
Spring-Tooth Harrows
Peg-Tooth Harrows
Orchard Harrows Cultivators

Planting and Seeding Machines

Corn Planters Corn Drills
Grain Drills Broadcast Seeders
Alfalfa and Grass Seed Drills
Fertilizer and Lime Sowers

Haying Machines

Mowers Side Delivery Rakes
Comb. Side Rakes & Tedders
Tedders Loaders (All types)
Baling Presses Rakes
Sweep Rakes Stackers
Comb. Sweep Rakes & Stackers
Bunchers

Belt Machines

Ensilage Cutters Corn Shellers
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Hay Presses Stone Burr Mills
Threshers Feed Grinders
Cream Separators

Power Machines

Kerosene Engines
Gasoline Engines
Kerosene Tractors
Motor Trucks
Motor Cultivators

Corn Machines

Planters Motor Cultivators
Drills Ensilage Cutters
Cultivators Binders Pickers
Shellers Husker-Shredders

Dairy Equipment

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Cream Separators (Belted)
Kerosene Engines
Motor Trucks Gasoline Engines

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Manure Spreaders
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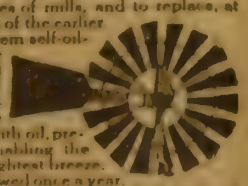
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Write for Reduced Prices on WITTE Engines—all sizes—2 to 30 H. P.—Kerosene—Gasoline—Stationary—Portable—Saw-Rig. If you need POWER to pump, saw, grind, fill silo, or do other hard work, be sure to get my money saving offer. I make better engines—guarantee longer—sell for less.—Valuable Book FREE. Ed. H. Witte, Pres.

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has become so popular in its first four years that thousands have been called for to replace, on their old towers, other makes of mills, and to replace, at small cost, the gearing of the earlier Aermotors, making them self-oiling. Its enclosed motor keeps in the oil and keeps out dust and rain. The Splash Oiling System constantly floods every bearing with oil, preventing wear and enabling the mill to pump in the lightest breeze. The oil supply is renewed once a year. Double Gears are used, each carrying half the load.



We make Gasoline Engines, Pumps, Tanks, Water Supply Goods and Steel Frame Saws.
Write AERMOTOR CO., 2500 Twelfth St., Chicago

run- **STOP** *-Start*

The trials of driving in the traffic prove the quality of Red Crown gasoline. Look for the Red Crown sign before you fill.

STANDARD OIL COMPANY
(California)

The Gasoline of Quality

RED CROWN GASOLINE

Orchardist Profited by Learning

(Written for Pacific Rural Press.)

"George E. Sutton's orchard up on the river has a lot of things that would interest your readers. Come on, let's go up there and see him," said Tehama County Horticultural Commissioner G. H. Flournoy. "You can get the facts direct from him and from C. Young who has been working the orchard."

We found a clean, thrifty orchard of prunes, apricots, cherries and a few pears on sediment soil underlaid by gravel which lies above the low-water level of the river.

Thought He Was Irrigating, but Wasn't.

Last July 1, Mr. Sutton telephoned to Mr. Flournoy that his prune trees were dying and the fruit was dropping badly. Tips of the branches had died back, and both he and Mr. Young thought the trees were about to die. They were at the time giving the orchard its third flood irrigation by pumping from the river, and the soil was too soft to walk on in many places.

Mr. Flournoy found no disease; but he said the trees were suffering from lack of water! This was argued by Messrs. Sutton and Young, but the commissioner insisted. They dug some holes to find out. They hit dry dirt at about sixten inches! Following advice, they shut off the pumps, plowed furrows along all high lines in the orchard as deep as two horses could pull the plow, and gave a thorough irrigation through the deep furrows, not worrying about low places. Within a few days the appearance of the trees had improved wonderfully, and they held enough fruit to require considerable propping. Water was put to their roots in time to develop fruit buds so that the crop now growing is practically as much as the trees should mature.

Crop of 1919 Needed Water in 1918.

Present evidence that water was needed to reach the lower roots in last summer's irigation is furnished in the apricot section of the orchard next to an alfalfa field. Trees on the higher elevations in this area are almost without crop, while their neighboring trees in swales alongside are heavily loaded. The latter had received seepage from the alfalfa and prunes of last summer in time to mature strong first buds.

Hot Water Saved Damaged Prunes.

The prune crop from this orchard came near being lost last fall. The "dry-ground" is a flat at the mouth of a small "canyon." While the prunes were laid out in all stages from freshly dipped to practically dried condition, six inches of rain fell in four hours. The hills contributed their share of the rain to the dry-yard and a lot of the prunes were washed across the orchard into the river. More of them got stuck in brush and gravel and mud. It was some mess! Again they called on Mr. Flournoy. This time he said again to cheer up, pick up the prunes, dip them an instant in boiling water, and dry them. Again came the protest that there was too much water already in the abused prunes. But Mr. Flournoy said that neither a wet sponge nor these rain-soaked prunes would take up additional water, so they were redipped and sold at 10 cents per pound. Mr. Sutton tells of a neighbor whose prunes had become mildewed and moldy after his own had been redipped. The boiling water treatment was recommended and most of that crop also was saved.

Pear Blister Mite; Leaves Dead.

One of the Sutton pear trees, about a dozen years old, had about the worst case imaginable of pearleaf blister mite. The leaves all seemed dead, with just a little green near the stems of some. Mr. Young was about to dig the tree out, but it was decided to try a dust spray of half dry sulphur and half dry hydrated lime. This was done thoroughly late in July or early in August. Of course the leaves all dropped, being already practically dead. This spring, whether due to the sulphuring or not, the tree is in full leaf with a few pears hanging, and every leaf seems absolutely clean.

Disinfectant Paste for Wounds.

In view of new diseases that are occasionally developing in the orchards of California, Mr. Flournoy's way of making a disinfectant bordeaux paste to use on pruning and cultivator wounds may prove of great value to orchardists.

Hang five pounds of bluestone in a bag near the surface of five gallons of hot water in a wooden or earthen vessel. Slack ten pounds of quicklime in another five gallons of water. Make ten pounds of wheat flour into a thin paste and cook as the wife does in making starch for clothes. Dissolve 1½ ounces of pulverized glue in warm water. When the lime and bluestone have cooled off, pour them together, stirring vigorously. Add the flour paste and glue, stirring thoroughly. Add water to make the mixture of the desired consistency. It should be thin when used on rough surfaces like the trunk and main limbs of most trees, so it will penetrate all crevices. Leave it thicker for use on smooth bark. Use within 48 hours after mixing.

HOW MUCH IS YOUR WHEAT WORTH?

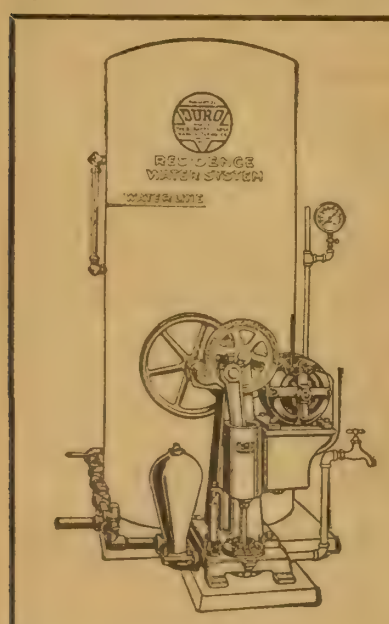
(Written for Pacific Rural Press.)

Wheat growers who want to know how their grain will grade may send samples prepaid to Chief Grain Inspector Henry C. Bunker, Merchants' Exchange Bldg., San Francisco. He will grade the grain as it would be graded officially and will make a report, charging a fee of $1. Such grades will not be official because the sample will not have been officially taken. One farmer sent a sample, which was entirely clean. The warehouseman sent an average sample of the same lot and it contained 12 per cent dockage.

"The sample," says Mr. Bunker, "ought to be a well-mixed lot taken by a trier from at least 5 per cent of the total number of sacks in a lot. One sack may be from a good part of the field and another from a weedy or smutty part. Neither would yield a fair sample for grading. At least three pounds of such a composite mixture should be sent to this office in a clean well-sewn cloth bag. We certify to the grade only. The U. S. Food Administration Grain Corporation figures the discount on the basis of dockage shown by the grade certificate."

REFRIGERATOR CARS TRIED OUT.

Two carloads of cherries have been shipped East under a new process of refrigeration and said to be likely to supersede present methods. Several shippers and transportation officials have accompanied the cars East to actually see results. The cars are equipped with electric thermometers so that inside temperatures can be read at any time without opening the car.



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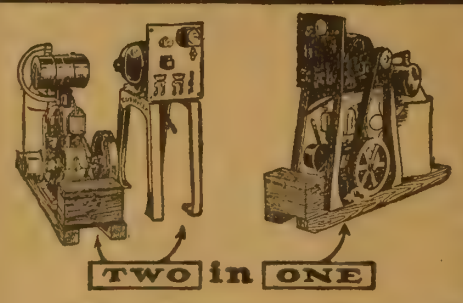
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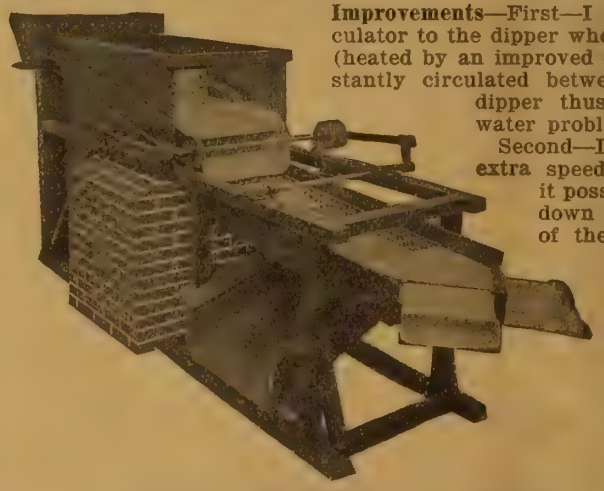
Every part is get-at-able. Not necessary to tear down the plant to correct trouble. The same engine—the 4 H. P. Cushman—can be used for work all over the farm. Other machinery can be run from the clutch pulley the same time batteries are being charged.

The Cushman Self-Starter permits the Cushman plant to be started, stopped and operated by woman or child. It is the only starter that automatically releases engine compression and turns on and off oil. Engine started from switchboard by pushing a button. Please call and see the Cushman plant.

Write for information.

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PERFECTION PRUNE DIPPER AND GRADER



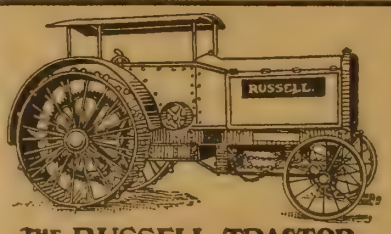
Improvements—First—I have added a circulator to the dipper whereby boiling water (heated by an improved oil burner) is constantly circulated between circulator and dipper thus solving the hot-water problem.

Second—I have installed an extra speed attachment, making it possible to speed up or down as the condition of the prunes demands.

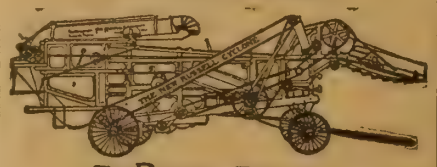
Hard prunes require more scalding and must remain in the hot water longer than soft ones.

A call and inspection will convince you that this dipper and grader is second to none on the market.

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COMPOSITE CONDITION OF CALIFORNIA CROPS, JUNE 1, 1919.

While the fruit crop promises to be a record breaker, most of the other crops of California are also above the average. The composite condition of all crops on June 1 was about 15.7 per cent above their 10-year average condition on that date. Last year the condition of all crops in California on June 1 was 2.1 per cent below the 10-year average. The condition of the various crops on June 1, expressed in percentage of their eight and ten-year averages (not the normal) and in comparison with 1918, was as follows:

Crop	Compared with Average Condition	Compared with 1918 Condition
Prunes	133.3	133.3
Peaches	125.0	135.1
Apricots	123.2	110.4
Walnuts	122.1	131.2
Pears	112.5	112.5
Apples	112.2	116.4
Oranges	107.7	97.0
Wheat	107.6	116.4
Lemons	106.7	98.0
Pasture	105.8	121.3
Olives	105.4	103.1
Hay	104.8	111.5
Almonds	104.2	107.1
Oats	102.4	109.0
Alfalfa	101.1	103.3
Watermelons	101.1	96.8
Onions	101.1	100.0
Cantaloupes	100.0	95.7
Cotton	99.0	99.0
Blackberries and Raspberries	97.9	95.8
Barley	97.6	106.7
Cabbage	94.5	96.6
Sugar Beets	79.3	84.8
Average of all	115.7	118.2

The State Commission of Horticulture and the Bureau of Crop Estimates are co-operating in reporting the condition of all fruit crops.

EGYPTIAN COTTON ACREAGE REDUCED.

(Written for Pacific Rural Press.)

Egyptian cotton acreage in California this year is not 25 per cent of that grown last year, according to E. E. Kaufman of the U. S. Bureau of Crop Estimates in California. Growing and ginning operations last year were so unfavorable that considerably less money was made than was expected. Some good Egyptian cotton was grown in Kern county but most of that grown in the San Joaquin Valley was of inferior staple, partly due to late planting and consequent frost injury, partly to ignorance of cotton growing requirements. On one ranch in Fresno county the plants grew taller than a man, but the yield was less than half a bale per acre. Imperial, Coachella and Palo Verde Valleys have the possibilities, but such poor ginning facilities that the growers didn't want to repeat their experience. Due to the small quantity and inferior quality of last season's San Joaquin crop, it proved hard to sell. Even that in Imperial county was almost as slow moving as it was in getting ginned. A larger acreage and crop to attract buyers and better ginning establishments would probably put southeastern California in as favorable a position for Egyptian cotton production as the Salt River Valley in Arizona.

HORTICULTURAL JOTTINGS.

The oldest date-bearing palms in the San Joaquin valley are on the old F. T. Eisen place near Fresno. They are 40 years old.

Growers of Thompson Seedless raisins in the Upper Sacramento are reputed to be offered 10 cents a pound for their crops.

Fruit prospects in Lake and Mendocino counties were never better. Large crop and big demand at high prices. Prunes will bring an average of about 15 cents dry.

Grape growers of California are to ask for the army's early demobilization, with a view to removing the barrier to the sale of their $12,000,000 wine grape crop.

California's raisin crop has grown steadily in size. Here is the record: 1914, 98,000 tons; 1915, 130,000 tons; 1916, 132,000 tons; 1917, 163,000 tons; 1918, 167,000 tons.

Fruit shipments from California to date (June 15) exceed those of last year by 270 carloads. Apricots totalled 284 cars as compared with 67 the same date last year.

The Climax plum must be irrigated very evenly and an equable condition of moisture maintained. If the ground is allowed to get too dry and then they receive a good wetting, they are likely to split.

Standard grading is becoming more and more important in the marketing of California fruits and vegetables. Success in those lines which have taken up the proposition has brought others into line. Growers and the trade are out now wanting the system carried out.

The Prune and Apricot Growers' Association have received their first shipments of new season apricots from growers in the early sections, and Santa Clara county will begin sending in dried apricots the first week in July. The Association is operating 15 packing-houses this year—three more than last year.

Wine grape vineyards in Fresno county are selling at a higher price than ever before, according to W. F. Setchell, President of the Valley Fruit Growers' Association, because they can be easily worked over to raisins or the wine grapes dried at small expense and shipped to wine-making countries at a profit; $50,000 has been paid for the crops on the trees to one grower, Joseph Basile Jr., whose orchard is near Hollister (San Benito county). The crop consists of prunes, apricots, apples, pears, walnuts and almonds and is estimated at 1200 tons.



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Safer Citizens--Fruit Harvest Assured

(Written for Pacific Rural Press by R. E. Hodges.)

We are spending lots of money to provide High Schools and equipment of most modern type, says President J. J. McDonald of the Santa Clara county unit of the Farm Owners' and Operators' National Association. We do it for the purpose of training our sons and daughters to become safe leaders in our democracy. But we are failing in one particular, which prevents our getting anything like proper advantage from the money so invested. Statistics show that only a small proportion of the grammar school students ever enter High School, and only a small proportion of that number graduate.

Mr. McDonald has interviewed many educators and school students to find out why. The major reason, as he found it, is that some boys and girls have more money and better clothes and finer homes than others. However democratically they may invite their comrades of lesser means to take part in their joy rides, ball games, clubs, societies, and social functions, the latter soon feel that because they cannot hold up their end and chip in equally on the expenses, they cannot keep up the pace and they drop out of school to earn money.

They recognize that by completing the course they could get better jobs and do bigger work in the world. We recognize that their extra capacity as citizens is needed to save our commonwealth from Bolshevism.

Help Earn Way Through School.

The idea in Mr. McDonald's mind is to give them a proper chance to supplement their cash resources by working in the country through harvest season, with special reference to fruit harvest. The benefit in health, viewpoint, and sympathies which city boys and girls get by working vacations in the country are worth while even if it cost them all they make. This was illustrated by a remark of the Losse Bros., who operate a fruit ranch of several hundred acres in Santa Clara county. They had 150 High School students last year. Many of these come out pale, weak, prejudiced in their ideas of the country. They got brown pretty soon and in the warm weather even stripped to the waist for their work. How they did eat! They had a jolly good time and returned to school with a good cash balance, great constitutional vigor, and a desire to do it again. They were paid 35 cents an hour for fruit picking. When Mr. Losse asked them this spring to come again, they said the same price would be satisfactory and were delighted.

Did the farmers like the work done by school students last year? This is answered by the fact that after Mr. Losse had made the arrangement mentioned, he had a letter from the boys saying that other farmers had come offering higher pay.

Sleeping Quarters and Supervision.

But the Losse Bros. have a ranch big enough to justify their putting up special sleeping quarters, dining room, bathing facilities, etc. Many ranchers do not have room even in their homes for outside help, and it wouldn't be so much fun for the boys if they did. The writer has worked on many a farm during harvest. He slept in a spare room and ate with the family; but that was not in California. Conditions are different here. Few fathers would want their boys to set out a-foot looking for a job in the country in this State as the writer has done many times in another State as a youth. A distinctly different sort of company would be met and it would not be good for the boys. They would have to carry their blankets and sleep out, which 90 per cent of youth would not now do for many days at a time.

To attract the boys to farm districts where they are needed, and to make it advisable, Mr. McDonald proposes that barracks be built in each school yard. He has found that Y. M. C. A.'s and Y. W. C. A.'s will gladly furnish supervision under systems found successful last year.

Cost and Finances.

He has figured that barracks for 200 boys or 200 girls could be built and equipped with cots, mattresses, tables, benches, and dishes for $3,000. The barracks would be in charge of the supervisor while in use. At the end of the season they would be turned over to the Farm Owners' and Operators' Association until next season. The equipment would be as safe as school equipment in the same yard and protected by the same janitor where there is one. Dishes and more valuable equipment would be collected from all barracks and stored at one place of safety if so desired. The boys would pay a pro rata for their eats and cooking and janitor expenses. Because the project would permit boys and girls to get a better education and make better citizens, and because city youth would get the chief benefit in this direction, Mr. McDonald believes that the cost of buildings should be borne by the State Government. However, it is figured that three dollars per boy or girl per season would pay interest on money invested and provide a fund to keep up repairs and repay the original capital by the time a new building would have to be put up. The boys and girls could pay this out of their earnings, in addition to the cost of their board. But however the project may be financed, it seems that it would pay well if our public schools pay well; and would also solve the problem of seasonal help for American farmers who like to employ American workers.

DO NOT BALE ROCKS WITH HAY.

The hay bill which Pacific Rural Press and others urged so strongly that State Superintendent of Weights and Measures Chas. G. Johnson undertook to get it through the Legislature, was introduced by Assemblyman Walter Eden of Orange county, and was passed as more recently noted in our columns. It was approved by the Governor May 19. G. I. Lytle of Riverside county, who is one of the Directors of the Alfalfa Growers of California, Inc., points out that "this measure concerns all those engaged in the business of baling hay, and will be of interest and value to a great many readers of Pacific Rural Press." He urges us to republish the law, which is done below.

Section 1. The term "baler" or "presser" as referred to in this act shall mean the person, firm, association, or corporation owning or having possession of or operating a hay press.

Sec. 2. Any person baling hay for compensation shall employ scales that have been tested and sealed by the sealer of weights and measures and any record of weight forming the basis in settlement for baling hay shall be the true net weight of the baled hay; and any record of weight forming the basis of settlement in the sale or purchase of baled hay shall be the true net weight of such baled hay.

Sec. 3. No baler or presser of hay shall put or conceal in any such bale of hay anything whatever for the purpose of increasing the weight of such bale with intent to defraud.

Sec. 4. Hay, when sold, offered, or exposed for sale shall be sold by avoirdupois weight and a ton shall consist of two thousand pounds net weight; providing, however, that hay may be sold by the bale, in which case the net weight of the bale shall be indicated on a tag securely fastened to the bale.

Sec. 5. When any hay is shipped by a common carrier in bales and where such bales become broken, the approximate weight of such broken bales shall be included in the total weight of the hay shipped.

Sec. 6. Any person, firm or corporation, violating any of the provisions of this act shall be guilty of a misdemeanor and shall be punished by a fine of not less than fifty dollars, or more than one hundred dollars.

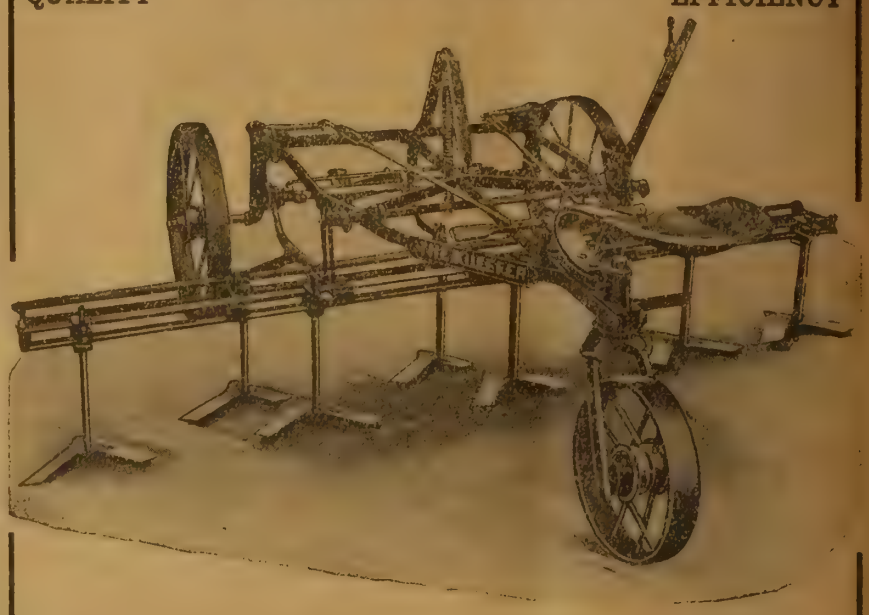
SANTA CLARA SUGAR BEETS.

About 2,250 acres of sugar beets are being grown in the Milpitas and Edenvale districts of Santa Clara county for the Spreckels Sugar Co., including about 1700 being grown by the company itself. The crop looks good, but is late, and digging will not begin until October as against July 1 in the Manteca district, and June 20 in the Corcoran district. The harvest in Santa Clara county was late last season, being finished about January 10, where it is normally completed about December 1. This is what delayed the present season's planting.

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4 Row Bean Cultivator

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One man will cultivate four rows of beans perfectly with this cultivator, which, like most of our implements, has been developed at the request of dealers and ranchers, for a strong simply controlled cultivator, capable of doing their work better than would be possible with a lighter tool.

The frame is one piece high carbon steel, (no joints to work loose or sag), holds the wheels always true and in line with the rest of the machine. The double frame bar gives ample clearance between the standards and eliminates the tendency to clog in trashy ground. This frame bar has a double lifting device, which holds it rigidly on both sides. The steering device is easily operated and very accurate.

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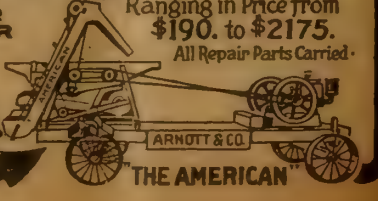
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FIELD AND GARDEN

Cotton Bounds Upward.

There has been rejoicing among local cotton growers due to the marked rise in cotton, which in the last two days has meant an increase of about $12 a bale. Recently the market jumped 22 points, and later reports showed another advance of 40 points. Four hundred bales of 1917 crop cotton, representing the entire production of Egyptian long staple in the San Joaquin valley, were sold to the California Product Company of Fresno for $80,000, according to General Manager Robert Hulme.

Certified Seed Potatoes—3 Factors.

"Certified seed potatoeswill mean a lot to us down in the islands and potato country around Stockton," said Harry H. Ladd, Horticultural Commissioner of San Joaquin county. "There are three factors to be considered. First, all the potato growers will have to want certified seed and they will when they all realize how dependent the industry is on a clean bill of health to hold its markets. Secondly, we will eliminate the man who sells potatoes 'for either seed or table use.' And thirdly, we will have proper seed available when a man needs it. We can raise all the seed we need right at home. We produced 25 carloads last year on the Sacramento red lands and all of it went to the delta. It was all inspected when it was dug—the Pride of Wisconsin. Now that the growers themselves have a good scare thrown in to them by tightening marketing conditions on export, they are anxious that something be done, and there is a certainty of an ever-widening cooperationon their part with the men whose duty it is to safeguard the industry."

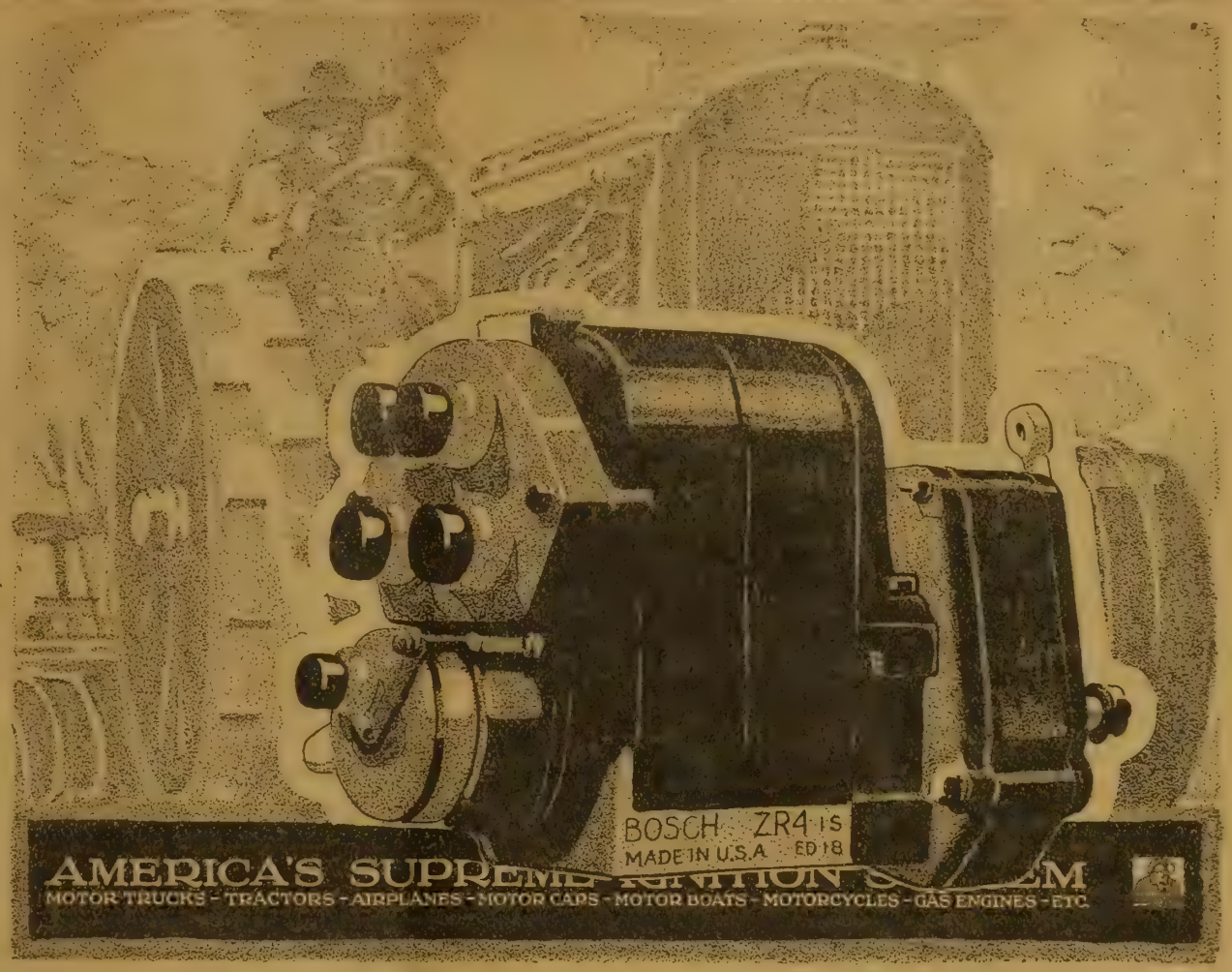
Selling Surplus Water.

To the Editor: My neighbor wishes to buy water from me and I am willing to sell it to him as a temporary arrangement, but do not wish to tie myself down so that I cannot terminate the arrangement upon reasonable notice. I have been told that if I once start to sell water I can never terminate the arrangement. Is this true? Also is it true that if I sell to four or more persons, my pumping plant becomes a public utility? Are there any other pitfalls or entanglements to beware of? Is a written agreement advisable?—H. G. M., Paso Robles.

The Railroad Commission Water Department advises us that you are entirely safe in making agreements to sell your surplus water for a period not exceeding one irrigation season and to as many water users as need be, provided you first file with the Commission a statement giving your own name and address, the same for the parties to whom you propose to sell, the lands proposed to be irrigated by your surplus, and the rate you propose to charge. This is under an emergency act approved in 1917 and which is in force six months beyond the time peace is signed. Senate Bill 491 passed by the 1919 Legislature and signed by the Governor amplifies this privilege and goes into effect when the first one mentioned goes out of effect. Under SB 491 you come under the Railroad Commission only as to such surplus water. No delivery is authorized for any period exceeding one year and statements must be filed with the Railroad Commission as under the present law.

GRASSHOPPERS UNDER CONTROL.

Grasshoppers are about under control now, according to the State Commission of Horticulture. The worst infestations occurred in Stanislaus, Tehama, Glenn, Butte and Sutter counties. Harry P. Stabler said that where they had been working on them in Sutter county you could scrape them up off the ground in double handfuls. In the various sections both burning and poisoning has been resorted to.



The Man Before the Plough

It used to be "the man behind the plough"; but today it is the man before the plough. Ploughs are now guided and pulled from the front. The Gas Engine leads agriculture.

The economy, durability and dependability of any Farm Engine is determined by its Ignition System. The searching strain of farm work demands magneto ignition and the qualities of Magneto Ignition reach their highest development in Bosch—"America's Supreme Ignition System."

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Later on, when electric service is available, the pump may be connected direct to an electric motor, thereby saving the cost of a new pump. It will deliver more water per horsepower.

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California Mechanical & Electrical Engineering Company, Sacramento.
Gridley Garage Co., Gridley.
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THE PELTON WATER WHEEL COMPANY,
1900 Harrison Street, San Francisco, California.

Constitutional Amendment on Ballots

(Written for Pacific Rural Press.)

All of the constitutional amendments passed by the Legislature have been signed by the Governor and will be on the ballots. A special election for the Highway Bonds is called for July 1.

To Frame New State Constitution.

Senate Constitutional Amendment 10, introduced by Senator M. B. Johnson of San Mateo county. If adopted by majority vote, it provides that the Legislature shall at its next session call a convention of 163 non-partisan delegates, one from each assembly district, one from each county, and twenty-five from the State at large. They are to be elected as provided by the Legislature and shall meet within nine months to do what they think best. They must recommend some one or alternative proposals to be voted on at a special election also provided by the Legislature. Whatever proposition receives highest approval of the people becomes the new constitution or the new part of it according to the terms of the proposition. This is frankly designed to get us a new constitution free from the bulky mass of detail which our present one has become by its numerous amendments. Governor Wm. D. Stephens recommended such a convention in his latest inaugural address.

State Aid to Sectarian Orphanages.

Senate Constitutional Amendment 19, introduced by Senator J. C. Nealon of San Francisco. It amends the present Article IV. Section 22, which provides that the State may grant money to sectarian or other institutions for support of minor orphans, half-orphans, abandoned children, or aged persons in indigent circumstances. The present section also provides for the Panama-Pacific Exposition, which is dropped by the new amendment. The only other change is the inclusion of children of fathers who are incapacitated for gainful occupations by tuberculosis or by permanent physical disability.

Highway Bonds for $40,000,000.

Senate Constitutional Amendment 27, by Senator M. B. Johnson of San Mateo county. It is a new section, which provides for the issuance of $40,000,000 highway bonds at 4½ per cent interest for the purpose of completing the highways prescribed in the acts of 1909 and 1915, and also for the following new projects: Barstow to Needles, Oxnard to San Juan Capistrano, Barstow to Mojave, Santa Maria to Bakersfield, Skyline boulevard San Francisco to Santa Cruz, Rio Vista to Fairfield, Auburn to Verdi, Ukiah to Tahoe City, Crescent City to Oregon line, Santa Rosa to Shellville, Big Pine to Oasis, Placerville to Sportsman's Hall, Feather River Route Oroville to Quincy, General Grant National Park to Kings River Canyon, Calistoga to Lower Lake, Mecca to Blythe, Rumsey to Lower Lake, Azusa to Pine Flats in San Gabriel canyon, La Canada via Arroyo Seco to Mount Wilson road, Lancaster to Bailey's, McDonald's to the mouth of Navarro river, Carmel to San Simeon, Klamath river state highway bridge to Happy Camp, Susanville to state line near Doyle, Pacheco Pass road into Hollister, Visalia to Sequoia Park line, Deep Creek easterly via Bear Valley dam to the county road at Metcalf creek in the Angeles forest, Orland to Chico, Tiburon to Alto, and county line near Michigan Bar via Huots ranch to Drytown. At least $20,000,000, or as much as necessary, must be used to complete systems already projected.

Suffrage for Absentee Voters.

Assembly Constitutional Amendment 10, by T. L. Ambrose of Los Angeles county. If approved by the people, will amend section one, article II, in relation to suffrage, by giving traveling men and those engaged in military or naval service of the U. S., a right to vote prior to election at their own county seats or on the day of election wherever they may be within the State on the day of election; or if in military or naval service, at any regular post where 50 or more such soldiers or sailors are stationed on election day within the United States of America.

Aliens to Pay Poll Tax.

Assembly Constitutional Amendment 13, by C. P. Vicini of Amador county. The Legislature shall provide for an annual poll tax of not less than four dollars on every alien male inhabitant of California over 21 and under 60 years of age. This tax goes into the school fund of the county where collected.

State Aid to Orphanages.

Assembly Constitutional Amendment 40, by Robert Madison of Sonoma county. As originally presented, it would have made tax free "all buildings and so much of the real property connected therewith as may be required for the use or occupation of, or as is customarily used for the support of, institutions sheltering more than 20 orphan or half-orphan children. Voters who support this will be voting to tax themselves for support of sectarian institutions. This is part of the same plan which secured the passage of Senate Amendment 19 and S. B. 114, whereby direct cash aid to such institutions was increased by the State.

Don't neglect the supply of crushed oyster shell now. As the fowls increase their production they need all the lime that their system can absorb for shell material.

WHEAT DOCKAGE ALLOWANCE.

(Written for Pacific Rural Press.)

No dockage allowance for foreign grain in wheat has ever been allowed by the U. S. Grain Corporation in any district except that of which California is a part, said Zone Vice-President W. A. Starr of the Corporation in San Francisco, discussing the recent ruling that no allowance for dockage under five per cent will be allowed here this season. Mr. Starr has just returned from the head office in New York, where important decisions on this and other points have been made in recent days. He makes the point that the cost of cleaning will equal the value of dockage if the latter equals five per cent of the total weight or less. Therefore, not even the miller could afford to pay extra for the dockage. Most of what the Grain Corporation expects to buy will be exported and they don't want the foreign grain in it nor can they get any allowance for it. Wheat growers who object to giving away the barley, etc., mixed in their wheat may have it taken out at any one of various cleaning establishments and sell it to feed dealers there. Probably the better way in most cases would be to get a farm grain cleaner and keep the barley, oats, etc., at home to avoid hauling and freight and eventual sacrifice.

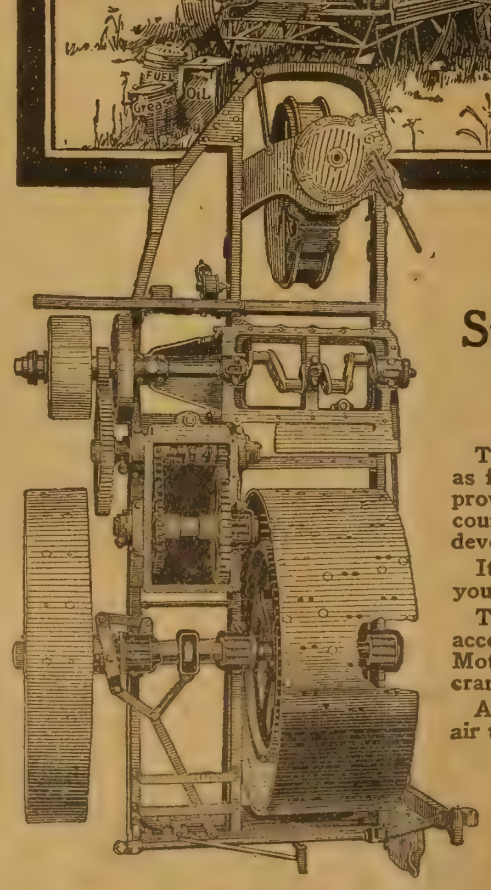
[Since the above was written Mr. Starr has been officially confirmed in his recommendation that wherever in the judgment of the Grain Corporation dockage contained in wheat can be sold for more than enough to pay cost of cleaning, allowance to that extent will be made to the grower. Disputes between growers and private buyers as to proper price for wheat may be referred to him as an arbitrator whose business it is to see that a reasonable approximation to Government prices is paid to growers. A sample of the lot in dispute must be taken at the time satisfactory to both parties.—Ed.]

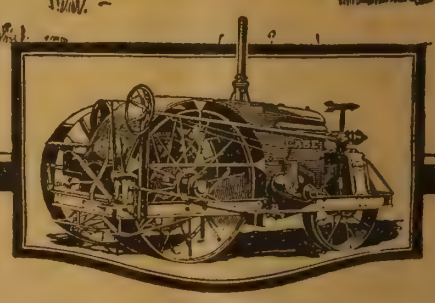
SACRAMENTO COUNTY FARM COUNTY.

"Soil improvement" is looked upon as being their biggest problem by Farm Adviser O. W. Jarvis of Sacramento county. At Courtland Center this week, Hardy W. Campbell addressed the members on dry farming. Another subject that the local committee arranged for was seed inoculation, and its value on different classes of soil. The Orangevale center arranged an excursion last week to Placer county to investigate results of pruning demonstrated last winter. The Franklin center is boosting for power. 1000 H.P. has been promised acceptance by farmers if power lines are led in. They want it. This center has also voted a further $400 for further equipment on their fire truck and outfit, which was started last year.

A great many Viking rotary pumps are in use as boosters for artesian wells where the air in the water might frequently unprime centrifugal pumps.







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Steady, Constant Power for Threshing

This Case 10-20 is Recommended for All Kinds of Belt Work

The Case 10-20 is praised as widely for its adaptability to all belt-work, as for its use in plowing and other field jobs. For five years it has proved its superiority on thousands of farms, not only throughout this country, but all over the world. Though rated at 10-20 horsepower, it can develop at least 20 per cent more.

Its powerful engine supplies that smooth, even power needed to keep your thresher running at uniform speed.

This smoothness of operation, for which the Case 10-20 is famous, is accounted for by the governor controlled, 4-cylinder, valve-in-head Case Motor, set crosswise on the main frame. The belt-pulley is located on the crank shaft, making it easy to "line up" to all belt-driven machinery.

Another great feature is the Case Patented Air-Washer which draws air through both screens and water, preventing dust or grit working into the cylinders. This tractor is also equipped with a Sylphon Thermostat which maintains a uniform motor-temperature under varying loads and insures economical and thorough combustion of kerosene.

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Chassis of Case 10-20

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Agricultural Notes

The early wheat harvest around Biggs is reported to be a disappointment, as an average of six sacks per acre is the rule.

Crop conditions in Lake and Mendocino counties could hardly be improved upon. Hay and grain are above the average.

The wheat and barley crops in San Luis Obispo County are excellent—the adobe hills showing plenty of ten and twelve-sack wheat crops.

Recent reports from Joseph Stephens, president of the Pacific Rice Growers' Association, state that throughout the Sacramento Valley we may expect a record crop this fall.

The International Institute of Agriculture, Rome, Italy, gives the 1919 production of wheat in India at 278,023,200 bushels, or 73.2 per cent of the 1918 crop and 78.9 per cent of the five year average 1913-1917.

About 200 men have been working on the 5,000 acres of the Alameda Sugar Company planted to sugar beets in Yolo County. The harvest will be far better than last year, principally because of the greater use of water.

There are 27 rural fire-fighting organizations in Stanislaus County besides the motor reserve corps in five of the cities which respond to rural fire calls. Farmers with such protection are making a move for lower insurance rates.

The first of the season's barley crop began to arrive in Tulare last week, two or three weeks earlier than in previous seasons, and with the barley showing cleaner than usual. The same is true of the wheat coming in from the Tulare Lake region.

The Australian government has arranged to ship 30,000 tons of wheat to India and 11,000 to England. The price to India is about $1.31 per bushel. The price to England, including all cost of shipment to the port of destination, is $2.31 per bushel.

The directors of the Pacific Rice Growers' Association have adopted the rate of 40 cents an hour to be paid for the pulling of the water grass in the rice fields of the valley during the growing of the 1919 rice crop, employees to board themselves.

There will be a summer course of instruction held at Riverside, July 14-August 9, 1919, conducted by the University of California for the California State Board of Education. In addition to Professor Condit and Mr. Booth, several experts at the experment station will offer instruction.

Construction has been started on the big plant of the Hunt-Jewett-Bontz Company for the handling of sweet potatoes during the approaching season. During the early part of the season the product will be shipped fresh, but when the sweet potatoes come in quantity the curing process will be commenced.

The California Bean Growers' Association will soon make the first payment to growers. Within ten days bean growers in the association will receive the first payment, varying according to varieties as follows:

Black-eyed beans, pound	.01
Tepary beans, pound	.06½
Pink beans, pound	.02
White beans, pound	.03

The Butte Valley Land Company has been irrigating and its effect upon the grain and alfalfa fields adjacent to Macdoel demonstrates what irrigation will do. Irrigated grain shows a growth of about four feet, while the unirrigated portions of the same fields show a growth of only two feet. Irrigated alfalfa shows a growth of two feet compared with a 12-inch growth on the unirrigated portion of the same field.

The future outlook for the cotton crop is very promising, according to recent reports, which state that the sixty acres growing at Kearney Vineyard not only promises a good crop in the fall, but a good seed supply for the future of the cotton industry in the San Joaquin Valley. While the stand of the present crop is not quite 100 per cent, still, it is reported highly satisfactory, according to Manager S. P. Frisselle and W. B. Camp of the Bureau of Plant Industry.

From June 30th to July 14th, J. B. Lillard, State Supervisor of Agricultural Instruction, will offer a course in the organization, administration and supervision of vocational agriculture. During the same period J. C. Booth of Ontario will give instruction in the methods of teaching the supplemental subjects, and a study will be made of general farming in Southern California.

The packing companies of California anticipate plenty of work for the next 12 months, owing to the great demand for food in Europe. It is reported that common stock of the California Packing Corporation is regarded with favor, due to the progressive management. The fact that it has earned $35.00 for common stock in three years, while the current rate of earnings are more than $10.00 a share, make it probable that dividend rate will be advanced during the present year to six per cent.

The Woman's Land Army is still operating, now under the name of the Woman's Land Service. It is still under the able directorship of Miss Alice Graydon Phillips. They are again doing good service and every recruit that Miss Phillips can muster is likely to be in demand. The help of these spirited soldiers of the soil is every whit as necessary this year as last. Next month we shall be heavily engaged and the autumn campaign will be onerous. Fall in, girls.

Squirrels in Mendocino County are taking possession of logged-over areas and were found within one hundred feet of the ocean, which establishes a record in the north coast region. Iver Iverson, the champion gopher catcher of Mendocino County, trapped 50,000 gophers on his ranch near Point Arena during the past year. With double sets 95 per cent kill is obtained, and with single sets about 75 per cent. Mr. Iversen estimates that each gopher is responsible for damage amounting to at least 45 cents a year.

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Government Guarantee

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TEST SPECIAL Belting is made right. Nothing but the best is used in its construction. Best grade cotton fibre, specially woven. Vulcanized under heavy pressure with elastic **Rubber Friction.** The Rubber is forced **through** the plies as well as **between** them. This assures a more firm grip and makes the entire belt as **one** piece.

A **TEST SPECIAL** will not break, slip, or cause shut-downs. It is strong and dependable and with proper care will outlast your machinery.

Every 30 ft. length of **TEST SPECIAL** is stamped with our guarantee. We guarantee it to last longer than any other Rubber Belt made. We guarantee it never to separate between plies and to give continual service. Write us for particulars.

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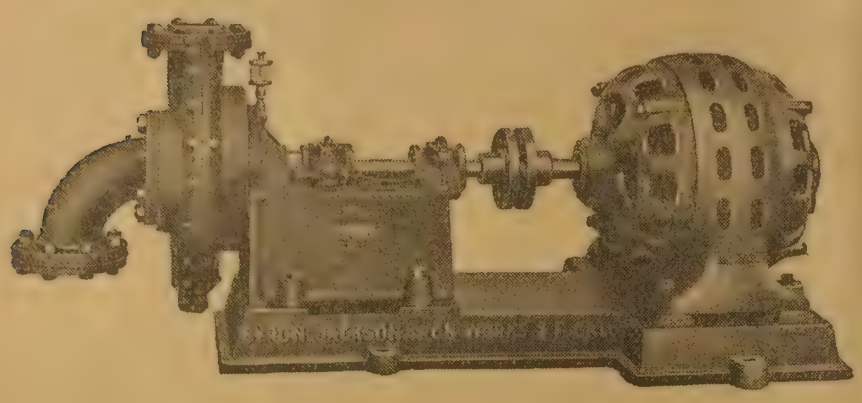
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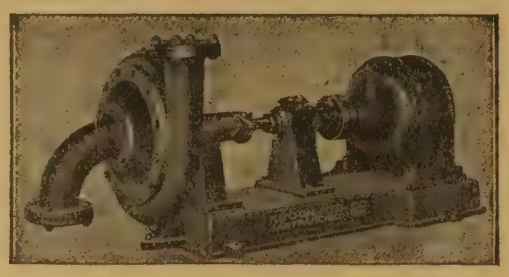
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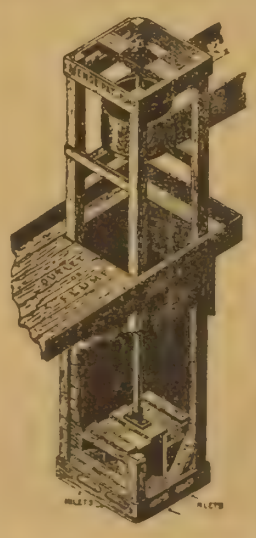
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Mechanical Power on the Farm

Users of tractors, engines, pumping plants, motor trucks, automobiles, electric motors, and other mechanical farm power are invited to make this department an exchange of their experiences and troubles.

TRACTOR BALES HAY.

Every time a charge of hay was put into James Lockie's horsepower baler, one of his feet went in with it. We were horrified, so we stopped to remind him that the new law prohibits the baling of anything else with hay, intentionally. He said that if his foot were baled with the hay it would be unintentional, although the press had caught several forks, and it was only on special occasions that he used his feet.

We were greatly impressed with the advantages we had just seen on an up-to-date hay-baler operated by Theodore Stirewalt in Tehama county. Instead of using a fork or even a foot to shove the forkfuls of hay into the baling chamber, a "Chinaman" was employed to shove it in with his head. But being a mechanical fellow geared to the machine, this "Chinaman" had a reasonable chance always to withdraw his head before it could be clipped off.

Mr. Stirewalt's baler was a 17x22, running about 21 strokes per minute and baling about 25 tons per day of ten hours. One day's work was over 30 tons. On another day he baled 8½ tons in 2½ hours. The charge for this first crop alfalfa was $3 per ton for baling. A 9-18 Case tractor was running this press easily. It was partly throttled down, and was burning about 7 gallons of distillate per ten hours.

Mr. Stirewalt was attending the tractor and superintending the job. We noticed a piece of fly screen set several inches in front of the radiator to keep chaff and light trash off from where it would prevent cooling of the engine.

The same tractor baled 1,700 tons of hay last year. The outfit kept two men with wheel bucks busy and one man hauling with a wagon from the farthest parts of the field. Three men pitched onto the platform, one pitched into the baler, a boy was sticking wires and a man was tieing them. Another man was weighing and recording the weights besides piling the bales. He had a slide made by fastening a plank onto two 2x4's set edgewise so the bales were slid to the pile from the scales instead of rolling them with greater labor.

DITCHING SWAMPS WITH DYNAMITE.

A drainage ditch 750 feet long and seven feet wide was blasted through a woodsy swamp in which logs littered the surface and were submerged throughout its course, and the cost was only 30 cents per lineal yard, including labor. Holes were punched into the mud bottom 30 inches apart and 2½ to 4½ feet deep, according to grade. Each hole was loaded with one-half to one and a half pounds of 40 per cent ammonia dynamite. An electric blasting cap was inserted in each charge and the charges were connected together in series by means of the cap wires. No tamping was necessary as water filled the holes. Where stumps, logs, or trees were encountered, oblique holes were punched to get the explosive underneath; and heavier charges were used. A No. 3 blasting machine fired the charges thirty at a time and did a clean job. Laborers to dig the ditch had been impossible to get, and the blasting was much cheaper anyway.

WATER WOULD PROFIT WHERE ELBOW GREASE DOES NOT.

There is a vital connection between tractors and pumps besides the belt which often enables them to unite in making farm crops possible. R. O. Lovell, Tulare dealer for Waterloo Boy tractors, knew of at least a dozen farmers in the section south of Tulare, who last spring intended to buy tractors out of the proceeds of their grain crops. But the crops never matured, and the tractors cannot be bought. One man in the Earlimart district works a dozen head of stock. Three years ago he bought 80 acres there and leased 750 acres, of which he has farmed 450. This season shows up his third successive crop failure and he is broke. There is plenty of reason to believe that if he had spent his money the first season for an irrigation outfit, he would have made three heavy crops of grain, and would not now be up against it for credit.

A couple of partners have leased a large acreage for three years, working it with three big tractors. Their average crop has been about 1½ sacks per acre. If they had used the same money to level and irrigate, grain would have put them on easy street ere this. If they had made a profit of one sack per acre without irrigation, they could increase their profit several hundred per cent by installation of pumps.

ORCHARD TRACTOR 45 H. P.

(Written for Pacific Rural Press by E. A. Dunipace, Paicines Orchards, Paicines.)

To the Editor: The difficulty of using a large tractor like the Caterpillar 45 in orchard work is imaginary. Our experience proves it. Our trees are all set 25 feet apart. The tractor measures 8 feet and will pull its own width in plows. Thus we plow a space in three trips, the tractor traveling always on the unplowed ground. The other tools are all 12 feet and over, disk, springtooth, pulverizer, etc. Thus in any well-cared-for orchard there is no necessity of driving near enough to the trees to injure them. Indeed the power of the machine in proportion to its width solves many problems for us, chiefly that of plowing the last round, which always bothered us more or less with the smaller machines. There is a difficulty with the 45 gas tank catching the laterals, but we are going to move ours to a more satisfactory position, which will also improve the operator's view of his work.

ROAD BUILDING MACHINERY FREE.

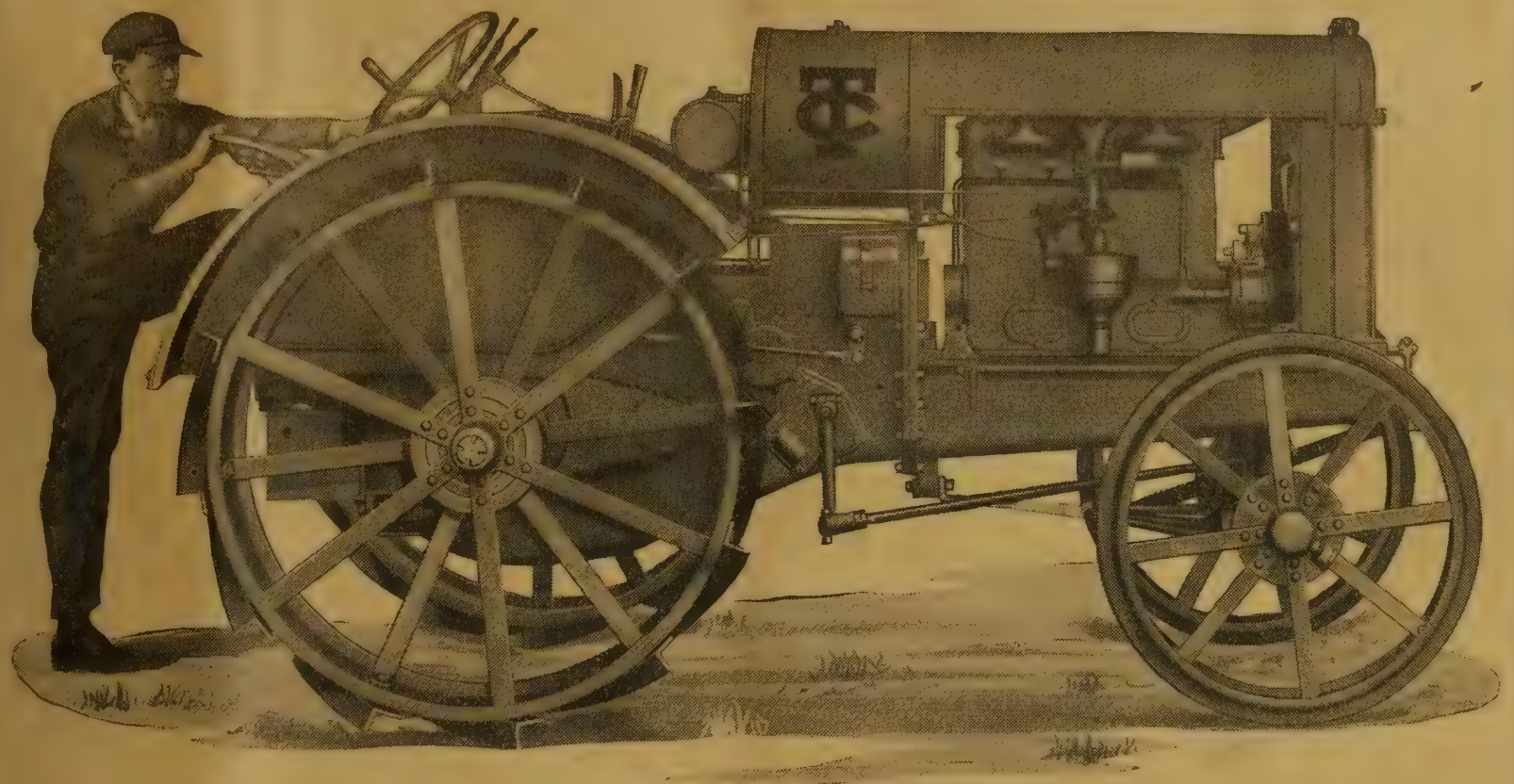
To help make highway building less expensive, the U. S. War Department has decided to distribute to the States through the Federal Bureau of Public Roads, 20,000 army motor trucks, 1,500 caterpillar tractors, about 400 road rollers, a large number of concrete mixers, road-graders, rock-crushers, steam shovels, hoisting engines, and other equipment. This machinery will be distributed without charge, in accordance with recent legislation, for use in construction and maintenance of Federal Aid Highways.

NEW PUMPS NEAR TULARE.

To increase production in the Tulare district 159 new electric pumping plants have been installed by the Tulare district office of the Mt. Whitney Power and Electric Co., representing 1600 horsepower, since January 1. The number of plants is far in excess of the number installed in any other district of the county, while as many or more gasoline plants have been installed during the same period. Minimum rainfall during the past three years has lowered the water level to some extent, so that many of the pump pits have had to be lowered.

Waste water from rice ranches above that operated by L. H. Twede & Son of Willows drains into a slough on their ranch. Two pumps were set to take water out of the slough for the Twede rice, cheaper than lifting well water and having the advantage that it is already warmed.

There are 33 Nash truck wholesale distributors in principal cities of the country, each carrying a full line of spare parts not far from any truck user who needs them.

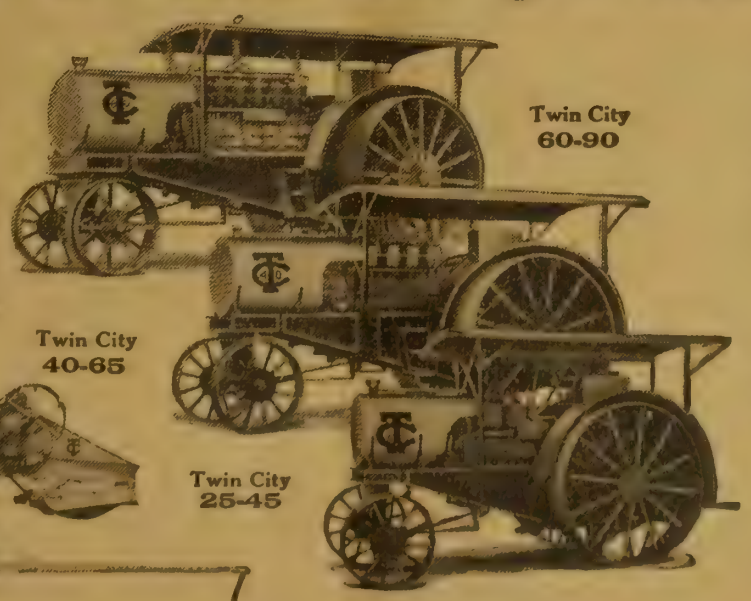


Twin City 12-20—the most powerful tractor in its class

More Power to your Farm

WE GAVE this Twin City 12-20 the opportunity to prove itself a worthy member of the famous Twin City Line on every farm task conceivable. We subjected it to heavy strains seldom encountered in farm work. We are proud to trust it with our reputation and our trade-mark.

Its power and strength are only equaled by its extreme simplicity and ready accessibility. It is a tried and proven success. Built to do the *work—not* to meet a price.



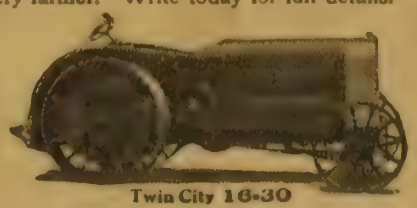


The New Twin City All-Steel Thresher

We say conservatively that the Twin City 12-20 Tractor delivers 25% more than its rated horsepower. It is equipped with the famous 16-valve (valve-in-head), four-cylinder engine which is unrivaled for power, strength and stamina. This double-valve area means complete clearance of burnt gases; a pure fuel mixture, and therefore more power and lower fuel cost.

Other important features include: removable cylinder sleeves; counterbalanced crankshaft; spur-gear transmission (running in oil) with two forward speeds, direct drive on both. Though completely enclosed and dust proof, there is quick and easy access to all moving parts.

This tractor is built by one of the largest tractor organizations in the world. This is important to every farmer. Write today for full details.



Twin City 16-30

Minneapolis Steel & Machinery Company, Minneapolis, U. S. A.

Manufacturers of the Famous Twin City 16-30, 25-45, 40-65 and 60-90 Tractors

Branches—Denver, Colo.; Des Moines, Ia.; Fargo, N. D.; Great Falls, Mont.; Salt Lake City, Utah; Spokane, Wash.; Wichita, Kansas; Winnipeg, Manitoba; Regina, Sask.; Calgary, Alberta.
Export Office—154 Nassau St., New York City.
Distributors—Twin City Co. at St. Louis, Mo.; Dallas, Tex.; Houston, Tex.; San Antonio, Tex.; Amarillo, Tex.; Crowley, La.; Baskerville & Dahl, Watertown, S. D.; Frank O. Renstrom Co., San Francisco, Calif.

TWIN CITY

12-20 Kerosene Tractor with 16-valve engine

Don't Be Blind to These Demons.

(Written for Pacific Rural Press by R. H. Whitten.)

Too many livestock farmers are blind to the fact that their greatest enemies are disease germ and parasites. They insure themselves against losses from fire, but such losses are insignificant as compared with those from disease. According to the last available Government records losses of livestock amounted to $212,000,000 in one year, and it was estimated that three-fourths of these losses could have been prevented by proper sanitary measures.

Fighting germs is insurance against disease, and when it is taken into consideration that about 90 per cent of all animal diseases with which farmers must combat are either contagious or infectious, the necessity of waging an incessant warfare against these enemies is realized.

If disease germs could be confined to an animal's body, the necessity for sanitation would not be so great. Unfortunately, however, the germs are thrown off by the animal and lie in the soil, in the litter of the corral, upon the floor and walls and in cracks and crevices of the barn. Here the little demons remain and maintain their virulence, ready at any time to be gathered up by an animal in its feed, or to be blown about in the dust and drawn into the lungs.

Cattle infected with tuberculosis pass out millions of these germs, and it is not difficult to understand how one diseased animal may contaminate the entire premises if preventive measures are not employed. Same with hog cholera. Government inspectors found that 72 per cent of all cholera cases investigated in one year were the result of failure to clean and disinfect the premises.

The ounce of prevention is proving to be worth more than the proverbial pound of cure in maintaining animal health. For a number of years the trend of veterinary science has been toward prevention, and it is a wise farmer who realizes this fact and shapes his system to prevent disease, instead of waiting until it has been introduced and assistance is needed in combatting it.

All the efficient weapons at our command should be used to protect our farm animals against the introduction and spread of disease. Cleanliness is both a preventative and a remedy for many ills. Filthy quarters may be the means not only of spreading diseases, but also of originating them; consequently, a general clean-up not only improves appearance, but is one of the safest weapons for warding off disease.

In the work of disinfection, nature has provided man with a valuable ally in sunlight. Dark and sunless buildings are favorable breeding places for bacteria, while those which admit the greatest amount of sunlight are the least favorable for their development. But while bright sunlight is a good disinfectant it is not an especially powerful one, and cannot be considered more than an accessory in the destruction of bacteria. Something more powerful and quicker in action is necessary, and some form of germicide or disinfectant is generally used—applied in solution by means of a spray pump. Nearly all of the various coal tar preparations are good, and they are so cheap that there can be no good excuse for not using them. A few dollars invested in a disinfectant, followed by its regular and thorough application, is a cheap form of insurance against the ravages of animal diseases.

Lime is excellent to scatter around places where there has been filth or disease. It is a germ killer, a disinfectant and, in the case of hogs, a health giver and bone builder if a little is put in the feed troughs.

Whitewashing the interior of a building makes it lighter, destroys the germs, and to a considerable extent protects the building from fire. It proves a better disinfectant if a little cresol, crude carbolic acid or dip is mixed with it. Chloride of lime is sometimes used with it—4 ounces to each gallon.

Remember, disease germs are mighty small and may remain for an indefinite time in dust, cracks and crevices. So in fighting them your work should be done thoroughly, and should be carried to every nook and corner. With animals, as with humans, cleanliness is next to Godliness, and in working for their betterment often a spray in time will save nine.



Expensive Blinders

ATTENTION DAIRYMEN



Large production and fine type are combined in this bull. His three nearest dams (including his own dam's two-year-old record) average 24,568.6 milk and 978.5 butter in one year.

If you are looking for a herd sire with such backing, get in touch with us right away.

J. S. GIBSON CO., Williams, Cal.

Large Production and Fine Type



are combined in the get of

PRINCE RIVERSIDE WALKER

Aaggie Acme of Riverside 2nd and Miss Valley Mead De Kol Walker, his two sisters, made the highest official yearly butter record and the highest butter record for three-year-olds, respectively, for 1917-18. His get won first prize at Sacramento last year. We are breeding his daughters to King Korndyke Pontiac 20th, our young $6,500 sire, whose great individuality, fine type, and backing of an unbroken line of great producing dams are hard to beat. Come and see the result of this breeding or write us for further particulars.

Our Entire Herd is Tuberculin Tested.

TULARE HOLSTEIN FARM

W. J. HIGDON, Owner TULARE, CAL. H. L. REDD, Herdsman



Here's all you have to do

START the engine, then attach the vacuum hose to the pipe line; apply the teat cups to two cows and the Empire Milking Machine will finish the job.

Empire Milkers are so simple and easy to operate that anyone can do the milking—your boy or girl can do it when other important work calls you and your men away from the dairy barn.

With the Empire Milking Machine you can either keep more cows, or use less help. It takes the drudgery out of milking and reduces this chore to a uniform and business-like system. With it you will produce better milk and more of it. Your cows will be milked uniformly—one reason for increased milk flow. You will cut dairy costs and increase milk profits.

Empire Milking Machines enable one man to do the milking formerly done by three. They are all that have prevented many farmers from going out of the dairy business and they are helping many others make increased milk profits.

Don't neglect this opportunity to learn more about them. Write for catalog No. 45 and let us refer you to our local dealer.

EMPIRE CREAM SEPARATOR COMPANY, Bloomfield, N. J.

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MILKING MACHINES

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LEONARD FARM JERSEYS
Bulls for sale from Register of Merit Cows. Write for information.
W. J. HACKETT,
Ceres, California

T. B. PURVINE & SONS
PETALUMA, CALIFORNIA.
Breeders of
Registered JERSEYS
Young bull calves for sale. Fine individuals with Register of Merit backing.

VENADERA HERD REG. JERSEYS
Herd headed by Altama Interest, Grand Champion 1918 State Fair. Awarded two other championships and 10 firsts, including Aged Herd Breeders' Young Herd, and get of sire. Young bulls for sale from dams and granddams in Register of Merit.
GUY H. MILLER, Modesto, Cal.

N. H. LOCKE CO.
LOCKEFORD, CAL.
Choice young bulls of King's Valet Blood, backed by Records.
Call at the ranch and make selection.

RANCHO SANTA MARGUERITA
D. F. Conant, Prop.,
Modesto, Cal.
Register of
MERIT JERSEYS
A limited number of bulls for sale.

FOR LARGE AND ECONOMICAL PRODUCTION Get one of my young Jersey bulls from a high producing dam. They are rich in the blood of Gertie of Glynllyn and Lady Letty Lambert. Occasionally one old enough for service.
A. A. JENKINS, Tulare, Cal.

LAKE VIEW FARM
SHROPSHIRE SHEEP
Hardy northern grown. Wooled from nose to toes. Shipped on approval.
Our First Offering:
20 RAM LAMBS.
25 EWE LAMBS.
Apply to or Address
Wilson E. Everett
Box 73, Loleta, Cal.

REGISTERED HOLSTEINS
Creamcup Herd offers service bulls and bull calves of 34-lb. breeding. Females offered for foundation stock. Tuberculin tested.
M. M. Holdridge, San Jose, Cal.
R. D. "A," Box 437.
Two miles out North First Street.

We have issued a convenient little book for the keeping of breeding dates of cattle, hoping to aid the breeder and cattle owner in maintaining accurate records. We will gladly mail you a copy free if you request it.
BREEDING DATE BOOK HERE
CALIFORNIA BREEDERS SALES AND PEDIGREE CO.
C. L. HUGHES, Sales Manager, Sacramento Cal.



Calf Profits
Are you getting them? Calf profits mean more to you now than ever before.
Blatchford's Calf Meal
Write for New Data See actual figures showing you how to increase your calf profits
COULSON CO. - - - Petaluma, Cal.

CALVES

The ONLY Calf Meal using pure dry milk solids as a base; feed
Red Horn Calf Meal
Wean calves from milk in four weeks. Send for free literature.
GLOBE MILLS, Los Angeles

CARRUTHERS WONDERFUL OFFERING.

We have grown to expect high quality at California livestock sales, but no matter how high a person gets his expectations, he will not be disappointed in the 45 Scotch Shorthorns that W. M. Carruthers will offer at his second public sale, to be held at the State Fair Grounds, Sacramento, Thursday, July 10.

The offering consists of 3 bulls and 42 females, the latter consisting of great matrons with calves at foot, bred heifers, open heifers and calves. As a special attraction the entire Carruthers Farm show herd will be offered, including the noted herd sire, Hallwood Villager, one of the greatest bulls ever put up at public sale west of the Rockies. This will be a wonderful opportunity for strengthening established herds or securing foundation stock for new herds, as the offering will be made up entirely of oustanding individuals.

CARLOTTA JERSEYS SELL LOW.

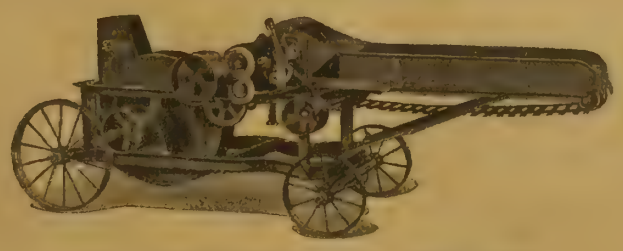
Interest in the sacrifice sale of registered Jerseys of the Cottage Gardens Nurseries at Carlotta, Humboldt county, did not extend to the pocketbooks of those present, as only 11 males and 3 females were sold. The remaining 15 animals were bought in by the Waterloo Jersey Farms to protect their claims, and will be shipped back to Iowa unless sold at private sale within the next few days.

This herd was considered one of the finest in the State. The animals are strong in Financial-Interest blood, and many are closely related to the $60,000 bull Financial Sensation. Despite the fact that they cost from $1,000 to $5,000 each, the top cow brought only $525 and males ranged from $250 down to $25.

E. B. McFarland of the Steybrae Ranch, San Mateo county, telegraphs from eastern Canada that he has secured ninety head of topnotch registered Ayrshires. The shipment will reach California early in July, when one-half of the stock will be sent to the Penobscot Ranch near Cool, and the balance will be brought to San Mateo county. Mr. McFarland will have, after combining this shipment with his home herd, the largest and finest lot of Ayrshires on the Coast.

One of the best lots of Poland-Chinas ever seen at a public sale will be offered October 7 at Hanford, when M. & A. L. Bassett, J. A. Crawshaw and F. D. Ross will sell 75 bred sows and a few outstanding boars. Watch for further particulars of this sale. It will be an epoch-making event. Col. Ord L. Leachman will cry the sale.

The ACME Cutter



THE LIGHT-RUNNING STEEL FRAME ACME

Buy it now for Chopping Hay

The Acme Cutter will pay for itself in one season out of the saving you can make by chopping your hay and making your own alfalfa meal.

Use it this fall for Silo Filling

PRODUCES FINEST SILAGE

The Spiral Knives make a perfect shearing stroke that cuts every piece clean and short. Acme made silage packs properly—avoids air pockets and spoiled silage.

You will appreciate the convenience of operation of the Acme Cutter—its large capacity and small power requirements. The superiority of its STEEL FRAME construction and its greater durability are apparent. Its simple, positive safety device makes it the safest machine to operate.

OUR CUTTER CATALOG DESCRIBES ALL SIZES

DE LAVAL DAIRY SUPPLY CO.

61 BEALE STREET, SAN FRANCISCO

HAVE SOME NICE YOUNG BULLS
Sired by SIR VEEMAN KORNDYKE PONTIAC
and from A. R. O. dams for sale.
ALSO A FEW CHOICE POLAND-CHINA BOARS.
R. F. GUERIN, Visalia, Calif.

Hampshire Hogs—The Popular Breed



This is a picture of the Hampshires which won grand championship over all breeds of hogs at the International in 1918. They sold for $2.25 per hundred above the selling price of any other car and killed absolutely clean, showing perfect health.

FREE INFORMATION AND LITERATURE ABOUT THE PROGRESS OF THIS HAMPSHIRE BREED OF HOGS AND THEIR ADAPTABILITY TO CALIFORNIA CONDITIONS.

WALTER FOLK
California Representative,
American Hampshire Record Association
ROUTE 2, SANTA BARBARA, CALIF

Rubbing Elbows with Other Breeders

(Written for Pacific Rural Press by Thos. F. McConnell.)

Jane Garden Farms.

From a tangle of brush and timber three years ago to a farm that today has 240 acres in alfalfa and raises enough feed to support 250 head of dairy cattle, 30 work horses, and 400 hogs, is a wonderful step in intensive farming, yet it is what has been accomplished at the Jane Garden Farms, owned by Fred W. Kiesel of Sacramento, the well-known banker and president of the California Holstein-Friesian Association. The ranch is located 12 miles out from Sacramento along the east side of the Sacramento River and contains 640 acres of land.

It required almost the vision of a prophet and the patience of a Job to take this isolated tract of land, get a crew of men to work on it and keep them there until it was developed into an earthly paradise. There were no roads leading to it at the time and the laborers staid on the job largely because they were held there by the river on one side and an almost impenetrable jungle on the other. Mr. C. W. Young, the superintendent, had to travel back and forth daily by street car and rowboat, literally carrying their daily meat, but today he travels back and forth in a motor car over one of the finest boulevards in the State to the farm, which is rightfully named a "garden" farm. Mr. Kiesel and Mr. Young must have much of the satisfaction and pleasure of great sculptors, who in collaboration have gone to the marble quarries and selected their rough block of stone; then have continuously worked and chipped and hewn until the beautiful creation stands forth an example of what man can do if his energies are rightly applied and directed. They not only have "made two blades of grass grow where one grew before," but have literally made millions grow where none grew before.

While all of this developing work was going on and the necessary houses, barns, fences and paddocks were being put up, a dairy herd was being established and it has developed until today there are approximately 250 head of registered Holsteins in the paddocks, contentedly eating alfalfa and making more money all the time.

The cows at maximum flow of milk are milked three times daily until they fall below a certain number of pounds; then they are milked twice daily. Great regularity in milking is observed, and everything that tends toward heavy production is carefully thought out and put into practice. System seems to be the watchword, and Mr. Young is eliminating useless steps and methods at every turn. All cattle are kept in paddocks and fed there the year around. Nine months in the year they are fed directly from the field and 3 months from the barns, and it is so conveniently planned and arranged that one man with a team feeds and cleans out the feeding sheds for the 250 cattle. This economy of help is carried into the swine department and when the maximum number of hogs is reached, which is placed at 1,500, it is expected to have things so arranged that one man will be able to feed and care for that number.

All stock is treated kindly and no one is permitted to strike an animal under any circumstances. To illustrate the relation existing between the animals and those caring for them, Mr. Young in walking along the central alleys has only to whistle and even though the heifers are feeding in the sheds at the far end of the paddock, they will come trotting out to meet him and be caressed.

Holsteins of the highest producing blood lines, both on the sire's side and on the side of the dam, compose this great herd. Official testing is going on and during the warm weather it is planned to have a screened enclosure under the shade of the trees in the paddocks where the cows on test will be as comfortable and free from annoyance as possible.

Among the noted herd sires at this great farm are Prince Gelsche Walker Korndyke, who at 1½ years of age brought the highest price ever paid for a bull at public auction in California; and King Korndyke Pontiac, son of King of the Pontiacs.

Every courtesy was shown the writer by Superintendent Young and by Dr. E. J. Weldon, who as secretary handles the business and sales end of the operations. Later we want to say more about the many other grand individuals in this herd.

Bemmerly Has a Bouncing Bull.

W. J. Bemmerly, the noted Hereford breeder of Woodland, has a very promising young bull calf, sired by the Chandler bull, that is making great growth. On April 1 he weighed 707 pounds; on May 1, 839 pounds, and on June 1, 957 pounds, which means a gain of 250 pounds in 60 days, or 4.16 pounds daily. This shows what a combination of good breeding and good feeding will do. Better yet, the youngster has developed in fine points just as satisfactorily as in size, and James O'Connor, the herdsmen, hopes to keep him going at his present gait for some time yet, developing into one of the largest and finest bulls of the breed. Undoubtedly he will be shown at all of the fairs this fall.

All of the bulls that Mr. Bemmerly brought from the East recently are sold, with two exceptions, and the chances for breeders to supply their needs from this importation will be gone unless they get in touch with Mr. Bemmerly at once.

Pigs and Peaches at Gardiner's.

The Gardiner Duroc-Jersey Ranch, situated about 5 miles southeast of Sacramento on the Stockton road, is an example of what can be done in the registered swine business on small ranches in connection with fruit growing. Part of the 60-acre ranch is in bearing peach trees and part devoted to grain and swine raising.

At the head of the herd are Tommy Tucker, by Viceroy's 13th, and G's King's Col. by King's Col. De Luxe. The sows, 35 in number, are mostly of Taxpayer 13th, Burke's Good E Nuff, King's Col. Orion Chief, and King the Col. blood lines.

Prolificacy is one of the chief characteristics in Mr. Gardiner's herd, and it seems to be very well developed and fixed. The average of the spring farrow was 12 from 8 brood sows. One gilt was suckling a litter of 12 pigs two weeks old at the time of visiting the ranch. The pigs were of fine type and in excellent condition.

Mr. Gardiner has a valuable herd after five years' experience in the registered swine business, and if he keeps on in the way he is now operating he certainly will make a reputation for himself and his herd.

ADVERTISING CLEANED HORINE OUT.

"For the love of Mike stop my ad quick," writes George L. Horine, the Duroc breeder of Winton. "I have been saving up gilts and extra sows for several months to take care of such business as I figured might come my way, but my plans have miscarried. Five weeks of Rural Press advertising have taken every sow, gilt and service boar I have to spare, and the $10 spent has brought me about $1,000 worth of business. The prices have been good, but I am afraid to sell any closer as it will reduce my herd too much. Stop the present ad and insert the enclosed one for young pigs, as that is all I have to sell."

Mr. Horine writes that the greatest demand has been for gilts of a type capable of producing real pork hogs. He breeds with the idea of making every hog show a profit on a feed cost of 10 cents per pound, whether it goes for a breeder or a porker. His gilts show a good back, carried straight from shoulder to ham, with wide-sprung ribs and deep sides. They generally grow into medium length sows, gentle and prolific, with the ability to pass on a capacity for "200 pounds in 6½ months," which is Mr. Horine's motto, and one that he lives up to according to the records that he keeps on his fattening pens.



UNEEDA QUEEN MODEL,
Grand Champion State Fair, 1918.

UNEEDA GLENN COUNTY HERD OF
Duroc-Jersey Hogs
KEY HERD OF PACIFIC COAST
Won at Sacramento:
Grand Champion Sow, Senior Champion Sow, Junior Champion Boar, seven Firsts, 23 other prizes.
PIGS BY NOTED SIRES
High Orion, the world's record-breaking sire, Great Wonder, Grand Champion Iowa; King Orion Cherry, First Prize Indiana and Ohio, and other best boars of the breed. Get some of their pigs. Few bred sows and gilts left.
H. P. SLOCUM & SON
WILLOWS, CAL.

A FEW GOOD DUROC BOARS FOR SALE
Sired by California's Defender No. 181269 and out of Tagus OK Lady No. 649796, Tulare Belle, No 655690, Tagus OK Def. 1st, No. 752198, Tagus Girl Def. 6th, No. 752208, Tagus Lady Defender II, No. 752184.
Weanlings, $25.00 each
4 months old $35.00 each
6 months old, $50.00 each
Serviceable Boars over 6 months, $60.00 and up
DIABLO STOCK FARM
Phone Danville 8F2
G. W. EMMONS, Proprietor E. F. PETERSON, Supt.

Lendorris Ranch Poland - Chinas

PUT PROFIT IN FARMING
Our herd is the result of careful selecting and constructive breeding, and combines size, bone, easy-feeding qualities, prolificacy—everything you want for a profit-making hog.
GREAT BATTERY OF BOARS
YOUNG JUMBO (see picture), the great son of Jumbo Bob, who is all that his name and breeding imply; also the sensational young boar, LENDORRIS LIBERTY BOND, a son of Liberty Bond, for whom $10,000 was refused. He promises to become one of the Coast's greatest sires. This is the blood you need to insure your success.
W. L. HAAG & SON
Hanford, Calif.



REGISTERED DUROC-JERSEYS
We have for sale right now, big, heavy-boned, high-up, four-months-old boars. Also some A-1 weanling pigs, either sex. Also some young gilts. Our herd boar has the best blood of the breed and was a prize-winner at the State Fair last year.
Write for prices.
ROUTE 4, BOX 735 THE GARDINER RANCH, SACRAMENTO, CAL.

DUROC JERSEYS
GREENWOOD HERD OF LARGE TYPE DUROCS
The kind that have the bone, constitution and size combined with supreme quality. Our breeding stock comprises animals with blood lines that are noted for certain reproduction of the above characteristics. Ranch on state highway, 8 miles north of Marysville and 3 miles south of Live Oak.
H. C. WITHEROW, Mgr. LIVE OAK, Sutter Co., Cal.

Chester White Boars
Here is your opportunity to secure Fall boars ready for service, and sure to put money-making qualities into your herd. Sired by the $1,000 Highlander and the pick of the season's crop. Prices reasonable.
OAK KNOLL FARM
LAKEPORT, CAL. SAN FRANCISCO OFFICE, 601 Balboa Bldg.

HAUSER'S DIGESTER TANKAGE
Gives Great VALUE for LEAST MONEY. IT MAKES THEM FAT.
HAUSER PACKING CO. LOS ANGELES

DIGESTER TANKAGE
Send for Sensible Folder on Feeding Hogs
WESTERN MEAT COMPANY
Animal Food Dept. 704 Townsend St., San Francisco

ROSEDALE FARMS
Hampshire Sheep
WE OFFER FOR THIS SEASON:
25 Head of Ram Lambs
50 Head of Yearling Ewes
100 Head of Ewe Lambs
One 3-year-old Butterfield Ram.
Apply to or address
D. E. KELLIHER, EUGENE, CAL.

DUROC JERSEY BOARS
Rancho Del Sur offers 15 good fall boars sired by Orion's King Gano and California Orion Cherry King. I guarantee these boars to please you. Those bought on mail order may be returned if not satisfactory.
DONALD H. GRAHAM
P. O. Box 177, Lancaster, Cal.

ROC STEIN RANCH DUROCS
Crimson Monarch, Gold Model and Orion Cherry King breeding. Weaned pigs and bred gilts and one service boar for sale. Write and get our prices before you buy.
W. M. Way & Son
Rt. 1, Box 320, MODESTO, CAL.



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NORWALK TIRES

EACH fabric layer is firmly imbedded with a multitude of resilient rubber rivets, which holds the plies together, eliminating fabric separation.

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is cheaper than second-hand, dollar for dollar of cost. Come in and see what we have to offer you in **HERCULES HARNESS**, Saddles, and Horse Collars. Our own make and fully guaranteed.

W. DAVIS & SONS

California's Pioneer Harness Manufacturers
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Catalogue of Harness, Saddlery, Trunks and Traveling Bags sent free on request.

HOLMES STOCK FARM

WATERFORD RD., MODESTO, CALIF.
Registered Holstein Friesians.
YOUNG SERVICE BULL FOR SALE
Prince Abbekerk Aralia Walker, No. 204267—Three-quarters white.
Write for pedigree and price. Inspection invited and satisfaction guaranteed.

Shropshire Rams

Pure blood yearling rams—singles and carload lots. Also pure-blood lamb bucks, ready for service by Sept. 1st. These bucks and rams are from pure-blood ewes (formerly registered) and the best registered rams to be purchased in the United States.

J. R. BLOOM, DIXON.

TAMWORTHS

(The Bacon Hog)
Largest Herd in the State
DUROC-JERSEYS
Mature Stock and Weanlings of both sexes. Sure to please.
SWINELAND FARM
W. O. Pearson, Prop. Woodland, Cal.



America's Pioneer Dog Medicines

BOOK ON
DOG DISEASES
And How to Feed
Mailed free to any address by the Author
H. CLAY GLOVER CO., Inc.,
118 West 31st Street, New York

HOG HEALTH—HOG WEALTH.

Keep a sharp eye on the tails of your pigs, for the tail is a pig's barometer. A lowered or drooping tail is a storm signal that should never be disregarded.

The voidings are another good indicator of the pig's health. If they are moderately loose and soft and not scouring, the pig is in right condition to resist diseases.

The best doctor for your hogs is In old Doc Sanitation. For best results he should call 365 times during the year, but his charges are reasonable—just a little effort on your part in maintaining sanitary conditions. This cleanliness is good for the pigs, while the manure and rubbish removed will fertilize the soil and raise bigger crops next year.

Use plenty of fresh, air-slaked lime after cleaning up. Spread it around the pens, the houses, the feed troughs and wherever the hogs are liable to gather. If you get a little inside the troughs it won't hurt. A little in the pigs' feed acts as a bone builder. Lime is a germ killer, a disinfectant and a health-giver combined.

Worms are the Huns of hogdom, but may be eliminated by the use of two grains of santonin and two grains of calomel in a capsule for each 50-pound pig, given to each pig separately after it has been without feed a few hours.

Lice do as much damage from the outside as worms do from the inside. Crude oil as a dip or spray will kill both the lice and the nits, and at the same time it will benefit the skin and keep it in good condition.

Skin diseases are associated with indigestion, unthriftiness, constipation and tendency to paralysis. In most cases the hogs are given too much grain and too little exercise. Dirty, wet beds are a contributing cause. Use a physic of Epsom salts, then feed a light, laxative ration, adding a dram of granular hyposulphite of soda twice a day for each animal. Rub the hogs with a coal tar dip thickened with flowers of sulphur. Repeat in a week, if necessary. Make the hogs take outdoor exercise daily.

A DOZEN SHEEP DON'TS.

1. Don't keep sheep on wet land.
2. Don't feed moldy or spoiled hay, roots, silage, or grain.
3. Don't forget to keep salt and fresh water before the sheep.
4. Don't neglect the sheep in winter. Keep them in good condition.
5. Don't forget to tag the ewes before breeding and lambing time.
6. Don't forget that bred ewes need exercise. Force this, if necessary.
7. Don't let the lamb go too long without sucking.
8. Don't be afraid to feed the young lambs a little grain.
9. Don't forget to dock the lambs early and to castrate the males.
10. Don't let parasites kill your lambs for lack of a change of pasture.
11. Don't shear your ewes until warm weather comes.
12. Don't tie the fleeces with anything but wool or paper twine.

MAKING SHEEP SCAB SKIDOO.

On account of the reappearance of sheep scab at different points in California, State Veterinarian J. P. Iverson started a vigorous campaign last spring to stamp out the infection, making greater effort than has been made since eradication of sheep scab was first started in this State ten years ago.

During April 571,859 sheep were inspected; 521,705 were found free, and 100,308 were dipped. During May the figures were 380,683, 276,347 and 196,968. The present season's work will end at the close of this month, and if small centers of infection appear later on, a campaign of fall inspections and dippings will effectually care for them. The results accomplished this spring are certainly gratifying.

DUROC-JERSEY SWINE
AT PUBLIC SALE
Wednesday July 16, 1919
New Sale Pavilion, Tulare, Calif.

60 BRED SOWS AND GILTS
selected from the herds of the following breeders:

Allen Thompson, R. C. Sturgeon, W. J. Higdon, Alex Whaley, Tulare; Henry Cummins, Goshen; Joe Chenowth, W. J. Fulgham & Sons, S. A. Williamson, W. J. Stewart, Visalia; R. E. Clifford, Strathmore; C. E. Ellis, Tulare; J. P. Walker, Visalia.

THE GREAT BLOOD of the **Golden Models, The Defenders, The Crimson Wonders, The Critics and Orion Cherry King** predominates in the animals in the sale.

The **BREEDER**, the **FARMER**, the **BEGINNER** are all invited to be the guests of the

TULARE COUNTY DUROC-JERSEY BREEDERS' ASSOCIATION

and you will find the animals in this sale will meet the high standard demanded by

DUROC-JERSEY BREEDERS

Every animal in this sale has been reserved by its breeders specially for this sale.

NOTE THE DATE OF SALE and make all arrangements to be there. This is the one sale you can't afford to overlook.

Secure your copy of the sale catalog by writing immediately to R. C STURGEON, Secretary, Tulare, Calif. It will give you the breeding of every animal and assist you in making your selections.

GEO W. BELL, Auctioneer. ALLEN THOMPSON, Pres.

Sale Starts promptly at 10 A. M.

Tulare County Duroc-Jersey Breeders' Association
TULARE, CALIFORNIA

Pork Production
BY ACTUAL TEST PURE HAWAIIAN CANE
MOLASSES

will increase pork production approximately five-tenths pounds daily over a barley and tankage feed, yet it sells for less than half the price. Do you know of any other feed at any price that will do this?

Why not get all the profits out of your hogs?

Write us immediately for a copy of above test.

W. H. YOUNG COMPANY

58 SUTTER STREET, SAN FRANCISCO

RAMBOUILLET RAMS

Just the kind you need to increase the size of carcass and fleece. Registered rams only used on the original registered flock of ewes and their descendants. Call on or write.

E. C. SPEAR ESTATE

One mile east of town. St. Helena, Calif.

SHROPSHIRE RAMS

The kind that produce the large uniform black face lamb so much sought after in the markets.

Call on or write to

C. E. BARNHART, Suisun, Calif.

Livestock and Dairy Notes

Livestock breeders all over the state are invited to send on postal cards, notes regarding their sales, State and County Fair intentions, new stock, etc.

LIVESTOCK SALES DATES.

July 10—Carruthers Farm, Live Oak. Sale of 45 Scotch Shorthorns at Sacramento.

July 16—Tulare County Duroc-Jersey Breeders' Association, Tulare. Second consignment sale of 60 head.

August 2—Butte City Ranch, Butte City. Shorthorn cattle, Berkshire hogs, Shropshire sheep and Shetland ponies.

August 6—Francis T. Underhill, Santa Barbara. 100 head Hampshire hogs.

August 26—Fresno County Poland-China Breeders' Association, Fresno. Consignment sale of bred sows and gilts.

September 17—John M. Bernstein and W. L. Haag & Son, Hanford. Bred sow sale.

October 7—M. & A. L. Bassett, J. A. Crawshaw and F. D. Ross, Hanford. 75 head of Poland-Chinas.

October 16—H. M. Elberg, Roselawn Stock Farms, Woodland. 45 head of Shorthorns.

October 29—Tulare County Poland-China Breeders' Association, Tulare. First consignment sale.

The Dairy.

R. L. Holmes of Modesto has purchased five very fine Holstein heifers and two cows from Luther Thompson of Modesto.

R. C. Sturgeon, Holstein breeder of Tulare, has sold a very fine yearling bull from Princess Hengerveld Arizaba, a 24-pound cow, to Faekler Bros. of Lemoore.

J. W. Benoit, Modesto, has six registered Holsteins on yearly tests, which will be completed between September and January. All are doing well and some excellent records are expected.

Dr. H. W. Hand of Orland was the successful bidder on two fine Jerseys at the Ed Carey sale at Carlton, Ore., at which the average was $1,150. The top was the herd bull St. Mawes Boise Rosaire, which brought $5,100.

At the recent annual meeting of the Holstein-Friesian Association at Philadelphia, Frank L. Morris of A. W. Morris & Sons, Woodland, was elected a director. He is the first California breeder to be accorded this honor.

Edgemoor Farm, Santee, landed three fine Guernsey cows at the Florham Farm sale recently held back in New Jersey. These were Pearl Rose of Beaver Ridge, purchased for $5,500; Maxixe of Anandale for $3,400, and Duchess of Maple Hill for $2,250.

A. M. Bibens, Modesto, has sold to Bion Voorhies of Manteca, 2 registered Holstein heifer calves and a bull that is a son of Aaggie Cornucopia Pauline Count. Mr. Bibens reports a very heavy demand for stock and has sold 10 bulls during the last three months.

Lina Pietertje Hengerveld De Kol 2nd in the herd of E. E. Freeman, Modesto, who made 21 pounds right after freshening, is now in the ninth month of her lactation period, and is giving almost as much milk as when fresh. Mr. Freeman also has on test a cow that has had four pairs of twins in the last six times she has freshened. That's going some.

The California Dairy Council will hold a 2-day meeting—July 8 and 9—in the rooms of the California Development Board, Ferry Building, San Francisco. There will be a general conference of school and health authorities and others on Tuesday, and an executive meeting on Wednesday, at which time a permanent board of directors will be elected.

The firm of Gotshall & Magruder, Ripon, has been reorganized and W. N. Steele of the First National Bank of Modesto will hereafter take an active part. As recently reported, the herd has been increased to the point where it now numbers nearly 100 females. The 2-year-old heifer, Korndyke Segis Daisy, a half-sister to King Korndyke Sadie Vale, is being started on test. The State record 2-year-old heifer, K. P. Tola Joe, recently dropped a bull calf by the Higdon bull and is going on test. She has a 3-year-old record of 31.92 pounds, but is in wonderful condition and promises to greatly exceed this record.

Beef Cattle.

R. S. Mossman of Antioch, who purchased foundation stock of registered Herefords at the 1918 Hereford Breeders' sale, has since added stock purchased from corn belt herds. He now has 11 registered females, headed by a very promising son of Choice Stanway out of a Beau Randolph cow.

Harris & Sons report having sold recently to the Ervine Ranch, Orange county, California, one carload of very fine pure-bred Shorthorn cows. This is the third sale made to this ranch in the last ten months. They have also sold one carload of registered Hereford bulls that were distributed to the Califf Ranch, Parker Ranch and Hollister Ranch, Santa Barbara, and to the Clark Ranch, Escondido. This makes over 500 head of cattle that Harris & Sons have shipped into southern California since the first of December.

Swine and Swinemen.

Ormondale Company, Redwood City, have sold to F. W. Kiesel of Jane Garden Farm, Sacramento, a young Duroc-Jersey boar by Trailblaser, he by Pathfinder.

Eldersly Farms, Live Oak, reports sales of registered Poland-Chinas as follows: A boar and 2 gilts to J. E. White, Escalon; 4 sow pigs to Lew Tarke, West Butte; boar pig to F. Fulton, Santa Rosa.

August 26 is the date claimed by the Poland-China breeders of Fresno county for their bred sow and gilt sale. The members are all pulling together and the offering will be made of topnotch animals.

A. Buckland & Son, Fresno, have a wonderful prospect in their young boar, Blue Valley King. He was farrowed last September and on the first of this month weighed 293 pounds. He is by King Big Bone, out of a Missouri Blue Valley sow.

Fred D. Ross of Hanford has purchased a new boar to take the place of Rossmead Big Bob, and many of the big Poland-China breeders who are accustomed to winning in the show ring are afraid of this fellow. He is King's Big Timm by Giant Timm, out of Smooth Pauline. Look for him at the show this fall.

A. F. Busch of White Oak Farm, Potter Valley, is finding the demand for registered Poland-Chinas very heavy and has recently made the following sales: Boar to M. R. Bevans, boar to P. S. Vaughan, 2 gilts to Crafts Bros., Potter Valley; 3 gilts and a boar to A. P. Brunner, Ukiah, and a boar to Annabel Clear, Island Mountain.

W. L. Haag & Son, the progressive Poland-China breeders of Hanford, cannot supply the demand for pigs from their senior herd sire, Long Jumbo. This great sire never looked better than at present. The junior herd side, Lendorris Liberty Bond, is coming along in fine shape and promises to have great size combined with a world of quality.

Sheep.

J. Bidegary, Fresno, sold 4 carloads of Rambouillet rams to Bullard Bros., Woodland.

Easton & Ward of Blackhawk Stock Farm, Diablo, have sold their entire stock of Shropshires to Butte City Ranch, Butte City.

John E. Marble, South Pasadena, has sold Dorsett rams to Robert S. Clide, Yucaipa; F. M. Deato, Lancaster; Miller & Lux, Los Banos, and one to go to Mereno.

Chas. Kimble, Rambouillet breeder of Hanford, recently sold 400 yearling rams to L. A. Smiley and John K. Hartt of Rawlins, Wyoming. This is quite a bunch, but Mr. Kimble raises sheep on such a large scale that he has some choice stock left to supply the balance of his trade.

Livestock Miscellaneous.

Professor E. C. Voorhies of the University Farm has been given the position of assistant to Dean Hunt of the Agricultural College at Berkeley. While he is to be congratulated on this promotion, he will be missed from the

FORTY-FIVE REGISTERED SHORTHORNS OF ROYAL CHARACTER

At Public Auction

THURSDAY, JULY 10, 1919
STATE FAIR GROUNDS
SACRAMENTO, CALIF.

Owned by W. M. Carruthers,

CARRUTHERS FARMS Live Oak, Calif. SECOND PUBLIC SALE

These cattle are now all on the sales grounds and have been visited by a number of Shorthorn breeders and breed authorities who are unanimous in pronouncing them a group of unusual excellence.

Many Individual Stars In The Offering

Among the 42 females in the sale there are many that would be singled out as star attractions in any offering of average quality. Among these might be mentioned **LADY RUBERTA,** famously bred and herself a first-prize winner at California State Fair; **MAYFIELD VICTORIA 2ND,** a wonderfully smooth, wide, deep daughter of Count Glory and bred to Hallwood Villager; **BROADHOOKS SULTANA 2ND,** a first-prize winner, bred in the purple and with a Count Glory heifer at foot; **LADY GRACE,** a daughter of the great Ringmaster, selling with an outstanding bull calf at foot by Count Glory and she is bred back to Hallwood Villager; and so on through a list of cows and heifers whose breeding and individuality are a delight to the sense and sight of the Shorthorn judge.

Three Bulls of Herd Heading Quality

MAJESTIC VISCOUNT 2ND, by Wood Dale Stamp and out of a Lavender dam, is a big, straight, smooth, red of impressive type, and has already been given service in the famous Ravenswood herd; **VICTOR LAD,** just past 16 months old, is by Maxwalton Rosedale and out of the richly bred Victoria 201298, and is an individual that will bear the closest inspection; then there is the star attraction of all—

HALLWOOD VILLAGER, who is now the most widely known Shorthorn bull ever led into a western sales ring. His breeding and type, now coupled up with the known high character of his get, have made him possibly the most popular young sire in the west among those who have had opportunity to observe him. At this stage of Shorthorn progress he is unquestionably worth a fortune to the breeder fortunate enough to secure him.

Every animal sold as a single lot is tuberculin tested and guaranteed to be a breeder; every young animal permanently immunized against blackleg by Purity Blackleg Aggressin made by the Kansas process.

A catalog of sale will be mailed on request. Drop in at the sale grounds and see the cattle.

SALE OPENS PROMPTLY AT 1 P. M., THURSDAY, JULY 10.

Auctioneers—
REPPERT
MILNE

Management—
CALIFORNIA BREEDERS SALES AND PEDIGREE CO.
J. M. HENDERSON JR., Pres. C. L. HUGHES, Sales Manager.
Sacramento, California.



Choice Princess—By Diamond Dale, out of Princess of Woodside.



Live Oak Eveline—By Hallwood Flash, out of Eveline 5th.



Roan Lavender—By Proud Monarch, out of Mt. Vernon Lavender.

University Farm where he has done excellent work in the animal husbandry division.

Feed conditions on the ranges in Trinity County are most excellent, according to John T. Gray, district ranger at Ruth. The estimated grazing capacity of the ranges in that district is 3,200 head of cattle and horses, and 11,000 head of sheep and goats. The ranches are being stocked to their full capacity and no parts are being rested at present.

LIVESTOCK DIRECTORY

Rate in this directory 3c. per word each issue.

SWINE.

Berkshires.

CASTLEVIEW

GIANT TYPE BERKSHIRES

We are booking orders for spring pigs from Grand Champion Sows and sired by Mayfield Roockwood, sire of Champion Barrow at 1919 Western Berkshire Congress.

CASTLEVIEW RANCH, SANTA ROSA.

ANCHORAGE FARM.

MONEY-MAKING BERKSHIRES—The prolific, easy-feeding kind that make the highest priced pork from the lowest priced feed. They will increase your profits. Prices reasonable; satisfaction guaranteed. Write for free booklet, describing our world's reserve champion STAR LEADER. We are now making a special offering of classy boar pigs.

Anchorage Farm, Orland, Calif.

GRAPEWILD FARM BERKSHIRE-GUERNseys—Spring pigs sired by Big Leader and Grapewild Farm Leader. A. B. Humphrey, Prop., Escalon, Calif.

TWO SOWS AND A BOAR—$100 the trio. Two sow pigs from ten raised sired by Baron Duke 201st, 780-pound, $1100 Grand National Champion, from Rival B Princess, a prize-winner at San Francisco, Sacramento, Oregon, and Omaha National Swine Show, and a boar sired by the Grand Laurel Champion boar from Symboleer Belle, and of Superbus blood lines. A boar from a litter of ten raised, big, long, typey, stretchy pigs. Sandercock Land Co., in charge of Natomas Land Sales, 23 Montgomery Street, San Francisco, Cal.

BERKSHIRE BOAR PIGS—From large litters. Order one if you want the best. Satisfaction guaranteed. R. J. Merrill, Morgan Hill, California

BERKSHIRES—Sired by Star Leader, the $1500 boar. Kounias Registered Stock Farm, Modesto, Calif.

FOR REAL GOOD BERKSHIRES write Frank B. Anderson, B. 724W., Sacramento, Cal.

CARRUTHERS FARMS BERKSHIRES — Cholera immune. Live Oak, California.

REGISTERED BERKSHIRES—Write B. D. Hume Dos Palos, California.

BERKSHIRES—Fair Oaks Ranch, Willits, California.

Poland-Chinas.

PROFITABLE POLAND-CHINAS

We offer at private sale 40 splendid young sows, 10 choice bred gilts and 5 carefully chosen boars. They are representative selections from the herds of leading California breeders, including M. Bassett, W. H. Browning, W. A. Young and Hewitt & Hewitt, and such Eastern breeders as Henry Fesenmeyer and T. F. Walker. They carry the blood of such noted sires as President, J. O. Orange, I. B A. Wonder and Chieftain

These registered hogs are sold for no fault. We are simply discontinuing this breed, and offer what we bought for the foundation of one of the finest herds in the West. Prices reasonable. Write at once.

AMERICAN HOG COMPANY

922 Crocker Bldg., San Francisco

MARCH BOAR PIGS—Out of sows selected from the best herds of the corn belt. One line-bred Big Bob pig sired by Bridges' Bob Wonder, Missouri, grand champion, and out of my great sow, Bridges' Bobby. Two sired by the noted Boulder Buster and out of the splendid sow Bob's Giantess. These are real tops and guaranteed to please. H. C. Shinn, R. F. D. 1, Tulare.

McCARTY & STARKWEATHER

FALL BOARS—Big type, smooth and classy. Cholera immune. Box 2250, San Francisco or Paradise Road, Modesto.

OXBONE HERD offers March boars for sale from King's Big Bone Leader, grand champion at State Fair, 1918. Write F. E. Fay, Tipton, California.

MAKE BIG MONEY with Cloverdale Farm big-type Poland-Chinas—the prolific, fast-growing, easy-feeding, money-making kind. We purchased the famous Whitten Ranch herd including great boar Jumbo Model. High-class stock for sale—farmers' prices. Write us. Cloverdale Farm, R. F. D. 1, Escondido, Cal.

J. H. COOK

LARGE TYPE POLAND-CHINAS — Fall boars by a great son of Caldwell's Big Bob; also spring boars by the Grand Champion King's Big Bone Leader and other noted sires. Satisfaction guaranteed.

PARADISE, CALIFORNIA

BIG-BONED POLAND-CHINAS—From Eastern prize-winners. Sold out of boars; a few choice October gilts for sale. D. H. Forney, Route G, Fresno, California.

SOW BARGAINS—We are offering some exceptionally nice tried sows, bred and open gilts, at attractive prices. They are all sired by the undefeated and world's grand champion Superba and out of big type sows, which cost me $200 and over. Investigate before buying elsewhere. Rough's Greenfields, Arlington Station, Riverside, California.

EL PROFITO—Our great herd boar, will put profit-making qualities into your herd. His offspring have size, stretch, bone, good backs and feet, and easy feeding qualities. To make the right start with big-type Poland Chinas, get one of his boar pigs. Prices right. Correspondence cheerfully answered Viola L. Renwick, Santa Barbara, California.

NOW BOOKING ORDERS for spring pigs, either sex from my prize-winning, large type Poland-Chinas hogs. Also will book a few orders for bred gilts, February and March farrow, and a few good serviceable, aged boars. Hale I. Marsh, Modesto, California.

ELDERSLY FARM—We are offering some excellent tops from our fall, and spring pigs at attractive prices, sired by one of America's best-bred boars, Big Black Bone Wonder, with grand championship breeding on both sides. He is a real 1000-lb. boar. J. H. Ware, Live Oak, California

HARTSOOK BIG TYPE POLANDS—A fine lot of young boars. Both bred and open gilts for sale. Toggenburg goats and Holstein bulls ready for service. Fred Hartsook, Laukershim, California.

HORAN'S POLAND CHINAS—Young stock. Bred and open gilts. Big-bone Bob and Wonder blood lines. N. K. Horan, Lockeford, Cal.

BRED AND OPEN JULY GILTS by King Big Bone Leader for sale. Also September gilts by California Jumbo Buster and a few toppy young boars. A. Buckland & Son, Route E, Box 126, Fresno.

BOOKING ORDERS for spring pigs sired by "Bob Big Bone" 281289, litter brother of the Junior Champion of Sacramento, 1918, P. E. Mitchell, Atwater, California.

WAUKEEN HERD POLAND-CHINAS—Big type herd boar, the $700 Grand Champion of California. Les McCracken, Prop., Ripon, Cal.

BIG TYPE POLAND-CHINAS—Stock from the best herds of the Middle West. N. Hauck, Alton, Humboldt County, California.

LAKE SIDE STOCK FARM—Large smooth and big boned Poland-Chinas. Geo. V. Beckman & Sons. Lodi, California.

REGISTERED POLAND-CHINA SWINE—Prize winners. Finest stock in the State. M. Bassett, Hanford, California.

CHAS. L. WEAVER, Tulare, Cal., Poland Chinas. One 11 months old—"A Wonder" bred boar.

POLAND-CHINAS—Young stock for sale. Edward A. Hall, R. 1, Box 39, Watsonville, Calif.

POLAND-CHINA PIGS—Bernstein Trewhitt, and Ross blood. B. M. Hargis, Tulare.

REAOAKS RANCH herd of registered Poland-Chinas, W. J. Hanna, Gilroy, Calif.

BIG BONED POLAND-CHINAS—Stock for sale. E S. Myers, Riverdale, California.

BIG TYPE POLAND-CHINAS—Young boars for sale. Carstens & Halloway, Madera, Calif.

POLAND-CHINAS—Young stock for sale. H. E. McMahan, Lemoore, California.

POLAND CHINAS—Strictly large type. J. F. Lehman, Lodi, Cal.

LARGE TYPE POLAND-CHINAS. Winton Poland-China Farm, Winton, Cal.

Chester Whites.

BILLIKEN CHESTER WHITES—Just a few left to offer. One 1917 fall boar and one 1918 fall boar; both cholera immune. Spring farrows are all sold except 10 boar pigs Will have 10 more sows farrow during May, June and July and will book orders now from these coming litters, delivery at weaning time. C. B. Cunningham, Mills, Calif.

DANDY REGISTERED CHESTER WHITE weanlings. Reasonable prices. K. Wellman, Los Altos, Cal.

Duroc-Jerseys.

DUROC-JERSEYS AT IRELAND—Home of Cherry Volunteer II., Grand Champion Boar at Riverside. Ireland's Orion Defender and Orion's King of Ireland are excellent sires in service. Booking orders for spring delivery Ranch at Owensmouth. City office, 1219 Breckman Bldg., Los Angeles. Calif

REGISTERED DUROC-JERSEYS. — Weanlings, both sexes, from Orion, Defender and Golden Model stock Pino Vista Ranch, Placerville, Cal. Address H. C. Baum.

BIG TYPE DUROCS—Herd headed by California Orion King Am offering a few selected boar pigs Inquiries invited. Harvey M Berglund, Dixon, Calif.

WE WON MORE MONEY on Durocs at the State Fair than any other exhibitor Why not buy some of this winning stock? Junn Acres Stock Farm, Davis, California

PATHFINDER AND KING'S COL. stock — Immune Weanlings, $25 each. Bred gilts and service boars Derryfield Farm Capital National Bank Bldg., Sacramento, Calif

START RIGHT—Registered Duroc Jersey Weanlings every month in the year, $15; 3 for $40 Satisfaction guaranteed Red Rock Ranch, Glen Ellen, Cal.

HORINE'S DUROC-JERSEYS — Everything sold out but weaned pigs and a few bred gilts Geo. L. Horine, Winton, Calif.

SWEETWATER DUROCS—The most popular herd in the West. Our Durocs make money for us—they will do the same for you. Winsor Ranch, Bonita, San Diego Co. Address R. K. Walker.

REGISTERED DUROC JERSEYS — Open and bred gilts. August and November boars. Great herd headers. Weanling pigs, both sexes. Stock of the big strong type so much desired. Jack Borge, Dos Palos, Cal.

DUROC JERSEY SWINE FOR SALE—Best blood lines. Bred sows and gilts. Service boars. Jersey Queen Farm, San Jose, Calif.

DUROC JERSEYS—Fine big type gilts, tried sows and boars Eastern and California bred. H. P. Slocum & Son, Willows, Calif.

HEAVY-BONED DUROCS—A few service boars for sale. Ormondale Co., Route 1, Redwood City, California.

REGISTERED DUROCS—All from prize-winning stock. W. P. Harkey, Gridley, Calif.

REGISTERED DUROCS—Stock for sale. W. J. Fulgham & Sons. Visalia, California.

Hampshires.

HAMPSHIRES—Fine quality. Weaned pigs, dandy young boars. Uneeda Hampshire Swine Farm, Tom M. Bodger, Prop., Gardena, Cal.

MY HAMPSHIRES are money makers Stock for sale. Buy now. L. W. Denker, Saugus, California.

Miscellaneous.

CROLEY'S BALANCED HOG FEED—The cheapest feed to fatten hogs. Write Geo. H. Croley Co., Inc., Livestock Supplies, 8th and Townsend Sts., San Francisco, Calif.

LARGE YORKSHIRES—The ideal hog for the progressive farmer. Young stock for sale. A. L. Tubbs Co., Calistoga, Calif.

DAIRY CATTLE.

Guernseys.

HIDDEN VALLEY FARM offers for sale 2 young Guernsey bulls, ready for service, out of high record advanced register dams. A. J. Welch, proprietor, Redwood City, California.

EDGEMOOR FARM GUERNSEYS—First in the show ring and in official records. A few choicely bred bull calves for sales. Edgemoor Farm, Santee, San Diego county, Calif.

PALO ALTO STOCK FARM, Palo Alto—Breeders of registered Guernseys; both sexes; prices reasonable.

Ayrshires.

ELKHORN FARM AYRSHIRES— Choice young bulls at reasonable prices. J. H. Meyer, 440 Montgomery St., San Francisco, Calif.

REGISTERED YEARLING ROB ROY Bull. Farmer's price. Redwoods Ayrshire Farm, La Honda.

AYRSHIRES—Registered; all ages. E. B. McFarland, 412 Claus Spreckles Building, San Francisco, California.

NORABEL FARM AYRSHIRES—Le Baron Estate Co., Valley Ford, Cal.

Jerseys.

THE KEEP ON herd of registered Jerseys has a few extra good males and females to offer at reasonable prices. Satisfaction guaranteed. Dr. H. W. Hand, Orland, Calif.

SUNSHINE FARM JERSEYS—Tuberculin tested. Production counts. E. E. Greenough, Merced, California.

Milking Shorthorns.

DUAL-PURPOSE SHORTHORNS — Registered and unregistered bulls and heifers. Two unregistered 2½ years old range bulls. Chas. L. Weaver, Tulare, Cal.

BREEDERS OF REGISTERED SHORTHORNS—Milk strain; choice young stock for sale.. John Lynch Ranch, Box 321, Petaluma.

INNISFAIL DAIRY SHORTHORNS—Registered young bulls for sale. Alexander & Kellogg, Suisun, California.

Holsteins.

A PRICE ON EVERY ANIMAL.

Herd free from tuberculosis. All sales subject to sixty days' retest. Sons of Finderne Soldene Valdess, whose dam is not only a world record cow in seven-day division, but has two sisters holding world's records for yearly production.

Toyon Farms Association.
670 Mills Building San Francisco.

PALO ALTO STOCK FARM, Palo Alto, breeders of registered Holsteins. Heifers and service bulls Reasonable prices

REGISTERED HOLSTEIN BULLS with world's record backing. Kounias' Registered Stock Farm, Modesto, California

REGISTERED HOLSTEIN CATTLE—E. B Freeman, Route B, Modesto, California.

EL DORADO HERD OF HOLSTEINS—Alex Whaley, Tulare, California.

BREEDERS OF REGISTERED HOLSTEIN cattle and Berkshire pigs Whittier State School, Whittier, California.

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SATURDAY, AUGUST 2, 1919

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Stockmen Against Enlargement of Parks

(Written for Pacific Rural Press by W. H. Conrad, Red Bluff.)

Word has just been received from Washington that Representative Elston's bill to extend the boundaries of the Sequoia National Park, has been reintroduced in the House. The reason given for this bill is that the area under consideration is of high scenic value and should be preserved for that purpose, but let me make a comparison between the park administration and the administration of similar areas in the National Forests.

The Yosemite Park consists of about 750,000 acres and embraces the Yosemite Valley proper. The annual tourist travel to the park is 30,000 to 35,000 per year. More than 95 per cent of these tourists visit only the small area included in the valley proper and leave over 600,000 acres unvisited by all but about 150 people per season. Why should this vast extent of territory be closed to all forms of use in order to provide recreation grounds for 150 people, when if it was under the control of the Forest Service it not only would be used by these same tourists, but would furnish water for irrigation and power, feed for many cattle and horses, and be open for tourists just as well or better than at present?

To illustrate: Adjoining the Yosemite Park are National Forests. The timber in them is sold and cut in accordance with principles which guarantee a permanent supply of timber. In the park the timber is allowed to mature, fall and decay and is a total waste. In the National Forests the water can be stored and used for irrigation and power purposes, but in the Park it cannot be used. In the National Forests the feed for stock is completely utilized and none is wasted, but in the Park the feed all goes to waste, while if used it would support many thousands of cattle and sheep. In the National Forests the tourists are unhampered. They are allowed to come and go as they please; no special rules are made, but the State law regarding fish and game and fire applies. They are assisted by the rangers in every way possible and nothing interferes with their pleasures. Where the amount of travel justifies, trails and roads are built, pastures are maintained, and feed reserved for their horses. They are free to hire a horse or an auto, obtain provisions and hotel accommodations from whom they see fit. In the Park they are hampered by restrictions. Automobilists must pay to use the roads the Government owns; if their machine breaks down they must get it repaired at the only garage granted a concession within the Park, and at whatever price the owner chooses to charge. If they want to hire a horse, they must hire from the same source, or if they hire a hirse from someone outside the Park, the concessionist must be paid for the privilege of using it inside the Park. If they wish to purchase provisions in the Park, they must do so at the only store granted a concession. If they wish to use a stage they must use the same company's stage. At the present time this concessionist owns all but one hotel or camp, and within a few years, when the Camp Curry permit expires, will own every camp and hotel privilege, and every other privilege in the Park. To make the matter plain, every privilege is owned by the one company. I feel that the distribution of such privileges, as is the policy of the Forest Service, is preferred.

I have made this statement as an illustration of what will occur in the area now proposed as an addition to the Sequoia Park if it is taken from the Forest Service and given to the Park authorities, as the bill now before Congress provides. The service values of the area are now being preserved; the timber is being conservatively utilized; the feed is being used and also the water for stock, irrigation and power. Tourists are cared for; they are free to go and come as they please, and they are not compelled to patronize any person who has a monopoly on every privilege in the area. Do we want this area administered as it is, or according to the park method?

Great damage will result to the stock industry by compelling all users of surrounding ranges to herd or so handle their stock that it will not trespass.

Under the Forest Service, the revenue derived from all sources is divided and 35 per cent is returned to the counties within which the forests are situated; 10 per cent for roads and trails and 25 per cent for the use of schools. None of the revenue from the Parks is ever returned to the county or state.

At the present time there are more than one million acres in National Parks within the State of California, as follows: Yosemite, 760,000; Sequoia, 16,960, and Lassen, 82,880. It is now known to be the plan of the people behind this move to extend the Parks along the Sierra Nevada mountains to include practically all the territory from Lake Tahoe to Mt. Whitney, and if they get that they will endeavor to continue north even farther.

Now, as an advantage or disadvantage to a community adjoining the Park or National Forest, the records kept by both in the State show that the average number of tourists to each National Forest is greater than the average number who visit the Yosemite Park. Tourists will go to a National Forest more than to a Park because they are not so restricted.

The National Forest supports timber and stock industries, power pro-

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jects, etc., but the creation of a park eliminates all industries and provides only for the tourist. From a dollar-and-cents standpoint, therefore, it is very evident that a community will progress better if the adjoining mountains are under the control of a National Forest rather than a Park. Records also show that more tourists visit the National Forests where stock are grazing, than visit the National Parks where there is no stock except wild animals.

This measure should be opposed on the ground of the unnecessary and unwise extension of the Park areas of the State. We already have more than enough land devoted to Park purposes. State development must not be retarded by the attempt to turn all California into a tourist resort.

THE PROOF OF A BULL'S WORTH.

"Sure, why shouldn't his daughters do well?" we recently heard a breeder of dairy cattle say, in commenting upon the way a noted bull was breeding. "Why, look at the cows that have been bred to him—the very cream of the land." According to this breeder's theory the real test of a bull's ability to stamp heavy milking qualities upon his offspring is to mate him to a very ordinary cow, so that she cannot be given credit for any accomplishments by her heifers.

We know of a case where such a test has been made. At the Palo Alto Stock Farm, Palo Alto, the president, M. H. Tichenor, wanted to see if the herd bull, King Pontiac Segis Korndyke, was prepotent enough to transmit the wonderful producing ability of his female ancestors, so he bred to this bull a scrub cow considered too poor to keep in a grade herd for commercial purposes. She was of no particular breed, and as a mature cow gave less than 3,000 pounds of milk in a year.

Fortunately the cow dropped a heifer calf, which was raised along with others without special care. That heifer has just finished her first lactation period and has produced 10,500 pounds of milk. Do you get that? She has milked as heavily as many purebreds do during their first lactation period, and has produced 3½ times as much as her mother did as a full-aged cow.

And still there are dairymen who doubt the wisdom of putting purebred bulls at the head of grade herds. To them there is nothing in inheritance, and the use of a bull is simply to get cows with calf so that they will freshen once a year.

This reminds us of a story connected with the death of a narrow-minded, non-progressive farmer. When his death was announced, one man who knew him very well said: "Oh, well, he ain't any deader than he has been for the last thirty years."

WASTE GRAIN SAVED THROUGH HOGS.

E. V. Givens, who owns a 500-acre grain ranch in Merced county, raised $2,800 worth of hogs last year without any cost other than the usual cost of running his ranch.

Mr. Givens carries about 125 hogs. He feeds the pigs for a month after they are weaned and then turns them out on pasture. This pasture is the land that he summer fallows later on. It amounts to about 125 acres, and about the time the last of it is pastured off or plowed up the grain crop is harvested and the hogs are turned on the stubble. Hogs raised in this way are marketed at 18 months weighing about 200 pounds. They are vigorous and thrifty and bring a top price, showing that the waste wheat and barley left in the field can be saved through hogs.

Mr. Givens has grade Poland-China sows and uses a high-class registered boar. He breeds the sows so that the young pigs will be weaned just about the time the green feed is coming on; thus there will be good pasture for them. Besides 125 head of hogs, he carries 30 head of cattle and 5 horses on the same pasturage.

Be sure that the halter put on the colt is strong and well fixed. If broken or rubbed off, it will not be forgotten, and the result will be a halter-breaking horse and a nuisance.

SPECIALIZATION IN HOG RAISING.

(Written for Pacific Rural Press.)

For several years poultrymen have been specializing, and nowadays a great many of the big commercial poultrymen do not raise their own chicks. They consider that incubating is a specialty by itself, and they prefer to get day-old chicks from the hatcheries.

Can specialization be carried to the swin industry? And can a breeder of pure-bred hogs, who make a specialty of furnishing breeding stock, do better by selling all culls to others to fatten and not attempting to finish off any market stock himself?

The writer recently visited Castleview Ranch at Santa Rosa, owned by J. Francis O'Connor, and was surprised to find no cull Berkshires on the place. Mr. O'Connor stated that he did not raise any hogs for market, and consequently the marketing problem did not bother him. He said that as fast as pigs were culled because they were not considered good enough to sell for breeders, they were sold to local ranchers who fattened them for market.

While Mr. O'Connor is comparatively new at the game he has made rapid strides, and in conducting his work he has shown a wealth of good judgment acquired in handling big problems along other lines. Is his plan for keeping on his ranch only the stock that is good enough to sell for breeding purposes a wise one? Elmer Lamb of Ceres has been breeding Durocs for years, and he follows the same plan. He says that his culls are always in big demand as feeders. What do other breeders think of the plan, and what are they doing with their culls?

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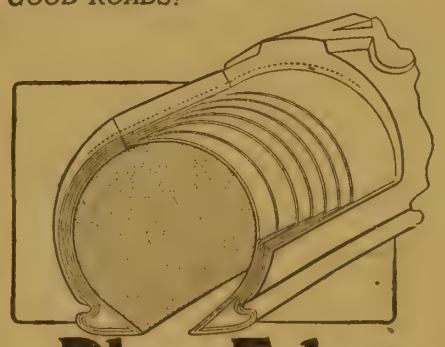
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GEESE GOOD ON GRASS.

The farmer who does not want to keep a dog for fear he will kill sheep, need not despair. Just let him get a few geese and he will find them better for sounding an alarm than the best watchdog ever raised. Yet they are gentle and easily kept within bounds, and when given range on grass they can be kept with the least expense and trouble of any domestic animal.

The demand for goose feathers and goose flesh is limited, and it would hardly pay farmers to raise geese in large numbers, but a few can be raised successfully and at a profit, especially where there is low, moist grass land. It is said that the horse bites closer than the ox, and the sheep goes nearer to the ground than the horse, but the goose will follow the sheep and grow fat on the grass it leaves.

The goose is by nature a plant-eater, and only during the breeding season and in finishing for the table does it require a grain ration. At all other times it will forage for its feed and get along nicely on tender grasses, succulent shoots of weeds, soft leaves and seeds. Thus it is a very efficient producer of meat.

It has been said that goose meat is hard to digest, but it would be nearer to the truth to say that the average person is apt to overeat when a young goose, roasted to a nice brown, is placed before him, and he can trace his digestive troubles to this source. It has also been said that goose flesh is very greasy, but this condition is largely caused by improper cooking and failure to remove the surplus fat from the abdominal cavity.



Typical Toulouse geese, the largest of the standard breeds. Fair layers, docile, rapid growers and good market birds.

The goose produces high-grade feathers and down used in pillows, comforts, etc. A mature bird will yield about 4½ ounces of feathers and from 1 to 1½ ounces of down.

Geese are only fair layers, averaging from 30 to 40 eggs per year. Their eggs are occasionally used for culinary purposes, but geese are generally kept for the production of flesh and feathers.

Geese are long lived, and one instance is cited where a goose 101 years old was killed by a horse. They will breed when about 2 years old, but do not mature for another year. The females are usually kept until they are from 12 to 20 years old, or as long as they lay well, but ganders are not generally kept after they are 8 or 9 years old if fertile eggs are wanted. They may be used when one year old.

There are six breeds of geese recognized by the Standard of Perfection, but the Toulouse and Embden are the most popular. The former is of French origin and is the largest of the standard breeds, the adult gander weighing 26 pounds and the goose 20 pounds. The plumage is dark gray, shading to light gray edged with white on the breast, and to white on the abdomen.

The Embden, being pure white, does not have the objectionable dark pin feathers of the Toulouse, and by some is considered a better market bird. It does not lay as many eggs, but the feathers bring more money. The standard weights are 20 pounds for the gander and 18 pounds for the goose.

Like other kinds of poultry, geese should be selected for size, prolificacy and vitality. They should be mated several months prior to the breeding season; therefore breeding stock should be bought in the fall. A gander may be mated with from one to four geese, but pair or trio matings usually give the best results. After being mated, geese can be allowed to run in flocks.

A body of water in which the geese can swim is considered essential during the breeding season, and is advisable during the rest of the year. Near the water should be built the shed in which the geese are expected to lay, sleep and hatch their young. Almost anything in the form of a shelter is good enough.

Geese are generally fed a ration to produce eggs soon after the first of the year, so that the goslings will be hatched by the time there is good pasture. The geese are allowed to make nests on the floor of the shelter, or sometimes large boxes or barrels are provided. The eggs should be collected daily and kept in a cool place where the contents will not evaporate too freely. The first eggs are generally set under hens while the last ones may be hatched either under hens or under the goose. If the eggs are not removed from the nest, the goose will usually stop laying sooner She will lay from 10 to 20 eggs before be fore becoming broody —sometimes more. She will cover from 10 to 15 eggs. A hen will cover from 4 to 6.

Some breeders prefer to raise all goslings under hens, as geese often become difficult to manage when allowed to hatch and rear their young. The hens must be dusted with insect powder and have good attention, as the period of incubation is longer than that of chickens, being from 28 to 30 days.

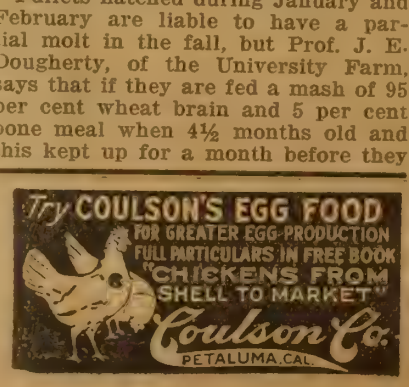
The eggs must be kept moist, and if geese are used this is accomplished by providing a swimming pool. If hens are used it will be necessary to have the nest on very moist ground, or sprinkle the eggs and nest with warm water.

The eggs should be tested about the tenth day, and those which are infertile or contain dead germs should be removed. The eggs hatch slowly, especially under hens, and the goslings are usually removed as soon as hatched and kept in a warm place until the hatching is over, when they are put back under the hen or goose.

Hens with goslings may be confined to a coop, and the goslings allowed to range. If the weather is cold the goslings should not be allowed to go into water until they are several days old. In mild weather hens are allowed to brood goslings for from 7 to 10 days, after which the youngsters can take care of themselves.

TO PREVENT PULLET MOLT.

Pullets hatched during January and February are liable to have a partial molt in the fall, but Prof. J. E. Dougherty, of the University Farm, says that if they are fed a mash of 95 per cent wheat brain and 5 per cent bone meal when 4½ months old and this kept up for a month before they are put back on the regular heavier mash, it will generally prevent this molting. The aim is to delay laying until the pullet is fully developed, which will tend to diminish not only early molting, but the laying of small eggs.



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ATKINSON'S PEERLESS ANCONAS lay more and eat less than other breeds. 50 big husky cockerels $5 and up. 200 pullets, trios and pens for sale. Hatching eggs. Catalogue free. J. W. Atkinson, Box B, 130 Willard Street, San Jose, Cal.

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CROLEY'S RED STAR CHICK FEED—California's standard Baby Chick Feed for twenty-five years. Manufactured by Geo. H. Croley Company, Inc ., 8th and Townsend Sts., San Francisco, Calif.

SANTA CLARA VALLEY HATCHERY has the chicks for you from six different standard breeds, all bred for egg yielders. Can furnish references from my old customers if desired. Lincoln Ave., San Jose, California.

S. C. WHITE LEGHORN CHICKS—Any quantity from A-1 Hoganized and trapnested stock, winners of 1st, 2nd and special for pullet and 1st cockerel at Pacific Coast Land Show. Orders taken for June 7. A. O. & P. M. Forster, 2918 Otis St., Berkeley, Calif.

SULLIVAN'S BUFF ORPINGTONS—Famous for 20 years in show and utility qualities. Line bred for 20 seasons. Bargains now in stock and eggs. Write Mr. and Mrs. W. S. Sullivan, 100 Market Road, Agnew, Cal.

GET BABY CHICKS NOW—Write for free booklet on fall chicks. See why they pay. Several varieties every week. Only good, strong youngsters shipped. Stubbe Poultry Ranch and Hatchery, Box 67, Palo Alto.

SURPLUS STOCK SALE—account of moving. Hoganized White Orpingtons and Sicilian Buttercups; trios, pens and singles, at reasonable prices; write for list. M. S. Woodhams, San Mateo, Cal.

EGG BRED—Buff Brown, White Leghorns, Golden Campines, Dark Cornish. Winners wherever shown. Send for circular. Percy Ward, 3142 Ward St., Fruitvale, California.

GOLDCROFT BUFF ORPINGTONS—Winners San Jose show. Eggs, $5.00 and $3.00 setting. Heavy laying. Choice breeders for sale. Samuel Abrams, Los Altos, Cal.

BARRED PLYMOUTH ROCKS — Nothing better in poultry. Prize-winners and wonderful layers. Choice stock for sale. Chas. H. Vodden, Box 3, Los Gatos, Calif.

BABY CHICKS—We have the large heavy-laying S. C. White Leghorns, severely culled last year. Send for prices. Tupman Poultry Farm, Ceres, California.

BABY CHICKS—Booking orders for spring deliveries. White and Brown Leghorns, Rhode Island Reds, Barred Rocks. E. W. Ohlen, Campbell, California.

EASTMAN'S BRED TO LAY Hoganized and trapnested Barred Plymouth Rocks. September chicks. Fairmead Poultry Farm, Fairmead, Calif.

BRONZE TURKEY EGGS—No more eggs till further notice. Albert M. Hart, Clements, California.

CHICKENS, DUCKS, GEESE, GUINEAS, Pea Fowl, Pigeons. Wm. A. French, 545 W. Park St., Stockton, California. Stamps.

BUFF ORPINGTONS, BUFF DUCKS, BOURBON RED TURKEYS—The Ferris Ranch. Rt. 2, Box 144D. Pomona, California.

RABBITS.

RAISE RABBITS—Most profitable and popular small animal in America. Big demand. Clean, fascinating work. Send 10c for copy of leading rabbit magazine and our Rabbit Book, P N 5. Gilmore's Rabbit Farm, Santa Barbara, Calif.

HIMALAYAN FUR RABBITS (Mock Ermine). The best for meat and fur. Mrs. Leroy B. Hackett, 3306 "P" West Street, Oakland, Calif.

PEDIGREED FLEMISH GIANTS; also utility stock. Prices low. Laura Beeching, 1578 W. 46th St., Los Angeles, Calif.

NEW ZEALAND REDS—First class utility does bred $5.00 each. Young does, $2.50 each. F. B. Caldwell, Broadmoor, San Leandro.

RAISE RABBITS FOR US—We supply the breeding stock. Send stamp for particulars. H. E. Gibson Co., Arcadia, Calif.

TAKING THE SNUFF OUT OF SNUFFLES.

Snuffles is the most common disease of rabbits, and also the most dangerous if not taken in time. It starts with sneezing and a cold in the head, and if the affected animal is not isolated at once you will have a regular epidemic on your hands in a short time. Also, it is claimed by some that rabbits that have had snuffles will usually produce youngsters with the same disease.

In high altitudes there is little trouble with the disease, but in localities where sudden changes or damp weather prevail it is common. It is generally the result of overfeeding, filthy hutches or exposure to drafts or dampness. Fresh air is most essential, but rabbits must be protected from drafts, and many cases of snuffles can be traced to poorly constructed hutches.

The rabbit takes cold, begins to sneeze, and has moist nostrils, which soon develop into "snotty nose." Its fur becomes rough and disordered; the rabbit shows every sign of illness and discomfort, and refuses to eat. If taken promptly in hand the disease may be cured, but if allowed to become well seated it is practically incurable, and the safest and surest way to prevent its spread is to kill the sufferer.

With the first appearance of a cold or sneezing, remove the rabbit to a warm, well-bedded hutch, free from drafts and dampness. The cold is accompanied by fever, and the first step should be to check the fever. This can be accomplished by putting tincture of aconite in the drinking water—10 drops to a gallon. This should be continued for about three days.

Then the secretions of mucus in the nasal passages must be removed, and this can be done by squirting an antiseptic up each nostril twice a day. This antiseptic must not be strong enough to burn, so it is not advisable to use solutions of carbolic acid or lysol. A mixture of one-third Sanitas oil and two-thirds olive oil is good; also 1 dram eucalyptus oil and 1 ounce liquid petroleum; also ½ pint wine of tar, 5 drops eucalyptus oil, and 5 drops camphor oil. Fill a small oil-can and apply to the nostrils, holding the head well back so that the remedy will get to the seat of the trouble. A mixture of equal parts of boracic powder and iodoform powder is used with good results—blown up the nostrils. Wash the nose, mouth and forelegs daily with carbolic soap and wipe dry.

If this does not end the discharge in a few days, give 2½ grains powdered blue-stone daily for a week in oats or bran; then one-half the amount for another week. Give easily digested foods. A gruel made of barley meal and a carrot is good.

Be careful after effecting a cure to prevent a recurrence of the disease, for the same cause will again produce the disease if it is not removed.

Classified Advertisements

Rate in this directory 3c. per word each issue.

MISCELLANEOUS.

REAL TRACTOR BARGAINS

Samson R-12	$ 450.00
Cleveland	650.00
Samson S-25	1000.00
Bates Steel Mule	1200.00
Samson S-25 (new)	1500.00
Samson 30-X (new)	1626.50
Best 90	1500.00

All in good condition. Will show and demonstrate. Terms. L. S. Jennings, Merritt 2272, 1075 Glendora Ave., Oakland.

CORN HARVESTER—One man, one horse, one row, self-gathering. Equal to a corn-binder. Sold to farmers for twenty-three years. Only $25, with fodder binder. Free catalogue showing pictures of harvester. PROCESS CORN HARVESTER CO., Salina, Kans.

REMANUFACTURED PIPE.

All sizes standard pipe and wrought iron screw casing. All kinds of fittings. Guaranteed good as new. Write for prices. Weissbaum Pipe Works, 160 Eleventh street, San Francisco.

ALL SIZES OF PIPE and screw casing, both new and second-hand, dipped and undipped. Guaranteed. Prices right. Sheeter Pipe Works, 304 Howard St., San Francisco.

MADE OF REDWOOD, Hawley's Perforated wooden well casing, the best and cheapest well screen made. Send for descriptive circular. G. M. Hawley, La Mesa, California.

CO-OPERATION (not operated for profit) reduces living expenses. Particulars and catalogue from Co-operative League, Commercial street, San Francisco.

PATENT ATTORNEYS.

WEBSTER, WEBSTER & BLEWETT, Savings and Loan Bldg., Stockton, California. Established 50 years. Send for free book on patents.

BEES FOR SALE—Golden Italians in patent hives. John G. Mee, St. Helena, Cal.

FOR SALE—One fruit-cutting machine, in first-class order. R. R. Beard, Vacaville.

WANTED.

WANTED—Married dairyman; experienced in feeding, testing, calf raising, use of milking machines, gas engines, etc. Sunnybrook Ranch, Willits, Calif.

WANTED—Married ranch foreman, experienced in deciduous orchards and general farming. Give references. E. D. Farrow, West Oak St., Visalia.

AGRICULTURAL EFFICIENCY expert desires to manage ranch on efficiency basis. Experience in all branches of farming. P. O. Box 750A, Chico, Calif.

WANTED—Experienced dairyman to take charge of small purebred herd, with one helper. Box 1580, Pacific Rural Press.

COUNTRY LANDS.

$35,000—Sixty-one acres located a short distance from Mountain View, in a good location. There are 41 acres in alfalfa, and 20 acres in tomatoes, with a small family orchard. Improvements consist of a fine modern residence of 7 rooms, barn and a complete set of outbuildings. There is a first-class pumping plant on the property, which furnishes an abundance of water for irrigation the year round. The place is fenced and cross-fenced and divided off into several fields. Can be bought on terms.

$500 per acre. 40 acres all in bearing alfalfa, located in the rich Mountain View district, and divided into two fields, irrigation from pumping plant and artesian well. No buildings. Terms of payment can be arranged.

DAIRY AND ALFALFA LAND

$205 per acre, for 113 acres of rich vegetable, dairy or alfalfa land; located near Mountain View, in a very good district; improvements consist of a 5-room ranch house, 3 barns, pumping plant and two flowing artesian wells. The property is fenced and cross-fenced and divided off into six different fields; a remarkably cheap place; one-third cash required.

WILLIAM P. WRIGHT
Mountain View, Santa Clara Co., California.

RANCH FOR SALE—Greatest bargain ever put on the market. $12,500 buys 460 acres in the choice spot of Modoc. 360 acres in mountain ranch on State highway. Mail daily. 100 acres fenced, most all in Red Top and Timothy hay. Fine garden spot. Family orchard, five-roomed house, barn and garage. Good range, lots of timber, ready market for same at good price. Numerous springs and creeks, never known to go dry and recorded water right. Five miles from this ranch and on same State highway in Surprise Valley. 100 acres all fenced; meadow alfalfa and grain land. Springs, artesian well and water right. 1½ miles from good grammar and high schools. All farming tools, team of horses. Clear title, no mortgage. Will take one-half cash, the balance at 7 per cent interest, if desired. Florence A. Hardwick, Cedarville, Modoc Co., Calif.

$35,000—85 acres, 50 yards from school; county road on two sides. 10 room house (hot and cold water), 3 wells, windmill and tank, new gas engine and pump; barn, chicken and brooder houses; 2 horses, 1 cow, 350 chickens; 300 fruit boxes, 200 trays; complete set of implements to run place, including 4 wagons, $250 power spray pump, cider press, etc.; garage and work shop. Average income $5,000 per annum. Will guarantee $7,000 crop this year. 2 miles from Windsor station between Santa Rosa and Healdsburg, Sonoma County. 30 acres prunes of which 18 acres bearing, balance 3 to 5 years; 1 acre peaches; 10 acres apples; 2 acres pears; 14 acres resistant vines; plenty of berries, beans, corn, potatoes, etc. About 30 acres of this is deep rich bottom land with plenty of water to irrigate if necessary. Mortgage, $12,000 5%, can remain. Umbsen, Kerner & Eisert, 20 Montgomery St., San Francisco.

176-ACRE MONEY-MAKER

With 10 cows, 3 horses and manure spreader, reaper, drill, potato digger, mowing machine, rakes, sulky and walking plows, roller, long list implements, in heart high-grade farming section, short walk school, 1¾ miles R. R. town. Loam tillage for good crops, wire-fenced, spring-watered pasture for 30 cows, home-used wood, fruit, 10-room house, 110-ft. stock barn, horse barn, corn house, etc. Owner retiring makes quick sale price $8,500, easy terms, gets all. Details page 35 Catalog Bargains 19 States, copy free. STROUT FARM AGENCY, 831 A. F., N. Y. Life Bldg., Kansas City.

FOR SALE OR EXCHANGE—10 acres well improved dairy and alfalfa ranch in the South San Joaquin irrigation district on main highway, close to school and town; good water. Will exchange for stock ranch in northern California. J. W. Le Tourneau, Ione, Calif.

FOR SALE—38 acre ranch, 100 fruit trees, 6 acres in alfalfa. All tillable. Good soil for beans or grain. House and barn. Close to irrigating ditch; one-half mile from highway and 10 miles from Modesto; 7½ miles from Turlock. Price, $5,000 on easy terms. No exchange. Mrs. Rozilla Mathews, Ladoga, Calif.

FOR SALE—10 acres of fine land containing a well-equipped chicken hatchery. Good house and improvements. 7 acres in young prune trees. For particulars, inquire of Box 603, Hollister.

SEEDS AND PLANTS.

FLORIDA SOUR AND CALIF. SWEET ORANGE seedbed stock. The time to plant is propitious; order now. Southland Nurseries, 1941 E. Colo. St., Pasadena, Calif.

THE MARKET REPORTS

Figures Given Are Independent and Reliable. Prices Quoted as Paid to Producers.

SAN FRANCISCO.

San Francisco, June 25, 1919.

WHEAT.

The following prices were announced by the Federal Grain Corporation last year and are still in effect. They are figured f. o. b. San Francisco, Los Angeles, Seattle, Tacoma and Portland, and guarantee the grower a minimum of $2 f. o. b. shipping point:

Per bushel—	
No. 1 hard	$2.20
No. 2	2.17
No. 3	2.13
No. 1 soft	2.18
No. 2	2.15
No. 3	2.11
Club or Sonora, No. 1	2.16
do, No. 2	2.13
do, No. 3	2.09
Recleaned, per ctl.—	
California	$4.30@4.40
Early Baart	None

BARLEY.

New barley continues to arrive in increasing quantities, but it is said to be rather small and not up to the standard required for rolled feedstuff. Futures continue strong and December has been bid as high as $2.85 to $2.90, which is higher than the present selling price of the 1918 crop. The latter is strong at unchanged quotations.

Feed	$2.60@2.70
Shipping	2.75@2.80

OATS.

The continued strength of barley and the increased price at which futures in that grain is being sold gives strength to the oat market and quotations were advanced slightly this week. The upward movement, however, is wholly sympathetic.

Red feed, per ctl.	$2.35@2.45
Red for seed	Nominal
Black for seed	Nominal
Recleaned Red or Black for seed	Nominal

CORN.

Arrivals of yellow California corn have greatly increased and the local market is well supplied with this grain.

California	$3.30@3.50
Egyptian, choice	Nominal
Milo	Nominal

HAY.

Receipts of hay for the past week were 1,686 tons compared with 1203 tons the previous week. New crop hay is now coming in quite freely and the market is in a neutral position that is usual at this season with new and old hay coming in together. Old hay maintains the prices formerly quoted, but it feels the effect of the new stock and sales are slow. No fixed basis of prices can be quoted on new hay as yet, as buyers are doubtful of its condition. The increased receipts have been mainly made up of first cutting alfalfa and volunteer oat hay. Indications are that better grades will be sent here in greater quantities during the next few weeks and the tone of the market is consequently somewhat weak.

No. 1 Wheat, per ton	16.00@18.00
No. 2 Wheat, per ton	12.00@15.00
Choice Tame Oat, per ton	17.00@19.00
Wild Oat, per ton	11.00@14.00
Barley Hay, per ton	11.00@14.00
Alfalfa, per ton	15.00@19.00
do, new, 1st cutting	10.00@13.00
Stock Hay, per ton	11.00@13.00
Barley Straw, per bale	.50@ .80

FEEDSTUFFS.

A larger demand is developing for the wheat feedstuffs and for cocoanut and oilcake meal. Other feedstuffs are firm at unchanged quotations.

Bran	$45.00@46.00
Middlings	52.00@53.00
Shorts	46.00@48.00
Cracked corn	72.00@73.00
Rolled barley	54.00
Rolled oats	52.00@53.00
Alfalfa meal	32.00@33.00
Cocoanut meal	47.00@48.00
Oil cake meal	72.00@73.00

POTATOES, ONIONS, ETC.

Potatoes were dull and unchanged this week and onions weaker and lower. In the general vegetable market there is a good demand, but increased receipts and production tended tto lower prices. Alameda green corn is now coming in and sells by the sack at $5.00 to $5.25.

String beans	10@12½c
do, Garden	10@12½c
Peas	10@11c
Carrots, per sack	$1.75@2.00
Asparagus	6@8c
Rhubarb, Strawberry, box	$1.50@2.00
Cucumbers, hothouse, box of 30	$1.50@2.50
Los Angeles	$1.00@1.25
Eggplant, per lb.	10@15c
Lettuce, per crate	75c@$1.25
Celery, crate	Nominal
Tomatoes, Southern, per crate	.75@1.25
do, Mexican	$1.75@2.00
Sprouts	Nominal
Summer squash	90c@$1.10
Green Corn, Alameda, sack	$5.00@5.25
Potatoes—	
Rivers	None
Oregon	2.00@2.40
Idaho	2.00@2.25
Garnets, new on street	$3.00@3.50
Other new on street	$3.25@3.75
Sweets, per sack	None
Onions, Warehouse Stock—	
Australian Browns	Nominal
Onions, new red	$3.50@4.00
yellow	$3.25@3.50
Green Alameda	$1.50@1.75
Garlic	15@16c

BEANS.

There are no encouraging features to the bean market, which is weak throughout, and generally lower where sales are reported.

Bayos, per ctl.	$5.90@6.10
Blackeyes	$3.75@3.90
Cranberry beans	5.75@6.00
Limas (south, recleaned)	$9.00
Pinks	$5.50@5.75
Mexican Reds	4.50@5.00
Tepary beans	2.50@2.75
Garbanzos	11.75@12.00
Large whites	5.65@5.85
Small whites	6.75@6.90

POULTRY.

The general market is much weaker and seems to be generally overstocked. While arrivals from the East have not been unusually heavy, consumption does not take care of the stock coming in. About the only feature of strength in the entire market is shown by fryers weighing from two to three pounds. These are not plentiful and sell a cent higher for the best than they did last week. Everything else is weak and lower. The demand for ducks and geese has almost reached the vanishing point.

Turkeys, live, young spring, lb.	Nominal
Broilers, 1½ lbs. and under	31c
do, 1½ to 2 lbs.	32@34c
Fryers, 2 to 3 lbs.	35@38c
Hens, extra, per lb. colored	33@34c
do, Leghorn	29@30c
Smooth young roosters, per lb. (3 lbs. and over)	45@48c
Old roosters, colored per lb.	22@23c
Geese, young, per lb.	25c
do, old, per lb.	25c
Squabs, per lb.	48c
Ducks, young	25c
do, old, per lb.	25c
Belgian hares	13@14c
Jack rabbits	$2.50@3.50

BUTTER.

Extra butter, after showing some strength and advancing a half cent during the first three days, dropped two cents and closed at that price. It is said that undergrades of butter are becoming more plentiful and Firsts were again quoted this week. Much of the butter now coming on the market is showing defects in body as well as high pasteurizing temperature flavor.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	53½	54½	54	52	52	52
Prime firsts						None
Firsts				48½	49½	49½

(Continued on page 982.)

Special Deciduous Market Report

(Written for Pacific Rural Press by J. L. Nagle.)

Sacramento, Cal., June 23, 1919.

Under increased offerings during the past week most of the markets showed a temporary decline on apricots and on peaches; all of the markets advanced, however, on sound arrivals of cherries, and remained steady with a very active demand, on plums.

Shipments of cherries and those of apricots are practically all finished for the season. The stock now arriving of apricots is showing ripe and in some instances cherries in models but firm stock of the latter variety is meeting an advantageous market.

The first 1,000 or 1000 cars of Georgia peaches caused the Eastern speculators heavy losses on account of the fruit arriving in an unsound condition due to continued rains. It is reported, however, that varieties now coming and yet to be shipped will arrive in good condition and it is anticipated will find a good market.

California Peaches east of Chicago will move slowly and will meet a sluggish market for the next thirty days when we anticipate a free field and good prices for the balance of the season. California peaches moving west of Chicago, at this time, can be disposed of to good advantage.

Bartlett pears are showing up well and should begin to move in small lots the latter part of this week. As the stock gives evidence of being clean and of good size, we feel satisfied it will meet a strong market throughout the season.

Averages for the week

NEW YORK: Royal Anne Cherries, $2.05; do, lugs, $3.30; Oregons, $2.20; Tartarians, $2.04, lugs, $3.13; do, lugs, $3.77; Royal Hearts, $2.43; do, lugs, $3.25; Lamberts, $2.48; Mayflower Peaches, 90c; Alexanders, $1.19; Newcastle Apricots, $1.44; Royals, $2.17; do, lugs, $2.13; Seedlings, $1.93; do, lugs, $1.85; Apex Plums $2.71; Beauty $3.17; Clyman $2.44; Formosa, $4.05.

BOSTON: Tartarian Cherries $1.91; do, lugs, $2.05; Oregons $2.10; Bings, $2.75; do, lugs $4.60; Royal Annes, $2.10; do, lugs, $3.47; Republicans $2.27; do, lugs, $4.07; Lamberts $2.05; do, lugs, $3.40; Royal Apricots $2.15; do, lugs, $2.71; Seedlings, $2.17; Apex Plums $3.07; Clymans $1.77; Beauty $2.91; Formosa $2.57; Alexander Peaches 90c; Mayflowers, 80c; Cound Peaches 1.05; $2.—

CHICAGO: Royal Apricots, $1.60; do, lugs, $1.47; Newcastle $1.30; do, lugs, $1.05; Beauty Plums $2.45; Clymans, $1.38; Formosa $2.50; Alexander Peaches $1.02; Royal Cherries, $2.41; do, lugs, $4.10; Tartarians $1.18; Royal Annes, $2.30; Oregons, $2.12; do, lugs $3.17; Lamberts, $2.00; Republicans, $2.—

THE HOME CIRCLE

PEACE.

When navies are forgotten
And fleets are useless things,
When the dove shall warm her bosom
Beneath the eagle's wing;

When memory of battles
At last is strange and old,
When nations have one banner
And creeds have found one fold;

When the Hand that sprinkles midnight
With its powdered drifts of suns,
Has hushed this tiny tumult
Of sects and swords and guns;

Then hate's last note of discord
In all God's worlds shall cease,
In the conquest which is service,
In the victory which is peace.
—George Frederick Knowles.

THE PRICE OF LIBERTY.

(Written for Pacific Rural Press.)

"Lives there a man with soul so dead
Who never to himself hath said:
'This is my own, my native land'?"

This year we will celebrate the Fourth of July with a clearer understanding of human rights, liberty and patriotism. The superficial, flag-waving hip-hurrahing celebrations as we were wont in years past to observe our national day of independence, is no longer our idea of expressing love of country or patriotism.

With the termination of the great world war, which for a time placed all civilization in jeopardy, even to the menacing of the sacred precincts of home and family ties, has come a sobering thought—a deeper meaning of what it is to be a free people, with the right of each individual to the "pursuit of happiness."

While our beloved country's participation and suffering in the terrific struggle was of small moment as compared to that of some of our allies, yet there is scarcely a home in our broad land, from the waters of the Pacific to the Atlantic's sweep, and from Canada's snows to Mexico's sun, that did not send forth a husband, brother or son to battle for right and to uphold the standard of liberty. Anxious were the days and long the nights to the waiting ones at home, and many of their loved ones will ne'er return, but are now asleep "where poppies blow in Flanders field." They paid the price for our freedom. Other homes have opened to receive their loved ones "out of the jaws of death," maimed, gassed and blinded, and these too know the price of liberty. The more fortunate ones whose sons and brothers have come back from hell with physical senses intact, yet with somber depths in young eyes which, before they marched away, knew only laughter and joy—boys who in a single experience have been molded into men of blood and iron and discipline, and who look upon the world and life through different lens,—these, too, know the price of liberty.

With the baptism of blood and fire and gas which our boys have been through, we will never again fall into a state of lethargy, or forget for a moment that the safety of home and fireside, the peaceful pursuit of every day affairs, all commercial activities are made possible only because these lads were ready, and in many cases did lay down their lives for us and the country we love; nor will we forget that the price of every nation's liberty is always paid in equally terrible sacrifice.

Love of liberty is inherent in us, for our forbears crossed a trackless sea, cleared the wilderness and fought savages for the sake of the liberty they sought and won, and left to us as a heritage. Our brave American boys have gone forth to battle for this standard, have won it, and given to us again the right to continue in our enjoyment of liberty, so dear to our hearts. This is thought to "give us pause," and it is small wonder that our ideas of a Fourth of July celebration this year should be different from that of by-gone years when the day was made a festival, with a surplus of bunting, flags, pink lemonade, and even street carnivals and side shows—a travesty on the very word "liberty."

Let us pledge anew our appreciation of the soldier lads, our loyalty to country, our gratitude to the Infinite; and let us cherish our liberty as the beautiful amaranth—never fading, forgetting not the sacrifices of youth, of health, and of life—the inevitable price of liberty.—Z. D. H.

WHAT MARGARET O'NEILL SAW.

A recent experience of mine will, I am sure, be a convincing argument that all trained animal acts ought to be abolished. It will be effective also in illustrating the fact that many such performances seemingly entailing no cruelty, may be viciously inhumane.

A short time ago I was attending a theatrical performance when presently an "unusual trained squirrel act" was announced. The exhibitor, after putting several of the little creatures through their stunts—training for which must have involved persistent cruelty—announced that he would show his famous dancing squirrel.

A large pedestal was brought in having a screened frame work at the top of which the "dancing squirrel" was caged. At first, while the trainer enlarged on its merits, the shy little beastie remained passive. Then it became restless, moving all about within its confinement and finally leaped and frisked ceaselessly, seeming never to touch the cage floor. I could see how the "dancing"—if one might call it that—was tiring the poor little thing. At times it flopped down exhausted, only to leap madly up again the next moment. Finally, the exhibitor opened the door and catching the squirrel that bounded into his arms, bowed himself off the stage amid applause.

Feeling sure that there was trickery somewhere, I sought out the manager at the close of the performance and requested permission to inspect the properties for the act. What ingeniously cruel, yet innocent looking contrivances! The pedestal I have mentioned was a hollow affair set over a trap-door. A youth inside applied a powerful gas flame to the floor of the squirrel cage—which was made of thin sheet iron. The fright of the poor animal when the iron became hot indeed accounted for the frantic way it leaped about. But you say, why didn't the squirrel cling to the screening of the cage? Because the framework and wire were charged with electricity so that contact meant a shock as painful as contact with the hot floor.

When I indignantly expostulated with the manager for booking such an act, he replied, "Well, that dancing squirrel has the easiest time of the whole bunch. The rest of them have to be trained, but this act doesn't need it. Of course it's expensive though, for a squirrel won't stand it long. Heart gives out." The exhibitor told me he had one die on him once right in the middle of the act. They had to ring down the curtain pretty quick. I was sick at heart that such torture could be endured, let alone calling it "entertainment." With the help of the Women's Club of the town and the publicity the newspapers afforded, the act was taken off and later the exhibitor was forbidden to present it anywhere else.

Let those who cite cases of animal acts seemingly involving no ill-treatment of the performers, think well on this. How often might they be cleverly taken in? Under just such semblance of humane treatment may lurk fiendish cruelty. Let us be perfectly sure that we are not being "entertained" at the expense of a dumb creature's suffering. Let us abolish trained animal acts. Tenacity of purpose will do it. For when the public declines to witness such performances, theatrical managers will refuse to book them.

ABRAHAM LINCOLN.

Gettysburg, November 19, 1863.

Fourscore and seven years ago our fathers brought forth on this continent a new nation, conceived in liberty, and dedicated to the proposition that all men are created equal.

Now we are engaged in a great civil war, testing whether that nation or any nation so conceived and so dedicated can long endure. We are met on a great battlefield of that war. We have come to dedicate a portion of that field as a final resting place for those who here gave their lives that that nation might live. It is altogether fitting and proper that we should do this.

But, in a larger sense, we cannot dedicate—we cannot consecrate—we cannot hallow—this ground. The brave men, living and dead, who struggled here, have consecrated it far above our poor power to add or detract. The world will little note nor long remember what we say here, but it can never forget what they did here. It is for us, the living rather, to be dedicated here to the unfinished work which they who fought here have thus far so nobly advanced. It is rather for us to be here dedicated to the great task remaining before us—that from these honored dead we take increased devotion to that cause for which they gave the last full measure of devotion; that we here highly resolve that these dead shall not have died in vain; that this nation, under God, shall have a new birth of freedom; and that government of the people, by the people, for the people shall not perish from the earth.

THE CREED OF THE REAL AMERICAN.

I believe in the principles upon which the United States of America was founded, which are Liberty, Equality, and Fraternity.

I believe all other nations have the same right to self-government as our own.

I believe the same normal laws that are binding on individuals are binding on nations.

I believe that ours is a government of the people, by the people, and for the people. It is a true democracy. It is a representative republic. It contains within itself the seed of improvement. Whatever imperfections it may possess can be overcome by the people without violence and by orderly legal means.

I believe it is my duty to obey my country's laws, and to labor to better them.

I believe it is the duty of my country to help every other country that strives toward ideals like ours.

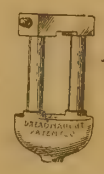
I believe it is the supreme duty of the United States of America to use every endeavor to establish the Federation of the World, and to equip itself to be a constituent part of that Federation.

I believe it is my duty to place all of my possessions, as well as my labors, my devotion, and my life, at my country's service.

I believe that by being a loyal citizen of the United States of America I am truly furthering the highest welfare of humanity and obeying the will of Almighty God.—Dr. Frank Crane.

DREADNAUGHT
BLAZING-AWAY-IN-COST-DEFENCE!

THE FIGHTING CHANCE



The Burner will work anywhere—always. All it needs is the fighting chance.

It's all so simple and natural that something unnatural or in violation of common, everyday laws must be done to prevent it. Elevate the oil and wash out the pipe line, then nothing can stop it. It wants to work—just let it.

The same stove—no changes. A piece of soap for the joints and a wrench for the pipe—that's all. Your days of hustling wood are over—a clean gas fire from a piece of paper in a minute and a half. No ashes, no smoke, soot or fumes. A full hundred per cent fire—no loss. Write for our factory circular and ask all the questions you wish to, we will be very glad to give fullest details.

BURNER AND VALVE—COMBINATION NEEDLE VALVE AND DRAIN—$6.50—PREPAID ANYWHERE

Good Agents Wanted

SCIENTIFIC SPECIALTIES CO. 310 South Hill Street LOS ANGELES, Cal.

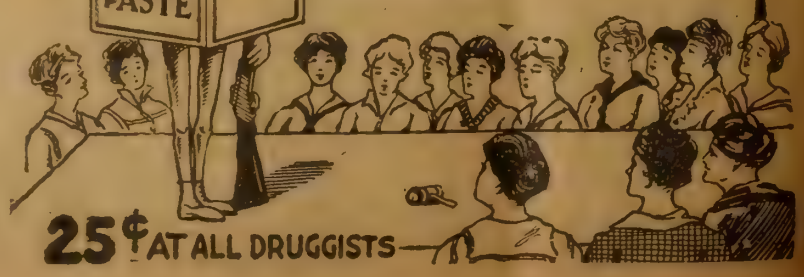
Save Food—Don't Waste—Use—

KELLOGG'S ANT PASTE

MAKES ANTS DISAPPEAR



Unanimously selected by the League of Housewives as the "Household Sentinel"



25¢ AT ALL DRUGGISTS



The cost of getting common tea from the tea-plant to you is twice the tea-garden cost of the tea. Is it worth your while to pay this heavy cost and get poor weak tea-flavor and a lot of tannin?

Don't you see now why Schilling Tea costs less per cup than common tea? It costs no more to get it to you than common tea, and it has an abundance of fine tea-flavor.

There are four flavors of Schilling Tea—Japan, Ceylon-India, Oolong, English Breakfast. All one quality. In parchmyn-lined moisture-proof packages. At grocers everywhere.

A Schilling & Co San Francisco

THE STEPHENSON PATENT COOLER

Absolutely Sanitary Perfect Ventilation

NO ICE REQUIRED



Awarded first prize wherever exhibited. If not for sale at your dealer's Write for particulars and prices

L. ANDERSON CO., Mfrs. MARTINEZ, CAL.

More Light Than 20 Oil Lanterns

AT LAST—the light of lights! A lantern that lights with common matches just like the old style oil lantern, but makes and burns its own gas from common gasoline, giving a brilliant, steady, white light of 300 candle power.

MOST BRILLIANT LIGHT MADE

Brighter than the brightest electric bulb. More light than 20 oil lanterns. Cheapest and best light made. Costs less than one-third of a cent per hour. Safer than the safest oil lantern. The



Coleman Quick-Lite

No wicks to trim — No globes to wash. No dirt or grease, no glare or flicker. Absolutely safe. Fuel can't spill — no danger if tipped over. Will last a lifetime. Write our office for Catalog 21-R. P.

COLE LITE & SALES CO., 216-18-20 East 41st St. Showrooms, 324 S. Hill St., Los Angeles.

DAISY FLY KILLER



PLACED ANYWHERE ATTRACTS AND KILLS ALL FLIES. Neat, clean, ornamental, convenient, cheap. Lasts all season. Made of metal, can't spill or tip over; will not soil or injure anything. Guaranteed effective. Sold by dealers, or 5 by EXPRESS, prepaid, $1.25.

HAROLD SOMERS, 150 De Kalb Ave., Brooklyn, N. Y.

FASHION'S FANCIES.

Long lace sleeves are graceful.

Jewels are very much in vogue.

The draped collar is much worn.

Once more we see the real girdle.

Beaded girdles are much used.

Flame colored tulle is striking.

Prospects are bright for draped veils.

The new three-buckle oxford is smart.

Organdie frocks in two tones are fashionable.

Black Chantilly is among the old laces revived.

Jet tassels possess much decorative quality.

Dove-gray is popular for the traveling suit.

Apron fronts and backs are seen on lingerie frocks.

Ribbon neckpieces are worn with ribbon trimmed hats.

Some of the new hats are of semi-lacquered straws.

The more elaborate capes show figured chiffon linings.

Net ruffles appear on the dainty afternoon frocks.

Tassels are on everything from sleeves to handbags.

Taffeta motor coats are lined with chiffon or cotton voile.

A gown of black taffeta is flounced with ecru point d'esprit.

Much metal lace is used by the French makers of evening gowns.

A novelty in trimming is called "bonette," furry-looking to simulate angora.

New serge dresses are beaded in between the rows of braid on the skirt, cuffs, etc.

Lavender is a most popular shade for the wearing apparel of grown-ups, and even children's dresses, wraps and hats are to be seen in this lovely shade.

THE LATEST SCRAMBLE.

Did you ever hear of scrambling eggs in a double boiler? That is one way of preparing them. Have the water in the lower kettle boiling well, place the second receptable upon this, after buttering it internally, and into it break the eggs which have been moderately well beaten. The flavor is different—more delicate—than when the scrambling is done in a frying-pan—and the dish is more wholesome.

PREMIER POPULARITY



There must be some reason for it. There are many thousand sold each year, and this is how it happens:

Mrs. Closby buys one; Mrs. Nextdoor waits for results. Soon Mrs. Nextdoor buys one, and then a startling thing happens; Mrs. Entire Neighborhood must have one. Sort of an endless chain proposition, when once started.

Listen to this: The Miles Rock Light-house, located at entrance to San Francisco Bay, has a PREMIER installed that has been burning continuously over six thousand hours—without once needing any attention. There is a reason for all things.

Complete outfits—$12.50 and up, according to requirements.

A postal will bring you literature

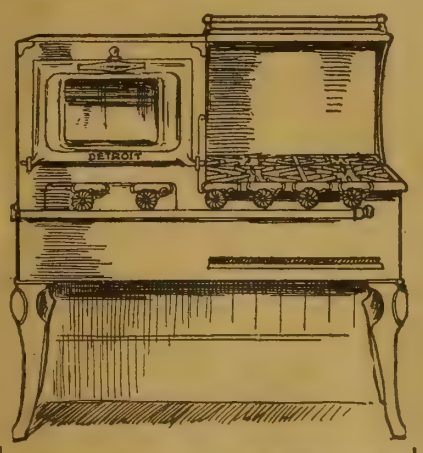
VAUGHAN & MATTISON, Pacific Coast Agents

270 Market Street, San Francisco, Calif.

Detroit Vapor Stoves

"Work Like Gas"

Burn Oil, Gasoline or Distillate



They cook and bake as fast as gas and at a lower cost. Burn 19 hours to a gallon.. No wicks or substitutes. Durable 8½-pound iron burners. Double walled ovens distribute the heat and use it twice. Write for descriptive literature.

Barker Bros ESTABLISHED-1880

722 South Broadway

Los Angeles

Convert *your old-fashioned* bathrooms

into modern bathrooms to which you can conduct your guests with a feeling of pride.

The combination of beauty and simplicity contained in Pacific Plumbing Fixtures make them the vogue. Their added convenience, and the amount of unnecessary work they save, will more than compensate for their moderate cost.

Write for a copy of the Book of Bathrooms. It's a 56-page book, brim full of helpful ideas on bathroom arrangement.

PACIFIC PLUMBING FIXTURES

For sale by all plumbers

Main Offices and Show Room
67 New Montgomery Street
San Francisco

Factories at Richmond and San Pablo, Cal.





B.V.D. *Quality can only be had in* B.V.D. *Underwear.*

If it hasn't this Red Woven Label

MADE FOR THE B.V.D. BEST RETAIL TRADE

It isn't B.V.D. *Underwear*

Trade Mark Reg. U.S. Pat. Off. and Foreign Countries

B. V. D. Coat Cut Undershirts and Knee Length Drawers

$1.00

The Garment

B. V. D. Sleeveless Closed Crotch Union Suits (Pat. U. S. A.)

$1.75

The Suit

Remember, all Athletic Underwear is not B.V.D.

THE B. V. D. COMPANY,

NEW YORK.

THE MARKET REPORT.

(Continued from page 979.)

EGGS.

Extra eggs continued to show strength, and with the regular commission of 8 per cent deducted, they again passed the 50-cent mark. The high price of this week has not been equalled since January 24th of this year, and the close, a half-cent lower, has only been equalled once since that date and that was during last month. These high prices are undoubtedly due to shipments which are constantly being made East from points of production. It is said that these shipments amount to two full carloads daily of carefully selected eggs, which sell above the regular market in the East. Extra pullets have not shown so much activity as extras, and while strong, they have maintained the same price throughout the week.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	49	49	49	50½	50½	50
Firsts	Nominal					
Ex. pullets	43	43	43	43	43	43

CHEESE.

Trading in cheese was light during the week. A small demand for California flats Firsts put that description on the board again for the first three days of the present calendar week.

Fancy California flats, per lb. 28½c
do, Firsts 27c
California Y. A., fancy 31c
Oregon Y. A. 33½c
Oregon Triplets 34c
Monterey cheese .....22½@24c

FRESH FRUITS.

Peaches, apricots, plums and figs are arriving in large quantities, and concessions in price were made this week to move them. The demand is good and sales are reported to have been heavy. The berry market continues firm with little reduction in the prices for the best stocks. More inferior berries have been coming in and these were sold at lower prices. With the exception of raspberries all the berries maintained last week's top prices for the best goods. Cantaloupes are slightly lower, but it is believed they have about reached bottom, except possibly for some days when there may be an unusual amount of arrivals.

California apples .....$3.00@4.00
Northwest apples ..... 3.00@4.00
Peaches ..... .40@ .75
Apricots .....$1.00@1.50
Plums ..... 1.25@1.75
Figs ..... .75@1.00
Strawberries, chest .....12.00@15.00
Raspberries .....10.00@14.00
Loganberries ..... 7.00@10.00
Blackberries .....10.00@13.00
Currants, box .....1.00@1.10
Gooseberries .....8@10c
Cherries—
Royal Anne .....10@11c
Black, bulk ..... 9@11c
White, bulk ..... 6@ 8c
Cantaloupe, Standards .....2.25@2.50
do, Ponies, ... 2.00@2.25
do, flats .....85c@90c
Watermelon, lb. 2½c

CITRUS FRUIT.

Lemons were again the feature of the citrus market and all descriptions were advanced 50 cents a box. It is said that lemons may go still higher, as the demand shows a constant increase. Oranges and grapefruit are strong at unchanged quotations.

Oranges, Valencia .....$4.00@5.25
Lemons, fancy .....$6.50@7.00
do, choice ..... 5.50@6.50
do, standard ..... 4.50@5.50
Lemonettes ..... 3.50@4.50
Grapefruit ..... 3.50@4.50

DRIED FRUITS.

The market for dried fruits shows no change this week. Buying is going on steadily at these figures, but the dealers are not bidding against each other so recklessly as a short time ago.

Apples .....17½@18c
Pears .....17½@19c
Peaches .....14½@15c
Apricots .....23@29c
Prunes .....12½@13c
Figs, Adriatic .....14@18c
do, Calimyrna .....15@20c

RICE.

There is no change in the rice situation. Some fancy Japanese rice is reported to have been sold at $10.25, although $10 is regarded as the top price. Paddy ranges in quotations from $4.10 to $4.32, although there are no sales being reported. Reports from the growers indicate that the crop is in as good condition as could be expected at this stage of its growth.

HONEY.

It is understood that the Honey Association has closed out all its old stock at prices much below the high figure which was offered them several months ago. A few old lots of old honey is appearing here from time to time and dealers report that they have picked up some of this at 11 cents.

Water White, Orange Blossom, ...18c
White to Water White, sage (Subject to production) 17c
Light Amber Mountain (Sage-Buckwheat) 14c
Light Amber Alfalfa 11c

LOS ANGELES.

Los Angeles, June 24, 1919.

BUTTER.

Butter prices are down again. A drop of 2c is reported since last week's quotations. Prices held at 57c throughout the week, and on the 23rd slumped off. The demand continues good and receipts heavy. Receipts for the week, 395,200 lbs.

We quote:

California extra creamery 55c
do, prime first 53c
do, first 52c

EGGS.

All egg prices advanced since last week. Demand reported to be very good and receipts are above a week ago. Receipts for the week, 1612 cases.

We quote:

Fresh ranch, extra 50c
do, case count 49c
do, pullets 43½c

POULTRY.

Broilers and friers continue in good demand. Hens reported slow sale and ducks and turkeys are dull. Prices show some changes since last week. Receipts only fair.

Broilers, 1 to 1¼ lbs. 24c
Broilers, 1½ to 1¾ lbs. 27c
Fryers, 2 to 3 lbs. 32c
Roosters (soft bone), 3 lbs. and up 24c
Stags and old roosters, per lb. 14c
Turkeys .....34@40c
Hens .....23@28c
Ducks .....23@26c
Geese 25c

FRUIT.

There are few changes in price to report in this market since quoted last week. All staples in good demand and receipts fairly heavy. Climax and Santa Rosa plums now listed and good sale.

We quote from growers:

Cherries, lb. ..... 8@16c
Gooseberries, lb. .....11@12c
Apricots, lb. ..... 3@ 5c
Strawberries—
30 basket crates, fancy .....$4.00@4.50
Poor to choice ..... 3.00@3.75
Blackberries, case 30 boxes ..... 2.50@3.00
Raspberries, case 30 boxes ..... 3.50@3.75
Loganberries, case, 30 boxes .... 3.00@3.25
Plums, Beauty, lb. .....5@ 6c
do, Climax ..... 4@ 7c
do, Santa Rosa 12c

VEGETABLES.

Local markets now being furnished with home-grown stuffs. Imperial Valley produce about out of the market as a result of this condition. Tomatoes are higher; so are cucumbers, but these are home grown. Watermelons slightly lower. Cantaloupes steady. A good demand is being had on all staples. Receipts continue satisfactory.

We quote from growers:

Potatoes, new, lug box .....75@@85c
Onions, New Red, per cwt. .....$4.25@4.50
do, Stockton yellows, per cwt. $4.25@4.50
White silver wax, crate .....$2.75@3.50
Cabbage, per 100 lbs. .....75c@1.00
Rhubarb, per 30-lb. box $1.25
Summer squash, lug .....45@50c
Peas, per lb. .....10@14c
Kentucky Wonders .....9@10c
String Beans, Wax ..... 7@9c
do, Green ..... 7@8c
Tomatoes, 4 basket crate.....$1.75@2.00
Cucumbers, local, lug box .....$2.25@2.50
Lima Beans, Imperial Valley, lb. ....10@12c
Cantaloupes, Stand. & Pony crates $1.75@2.00
Watermelons, 100 lbs. .....$1.35@1.75
Lettuce, crate .....50@@75c

BEANS.

All prices remain the same as quoted last week. The market continues dull and weak.

Limas, per cwt. $8.00
Large white, per cwt. 6.25
Pink, per cwt. 6.50
Small white 6.25
Blackeyes, per cwt. 3.25
Tepary, per cwt. .....$2.00@2.50

CALIFORNIA PORKERS AT AUCTION.

The following table gives prices, weight and buyers at recent sales held by the California Farm Bureau Marketing Association:

	Gross Wt.	Dock	Av. Wt.	Per 100 lbs.	Buyer
McFARLAND—JUNE 14, 1919.					
82 hogs	15540		190	$17.25	Cudahy Packing Co.
81 hogs	16205		200	17.55	Cudahy Packing Co.
4 hogs	1330	20	330	16.75	Cudahy Packing Co.
7 hogs	1575	10	225	17.25	Cudahy Packing Co.
15 hogs	2255	30	155	15.70	Cudahy Packing Co.
73 hogs	11365	20	155	15.70	Cudahy Packing Co.
82 hogs	16220		200	17.25	Wilson & Co.
HANFORD—JUNE 18, 1919					
62 hogs	10035	20	162	17.00	Cudahy Packing Co.
72 hogs	14075		200	17.55	Wilson Packing Co.
58 hogs	13315	330	230	17.40	Wilson & Co.
CORCORAN—JUNE 19, 1919.					
74 hogs	14925		207	17.50	Wilson & Co.
26 hogs	5395		207	17.55	Wilson & Co.
58 hogs	9180		160	16.80	Wilson & Co.
59 hogs	11540		200	17.45	Wilson & Co.
9 hogs	2700	160	300	16.45	Wilson & Co.
FRESNO—JUNE 20, 1919					
15 hogs	3100		206	17.60	Cudahy Packing Co.
55 hogs	11430		208	17.35	Cudahy Packing Co.
73 hogs	13490	20	185	17.30	Cudahy Packing Co
77 hogs	17290		225	17.30	Cudahy Packing Co.
116 hogs	17700		110	16.85	Cudahy Packing Co.
24 hogs	6030	40	250	16.80	Cudahy Packing Co.
19 hogs	3625		190	16.80	Cudahy Packing Co.
27 hogs	9100	980	337	15.80	Cudahy Packing Co.
70 hogs	8925	20	127	14.10	Cudahy Packing Co.
14 hogs	2625	40	187	14.10	Cudahy Packing Co.
BAKERSFIELD—JUNE 21, 1919					
2 hogs	360		180	18.00	Wilson & Co.
64 hogs	12945	90	202	17.75	Wilson & Co.
2 hogs	635		317	16.75	Wilson & Co.
1 hog	160		160	17.25	Wilson & Co.
11 hogs	1590		144	17.00	Wilson & Co.

HAY.

No change in prices noted in this market since last week. It is very dull and weak unde rheavy receipts.

We quote f. o. b. Los Angeles.

Barley hay, per ton .....$18.00@21.00
Oat hay, per ton .....$20.00@22.00
Alfalfa, Northern, per ton ....$20.00@22.00
Alfalfa, local, per ton .....$21.00@23.00
Straw, per ton ..... 9@10.00

ALFALFA GROWERS OF CALIFORNIA, INC.

Alfalfa prices are higher since quoted last week. Receipts of No. 1 Dairy light. Demand active. Receipts of Standard dairy and Standard alfalfa, heavy, with light call. Sales of alfalfa by the Alfalfa Growers of California, Inc., 525 Central Building, Los Angeles, were at the following prices, f. o. b. cars, Los Angeles.

No. 1 Dairy $25.00
Standard dairy .....$21.00@22.00
do, alfalfa ..... 18.00@19.00
Stock alfalfa ..... 12.00@16.00

Special Livestock Market Report.

San Francisco, June 25, 1919.

CATTLE—The cattle markets are weak the country over, and the San Francisco market is no exception. Cattle are arriving locally, somewhat in excess of packers' capacity to care for them. The consuming demand is still light. There is a fractional decline in quotations. The demand for calves is fairly strong.

Steers—
Grass Steers, No. 1, weighing 1000-1200 lbs. .....10½@10¾c
Grass Steers, No. 1, weighing 1200-1400 lbs. .....10½@10¾c
Grass Steers, second quality .... 9 @ 9¼c
Grass Steers, thin ..... 5 @ 7c
Grass Cows & Heifers, No. 1.. 8 @ 8½c
Grass Cows & Heifers, 2nd quality 7 @ 7¼c
Grass Cows & Heifers, thin .... 3½ @ 5½c
Bulls and Stags, good ..... 5 @ 5½c
do, fair ..... 4 @ 4½c
do, thin ..... 3 @ 3½c
Calves, light weight .....12 @12½c
do, medium .....11 @11½c
do, heavy ..... 8 @ 9c

SHEEP—The sheep market is firm, though there is a slight decline in price on most grades in sympathy with the general drop in cattle values.

Lambs, yearling .....10@10½c
do, milk .....13@13½c
Sheep, wethers ..... 9¾@10c
do, ewes ..... 7½@ 8c

HOGS—The hog market is again soaring, widening the spread between cattle and hogs in favor of the latter. Hog raisers are confident of the future, and are not rushing their stock to market prematurely. A new high record was reached in Chicago last week when $21.60 was paid for tops.

Hogs, hard, grainfed, 100-50.....18c
do, 150-250.....18½c
do, 250-300.....18c
do, 300-400.....17½c

Los Angeles, June 24, 1919.

CATTLE—This market is still slumping. Prices are lower than quoted a week ago, and it is reported to be very dull.

Per cwt., f. o. b. Los Angeles:

Beef, steers, 1000@1100 lbs. ..$ 9.50@11.00
Prime cows and heifers ..... 8.00@ 9.00
Good cows and heifers ..... 7.50@ 8.00
Canners ..... 5.50@6 00

HOGS—All prices remain stationary in this market. The market is steady and the demand light.

Per cwt. f. o. b. Los Angeles:

Heavy avr-ging 275@@350 lbs. $15.50@16.50
Heavy, avr'ging 225@275 lbs. 16.50@17.50
Light .....17.50@18.00
Rough docked 20 lbs. piggy sows 40 per cent.

SHEEP—Prices are firmer and demand reported to be better though no change in prices is noted.

Prime wethers .....$ 8.50@ 9.50
Prime ewes .....8.00@ 8.50
Yearlings .....8.50@ 9.50
Lambs ..... 12.50@13.50

PORTLAND LIVE STOCK.

Portland, Ore., June 24, 1919.

CATTLE—Steady; receipts, 236.

Steers—Best, $10.50@11; good to choice, $9@10; medium to good, $8.50@9; fair to good, $7.75@8.25; common to fair, $7@7.50.

Cows and heifers—Good to choice, $8@8.50; medium to good, $7@7.75; fair to medium, $4.50@5.50; canners, $3@4; bulls, $5@7.50; calves, $9@13.

HOGS—Steady; receipts, 215.

Prime mixed, $19.75@20; medium, $19.25@19.75; rough heavies, $18.50@19; pigs, $17.75@18.25.

SHEEP—Steady; receipts, 25.

Prime lambs, $11.50@13.50; fair to medium, $9@10; yearlings, $6@9; wethers, $7@8.50; ewes, $6@8.

A PROSPEROUS YEAR FOR CALIFORNIA PEAR GROWERS.

In an interview this week with Frank T. Swett, Manager the California Pear Growers' Association, he said:

The Association began June 24th, allotments of canning pears to the Canners who had placed tentative orders with the Association. There was a greater demand for tonnage than the Association holdings, and in some districts it proved necessary to pro rate down, substituting a percentage of fruit in other districts, but practically filling the requirements of all canners who applied early enough to have allotments considered.

In two small districts there remains a small tonnage of No. 2 pears, running from 2 to 2¼ inches, which local canners, owing to prospective shortage of help, prefer not to engage at the present time. These pears however, are useful for drying, and at the present price of dried pears, which is about 20 cents, are in demand for that purpose. The tonnage sold of No. 1 pears, which is 90 per cent of the crop, is about 14,000 and will bring the grower-members of the Association over a million dollars.

The pack of canned pears will be much larger than last season. The older canners will work up to normal capacity, and new canners will pack over 5000 tons. Many canners have expressed themselves satisfied with the conservative action of the Association in the matter of prices.

While cherries brought $200 a ton, and peaches and cots have run about a $100 level, No. 1 pears were set at $85, thus insuring a large pack. With an unusually large cannery pack, the Eastern shipments will be limited and auction markets should show satisfactory prices.

TIRES

BARGAINS

STANDARD MAKES

These tires are all new, fresh goods and NOT retreaded or so-called rebuilt tires.

REDUCED PRICES

	Plain Tread Seconds Guaranteed	First Non-Skid Standard Guaranteed	Tubes Guaranteed Gray
28x3	.....	$10.75	$2.05
30x3	$9.20	10.95	2.05
30x3½	11.50	13.50	2.50
32x3½	12.85	15.85	2.70
31x4	16.30	20.65	3.15
32x4	16.60	21.15	3.25
33x4	17.30	22.00	3.35
34x4	17.80	22.50	3.45
36x4	.....	26.60	.....
34x4½	24.00	28.90	4.20
35x4½	25.00	30.15	4.30
36x4½	25.45	30.65	4.45
37x4½	.....	35.75	5.10
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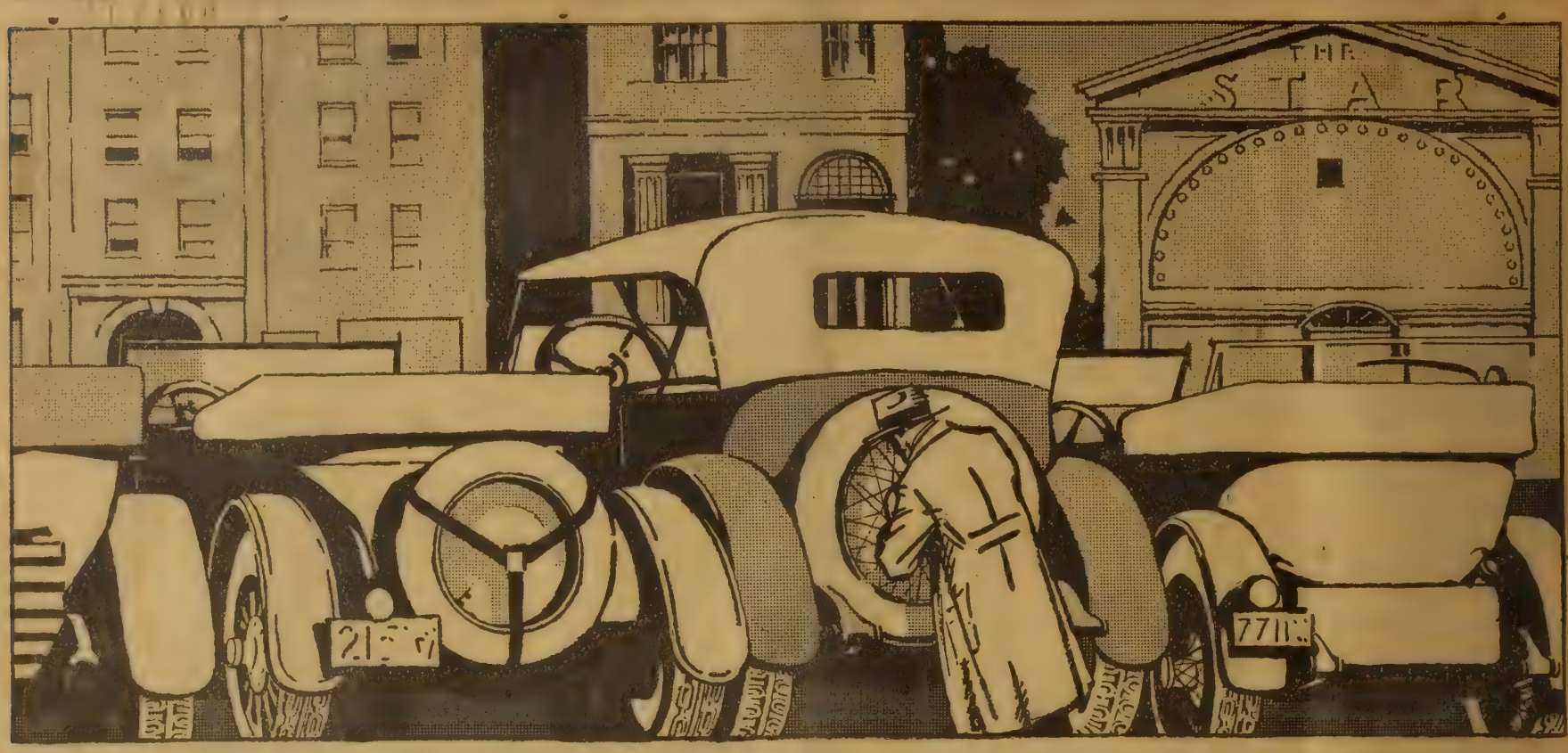
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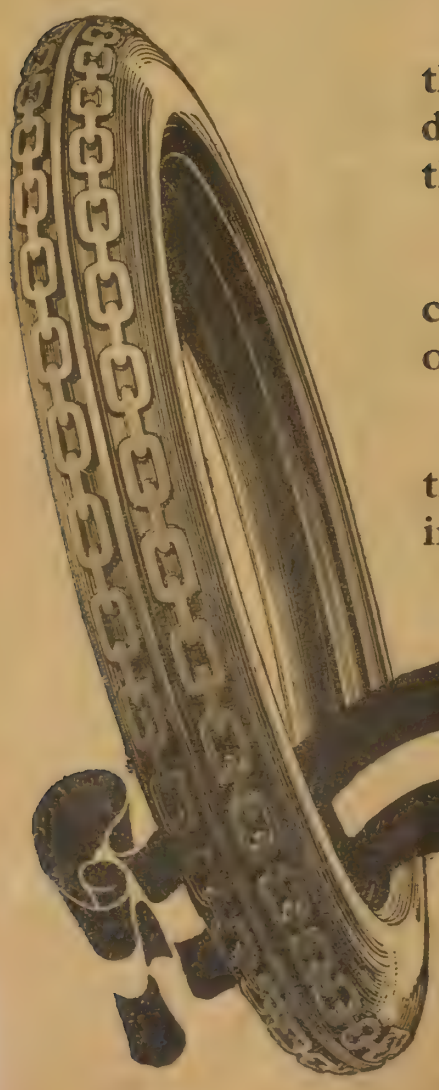
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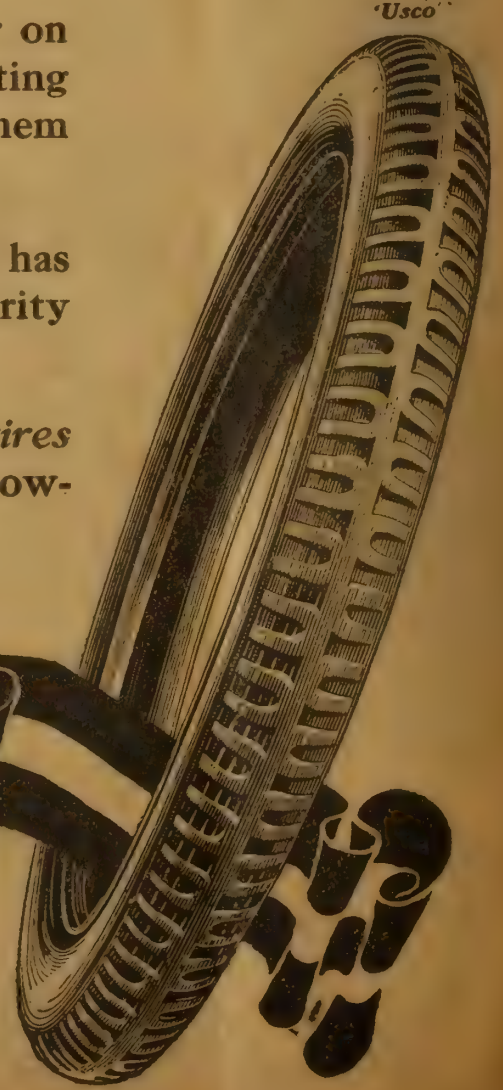
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